

Electrolytic Aluminum Capacitors



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A Worldwide presence







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Selection Guide

SCREW TERMINALS









| Reference | Capacitance (μ F) | Voltage (V) | Dimensions in mm (inches) | | Operating temperature | Main characteristics | Page |
|--|---------------------------|----------------|------------------------------|--------------------------------|--------------------------|--|-----------|
| | | | \emptyset | H | | | |
|  FELSIC 85 (BC) - CO 54 FELSIC 85 (BD) - CO 53 | 68 to 680 000 | 10 to 630 | 36 to 90 (1,417 to 3,543) | 52 to 200 (2,047 to 7,874) | -55°C + 85°C | Standard 85°C | 16 |
|  FELSIC 039 (BC) - CO 39 FELSIC 037 (BD) - CO 37 | 100 to 150 000 | 10 to 400 | 36 to 77 (1,417 to 3,031) | 47 to 144 (1,850 to 5,669) | -55°C + 85°C | Standard C039 type (railway maintenance standard) | 22 |
|  FELSIC 85 M (BC) - CO 54 FELSIC 85 M (BD) - CO 53 | 68 to 330 000 | 10 to 630 | 36 to 90 (1,417 to 3,543) | 52 to 200 (2,047 to 7,874) | -55°C + 85°C | Standard 85°C \pm 20% tolerance | 26 |
|  FELSIC 105 (BC - BD) | 100 to 470 000 | 16 to 450 | 36 to 90 (1,417 to 3,543) | 52 to 200 (2,047 to 7,874) | -55°C + 105°C | Extreme Long life | 31 |
|  FELSIC 105 TFRS (BC - BD) -CO 45 | 470 to 68 000 | 10 to 100 | 36 to 77 (1,417 to 3,031) | 47 to 144 (1,850 to 5,669) | -55°C + 105°C | Very low ESR | 35 |
|  FELSIC 105 LP (BC) | 1 500 to 220 000 | 10 to 450 | 90 (3,543) | 67 (2,638) | -55°C + 105°C | 105 with Low Profile can | 38 |
|  FELSIC HC (BC - BD) | 100 to 2 200 000 | 10 to 500 | 36 to 90 (1,417 to 3,543) | 52 to 200 (2,047 to 7,874) | -40°C + 85°C | High energy density | 40 |
|  FELSIC HV (BC - BD) | 1 500 to 47 000 | 160 to 450 | 51 to 90 (2,008 to 3,543) | 104 to 200 (4,094 to 7,874) | -55°C + 105°C | Extreme Long life; High ripple | 48 |
|  FELSIC 125 FRS (BC) - CO 47 FELSIC 125 FRS (BD) - CO 46 | 220 to 150 000 | 16 to 350 | 36 to 90 (1,417 to 3,543) | 53 to 145 (2,087 to 5,709) | -55°C + 125°C | Low ESR | 51 |

RADIAL LEADED






| Reference | Capacitance (μ F) | Voltage (V) | Dimensions in mm (inches) | | | | Operating temperature | Main characteristics | Page |
|--|---------------------------|----------------|---------------------------|------------------------------|--------------------------------|----------------------------------|--------------------------|--|-----------|
| | | | I | L | \emptyset | H | | | |
|  ALSIC 145 20g | 220 to 3 300 | 12 to 115 | | | 20 25 (0,787) (0,984) | 18 22,5 (0,709) (0,886) | -55°C + 145°C | High temperature range - Long life withstand 20g vibrations | 56 |
|  ALSIC 20g | 100 to 80 000 | 10 to 500 | | | 20 25 (0,787) (0,984) | 18 to 35,5 (0,787 to 0,984) | -55°C + 105°C | Withstand 20g vibrations | 58 |
|  CUBISIC | 100 to 33 000 | 10 to 450 | 35 (1,378) | 35 to 50 (1,378 to 1,969) | | 16 (0,630) | -55°C + 105°C | Non cylindrical case, Withstand 20g vibrations, High energy density | 61 |
|  CUBISIC LP | 120 to 68 000 | 10 to 400 | 45 (1,772) | 12 (0,472) | | 35 to 75 (1,378 to 2,953) | -55°C + 105°C | Non cylindrical case, Withstand 20g vibrations, High energy density | 64 |

Selection Guide

SNAP IN

| Reference | Capacitance (μF) | Voltage (V) | Dimensions in mm (inches) | | Operating temperature | Main characteristics | Page |
|---|----------------------------------|----------------|------------------------------|-------------------------------|--------------------------|------------------------------------|-----------|
| | | | \emptyset | H | | | |
|  SNAPSIC | 22 to 47 000 | 16 to 500 | 22 to 35 (0,866 to 1,378) | 30 to 50 (1,181 to 1,969) | -55°C + 85°C | Standard 85°C type | 68 |
|  SNAPSIC 105 | 22 to 68 000 | 16 to 500 | 22 to 35 (0,866 to 1,378) | 25 to 50 (0,984 to 1,969) | -55°C + 115°C | Standard 105°C type | 72 |
|  SNAPSIC HC | 33 to 47 000 | 25 to 500 | 22 to 35 (0,866 to 1,378) | 25 to 50 (0,984 to 1,969) | -40°C + 85°C | High energy density | 76 |
|  SNAPSIC HV | 47 to 2 200 | 16 to 500 | 22 to 35 (0,866 to 1,378) | 25 to 50 (0,984 to 1,969) | -55°C + 105°C | Long Life; High ripple current | 83 |
|  SNAPSIC 4P | 330 to 150 000 | 16 to 500 | 35 to 45 (0,866 to 1,378) | 50 to 100 (1,969 to 3,937) | -55°C + 85°C | Standard 85°C type with 4Pins | 86 |
|  SNAPSIC 105 4P | 330 to 150 000 | 16 to 500 | 35 to 45 (0,866 to 1,378) | 50 to 100 (1,969 to 3,937) | -55°C + 105°C | Standard 105°C type with 4Pins | 90 |
|  SNAPSIC 105 LP | 150 to 68 000 | 16 to 500 | 45 (1,772) | 16 to 40 (0,630 to 1,575) | -55°C + 105°C | Low Profile 105°C with 4 Pins | 93 |
|  SNAPSIC 125 | 470 to 47 000 | 16 to 100 | 22 to 35 (0,866 to 1,378) | 25 to 50 (0,984 to 1,969) | -55°C + 125°C | High temperature range - Long Life | 96 |

AXIAL LEADED

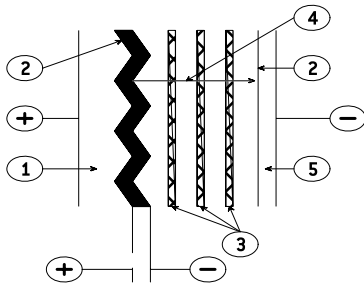
| Reference | Capacitance (μF) | Voltage (V) | Dimensions mm (inches) | | Operating temperature | Main characteristics | Page |
|---|----------------------------------|----------------|-------------------------------|------------------------------|--------------------------|--|------------|
| | | | \emptyset | H | | | |
|  SICAL SICAL CO 42 | 2,2 to 47 000 | 10 to 630 | 6,5 to 25 (0,256 to 0,984) | 15 to 75 (0,591 to 2,953) | -55°C + 85°C | Standard 85°C type | 100 |
|  PRORELSIC 125 CO 52 | 1 to 15 000 | 10 to 450 | 6,5 to 25 (0,256 to 0,984) | 15 to 75 (0,591 to 2,953) | -55°C + 125°C | 125°C Long life | 106 |
|  PRORELSIC 145 CO 52 | 6,8 to 10 000 | 16 to 450 | 14 to 25 (0,551 to 0,984) | 30 to 75 (1,181 to 2,953) | -55°C + 145°C | High temperature Long life | 112 |
|  VACSIC 105 | 15 to 4 700 | 10 to 350 | 12 to 16 (0,472 to 0,630) | 30 (1,181) | -55°C + 105°C | Standard 105°C type Withstand 45g vibrations. | 116 |
|  VACSIC 150 | 6,8 to 3 300 | 16 to 450 | 12 to 16 (0,472 to 0,630) | 30 (1,181) | -55°C + 150°C | High temperature Long life Withstand 45g vibrations | 119 |

| OLD RANGES | REPLACEMENT TYPES | OLD RANGES | REPLACEMENT TYPES | OLD RANGES | REPLACEMENT TYPES |
|---------------------------------|----------------------------------|-----------------------------------|---------------------------------------|---------------------|-------------------|
| FELSIC 125 | FELSIC 125 FRS | CELLSIC | FELSIC HC 10 , 16 V | RELSIC TFRS (CO 43) | SICAL CO 42 |
| FELSIC TFRS (CO 45) | FELSIC 105 TFRS (BC) (CO 45) | CMF FP - CMF | SICAL CO 42 - SICAL | SICAL 025 (CO 25) | SICAL CO 42 |
| FELSIC HP | FELSIC 105 77 x 220 | CMF FRS 12.3 | SICAL CO 42 | SICAL 041 (CO 41) | SICAL CO 42 |
| FELSIC IND (BC - BD) 93.6, 94.6 | FELSIC HC FELSIC 85 (BC - BD) | PROMISIC 015 (CO 15) | PRORELSIC 125 (CO 52) PROMISIC 031 | | |
| FELSIC UPS | FELSIC HC | PROMISIC 125 (CO 16) | PRORELSIC 125 (CO 52) | | |
| FELSIC 018 (CO 18) | FELSIC 85 BC - FELSIC 039 | PROMISIC FRS (CO 32) | SICAL CO 42 | | |
| FELSIC 019 (CO 19) | FELSIC 85 BC - FELSIC 039 | PROMISIC TFRS (CO 28) | SICAL CO 42 | | |
| FELSIC DI | FELSIC 85 480 V - 500 V | PRORELSIC 105 TFRS (CO 48) (2) | PRORELSIC 125 (CO 52) | | |
| FELSIC 036 (CO 36) | FELSIC 037 (CO 37) | RELSIC 026 (CO 26) | PRORELSIC 125 (CO 52) RELSIC 033 | | |
| FELSIC 038 (CO 38) | FELSIC 039 (CO 39) | RELSIC 125 (CO 44) | PRORELSIC 125 (CO 52) | | |

General technical data

1. BASIC CONSTRUCTION

Structure of an electrolytic aluminum capacitor is shown hereunder:



1. Anode: aluminum foil
2. Dielectric: aluminum oxide
3. Papers spacers impregnated with electrolyte
4. Ionic conduction assumed by electrolyte
5. Cathode: aluminum foil

The positive plate is an etched aluminum foil covered with alumina which is the dielectric of the capacitor.

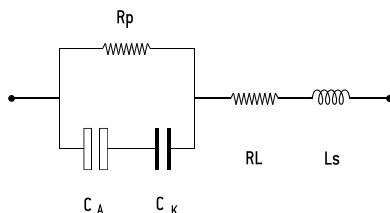
The negative plate is constituted by a second aluminum foil which serves as a current supply, and by electrolyte-impregnated papers layers.

The metal used for anode is a $\geq 99,98$ % grade aluminum.

The dielectric has a thickness of $13 \text{ \AA} / V$.

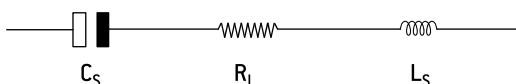
The aluminum used for the cathode is a ≥ 98 % grade aluminum covered with a dielectric layer with a thickness of about 40 \AA .

2. DIAGRAM OF THE EQUIVALENT CIRCUIT



- C_A = Capacitance of the anode
- C_K = Capacitance of the cathode
- R_p = Parallel resistance due to the aluminum oxide film.
- R_L = Series resistance of connections, plates and impregnated spacer.
- L_s = Inductance of winding and connections.

A standard simplified diagram is.



C_s is the series capacitance of both anode and cathode capacitances. Electrolytic aluminum capacitors are naturally polarized because of the insulating film on the anode. Given the very thin aluminum oxide layer, a reversed voltage should not exceed 1.5 V when there is energy supply.

Short duration reverse voltages can be absorbed by special construction, second anode replacing the former cathode.

3. CAPACITORS MARKING

3.1. ARTICLE CODE (ON EACH PACKAGING)

A followed by 6 figures number. First 3 positions are specific of the range. (Ex. A 745xxx for a FELSIC 85 BD)

| | |
|--------------------------------|--------------------------------|
| 140 FELSIC in bank | 741 FELSIC 125 FRS BD (ex 731) |
| 701 PRORELSIC 125 | 742 PRORELSIC 105 TFRS |
| 703 PRORELSIC 125 | 743 PRORELSIC 105 TFRS |
| 704 SNAPSIC | 744 FELSIC 85 BC |
| 705 SNAPSIC 105 | FELSIC 85 LP |
| 706 FELSIC HP BC – BD | 745 FELSIC 85 BD |
| 708 PRORELSIC 145 | 746 FELSIC 85 M BC |
| 710 CUBISIC | 747 FELSIC 85 M BD |
| 711 PROMISIC 031 | 748 SICAL CO 42 - SICAL |
| 712 CUBISIC LP | 749 SICAL CO 42 - SICAL |
| 713 SNAPSIC 105 LP | 750 CUBISIC 125 |
| 714 SNAPSIC 4P | 756 FELSIC 105 BC |
| 715 SNAPSIC 105 4P | FELSIC 105 LP |
| 716 SNAPSIC HV | 757 FELSIC 105 BD |
| 717 SNAPSIC HC | 760 FELSIC 105 BC |
| 718 SNAPSIC 125 | 761 FELSIC HC BD |
| 721 RELSIC 033 | 762 FELSIC 105 TFRS BC |
| 722 CI FRS | 763 FELSIC 105 TFRS BD |
| 723 CI FRS | 764 FELSIC HV BC |
| 728 FELSIC 039 (ex 72?) | 765 FELSIC HV BD |
| FELSIC DI | 775 VACSIC |
| 738 FELSIC 037 (ex 73?) | 774 VACSIC 150 |
| 740 FELSIC 125 FRS BC (ex 731) | 776 ALSIC 20G |
| | ALSIC 145 20G |

In FELSIC ranges, article code without first letter A, is printed on each capacitor.

a Figure 9 in fourth position shows a special product.

3.2. BATCH (ON EACH CAPACITOR).

3 figures or 6 figures

3.3. DATE (ON EACH CAPACITOR IF APPLICABLE)

4 figures (year-week)

4. ELECTRICAL CHARACTERISTICS

4.1. RATED CAPACITANCE C_R

The rated capacitance is defined at 100 Hz and at ambient temperature.

4.2. RATED VOLTAGE U_R

U_R is the maximum DC voltage which may be applied in continuous operation.

When applying a superimposed alternating voltage, the peak value of the resulting waveform should not exceed the rated voltage.

4.3. PEAK VOLTAGE U_p

U_p is the maximum repetitive voltage which can be applied within short periods.

Defined in CECC 30 300 and IEC 60 384-4:

1000 cycles of 30 s charge followed by a no load period of 5 min. 30 s with upper category temperature.

$$U_p \leq 1,15 U_R \quad (U_R \leq 315 \text{ V})$$

$$U_p \leq 1,10 U_R \quad (U_R > 315 \text{ V})$$

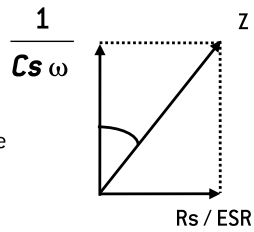
General technical data

4.4. DISSIPATION FACTOR TANδ

The dissipation or loss factor is defined by its tangent $\text{Tan}\delta$

$$\text{Tg}\delta = R_s C_s \omega$$

$$(\omega = 2\pi F)$$



ESR Capacitor Equivalent Series Resistance

Cs Capacitor capacitance

F Frequency [100 Hz]

Z Capacitor impedance

4.5. EQUIVALENT SERIES RESISTANCE ESR

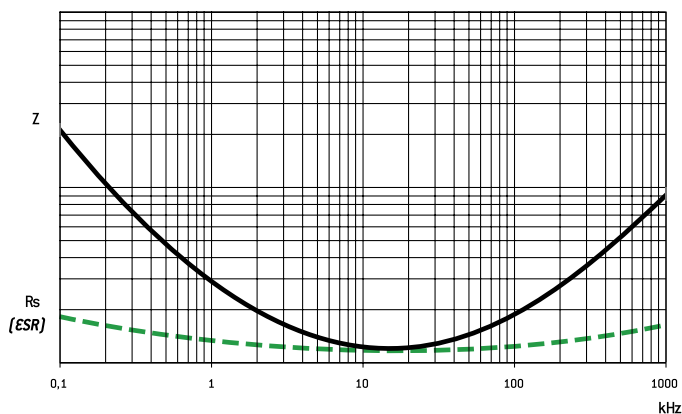
The relation between ESR and dissipation factor $\text{Tan}\delta$ is given in § 4.4.

4.6. IMPEDANCE Z - INDUCTANCE L

The impedance is given by:

$$Z = \sqrt{R^2 + \left[L\omega - \frac{1}{C\omega}\right]^2}$$

L inductance. Generally $L = 5$ to 20 nH



Z and ESR as function of frequency typically follows the chart:

4.7. PERMISSIBLE RIPPLE CURRENT (I.r.m.s.) I~

The current is defined at the maximum climatic category and at 100 Hz. It is the root mean square value r.m.s. The value I_0 is the rated value for calculations of expected life up to $3 I_0$.

4.8. LEAKAGE CURRENT II

It is measured at 20°C after a 5 min. polarization under rated voltage.

For C_R in μF and U_R in V:

$$I \leq 0,01 C_R U_R \text{ or } 1 \mu\text{A}^*$$

when $C_R U_R \leq 1000 \mu\text{C}$

$$I \leq 0,006 C_R U_R + 4 \mu\text{A}$$

when $C_R U_R > 1000 \mu\text{C}$

For $U_R > 350 \text{V}_{\text{DC}}$ it can be specified:

with $K = 4, 6$ or 8

or

$$I \leq 0,3 (C_R U_R)^{0,7} + 4 \mu\text{A} \text{ (CECC 30 300)}$$

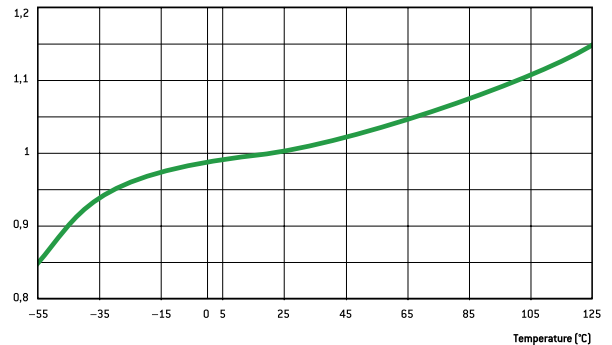
* Whichever is the greater

4.9. CHARACTERISTICS

Versus temperature [typical values].

4.9.1. Capacitance drift

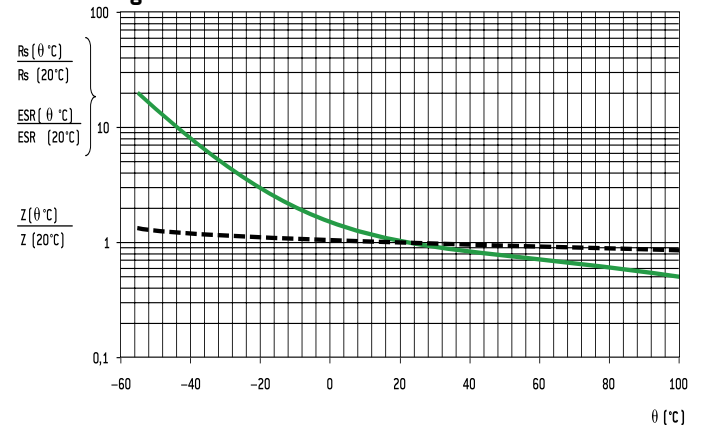
Versus temperature



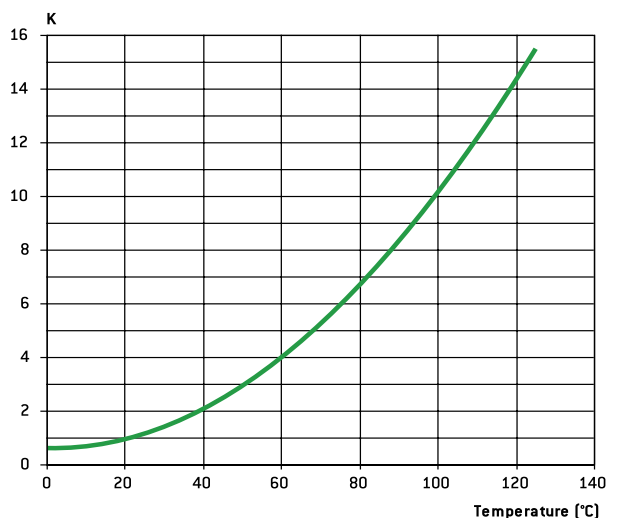
4.9.2. ESR and Z drifts at 100 Hz

Versus temperature

4.9.3 Leakage current drift



Versus temperature



General technical data

5. SPECIFICATION TO APPLY

Electrolytic aluminum capacitors are defined in:

- NF and UTE French national standard
- CECC European specifications
- IEC international specifications

Quality insurance procedures are described in these specifications.

| | French | European | International |
|--|---|--|---------------------------------|
| Generic specification Fixed capacitors | NF C 83 100 | CECC 30 000 EN 130 000 | IEC 60 384 -1 QC 300 000 |
| Sectional specification Electrolytic aluminum capacitors | NF C 83 110 | CECC 30 300 | IEC 60 384 - 4 C 300 300 |
| Blank deta II specification - Electrolytic aluminum capacitors with non solid electrolyte. | UTE 83 110 | CECC 30 301 | IEC 60 384 - 4 -1 QC 300 301 |
| Blank deta II specifications | CECC 30 301- 017 to CECC 30 301- 062 CO 31 to CO 55 | CECC 30 301- 017 to CECC 30 301- 062 CECC 30 301- 802 to CECC 30 301- 811 | |

6. ENDURANCE TESTS / LIFE TIME

6.1. STANDARD ENDURANCE TEST

at max category temperature:

| Temperature | Endurance test | | | |
|-------------|---------------------|---------|---------|----------------------------|
| | Grade I - Long life | | | Grade II - General purpose |
| | 10 000 h | 5 000 h | 2 000 h | 1 000 h |
| 125°C | | | • | |
| 105°C | | • | • | • |
| 85°C | • | • | • | • |

Standard endurance tests do not exceed 2000 hours at 125°C. However, present EXXELIA technologies concerning liquid electrolytes have led to endurance tests up to 5000 hours at 125°C (PRORELSIC 125 - FELSIC 125 RS) and even 20000 hours at 125°C (PRORELSIC 145 - ALSIC 145)

6.2. PERFORMANCE REQUIREMENTS ON STANDARD ENDURANCE TESTS.

Permissible capacitance drift $\Delta C/C$ (%)

Permissible increase factors on $\tan\delta$, ESR, Z and II initial values

| U_R | Endurance test | | | |
|--------------|----------------|----------|----------|----------|
| | Grade I | | | Grade II |
| | 10 000 h | 5 000 h | 2 000 h | 1 000 h |
| 6,3 V | | | +15 -30 | +25 -40 |
| 10 V - 35 V | +15 -20 | ± 15 | ± 15 | ± 30 |
| 40 V - 160 V | ± 15 | ± 15 | ± 15 | ± 30 |
| > 160 V | ± 15 | ± 10 | ± 10 | ± 15 |

| | Endurance test | | | |
|-------------------------|-----------------|---------|---------|----------|
| | Grade I | | | Grade II |
| | 10 000 h | 5 000 h | 2 000 h | 1 000 h |
| $\tan\delta$ or ESR [1] | 1,5 | 1,3 | 1,3 | 1,5 |
| Z [2] | 3 | 2 | 2 | 3 |
| II | Standard values | | | |

[1] $\tan\delta$ or ESR: for initial value, take standard value.

[2] Z: for initial value, take specified value [see data sheet].

Specific requirements can be taken into consideration with regards to initial values of dissipation factor or equivalent series resistance and impedance.

6.3. FAILURE CRITERIA FOR ELECTROLYTIC CAPACITORS.

Failure criteria are defined in CECC 30 301

- Non measurable defaults leading to complete failure.
- Measurable defaults leading to adjustment losses of the load circuit (failure due to variations).

6.3.1. Non measurable defaults.

They might be summed up as:

- Open circuit
- Short circuit
- Operation of pressure relief device
- Severely damaged insulation
- Unusable terminations

6.3.2. Measurable defaults.

Variations exceeding the values given below characterize a default.

- Capacitance drift $\Delta C/C$ (%): 3 times the limit for standard endurance testing or 50 % (whichever is the smallest).
- $\tan\delta$ or ESR: 3 times standard max initial values.
- Z: 3 times standard max initial values.
- II: initial limit (under load conditions).

Specific requirements can be taken into consideration with regards to lower drifts.

6.4. INFLUENCE OF MAIN PARAMETER ON OPERATIONAL LIFE.

6.4.1. Temperature.

The capacitors operational life is highly dependent upon its internal temperature Θ_i and therefore upon the ambient temperature and the ripple current.

Knowing ESR and dissipated power values (§ 6.4.3.) one can figure out, the internal temperature rise and then determine the capacitors expected life.

With present high boiling point electrolytes (§ 8.6)

Θ_i max = 125 to 185°C depending on styles.

6.4.2. Ripple current.

The ripple current flowing through the capacitor increase the internal temperature through power dissipation.

Standards define the permissible current at 100 Hz and generally consider a temperature rise of 5 to 10°C of max category temperature.

Current waveforms and frequencies make it difficult to clearly determine the capacitors internal temperature rise, which defines the operationally life.

Experiments confirm following relationship:

$$\Theta_i = \Theta_a + (\Theta_c - \Theta_a) K$$

Where:

- Θ_i = Internal hot spot temperature
- Θ_a = Ambient temperature
- Θ_c = Case temperature
- K = Parameter depending upon case diameter and cooling
 - $\emptyset \geq 51$ k = $2 \pm 0,5$
 - $\emptyset < 51$ k = $1,5 \pm 0,5$ (air cooling - 0,2 m/s)

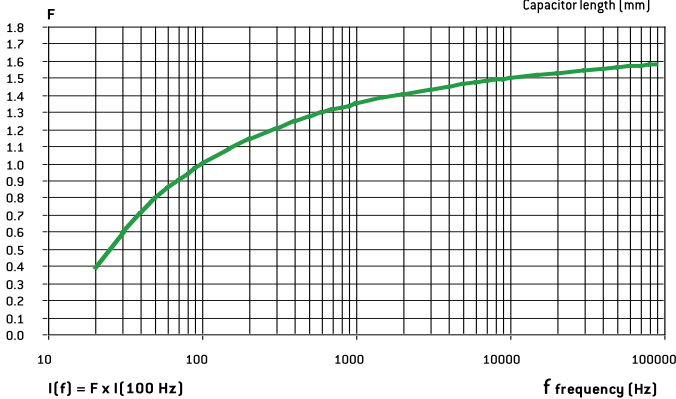
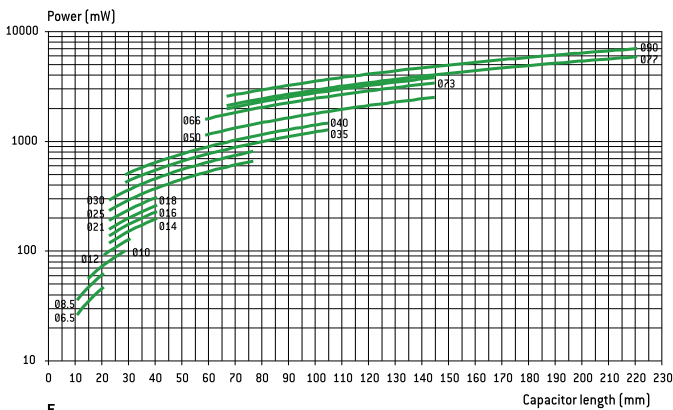
General technical data

r.m.s. value according to current waveform.

| Function | Mean value | R.m.s. value | Function | Mean value | R.m.s. value | Function | Mean value | R.m.s. value |
|----------|---------------|--------------------|----------|------------------|-------------------|----------|------------|----------------|
| | $A (t_0/T)$ | $A \sqrt{t_0/T}$ | | $A/2$ | $A \sqrt{3}$ | | $2A/\pi$ | $A / \sqrt{2}$ |
| | $A (t_1/T)$ | $A \sqrt{2t_1/3T}$ | | $2A/\pi (t_0/T)$ | $A \sqrt{t_0/2T}$ | | $A/2$ | $A / \sqrt{3}$ |
| | $A/2 (t_0/T)$ | $A \sqrt{t_0/3T}$ | | $A/2 (t_0/T)$ | $A \sqrt{t_0/3T}$ | | 0 | A |

6.4.3. Dissipated power versus case dimension

For calculations of ripple currents, considering an internal temperature rise of 10°C



$P = ESR \cdot I^2$

P = Dissipated power (mW)

($\Theta_i - \Theta_a = 10^\circ\text{C}$)

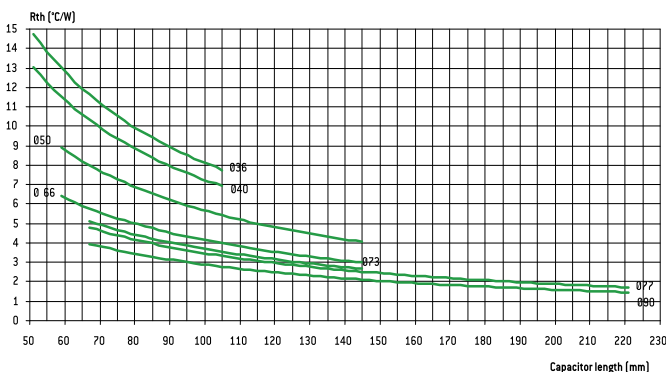
ESR: Equivalent series resistance (100 Hz 20°C)

I: Ripple current (r.m.s. value at 100 Hz)

For different frequencies from 100 Hz, I must be multiplied by the factor F, according to above chart.:

6.4.4. Thermal resistance Rth and air cooling

Rth is static thermal resistance (without cooling) between capacitor central hot spot and ambient temperature measured at a distance of one capacitor diameter



Forced or not cooling air can lead to a significant decrease of these values.

Consequently, r.m.s. ripple current can be increased as a function of air cooling speed:

| Ø mm (inches) | ≤ 0,5 m/s | 1 m/s | 2 m/s | 3 m/s | ≥ 4 m/s |
|---------------|-----------|-------|-------|-------|---------|
| 66 - 90 | 1~ | 1,1~ | 1,2~ | 1,25~ | 1,3~ |
| 36 - 51 | 1~ | 1,2~ | 1,4~ | 1,45~ | 1,5~ |

This parameter shall be applied to one capacitor alone.

For capacitors in bank, ambient temperature must be strictly equal around all capacitors.

6.4.5. Quality guaranty

We guarantee products manufactured during 2 years from the data of shipment against defaults of material and assembly.

This guaranty can be involved by the buyer only if our products are used within normal conditions, always according to the state of the art and taking in account storage conditions.

The equipment design should take into consideration possible failures of our capacitors and related effects in order to avoid them.

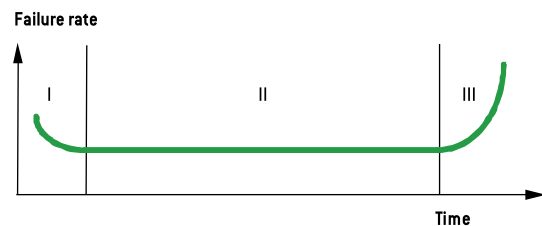
Guaranty is not applicable for damages occurred by surge voltage, irregular use, polarity inversion or maintenance default.

Guaranty is exclusively limited to the replacement of individual defective capacitors within the terms of delivery. This rule applied to all cases and particularly to any further consequence of failures.

6.4.6. Reliability

Failure rate:

$$FR = \frac{\text{Number of components tested} \times \text{test duration}}{\text{Number of failures}}$$



Failure rate is measured in FIT (failure in time = 10⁻⁹ / hour).

The failure rate is set up during the life time of the capacitor (phase II)

I. Early failure phase (generally excluded during ageing process).

II. Operational life time of the capacitors

III. End of life

General technical data

Mean time between failures MTBF = 1/FR mesured in years

| Range | Failure rate for a failure percentage not exceeding 1% with a confidence level of 60 % |
|--|--|
| FELSIC 85 >350 V FELSIC HC > 350 V SNAPSIC - SNAPSIC HC > 350 V SNAPSIC 4P > 350 V PROMISIC 031 Ø = 6,5 SICAL CO 42 - SICAL > 350 V | 50 FIT - (MTBF = 2280) |
| FELSIC 037 - 039 FELSIC 85 ≤ 350 V FELSIC HC ≤ 350 V CUBISIC CI FRS SNAPSIC 105 - SNAPSIC 105 4P SNAPSIC 105 LP - SNAPSIC HV SNAPSIC - SNAPSIC 4P ≤ 350 V SNAPSIC HC ≤ 350 V ALSIC IR - ALSIC 145 - ALSIC HV - VACSIC 150 - VACSIC SICAL CO 42 - SICAL ≤ 350 V PRORELSIC 125 Ø = 6,5 RELSIC 033 PROMISIC 031 Ø > 6,5 | 25 FIT - (MTBF = 4560) |
| FELSIC 125 FRS - SNAPSIC 125 FELSIC HV - FELSIC 105 | 10 FIT - (MTBF = 11410) |
| PRORELSIC 125 Ø > 6,5 PRORELSIC 145 | 5 FIT - (MTBF = 22820) |

Multiplying factor of FR with voltage and temperature

| Factor | Temperature [°C] | | | | | | | |
|--------|------------------|-----|-----|-----|-----|---------|---------|---------|
| | ≤ 40 | 50 | 60 | 70 | 85 | 105 (1) | 125 (1) | 145 (1) |
| Factor | 1 | 1,5 | 2,3 | 3,4 | 6,3 | 14 | 32 | 72 |

(1) Only for permitted capacitors

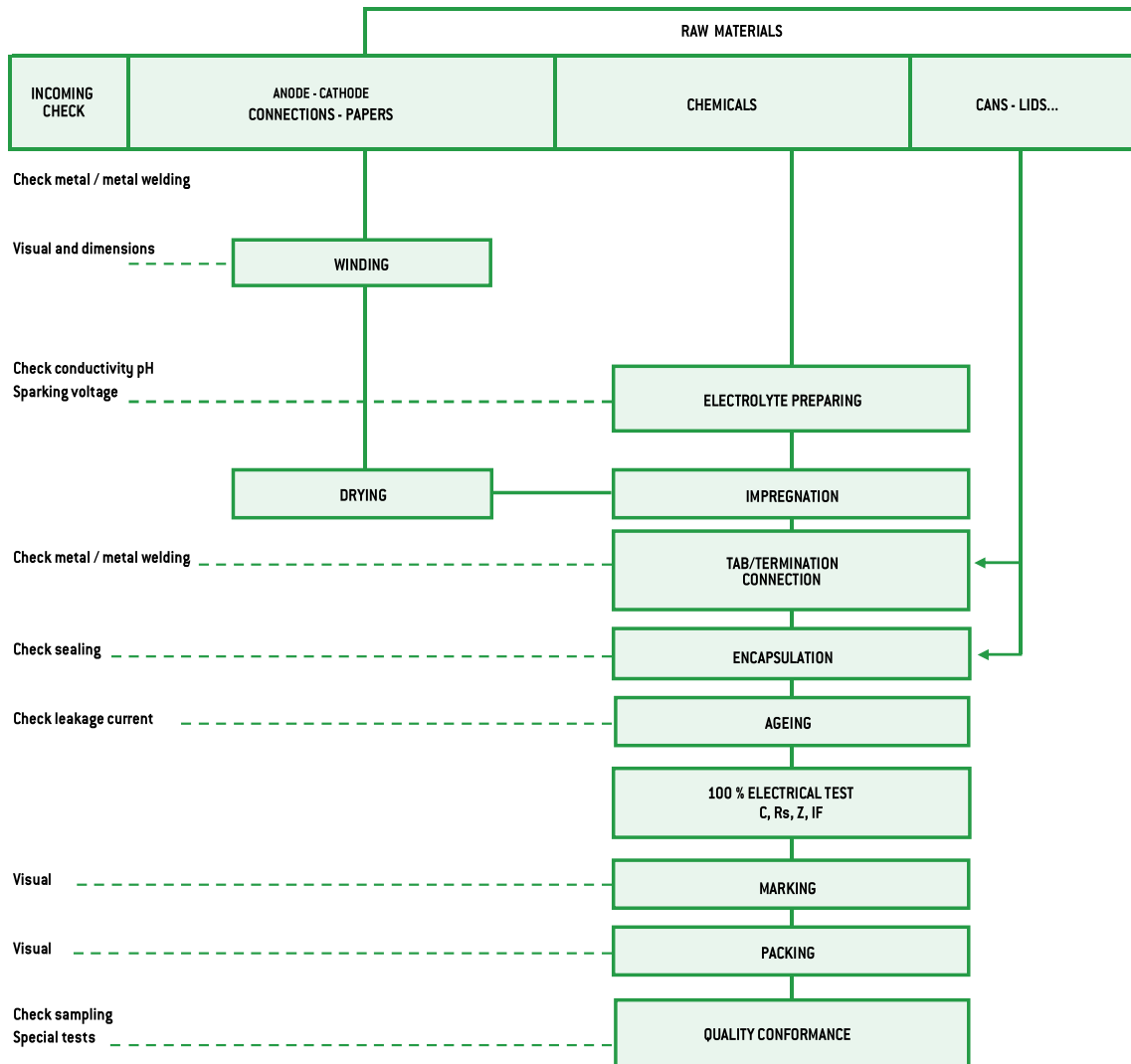
| Factor | Percentage of rated voltage (2) | | |
|--------|---------------------------------|------|------|
| | 100 % | 80 % | 50 % |
| Factor | 1 | 0,8 | 0,5 |

(2) This voltage has to be constant

| Environ-ment | Without vibration | | Ground with vibrations or mob Ile | | | |
|--------------|-------------------------------|-------------|--|--|--|-------|
| | Ground, fix Controlled air | Ground, fix | PRORELSIC SNAPSIC 20 g FELSIC 20 g | FELSIC 10 g PROMISIC SICAL Ø ≤14 | CI FRS - SNAPSIC RELSIC SICAL Ø >14 | ALSIC |
| Factor | 1 | 2 | 2 | 4 | 6 | 12 |

7. MANUFACTURING FLOW CHART

Process controls



General technical data

8. INFORMATION ON APPLICATION

8.1. CLEANING SOLVENTS

Use aliphatic alcohols, such as denatured ethyl alcohol, isopropanol, or butylacetate, or else alkaline diluted solutions. Avoid incompatible solvents (halogenous for example).

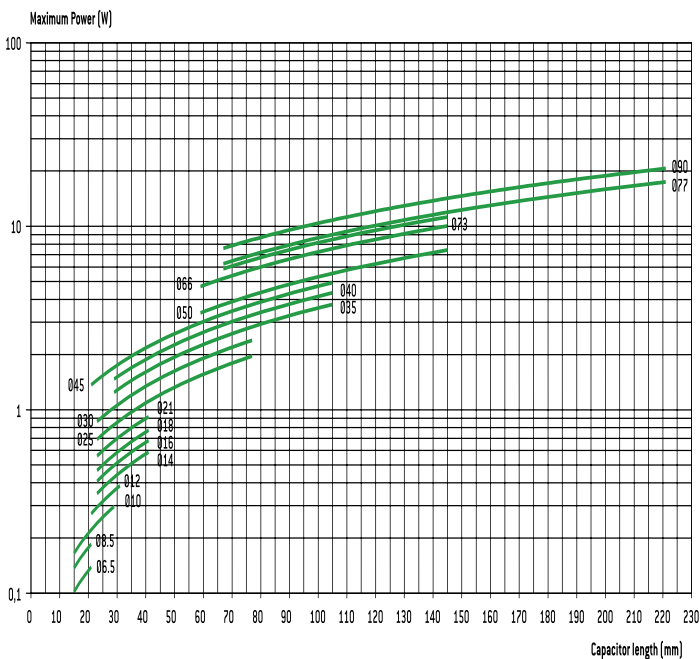
8.2. SHELF LIFE

There is no electrical characteristics variation for long periods of storage except leakage current which can increase.

It is caused by chemical reactions between the dielectric alumina and the electrolyte. These reactions are reversible when switched on. Capacitors can generally be stored at temperature between -5° and $+50^{\circ}\text{C}$ without reforming for the following periods of time:

- For $U_R \leq 100\text{ V}$, storage time: 5 years (up to 10 years under specific conditions)
- For $100\text{ V} < U_R \leq 360\text{ V}$ storage time: 3 years
- For $360\text{ V} < U_R < 500\text{ V}$ storage time: 1 year
- For $U_R \leq 500\text{ V}$, storage time: 6 months

Generally when these periods are overstepped, one hour at rated voltage causes the decrease of leakage current under the specified limits. An other way to avoid this leakage current increase problem is to always limit available power through capacitor during first seconds or minutes after storage or transport, according to the following chart:



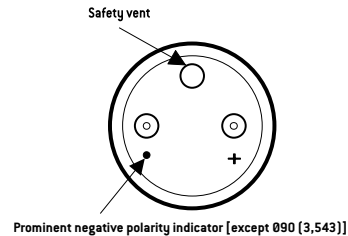
8.3. LOW PRESSURE RESISTANCE

EXXELIA capacitors can be used with ambient low pressure decreasing up to 10 mbar (altitude 28000 m – 92000 feet).

8.4. MOUNTING SCREW TERMINALS CAPACITORS (FELSIC)

Capacitors may be used vertically (terminals on top) or horizontally. When used horizontally, the following position in relation to the safety vent, is recommended:

Mounting capacitors in series may be used for operating voltage exceeding U_R . See FELSIC in bank.



8.5. MOUNTING SOLDER TYPE CAPACITORS.

They may be used in any position. During mounting, avoid applying excessive force to capacitor pins or wires. There is a risk of damaging internal connections.

After soldering and for the same reasons, do not try to move the capacitor's body.

8.6. ELECTROLYTES: SAFETY RULES.

Electrolytes used in EXXELIA capacitors are manufactured by EXXELIA. Main solvents are generally γ butyrolactone and ethylene glycol, very stable high boiling point solvents. Ionic conductive salts in electrolyte induce a very weak acidity (pH 5 to 7).

8.7. ENVIRONMENT.

In aluminium capacitors with liquid electrolyte there is no component showing a pollution risk, in small amounts, of air or water. EXXELIA is always involved in this security field particularly in using chemicals for electrolyte, without well-known risks.

- Dimethylformamide (DMF) dangerous solvent forbidden in several uses is completely excluded by EXXELIA, since 1990.
- There is no halogen compound such as chlorofluorocarbon (CFC or FCKW in German) or polychlorobiphenyl (PCBPyralene) or pentabromodiphenylether or octabromodiphenylether.

There is neither benzene, toluene or phenyl compound nor explosive such as picric acid, nor asbestos in plastic covers. All the capacitors made by EXXELIA since 1991, can be scrapped or used in raw materials recycling processes without special care in compliance with Community rules.

EXXELIA aluminium capacitors with non-solid electrolyte are particularly suitable for different kinds of environment taking in account severity increasing laws.

European directives 2003/11/EC, 2002/96/EC (WEEE) and 2002/95/EC (RoHS) applies to all EXXELIA capacitors including every solder type, manufactured with pure tin coated pins or wires, since at least January 2006.

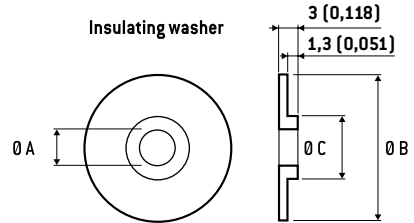
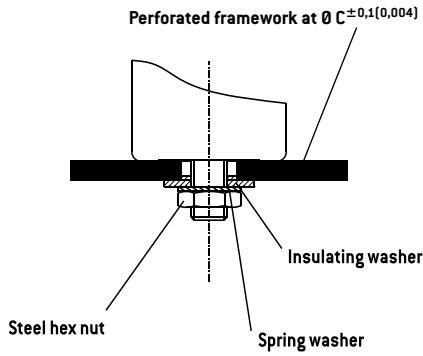
Mounting and insulating parts

STUD FIXING: FELSIC BD

Steel nut, spring washer and insulating washer are delivered loosely with the capacitor.

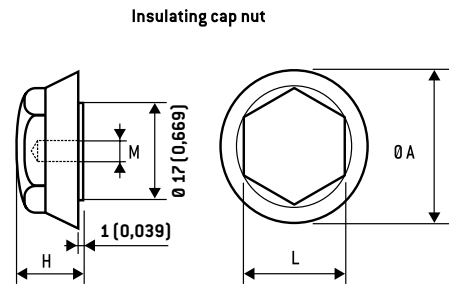
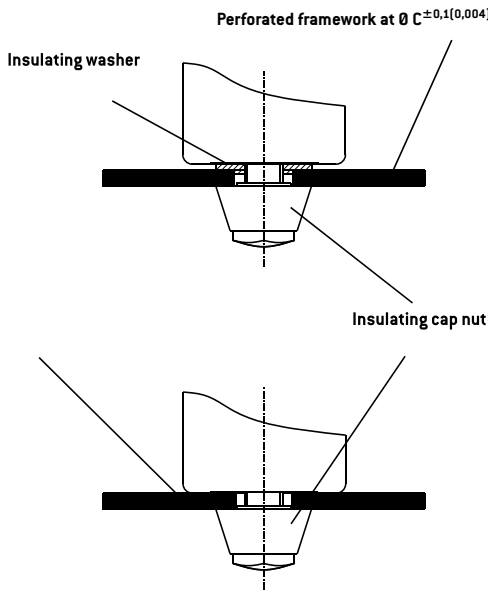
STANDARD MOUNTING WITH:

Insulating washer and steel nut



| Ø Capacitor | DIMENSIONS in mm (inches) | | | | Code |
|-------------|---------------------------|------|-----|------|----------|
| | M | Ø A | Ø B | Ø C | |
| 36 | 8 | 8,4 | 25 | 18,5 | A 691060 |
| 51 - 77 | 12 | 12,5 | 30 | 21,5 | A 691061 |
| 90 | 12 | 12,5 | 35 | 21,5 | A 691062 |

Insulating plastic nut with or without insulating washer

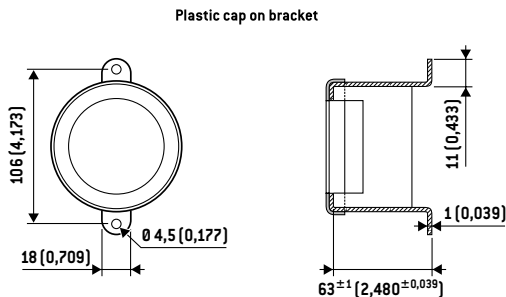


| DIMENSIONS in mm (inches) | | | | | |
|---------------------------|------------|------------|------------|-------------|----------|
| M | Ø A | H | L | Max. torque | Code |
| 8 [0,315] | 25 [0,984] | 15 [0,591] | 17 [0,669] | 3 Nm | A 691070 |
| 12 [0,472] | 30 [1,181] | 20 [0,787] | 19 [0,748] | 7 Nm | A 691071 |

Ring - clip mounting: FELSIC LP

Ring clips shall be ordered separately.

Tightening screws and nuts are supplied loosely.



| FELSIC 85 LP FELSIC 105 LP | Code |
|-------------------------------|---------|
| Metal bracket | A691055 |
| Plastic cap | A691065 |

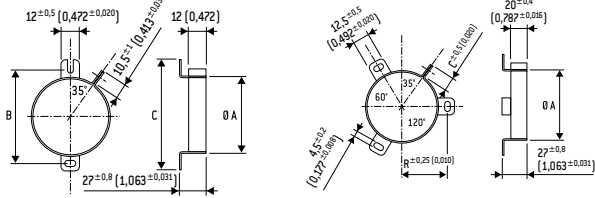
General technical data

Ring - clip mounting: FELSIC BC

Ring clips shall be ordered separately.

Tightening screws and nuts are supplied loosely.

FELSIC BC - Metal ring-clips



| Ø A Cap. | B | C | Code | Ø A Cap. | B | C | Code |
|------------|------------|------------|----------|------------|--------------|--------------|----------|
| 36 (1,417) | 54 (2,126) | 63 (2,480) | A 691901 | 51 (2,008) | 33,5 (1,319) | 11,8 (0,465) | A 691905 |
| | | | | 66 (2,598) | 39 (1,535) | 10,5 (0,413) | A 691913 |
| | | | | 73 (2,874) | 44 (1,732) | 10,5 (0,413) | A 691914 |
| | | | | 77 (3,031) | 44,5 (1,752) | 10,5 (0,413) | A 691907 |
| | | | | 90 (3,543) | 53,3 (2,098) | 11,8 (0,465) | A 691915 |

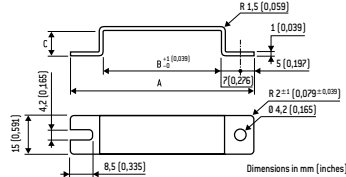
Stirrup mounting: CUBISIC LP

Stirrups shall be ordered separately.

Tightening screws and nuts are supplied loosely

Salt mist endurance of screws and mounting accessories:
minimum 96 h (IEC 600 68-2-11)

CUBISIC /CUBISIC LP - Metal bracket



| Ø A Cap. | A | B | C | Code |
|---------------------|------------|------------|------------|----------|
| 45x12 (1,772x0,472) | 69 (2,717) | 45 (1,772) | 10 (0,394) | A 691057 |
| 35x16 (1,378x0,630) | 59 (2,323) | 35 (1,378) | 14 (0,551) | A 691059 |

PACKAGING

1. PACKAGING AND WEIGHT UNITS.

1.1. Capacitor with screw terminals

| Can DIMENSIONS in mm (inches) | | | | Unit weight * |
|-------------------------------|-------------|-------------|------------|---------------|
| Ø | H | | | (g) |
| 36 (1,417) | 47 (1,850) | 52 (2,047) | 53 (2,087) | 70 |
| 36 (1,417) | 60 (2,362) | | | 79 |
| 36 (1,417) | 80 (3,150) | 81 (3,189) | | 100 |
| 36 (1,417) | 104 (4,094) | 105 (4,134) | | 120 |
| 51 (2,008) | 47 (1,850) | | | 80 |
| 51 (2,008) | 62 (2,441) | 63 (2,480) | | 105 |
| 51 (2,008) | 81 (3,189) | 82 (3,228) | | 190 |
| 51 (2,008) | 104 (4,094) | 105 (4,134) | | 260 |
| 51 (2,008) | 112 (4,409) | | | 270 |
| 51 (2,008) | 144 (5,669) | | | 370 |
| 66 (2,598) | 104 (4,094) | 105 (4,134) | | 430 |
| 66 (2,598) | 112 (4,409) | | | 460 |
| 73 (2,874) | 104 (4,094) | 112 (4,409) | | 600 |
| 73 (2,874) | 144 (5,669) | | | 680 |
| 77 (3,031) | 104 (4,094) | 105 (4,134) | | 620 |
| 77 (3,031) | 144 (5,669) | 145 (5,709) | | 860 |
| 77 (3,031) | 200 (7,874) | | | 1300 |
| 77 (3,031) | 220 (7,874) | 221 (8,701) | | 1400 |
| 90 (3,543) | 67 (2,638) | | | 600 |
| 90 (3,543) | 144 (5,669) | 145 (5,709) | | 1400 |
| 90 (3,543) | 200 (7,874) | | | 1800 |

* Unit weight = typical values

Possible variations of = ± 25 % according to different voltage and capacitance.

1.2. Radial solder types

| Can dimensions mm (inches) | | | ALSIC | SNAP-SIC | Can dimensions | | | ALSIC | SNAP-SIC |
|----------------------------|------------|--|-------------|----------|----------------|-------------|--|-------------|----------|
| Ø | H | | Weight* (g) | | Ø | H | | Weight* (g) | |
| 10 (0,394) | 16 (0,630) | | 1,8 | - | 35 (1,378) | 30 (1,181) | | - | 50 |
| 12,5 (0,492) | 21 (0,827) | | 4,5 | - | 35 (1,378) | 40 (1,575) | | - | 50 |
| 12,5 (0,492) | 24 (0,945) | | 5 | - | 35 (1,378) | 45 (1,772) | | - | 52 |
| | | | | | 35 (1,378) | 50 (1,969) | | - | 60 |
| 16 (0,630) | 25 (0,984) | | 8,2 | - | 35 (1,378) | 75 (2,953) | | - | 95 |
| | | | | | 35 (1,378) | 100 (3,937) | | - | 125 |
| 22 (0,866) | 25 (0,984) | | - | 15 | 40 (1,575) | 40 (1,575) | | - | 65 |
| 22 (0,866) | 30 (1,181) | | - | 17 | 40 (1,575) | 50 (1,969) | | - | 100 |
| 22 (0,866) | 40 (1,575) | | - | 18 | 40 (1,575) | 75 (2,953) | | - | 130 |
| | | | | | 40 (1,575) | 100 (3,937) | | - | 170 |
| 25 (0,984) | 25 (0,984) | | - | 17 | 45 (1,772) | 21 (0,827) | | - | 50 |
| 25 (0,984) | 30 (1,181) | | - | 20 | 45 (1,772) | (0,984) | | - | 60 |
| 25 (0,984) | 35 (1,378) | | - | 22 | 45 (1,772) | 30 (1,181) | | - | 73 |
| 25 (0,984) | 40 (1,575) | | - | 25 | 45 (1,772) | 35 (1,378) | | - | 85 |
| 25 (0,984) | 45 (1,772) | | - | 28 | 45 (1,772) | 45 (1,772) | | - | 110 |
| 25 (0,984) | 50 (1,969) | | - | 30 | 45 (1,772) | 75 (2,953) | | - | 180 |
| | | | | | 45 (1,772) | 100 (3,937) | | - | 240 |
| 30 (1,181) | 25 (0,984) | | - | 28 | | | | | |
| 30 (1,181) | 30 (1,181) | | - | 30 | | | | | |
| 30 (1,181) | 35 (1,378) | | - | 30 | | | | | |
| 30 (1,181) | 40 (1,575) | | - | 40 | | | | | |
| 30 (1,181) | 45 (1,772) | | - | 45 | | | | | |
| 30 (1,181) | 50 (1,969) | | - | 50 | | | | | |

| Can DIMENSIONS in mm (inches) | | | CUBISIC |
|-------------------------------|------------|------------|------------|
| I | L | H | weight (g) |
| 35 (1,378) | 35 (1,378) | 16 (0,630) | 30 |
| 35 (1,378) | 50 (1,969) | 16 (0,630) | 40 |
| 45 (1,772) | 35 (1,378) | 12 (0,472) | 30 |
| 45 (1,772) | 50 (1,969) | 12 (0,472) | 45 |
| 45 (1,772) | 75 (2,953) | 12 (0,472) | 60 |

* Unit weight = typical values

Possible variations of = ± 25 % according to different voltage and capacitance.

1.3. Axial types

| Can DIMENSIONS in mm (inches) | | PRORELSIC RELSIC | PRORELSIC PROMISIC | SICAL CO 42 SICAL |
|-------------------------------|------------|-------------------|--------------------|-------------------|
| Ø | H | Unit weight * (g) | Unit weight * (g) | Unit weight * (g) |
| 6,5 (0,256) | 15 (0,591) | - | 1,6 | - |
| 6,5 (0,256) | 19 (0,748) | - | 1,8 | 1,8 |
| 8,5 (0,335) | 19 (0,748) | - | 2,3 | 2,3 |
| 10 (0,394) | 19 (0,748) | - | 2,8 | 2,8 |
| 10 (0,394) | 25 (0,984) | - | 3,5 | 3,5 |
| 10 (0,394) | 28 (1,102) | - | 3,8 | - |
| 12 (0,472) | 25 (0,984) | - | 5 | - |
| 12 (0,472) | 30 (1,181) | - | 5,4 | 5,4 |
| 14 (0,551) | 30 (1,181) | - | 6,9 | 6,9 |
| 14 (0,551) | 41 (1,614) | - | 9,5 | - |
| (0,630) | 30 (1,181) | 7,7 | - | 7,7 |
| 18 (0,709) | 35 (1,378) | 13,6 | - | - |
| 18 (0,709) | 40 (1,575) | 15,3 | - | 15,3 |
| 21 (0,827) | 40 (1,575) | 19,5 | - | 19,5 |
| 25 (0,984) | 40 (1,575) | 28 | - | 28 |
| 25 (0,984) | 50 (1,969) | 35 | - | 35 |
| 25 (0,984) | 75 (2,953) | 56 | - | 56 |

* Unit weight = typical values

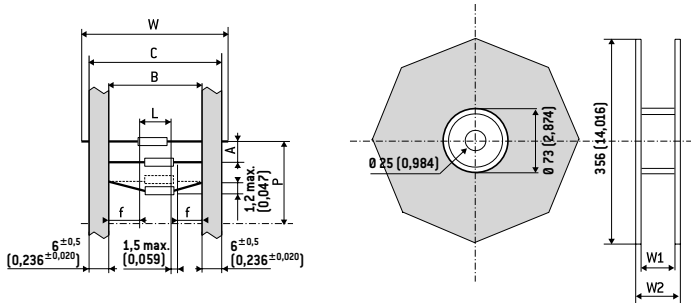
Possible variations of = ± 25 % according to different voltage and capacitance.

General technical data

2. PACKAGING ON TAPE

2.1. Axial types

Dimensions and tolerance in accordance with IEC 60 286-



| DIMENSIONS in mm (inches) | | | | | | | | | |
|----------------------------|------------|-----------------------------|-----------------------------|-------------|--------------|----------------|---------------------|-----------------------------|------------------|
| D | L max. | B | A | P | C max. | W ₁ | W ₂ max. | W | n ⁽²⁾ |
| 6,5 (0,256) | 20 (0,787) | 73 ± 1,5 (2,874 ± 0,059) | 10 ± 1,5 (0,394 ± 0,059) | ± 2 (0,079) | 87,5 (3,445) | 93 (3,661) | 106 (3,661) | 85 ± 1,5 (3,346 ± 0,059) | 1000 (39,370) |
| 8,5 (0,335) ⁽¹⁾ | | | | | | | | | 750 (29,528) |
| 10 (0,394) ⁽¹⁾ | 32 (1,260) | 73 ± 1,5 (2,874 ± 0,059) | 15 ± 1,5 (0,591 ± 0,059) | ± 3 (0,118) | 87,5 (3,445) | 93 (3,661) | 106 (3,661) | 85 ± 1,5 (3,346 ± 0,059) | 400 (15,748) |
| 12 (0,472) ⁽¹⁾ | | | | | | | | | 400 (15,748) |
| 14 (0,551) ⁽¹⁾ | | | | | | | | | 200 (7,874) |

(1) On tape only on request

(2) n = number of capacitors per reel.

White positive tape f : > 20 mm (0,787 inches)

P: 10 space

SCREW TERMINALS

SCREW TERMINALS



FELSIC 85

CO 54 - CO 53

15 000 h / 85°C

| | | | | |
|----------------|--------------------------------|---|--------------|----------------|
| 10 V ... 630 V | 68 μ F ... 680 000 μ F | \emptyset 36 (1,417) ... \emptyset 90 (3,543) | - 55°C +85°C | Long Life Time |
|----------------|--------------------------------|---|--------------|----------------|

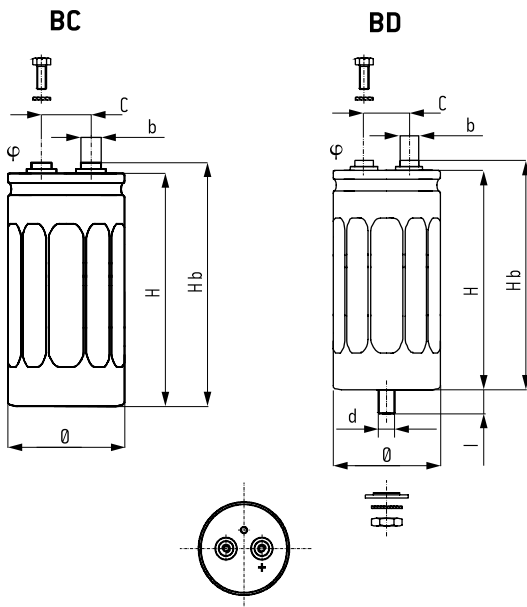


APPLICATIONS

- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current
- 360 V and 480 V series are mainly designed for repetitive fast discharges working.

Fixing: Clip or stud fixing
Screw terminals: M5 or M6

Tolerance on capacitance at 20°C: -10 +30 %
Operating temperature: - 55°C + 85°C



| BC | BD |
|--|---|
| Insulated aluminum can | Aluminum can with sleeve |
| Hexagonal screws | Hexagonal screws |
| Spring washers | Spring washers |
| Fixing clip must be ordered separately | Stud fixing delivered with capacitor (steel hex nut, spring washer) |

DIMENSIONS in mm (inches)

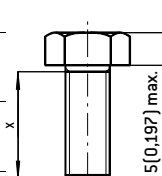
| \emptyset ± 1 (0,039) | H ± 2 (0,079) | Hb ± 2 (0,079) | C $\pm 0,5$ (0,020) | ϕ | b |
|-----------------------------|-------------------|--------------------|---------------------|--------|------------|
| 36 (1,417) | 52 (2,047) | 58 (2,283) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 60 (2,362) | 66 (2,598) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 80 (3,150) | 86 (3,386) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 104 (4,094) | 110 (4,331) | 12,7 (0,500) | M5 | 8 (0,315) |
| 51 (2,008) | 81 (3,189) | 87 (3,425) | 22,2 (0,874) | M5 | 13 (0,512) |
| 51 (2,008) | 104 (4,094) | 110 (4,331) | 22,2 (0,874) | M5 | 13 (0,512) |
| 66 (2,598) | 104 (4,094) | 110 (4,331) | 28,5 (1,122) | M5 | 13 (0,512) |
| 77 (3,031) | 104 (4,094) | 110 (4,331) | 31,7 (1,248) | M5 | 13 (0,512) |
| 77 (3,031) | 144 (5,669) | 150 (5,906) | 31,7 (1,248) | M5 | 13 (0,512) |
| 77 (3,031) | 220 (8,661) | 226 (8,898) | 31,7 (1,248) | M5 | 13 (0,512) |
| 90 (3,543) | 144 (5,669) | 151 (5,945) | 31,7 (1,248) | M6 | 13 (0,512) |
| 90 (3,543) | 200 (7,874) | 207 (8,150) | 31,7 (1,248) | M6 | 13 (0,512) |

| \emptyset | d | l | Max. nut torque |
|-------------------|-----|-----------------------------------|-----------------|
| 36 (1,417) | M8 | 12 ± 1 (0,472 $\pm 0,472$) | 4 Nm |
| ≥ 51 (2,008) | M12 | 16 $\pm 1,5$ (0,630 $\pm 0,059$) | 10 Nm |

HEXAGONAL SCREWS mm (inches)

Screwing height between screws and terminals:
3,5 (0,138) max

Max. screw torque: M5: 3 Nm [x min 8 (0,315)]
M6: 6 Nm [x min 10 (0,394)]



RESISTANCE TO VIBRATIONS

| Hb mm (inches) | >150 (5,906) | ≤ 150 (5,906) |
|----------------|----------------------------|-----------------------------|
| f (Hz) | 10 - 55 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 (0,030) | 1,5 (0,059) |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

SPECIFICATIONS

NFC 83 110 - Long life
DIN 41 240 - Climatic category GPF - 55°C + 85°C / 56 days
CECC 30301-059 Issue 3
CECC 30 301-810
IEC 60 384.4 long life
Standard endurance test at U_R : $U_R \leq 350$ V: 5000 h / 85°C
 $U_R > 350$ V: 2000 h / 85°C

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 M Ω
Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V
Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

15 000 h / 85°C

| Capacitance (μ F) | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. (m Ω) | I +20°C 5 min max. (mA) | I _r 100 Hz | | Code | | | |
|----------------------------|------------------------------|------------------|------------------------|-----------------------|--|----------------------------------|--------------------------|--------------|---------------|---------------|----------|----------|
| | \varnothing mm (inches) | H mm (inches) | Typic (m Ω) | max. (m Ω) | | | +40°C max. (A) | +85°C (A) | CO 54 (BC) | CO 53 (BD) | | |
| Rated voltage 10 V | | | | | | | | | | | | |
| 33000 | 36 | [1,417] | 52 | [2,047] | 16 | 24 | 25 | 1,8 | 22 | 6,6 | A 744020 | A 745020 |
| 68000 | 36 | [1,417] | 104 | [4,094] | 7 | 11 | 13 | 4 | 22 | 13,5 | A 744021 | A 745021 |
| 330000 | 66 | [2,598] | 104 | [4,094] | 4 | 8 | 7 | 5 | 50 | 25 | A 744023 | A 745023 |
| Rated voltage 16 V | | | | | | | | | | | | |
| 22000 | 36 | [1,417] | 52 | [2,047] | 16 | 24 | 25 | 2 | 22 | 6,6 | A 744040 | A 745040 |
| 47000 | 36 | [1,417] | 80 | [3,150] | 11 | 16 | 15 | 4 | 22 | 8,8 | A 744041 | A 745041 |
| 100000 | 51 | [2,008] | 81 | [3,189] | 8 | 12 | 10 | 5 | 25 | 13,7 | A 744042 | A 745042 |
| 150000 | 51 | [2,008] | 104 | [4,094] | 7 | 11 | 8 | 5 | 25 | 16,4 | A 744043 | A 745043 |
| 220000 | 66 | [2,598] | 104 | [4,094] | 5 | 8 | 6 | 5 | 50 | 22,3 | A 744044 | A 745044 |
| 330000 | 77 | [3,031] | 104 | [4,094] | 3 | 5 | 6 | 6 | 55 | 31,5 | A 744045 | A 745045 |
| 470000 | 77 | [3,031] | 144 | [5,669] | 3 | 5 | 6 | 6 | 55 | 36 | A 744046 | A 745046 |
| 680000 | 77 | [3,031] | 220 | [8,661] | 3 | 5 | 6 | 7 | 55 | 43 | A 744047 | A 745047 |
| Rated voltage 25 V | | | | | | | | | | | | |
| 15000 | 36 | [1,417] | 52 | [2,047] | 18 | 27 | 26 | 2 | 22 | 6,2 | A 744060 | A 745060 |
| 22000 | 36 | [1,417] | 52 | [2,047] | 17 | 25 | 24 | 3 | 22 | 6,5 | A 744069 | A 745069 |
| 33000 | 36 | [1,417] | 80 | [3,150] | 15 | 23 | 18 | 4 | 22 | 8,2 | A 744061 | A 745061 |
| 47000 | 36 | [1,417] | 104 | [4,094] | 12 | 18 | 15 | 5 | 25 | 10,3 | A 744070 | A 745070 |
| 47000 | 51 | [2,008] | 81 | [3,189] | 9 | 14 | 10 | 5 | 25 | 12,9 | A 744062 | A 745062 |
| 68000 | 51 | [2,008] | 81 | [3,189] | 8 | 14 | 10 | 5 | 25 | 13,7 | A 744063 | A 745063 |
| 100000 | 51 | [2,008] | 104 | [4,094] | 8 | 14 | 8 | 5 | 25 | 15,3 | A 744064 | A 745064 |
| 150000 | 66 | [2,598] | 104 | [4,094] | 7 | 11 | 7 | 5 | 50 | 18,9 | A 744065 | A 745065 |
| 220000 | 77 | [3,031] | 104 | [4,094] | 4 | 6 | 7 | 6 | 55 | 26 | A 744066 | A 745066 |
| 330000 | 77 | [3,031] | 144 | [5,669] | 3 | 5 | 6 | 7 | 55 | 36 | A 744067 | A 745067 |
| Rated voltage 40 V | | | | | | | | | | | | |
| 10000 | 36 | [1,417] | 52 | [2,047] | 20 | 30 | 28 | 2 | 21 | 5,9 | A 744080 | A 745080 |
| 15000 | 36 | [1,417] | 80 | [3,150] | 18 | 27 | 23 | 3 | 22 | 7,5 | A 744081 | A 745081 |
| 22000 | 36 | [1,417] | 104 | [4,094] | 15 | 22 | 19 | 5 | 22 | 9,2 | A 744082 | A 745082 |
| 33000 | 51 | [2,008] | 81 | [3,189] | 10 | 15 | 13 | 5 | 25 | 12 | A 744091 | A 745091 |
| 47000 | 51 | [2,008] | 81 | [3,189] | 9 | 14 | 9 | 5 | 25 | 12,9 | A 744083 | A 745083 |
| 68000 | 51 | [2,008] | 104 | [4,094] | 8 | 12 | 8 | 6 | 25 | 14,4 | A 744092 | A 745092 |
| 100000 | 66 | [2,598] | 104 | [4,094] | 7 | 11 | 7 | 6 | 50 | 18,9 | A 744084 | A 745084 |
| 150000 | 77 | [3,031] | 104 | [4,094] | 5 | 8 | 7 | 8 | 55 | 24,5 | A 744085 | A 745085 |
| 220000 | 77 | [3,031] | 144 | [5,669] | 4 | 6 | 6 | 9 | 55 | 31,5 | A 744086 | A 745086 |
| 470000 | 90 | [3,543] | 200 | [7,874] | 3 | 5 | 5 | 15 | 80 | 46 | A 744088 | A 745088 |
| Rated voltage 63 V | | | | | | | | | | | | |
| 4700 | 36 | [1,417] | 52 | [2,047] | 40 | 60 | 48 | 1,6 | 15 | 4,2 | A 744100 | A 745100 |
| 6800 | 36 | [1,417] | 52 | [2,047] | 35 | 50 | 39 | 2,5 | 15 | 4,4 | A 744112 | A 745112 |
| 10000 | 36 | [1,417] | 80 | [3,150] | 23 | 34 | 28 | 3 | 22 | 7 | A 744101 | A 745101 |
| 15000 | 51 | [2,008] | 81 | [3,189] | 13 | 20 | 18 | 5 | 25 | 10,7 | A 744102 | A 745102 |
| 22000 | 51 | [2,008] | 81 | [3,189] | 12 | 18 | 15 | 5 | 25 | 11,1 | A 744103 | A 745103 |
| 33000 | 51 | [2,008] | 104 | [4,094] | 10 | 15 | 14 | 5 | 25 | 13,7 | A 744113 | A 745113 |
| 33000 | 66 | [2,598] | 104 | [4,094] | 10 | 15 | 14 | 5 | 50 | 15,8 | A 744104 | A 745104 |
| 47000 | 66 | [2,598] | 104 | [4,094] | 8 | 12 | 11 | 6 | 50 | 17,7 | A 744105 | A 745105 |
| 68000 | 77 | [3,031] | 104 | [4,094] | 5 | 8 | 8 | 8 | 55 | 24,5 | A 744106 | A 745106 |
| 100000 | 77 | [3,031] | 144 | [5,669] | 3 | 8 | 8 | 9 | 55 | 36 | A 744107 | A 745107 |
| 150000 | 77 | [3,031] | 220 | [8,661] | 3 | 8 | 8 | 11 | 55 | 43 | A 744109 | A 745109 |
| 220000 | 90 | [3,543] | 200 | [7,874] | 3 | 5 | 4 | 15 | 80 | 46 | A 744110 | A 745110 |
| Rated voltage 80 V | | | | | | | | | | | | |
| 3300 | 36 | [1,417] | 52 | [2,047] | 60 | 90 | 70 | 1,5 | 12 | 3,4 | A 744360 | A 745360 |
| 10000 | 51 | [2,008] | 81 | [3,189] | 19 | 29 | 23 | 5 | 25 | 8,9 | A 744363 | A 745363 |
| 15000 | 51 | [2,008] | 81 | [3,189] | 17 | 25 | 20 | 5 | 25 | 9,4 | A 744364 | A 745364 |
| 22000 | 51 | [2,008] | 104 | [4,094] | 14 | 21 | 17 | 6 | 25 | 12 | A 744365 | A 745365 |
| 33000 | 66 | [2,598] | 104 | [4,094] | 12 | 18 | 15 | 6 | 49 | 14 | A 744366 | A 745366 |
| 47000 | 77 | [3,031] | 104 | [4,094] | 8 | 12 | 10 | 8 | 55 | 19 | A 744367 | A 745367 |
| 68000 | 77 | [3,031] | 144 | [5,669] | 6 | 9 | 8 | 9 | 55 | 26 | A 744368 | A 745368 |
| Rated voltage 100 V | | | | | | | | | | | | |
| 2200 | 36 | [1,417] | 52 | [2,047] | 70 | 105 | 90 | 1,1 | 11 | 3,1 | A 744120 | A 745120 |
| 4700 | 36 | [1,417] | 80 | [3,150] | 45 | 68 | 54 | 2,5 | 16 | 4,7 | A 744121 | A 745121 |
| 6800 | 51 | [2,008] | 81 | [3,189] | 24 | 36 | 27 | 4 | 25 | 7,9 | A 744122 | A 745122 |
| 10000 | 51 | [2,008] | 81 | [3,189] | 20 | 30 | 21 | 5 | 25 | 8,7 | A 744123 | A 745123 |
| 15000 | 51 | [2,008] | 104 | [4,094] | 17 | 26 | 18 | 6 | 25 | 10,5 | A 744124 | A 745124 |
| 22000 | 66 | [2,598] | 104 | [4,094] | 13 | 19 | 15 | 6 | 49 | 13,9 | A 744125 | A 745125 |
| 33000 | 77 | [3,031] | 104 | [4,094] | 10 | 15 | 13 | 8 | 55 | 17,5 | A 744126 | A 745126 |
| 47000 | 77 | [3,031] | 144 | [5,669] | 7 | 11 | 10 | 9 | 55 | 23 | A 744127 | A 745127 |
| 100000 | 90 | [3,543] | 200 | [7,874] | 5 | 8 | 6 | 11 | 80 | 35 | A 744130 | A 745130 |

FELSIC 85

CO 54 - CO 53

15 000 h / 85°C

| Capacitance (μ F) | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. (m Ω) | II +20°C 5 min max. (mA) | I \sim 100 Hz | | Code | | | |
|----------------------------|----------------------------|------------------|------------------------|-----------------------|--|-----------------------------------|--------------------|--------------|---------------|---------------|----------|----------|
| | \emptyset mm (inches) | H mm (inches) | Typic (m Ω) | max. (m Ω) | | | +40°C max. (A) | +85°C (A) | CO 54 (BC) | CO 53 (BD) | | |
| Rated voltage 160 V | | | | | | | | | | | | |
| 1000 | 36 | [1,417] | 52 | 85 | 130 | 80 | 0,9 | 10 | 2,8 | A 744140 | A 745140 | |
| 1500 | 36 | [1,417] | 80 | 55 | 85 | 70 | 1,3 | 15 | 4,3 | A 744141 | A 745141 | |
| 2200 | 36 | [1,417] | 104 | 48 | 73 | 53 | 2 | 18 | 5,2 | A 744142 | A 745142 | |
| 3300 | 51 | [2,008] | 81 | 28 | 42 | 34 | 3 | 25 | 7,3 | A 744143 | A 745143 | |
| 4700 | 51 | [2,008] | 104 | 20 | 30 | 28 | 4 | 25 | 9,7 | A 744144 | A 745144 | |
| 6800 | 66 | [2,598] | 104 | 17 | 25 | 21 | 5 | 43 | 12,3 | A 744145 | A 745145 | |
| 10000 | 77 | [3,031] | 104 | 12 | 18 | 16 | 6 | 55 | 15,8 | A 744146 | A 745146 | |
| 15000 | 77 | [3,031] | 144 | 10 | 14 | 13 | 8 | 55 | 20 | A 744147 | A 745147 | |
| 22000 | 77 | [3,031] | 220 | 10 | 15 | 13 | 10 | 55 | 24 | A 744148 | A 745148 | |
| 33000 | 90 | [3,543] | 200 | 8 | 12 | 11 | 14 | 80 | 28 | A 744150 | A 745150 | |
| Rated voltage 250 V | | | | | | | | | | | | |
| 470 | 36 | [1,417] | 52 | [2,047] | 110 | 170 | 100 | 0,7 | 9 | 2,5 | A 744160 | A 745160 |
| 1000 | 36 | [1,417] | 80 | [3,150] | 70 | 105 | 70 | 1,5 | 13 | 3,8 | A 744161 | A 745161 |
| 1500 | 51 | [2,008] | 81 | [3,189] | 50 | 75 | 50 | 2 | 19 | 5,5 | A 744162 | A 745162 |
| 2200 | 51 | [2,008] | 81 | [3,189] | 48 | 72 | 48 | 3 | 20 | 5,6 | A 744163 | A 745163 |
| 3300 | 51 | [2,008] | 104 | [4,094] | 35 | 50 | 35 | 4 | 25 | 7,6 | A 744164 | A 745164 |
| 4700 | 66 | [2,598] | 104 | [4,094] | 21 | 32 | 20 | 6 | 38 | 10,9 | A 744165 | A 745165 |
| 6800 | 77 | [3,031] | 104 | [4,094] | 16 | 24 | 15 | 8 | 46 | 13 | A 744166 | A 745166 |
| 10000 | 77 | [3,031] | 144 | [5,669] | 14 | 21 | 13 | 9 | 55 | 16,8 | A 744167 | A 745167 |
| 15000 | 77 | [3,031] | 220 | [8,661] | 12 | 18 | 12 | 10 | 55 | 22 | A 744168 | A 745168 |
| 22000 | 90 | [3,543] | 200 | [7,874] | 10 | 15 | 12 | 14 | 80 | 25 | A 744170 | A 745170 |
| Rated voltage 350 V | | | | | | | | | | | | |
| 330 | 36 | [1,417] | 52 | [2,047] | 240 | 360 | 190 | 0,7 | 5,9 | 1,7 | A 744180 | A 745180 |
| 470 | 36 | [1,417] | 80 | [3,150] | 150 | 230 | 140 | 0,9 | 9 | 2,6 | A 744181 | A 745181 |
| 680 | 36 | [1,417] | 104 | [4,094] | 100 | 150 | 100 | 1,4 | 13 | 3,6 | A 744182 | A 745182 |
| 1000 | 51 | [2,008] | 81 | [3,189] | 75 | 110 | 65 | 2 | 16 | 4,5 | A 744183 | A 745183 |
| 1500 | 51 | [2,008] | 104 | [4,094] | 55 | 75 | 55 | 3 | 20 | 5,8 | A 744184 | A 745184 |
| 2200 | 66 | [2,598] | 104 | [4,094] | 30 | 45 | 32 | 4 | 32 | 9,1 | A 744185 | A 745185 |
| 3300 | 77 | [3,031] | 104 | [4,094] | 25 | 38 | 27 | 6 | 38 | 10,9 | A 744186 | A 745186 |
| 4700 | 77 | [3,031] | 104 | [4,094] | 20 | 30 | 18 | 7 | 43 | 12,2 | A 744191 | A 745191 |
| 6800 | 77 | [3,031] | 144 | [5,669] | 17 | 25 | 15 | 7 | 53 | 15,2 | A 744187 | A 745187 |
| 8200 | 77 | [3,031] | 220 | [8,661] | 12 | 18 | 15 | 8 | 55 | 22 | A 744188 | A 745188 |
| 10000 | 77 | [3,031] | 220 | [8,661] | 11 | 16 | 14 | 9 | 55 | 23 | A 744189 | A 745189 |
| 15000 | 90 | [3,543] | 200 | [7,874] | 10 | 15 | 13 | 14 | 80 | 25 | A 744190 | A 745190 |
| Rated voltage 360 V | | | | | | | | | | | | |
| 910 | 36 | [1,417] | 80 | [3,150] | 160 | 200 | 130 | 3,4 | 9,8 | 2,8 | A 744341 | A 745341 |
| 1200 | 36 | [1,417] | 104 | [4,094] | 120 | 180 | 120 | 3,9 | 11 | 3,3 | A 744342 | A 745342 |
| 4700 | 66 | [2,598] | 104 | [4,094] | 80 | 120 | 80 | 7 | 20 | 5,6 | A 744345 | A 745345 |
| 10000 | 77 | [3,031] | 144 | [5,669] | 35 | 50 | 35 | 10 | 39 | 11 | A 744347 | A 745347 |
| 20000 | 90 | [3,543] | 200 | [7,874] | 9 | 14 | 12 | 16 | 80 | 26 | A 744349 | A 745349 |
| Rated voltage 385 V | | | | | | | | | | | | |
| 220 | 36 | [1,417] | 52 | [2,047] | 380 | 570 | 360 | 0,5 | 4,6 | 1,3 | A 744200 | A 745200 |
| 1000 | 51 | [2,008] | 81 | [3,189] | 90 | 135 | 100 | 2,3 | 14 | 4,1 | A 744202 | A 745202 |
| 1500 | 51 | [2,008] | 104 | [4,094] | 70 | 110 | 80 | 3,4 | 18 | 5 | A 744203 | A 745203 |
| 2200 | 66 | [2,598] | 104 | [4,094] | 50 | 75 | 50 | 5 | 25 | 7,1 | A 744204 | A 745204 |
| 3300 | 77 | [3,031] | 104 | [4,094] | 29 | 45 | 30 | 6 | 35 | 10,1 | A 744205 | A 745205 |
| 4700 | 77 | [3,031] | 144 | [5,669] | 22 | 35 | 25 | 7 | 47 | 13,4 | A 744206 | A 745206 |
| 6800 | 77 | [3,031] | 220 | [8,661] | 17 | 25 | 15 | 8 | 55 | 18,4 | A 744207 | A 745207 |
| Rated voltage 400 V | | | | | | | | | | | | |
| 220 | 36 | [1,417] | 52 | [2,047] | 400 | 600 | 500 | 1,7 | 4,6 | 1,3 | A 744220 | A 745220 |
| 330 | 36 | [1,417] | 80 | [3,150] | 280 | 420 | 300 | 2,0 | 6,6 | 1,9 | A 744221 | A 745221 |
| 470 | 36 | [1,417] | 104 | [4,094] | 200 | 300 | 200 | 2,5 | 9 | 2,5 | A 744222 | A 745222 |
| 1000 | 51 | [2,008] | 81 | [3,189] | 90 | 135 | 100 | 3,5 | 14 | 4,1 | A 744223 | A 745223 |
| 1500 | 66 | [2,598] | 104 | [4,094] | 60 | 90 | 60 | 4,0 | 22 | 6,4 | A 744224 | A 745224 |
| 2200 | 66 | [2,598] | 104 | [4,094] | 40 | 70 | 50 | 5,0 | 28 | 7,9 | A 744225 | A 745225 |
| 3300 | 77 | [3,031] | 104 | [4,094] | 29 | 50 | 35 | 6,0 | 35 | 10,1 | A 744226 | A 745226 |
| 4700 | 77 | [3,031] | 144 | [5,669] | 22 | 35 | 25 | 7,0 | 47 | 13,4 | A 744227 | A 745227 |
| 6800 | 90 | [3,543] | 144 | [5,669] | 16 | 25 | 15 | 9,0 | 64 | 18,4 | A 744229 | A 745229 |
| 10000 | 90 | [3,543] | 200 | [7,874] | 11 | 18 | 15 | 12,0 | 80 | 24,0 | A 744230 | A 745230 |

15 000 h / 85°C

| Capacitance [μ F] | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. [m Ω] | II +20°C 5 min max. [mA] | I~ 100 Hz | | Code | | | |
|----------------------------|----------------------------|------------------|------------------------|-----------------------|--|-----------------------------------|-------------------|--------------|---------------|---------------|----------|----------|
| | \emptyset mm (inches) | H mm (inches) | Typic [m Ω] | max. [m Ω] | | | +40°C max. [A] | +85°C [A] | CO 54 [BC] | CO 53 [BD] | | |
| Rated voltage 450 V | | | | | | | | | | | | |
| 150 | 36 | [1,417] | 52 | [2,047] | 590 | 890 | 700 | 1,5 | 3,9 | 1,1 | A 744240 | A 745240 |
| 220 | 36 | [1,417] | 60 | [2,362] | 400 | 600 | 480 | 1,8 | 4,9 | 1,4 | A 744241 | A 745241 |
| 330 | 36 | [1,417] | 80 | [3,150] | 260 | 400 | 370 | 2,3 | 7 | 2,0 | A 744242 | A 745242 |
| 470 | 36 | [1,417] | 104 | [4,094] | 170 | 260 | 240 | 2,7 | 9,5 | 2,7 | A 744243 | A 745243 |
| 680 | 51 | [2,008] | 81 | [3,189] | 130 | 190 | 130 | 3,3 | 12 | 3,3 | A 744244 | A 745244 |
| 1000 | 51 | [2,008] | 104 | [4,094] | 85 | 130 | 90 | 4,0 | 16 | 4,7 | A 744245 | A 745245 |
| 1500 | 66 | [2,598] | 104 | [4,094] | 65 | 100 | 85 | 5,0 | 22 | 6,2 | A 744246 | A 745246 |
| 2200 | 66 | [2,598] | 104 | [4,094] | 50 | 85 | 70 | 6,0 | 25 | 7,0 | A 744250 | A 745250 |
| 2200 | 77 | [3,031] | 104 | [4,094] | 38 | 70 | 60 | 6,0 | 31 | 8,8 | A 744247 | A 745247 |
| 3300 | 77 | [3,031] | 144 | [5,669] | 25 | 50 | 40 | 7,3 | 44 | 12,6 | A 744248 | A 745248 |
| 4700 | 77 | [3,031] | 144 | [5,669] | 22 | 40 | 35 | 8,7 | 47 | 13,4 | A 744252 | A 745252 |
| 5600 | 77 | [3,031] | 220 | [8,661] | 20 | 40 | 30 | 9,5 | 55 | 17,0 | A 744249 | A 745249 |
| 6000 | 90 | [3,543] | 144 | [5,669] | 20 | 40 | 30 | 9,9 | 60 | 17,0 | A 744253 | A 745253 |
| 6800 | 90 | [3,543] | 200 | [7,874] | 15 | 30 | 20 | 10,0 | 72 | 20,0 | A 744251 | A 745251 |
| 8000 | 90 | [3,543] | 200 | [7,874] | 12 | 20 | 18 | 11,0 | 80 | 23,0 | A 744255 | A 745255 |
| 10000 | 90 | [3,543] | 200 | [7,874] | 11 | 18 | 16 | 13,0 | 80 | 24,0 | A 744256 | A 745256 |
| Rated voltage 480 V | | | | | | | | | | | | |
| 150 | 36 | [1,417] | 52 | [2,047] | 550 | 820 | 600 | 1,6 | 3,9 | 1,1 | A 744260 | A 745260 |
| 220 | 36 | [1,417] | 60 | [2,362] | 450 | 680 | 500 | 2,0 | 4,6 | 1,3 | A 744261 | A 745261 |
| 330 | 36 | [1,417] | 80 | [3,150] | 290 | 440 | 400 | 2,4 | 6,7 | 1,9 | A 744262 | A 745262 |
| 470 | 36 | [1,417] | 104 | [4,094] | 200 | 300 | 300 | 2,9 | 8,8 | 2,5 | A 744263 | A 745263 |
| 680 | 51 | [2,008] | 81 | [3,189] | 150 | 220 | 150 | 3,8 | 11 | 3,2 | A 744264 | A 745264 |
| 1000 | 51 | [2,008] | 104 | [4,094] | 100 | 150 | 100 | 4,2 | 15 | 4,3 | A 744265 | A 745265 |
| 1500 | 66 | [2,598] | 104 | [4,094] | 65 | 100 | 85 | 5,0 | 22 | 6,2 | A 744266 | A 745266 |
| 2200 | 77 | [3,031] | 104 | [4,094] | 38 | 70 | 60 | 6,2 | 31 | 8,8 | A 744267 | A 745267 |
| 3300 | 77 | [3,031] | 144 | [5,669] | 25 | 50 | 40 | 7,5 | 44 | 12,6 | A 744268 | A 745268 |
| 4700 | 77 | [3,031] | 220 | [8,661] | 20 | 30 | 20 | 9,0 | 55 | 17,0 | A 744269 | A 745269 |
| 6800 | 90 | [3,543] | 200 | [7,874] | 15 | 25 | 15 | 11,0 | 74 | 21,0 | A 744270 | A 745270 |
| Rated voltage 500 V | | | | | | | | | | | | |
| 68 | 36 | [1,417] | 52 | [2,047] | 700 | 1050 | 750 | 1,1 | 3,5 | 1,0 | A 744280 | A 745280 |
| 100 | 36 | [1,417] | 52 | [2,047] | 520 | 800 | 550 | 1,3 | 4 | 1,2 | A 744381 | A 745381 |
| 150 | 36 | [1,417] | 60 | [2,362] | 400 | 700 | 500 | 1,6 | 4,9 | 1,4 | A 744382 | A 745382 |
| 220 | 36 | [1,417] | 80 | [3,150] | 280 | 420 | 300 | 2,0 | 6,6 | 1,9 | A 744383 | A 745383 |
| 330 | 36 | [1,417] | 104 | [4,094] | 240 | 360 | 260 | 2,4 | 8 | 2,3 | A 744384 | A 745384 |
| 470 | 51 | [2,008] | 81 | [3,189] | 170 | 260 | 180 | 2,9 | 10 | 3,0 | A 744385 | A 745385 |
| 680 | 51 | [2,008] | 104 | [4,094] | 120 | 180 | 130 | 3,5 | 14 | 3,9 | A 744386 | A 745386 |
| 1000 | 66 | [2,598] | 104 | [4,094] | 80 | 120 | 80 | 4,2 | 20 | 5,6 | A 744387 | A 745387 |
| 1500 | 77 | [3,031] | 104 | [4,094] | 70 | 105 | 70 | 5,2 | 23 | 6,5 | A 744388 | A 745388 |
| 2200 | 77 | [3,031] | 144 | [5,669] | 50 | 75 | 50 | 6,2 | 31 | 8,9 | A 744389 | A 745389 |
| 3300 | 77 | [3,031] | 220 | [8,661] | 30 | 45 | 35 | 7,7 | 49 | 14,0 | A 744390 | A 745390 |
| 4700 | 90 | [3,543] | 200 | [7,874] | 20 | 35 | 25 | 9,2 | 62 | 18,0 | A 744391 | A 745391 |
| Rated voltage 550 V | | | | | | | | | | | | |
| 68 | 36 | [1,417] | 52 | [2,047] | 850 | 1300 | 900 | 1,5 | 3,2 | 0,9 | A 744302 | A 745302 |
| 100 | 36 | [1,417] | 52 | [2,047] | 600 | 1000 | 700 | 1,9 | 3,8 | 1,1 | A 744303 | A 745303 |
| 150 | 36 | [1,417] | 80 | [3,150] | 500 | 800 | 600 | 2,3 | 5 | 1,4 | A 744304 | A 745304 |
| 220 | 36 | [1,417] | 104 | [4,094] | 400 | 600 | 450 | 2,8 | 6,3 | 1,8 | A 744305 | A 745305 |
| 330 | 51 | [2,008] | 81 | [3,189] | 300 | 450 | 330 | 3,4 | 7,8 | 2,2 | A 744306 | A 745306 |
| 470 | 51 | [2,008] | 104 | [4,094] | 200 | 300 | 230 | 4,1 | 11 | 3,1 | A 744307 | A 745307 |
| 680 | 66 | [2,598] | 104 | [4,094] | 130 | 200 | 150 | 4,9 | 15 | 4,4 | A 744308 | A 745308 |
| 1000 | 77 | [3,031] | 104 | [4,094] | 100 | 150 | 110 | 5,9 | 19 | 5,5 | A 744309 | A 745309 |
| 1500 | 77 | [3,031] | 144 | [5,669] | 80 | 120 | 80 | 7,3 | 25 | 7,0 | A 744310 | A 745310 |
| 2200 | 90 | [3,543] | 144 | [5,669] | 40 | 70 | 55 | 8,8 | 38 | 11,0 | A 744311 | A 745311 |
| 3300 | 90 | [3,543] | 200 | [7,874] | 25 | 45 | 35 | 11,0 | 56 | 16,0 | A 744301 | A 745301 |
| 4700 | 90 | [3,543] | 200 | [7,874] | 20 | 35 | 30 | 13,0 | 62 | 18,0 | A 744313 | A 745313 |
| Rated voltage 630 V | | | | | | | | | | | | |
| 68 | 36 | [1,417] | 52 | [2,047] | 2400 | 3600 | 3000 | 2,0 | 1,9 | 0,5 | A 744400 | A 745400 |
| 100 | 36 | [1,417] | 52 | [2,047] | 2000 | 3000 | 2800 | 2,5 | 2,1 | 0,6 | A 744411 | A 745411 |
| 150 | 36 | [1,417] | 80 | [3,150] | 1100 | 1650 | 1200 | 3,1 | 3,3 | 1,0 | A 744401 | A 745401 |
| 220 | 36 | [1,417] | 104 | [4,094] | 750 | 1150 | 850 | 3,7 | 4,6 | 1,3 | A 744402 | A 745402 |
| 330 | 51 | [2,008] | 81 | [3,189] | 500 | 750 | 550 | 4,6 | 6 | 1,7 | A 744403 | A 745403 |
| 470 | 51 | [2,008] | 104 | [4,094] | 350 | 520 | 400 | 5,4 | 8 | 2,3 | A 744404 | A 745404 |
| 680 | 66 | [2,598] | 104 | [4,094] | 230 | 350 | 270 | 6,5 | 12 | 3,3 | A 744405 | A 745405 |
| 1000 | 77 | [3,031] | 104 | [4,094] | 200 | 300 | 250 | 7,9 | 14 | 3,9 | A 744406 | A 745406 |
| 1500 | 77 | [3,031] | 144 | [5,669] | 180 | 270 | 200 | 9,7 | 16 | 4,7 | A 744407 | A 745407 |
| 2200 | 90 | [3,543] | 144 | [5,669] | 120 | 180 | 120 | 12,0 | 22 | 6,3 | A 744408 | A 745408 |
| 3300 | 90 | [3,543] | 200 | [7,874] | 80 | 120 | 80 | 15,0 | 31 | 8,9 | A 744409 | A 745409 |

SCREW TERMINALS

FELSIC 85

CO 54 - CO 53**15 000 h / 85°C**

PEAK VOLTAGE (V)

1000 cycles, without ripple current

Up: Repetitive standard peak voltage (30 s)

Us: Repetitive surge voltage (0,1 s)

Do not overstep this value without damage.

| U _r | 10 V | 16 V | 25 V | 40 V | 63 V | 80 V | 100 V | 160 V | 250 V | |
|----------------|------|------|------|------|------|------|-------|-------|-------|-----|
| Up | 11,5 | 18 | 29 | 46 | 72 | 92 | 115 | 184 | 288 | |
| Us | | | | | | | | | 200 | 290 |

| U _r | 350 V | 360 V | 385 V | 400 V | 450 V | 480 V | 500 V | 550 V | 630 V |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Up | 385 | 390 | 424 | 440 | 495 | 500 | 550 | 605 | 695 |
| Us | 405 | 405 | 430 | 450 | 500 | 540 | 600 | 650 | 700 |

PERMISSIBLE REPETITIVE PEAK CURRENT I_p:

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows:

| DIMENSIONS in mm [inches] | | I _p (A) | | I _{rms} max. | | |
|---------------------------|---------|--------------------|---------|-----------------------|------|----|
| Ø | H | 40°C | 85°C | (A) | | |
| 36 | [1,417] | 52 | [2,047] | 400 | 200 | 22 |
| 36 | [1,417] | 60 | [2,362] | 450 | 220 | 22 |
| 36 | [1,417] | 80 | [3,150] | 600 | 300 | 22 |
| 36 | [1,417] | 104 | [4,094] | 700 | 400 | 22 |
| 51 | [2,008] | 81 | [3,189] | 800 | 400 | 25 |
| 51 | [2,008] | 104 | [4,094] | 1100 | 500 | 25 |
| 66 | [2,598] | 104 | [4,094] | 1900 | 800 | 50 |
| 77 | [3,031] | 104 | [4,094] | 3100 | 1200 | 55 |
| 77 | [3,031] | 144 | [5,669] | 4200 | 1800 | 55 |
| 77 | [3,031] | 220 | [8,661] | 5700 | 2400 | 55 |
| 90 | [3,543] | 144 | [5,669] | 5700 | 2400 | 80 |
| 90 | [3,543] | 200 | [7,874] | 7700 | 3200 | 80 |

EXPECTED LIFE WITH ID:

- 1 to 5 discharges per minute For I = I_d 48 000 000 cycles
In order to have the highest value of stored energy use preferably FELSIC 85 360 V.
- 10 discharges per minute For I = I_d 36 000 000 cycles
- 15 discharges per minute For I = I_d 18 000 000 cycles
I = I_d/2 > 1 x 10⁹ cycles
- 15 to 60 discharges per minute
To have the highest dissipated power, use preferably FELSIC 85 480 V, 500 V and 550 V and calculate r.m.s. current [general technical data § 6.4.2.].

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I_{rms}: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | 50 000 |
|--------|------------------------|------------------|------------------------|------------------------|-------------------------|------------------------|------------------------|
| I | 0,8 x I _{rms} | I _{rms} | 1,2 x I _{rms} | 1,3 x I _{rms} | 1,35 x I _{rms} | 1,5 x I _{rms} | 1,6 x I _{rms} |

FAST DISCHARGES WORKING (ID)

Discharge current I_d = peak current of 3 ms per cycle of 1 to 60 s, at 40°C.I_d as a function of case

| DIMENSIONS in mm [inches] | | I _d | | |
|---------------------------|---------|----------------|---------|------|
| Ø | H | (A) | | |
| 36 | [1,417] | 52 | [2,047] | 230 |
| 36 | [1,417] | 60 | [2,362] | 300 |
| 36 | [1,417] | 80 | [3,150] | 440 |
| 36 | [1,417] | 104 | [4,094] | 580 |
| 51 | [2,008] | 81 | [3,189] | 740 |
| 51 | [2,008] | 104 | [4,094] | 990 |
| 66 | [2,598] | 104 | [4,094] | 1400 |
| 77 | [3,031] | 104 | [4,094] | 2000 |
| 77 | [3,031] | 144 | [5,669] | 2800 |
| 77 | [3,031] | 220 | [8,661] | 3700 |
| 90 | [3,543] | 144 | [5,669] | 3900 |
| 90 | [3,543] | 200 | [7,874] | 4800 |

FELSIC 85

CO 54 - CO 53

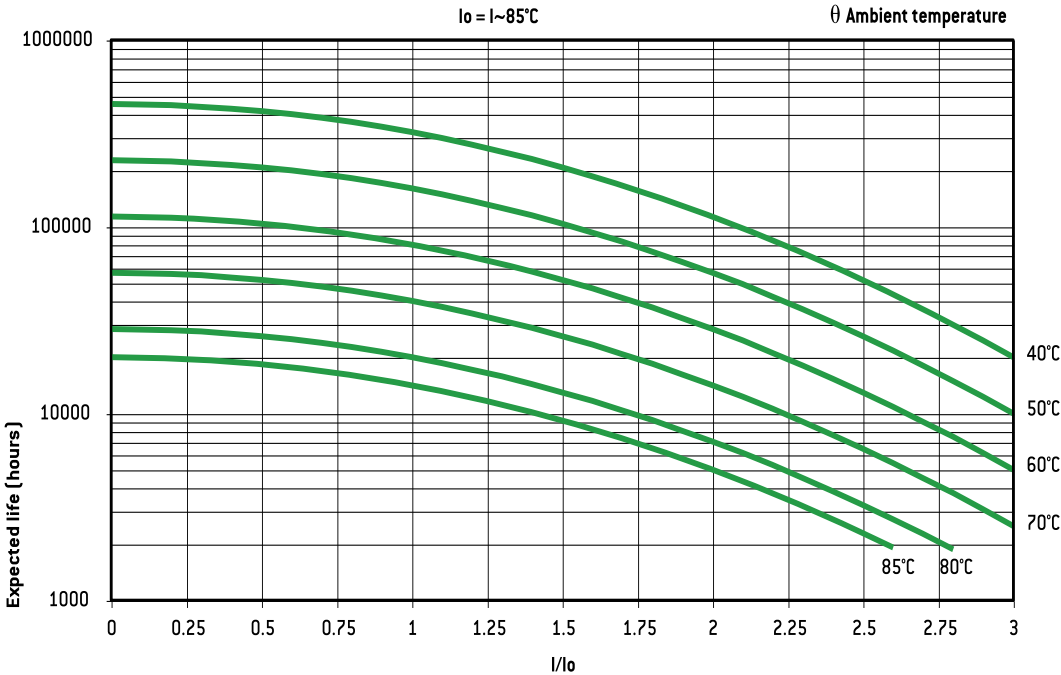
15 000 h / 85°C

EXPECTED LIFE

As a function of temperature and ripple current
For $U_R = 360\text{ V}$ and 480 V do not overstep $0.95 U_R$

CONNECTIONS IN SERIES:

Operating voltages exceeding 500 V up to 20000 V will be reached by connecting capacitors with rated voltages higher or equal to 350 V in series (see FELSIC in bank.).



SCREW TERMINALS

FELSIK 039 - FELSIK 037

CO 37 - CO 39

32 000 h / 85°C

| | | | | |
|--------------|---------------------------------|---|---------------|----------------|
| 10V ... 400V | 100 μ F ... 150 000 μ F | \emptyset 36 [1,417] ... \emptyset 77 [3,031] | - 55°C + 85°C | Long Life Time |
|--------------|---------------------------------|---|---------------|----------------|



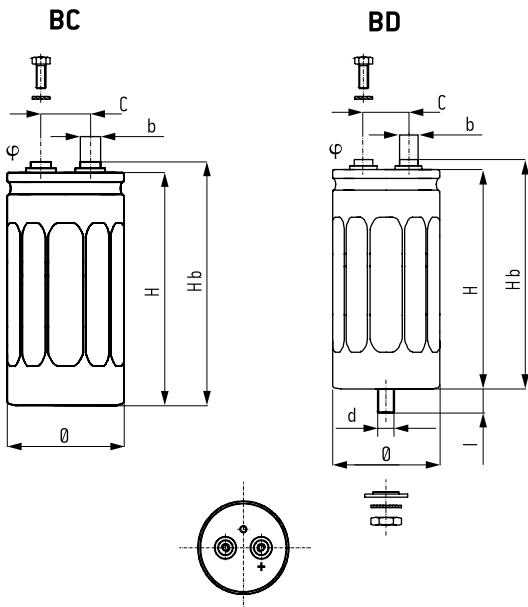
APPLICATIONS

- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current

Screw terminals: M4 or M5

Tolerance on capacitance at 20°C: -10 +50 %

Operating temperature: - 55°C + 85°C



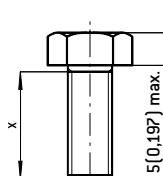
| BC | BD |
|--|---|
| Insulated aluminum can | Aluminum can with sleeve |
| Hexagonal screws | Hexagonal screws |
| Spring washers | Spring washers |
| Fixing clip must be ordered separately | Stud fixing delivered with capacitor (steel hex nut, spring washer) |

DIMENSIONS in mm (inches)

| \emptyset ± 1 (0,039) | H ± 2 (0,079) | Hb ± 2 (0,079) | C $\pm 0,5$ (0,020) | ϕ | b |
|-----------------------------|-------------------|--------------------|---------------------|--------|------------|
| 36 [1,417] | 47 [1,850] | 53 [2,087] | 12,7 [0,500] | M5 | 8 [0,315] |
| 36 [1,417] | 60 [2,362] | 66 [2,598] | 12,7 [0,500] | M5 | 8 [0,315] |
| 36 [1,417] | 80 [3,150] | 86 [3,386] | 12,7 [0,500] | M5 | 8 [0,315] |
| 51 [2,008] | 62 [2,441] | 68 [2,677] | 22,2 [0,874] | M5 | 13 [0,512] |
| 51 [2,008] | 81 [3,189] | 87 [3,425] | 22,2 [0,874] | M5 | 13 [0,512] |
| 51 [2,008] | 112 [4,409] | 118 [4,646] | 22,2 [0,874] | M5 | 13 [0,512] |
| 66 [2,598] | 112 [4,409] | 118 [4,646] | 28,7 [1,130] | M5 | 13 [0,512] |
| 73 [2,874] | 112 [4,409] | 118 [4,646] | 31,7 [1,248] | M5 | 13 [0,512] |
| 77 [3,031] | 144 [5,669] | 150 [5,906] | 31,7 [1,248] | M5 | 13 [0,512] |

| \emptyset | d | l | Max. nut torque |
|-------------------|-----|-----------------------------------|-----------------|
| 36 [1,417] | M8 | 12 ± 1 [0,472 $\pm 0,472$] | 4 Nm |
| ≥ 51 [2,008] | M12 | 16 $\pm 1,5$ [0,630 $\pm 0,059$] | 10 Nm |

HEXAGONAL SCREWS mm (inches)

Screwing height between screws and terminals:
3,5 [0,138] maxMax. screw torque: M4: 2 Nm [x min 8 [0,315]]
M5: 3 Nm [x min 8 [0,315]]

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|----------------------------|
| f [Hz] | 10 - 2000 Hz |
| Amplitude | 1,5 [0,059] |
| Acceleration | 20 g - 96 m/s ² |
| t [h] | 3 x 2 h |

SPECIFICATIONS

NFC 83 110 - Models CO 39, CO 37 - Long life

DIN 41 240 - Climatic category FDP - 55°C + 85°C / 56 days

CECC 30301-017 Issue 4

IEC 60 384.4 long life

Standard endurance test at U_R : $U_R \leq 160$ V: 10 000 h / 85°C
 $U_R > 160$ V: 5000 h / 85°C

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 M Ω

Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V

Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

FELSIC 039 - FELIC 037

32 000 h / 85°C

CO 37 - CO 39

| Capacitance (μ F) | Can | | | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. (m Ω) | I _r +20°C 5 min max. (mA) | I _{rms} 100 Hz | | | Code | |
|----------------------------|----------------------------|------------------|------------------------|-----------------------|---------------------|--------------|--|---|----------------------------|--------------------|--------------------|----------|----------|
| | \emptyset mm (inches) | H mm (inches) | Typic (m Ω) | max. (m Ω) | +40°C max. (A) | +85°C (A) | | | +105°C (A) | FELSIC 039 (BC) | FELSIC 037 (BD) | | |
| Rated voltage 10 V | | | | | | | | | | | | | |
| 15000 | 36 | (1,417) | 60 | (2,362) | 23 | 35 | 35 | 0,9 | 22 | 6,5 | 4,2 | A 728321 | A 728331 |
| 22000 | 36 | (1,417) | 80 | (3,150) | 17 | 22 | 25 | 1,2 | 22 | 8,7 | 5,6 | A 728322 | A 728332 |
| Rated voltage 16 V | | | | | | | | | | | | | |
| 6800 | 36 | (1,417) | 47 | (1,850) | 35 | 42 | 50 | 0,6 | 17 | 4,5 | 2,9 | A 728340 | A 738350 |
| 10000 | 36 | (1,417) | 60 | (2,362) | 24 | 35 | 35 | 0,9 | 22 | 6,4 | 4,1 | A 728341 | A 738351 |
| 15000 | 36 | (1,417) | 80 | (3,150) | 19 | 30 | 25 | 1,4 | 22 | 8,1 | 5,2 | A 728342 | A 738352 |
| 22000 | 51 | (2,008) | 62 | (2,441) | 26 | 3 | 40 | 2 | 25 | 7,3 | 4,7 | A 728343 | A 738353 |
| 33000 | 51 | (2,008) | 81 | (3,189) | 18 | 25 | 30 | 3 | 25 | 10 | 6,4 | A 728344 | A 738354 |
| 47000 | 51 | (2,008) | 112 | (4,409) | 14 | 19 | 20 | 4 | 25 | 13 | 8,4 | A 728345 | A 738355 |
| 68000 | 66 | (2,598) | 112 | (4,409) | 8 | 11 | 12 | 5 | 50 | 18 | 11,6 | A 728346 | A 738356 |
| 100000 | 73 | (2,874) | 112 | (4,409) | 8 | 11 | 11 | 5 | 50 | 19 | 12,3 | A 728347 | A 738357 |
| Rated voltage 25 V | | | | | | | | | | | | | |
| 4700 | 36 | (1,417) | 47 | (1,850) | 39 | 62 | 54 | 0,7 | 16 | 4,3 | 2,8 | A 728360 | A 738370 |
| 6800 | 36 | (1,417) | 60 | (2,362) | 27 | 40 | 40 | 1 | 22 | 6 | 3,9 | A 728361 | A 738371 |
| 10000 | 36 | (1,417) | 80 | (3,150) | 21 | 30 | 30 | 1,5 | 22 | 7,5 | 4,8 | A 728362 | A 738372 |
| 22000 | 51 | (2,008) | 81 | (3,189) | 16 | 21 | 30 | 3 | 25 | 10 | 6,4 | A 728364 | A 738374 |
| 33000 | 51 | (2,008) | 112 | (4,409) | 14 | 20 | 20 | 4 | 25 | 13 | 8,4 | A 728365 | A 738375 |
| 47000 | 66 | (2,598) | 112 | (4,409) | 10 | 13 | 16 | 5 | 50 | 17,3 | 11,2 | A 728366 | A 738376 |
| 68000 | 73 | (2,874) | 112 | (4,409) | 10 | 13 | 16 | 5 | 50 | 18,4 | 11,9 | A 728367 | A 738377 |
| 150000 | 77 | (3,031) | 144 | (5,669) | 5 | 8 | 10 | 6 | 55 | 20 | 12,9 | A 728368 | A 738378 |
| Rated voltage 40 V | | | | | | | | | | | | | |
| 3300 | 36 | (1,417) | 47 | (1,850) | 43 | 60 | 60 | 0,7 | 15 | 4,1 | 2,7 | A 728380 | A 738390 |
| 4700 | 36 | (1,417) | 60 | (2,362) | 29 | 45 | 45 | 1 | 21 | 5,7 | 3,7 | A 728381 | A 738391 |
| 6800 | 36 | (1,417) | 80 | (3,150) | 23 | 40 | 35 | 1,5 | 22 | 7,2 | 4,7 | A 728382 | A 738392 |
| 10000 | 51 | (2,008) | 62 | (2,441) | 28 | 40 | 40 | 2 | 25 | 7 | 4,5 | A 728383 | A 738393 |
| 15000 | 51 | (2,008) | 81 | (3,189) | 22 | 33 | 30 | 3 | 25 | 8,7 | 5,6 | A 728384 | A 738394 |
| 22000 | 51 | (2,008) | 112 | (4,409) | 15 | 23 | 23 | 5 | 25 | 12,6 | 8 | A 728385 | A 738395 |
| 33000 | 66 | (2,598) | 112 | (4,409) | 10 | 13 | 18 | 5 | 50 | 16,5 | 10,6 | A 728386 | A 738396 |
| 47000 | 73 | (2,874) | 112 | (4,409) | 10 | 13 | 16 | 5 | 50 | 18,4 | 11,9 | A 728387 | A 738397 |
| 100000 | 77 | (3,031) | 144 | (5,669) | 5 | 8 | 10 | 6 | 55 | 22 | 14 | A 728388 | A 738398 |
| Rated voltage 63 V | | | | | | | | | | | | | |
| 2200 | 36 | (1,417) | 47 | (1,850) | 47 | 80 | 65 | 0,7 | 15 | 3,9 | 2,5 | A 728400 | A 738410 |
| 3300 | 36 | (1,417) | 60 | (2,362) | 32 | 60 | 50 | 1,1 | 20 | 5,4 | 3,5 | A 728401 | A 738411 |
| 4700 | 36 | (1,417) | 80 | (3,150) | 25 | 40 | 40 | 1,6 | 22 | 6,9 | 4,5 | A 728402 | A 738412 |
| 6800 | 51 | (2,008) | 62 | (2,441) | 30 | 45 | 45 | 2 | 25 | 6,7 | 4,3 | A 728403 | A 738413 |
| 10000 | 51 | (2,008) | 81 | (3,189) | 23 | 32 | 35 | 3 | 25 | 8,5 | 5,5 | A 728404 | A 738414 |
| 15000 | 51 | (2,008) | 112 | (4,409) | 16 | 24 | 24 | 5 | 25 | 12,5 | 8 | A 728405 | A 738415 |
| 22000 | 66 | (2,598) | 112 | (4,409) | 13 | 20 | 16 | 5 | 50 | 15,7 | 10,1 | A 728406 | A 738416 |
| 33000 | 73 | (2,874) | 112 | (4,409) | 12 | 16 | 16 | 5 | 50 | 17,5 | 11,3 | A 728407 | A 738417 |
| 47000 | 77 | (3,031) | 144 | (5,669) | 7 | 9 | 12 | 6 | 55 | 20 | 12,9 | A 728408 | A 738418 |
| Rated voltage 100 V | | | | | | | | | | | | | |
| 1000 | 36 | (1,417) | 47 | (1,850) | 58 | 170 | 150 | 0,5 | 13 | 3,5 | 2,3 | A 728420 | A 738430 |
| 1500 | 36 | (1,417) | 60 | (2,362) | 38 | 120 | 100 | 0,8 | 18 | 4,9 | 3,2 | A 728421 | A 738431 |
| 2200 | 36 | (1,417) | 80 | (3,150) | 31 | 85 | 70 | 1,1 | 22 | 6,1 | 4 | A 728422 | A 738432 |
| 3300 | 51 | (2,008) | 62 | (2,441) | 34 | 85 | 70 | 1,8 | 24 | 6,3 | 4,1 | A 728423 | A 738433 |
| 4700 | 51 | (2,008) | 81 | (3,189) | 26 | 52 | 50 | 2,5 | 25 | 8 | 5,2 | A 728424 | A 738434 |
| 6800 | 51 | (2,008) | 112 | (4,409) | 18 | 36 | 40 | 4 | 25 | 11,3 | 7,3 | A 728425 | A 738435 |
| 10000 | 66 | (2,598) | 112 | (4,409) | 16 | 32 | 18 | 5 | 50 | 13,9 | 9 | A 728426 | A 738436 |
| 15000 | 73 | (2,874) | 112 | (4,409) | 16 | 21 | 18 | 6 | 50 | 14,8 | 9,6 | A 728427 | A 738437 |
| 22000 | 77 | (3,031) | 144 | (5,669) | 10 | 13 | 14 | 6 | 55 | 18 | 11,6 | A 728428 | A 738438 |
| Rated voltage 160 V | | | | | | | | | | | | | |
| 470 | 36 | (1,417) | 47 | (1,850) | 185 | 270 | 190 | 0,4 | 8 | 2 | 1,3 | A 728440 | A 738450 |
| 680 | 36 | (1,417) | 60 | (2,362) | 130 | 240 | 130 | 0,5 | 9 | 2,5 | 1,6 | A 728441 | A 738451 |
| 1000 | 36 | (1,417) | 80 | (3,150) | 100 | 170 | 95 | 0,9 | 12 | 3,1 | 2 | A 728442 | A 738452 |
| 1500 | 51 | (2,008) | 62 | (2,441) | 72 | 130 | 95 | 1,3 | 16 | 4,2 | 2,8 | A 728443 | A 738453 |
| 2200 | 51 | (2,008) | 81 | (3,189) | 52 | 85 | 74 | 2 | 20 | 5,4 | 3,6 | A 728444 | A 738454 |
| 3300 | 51 | (2,008) | 112 | (4,409) | 35 | 50 | 60 | 3 | 25 | 8 | 5,1 | A 728445 | A 738455 |
| 4700 | 66 | (2,598) | 112 | (4,409) | 24 | 40 | 40 | 4 | 39 | 10,5 | 7 | A 728446 | A 738456 |
| 6800 | 73 | (2,874) | 112 | (4,409) | 16 | 25 | 40 | 5 | 50 | 13,7 | 8,8 | A 728447 | A 738457 |
| 10000 | 77 | (3,031) | 144 | (5,669) | 12 | 17 | 16 | 6 | 55 | 18 | 11,6 | A 728448 | A 738458 |

FELSIC 039 - FELSIC 037

CO 37 - CO 39

32 000 h / 85°C

| Capacitance [μ F] | Can | | | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. [m Ω] | II +20°C 5 min max. [mA] | I \sim 100 Hz | | Code | |
|----------------------------|----------------------------|------------------|------------------------|-----------------------|---------------------|--------------|--|-----------------------------------|--------------------|--------------------|----------|----------|
| | \emptyset mm [inches] | H mm [inches] | Typic [m Ω] | max. [m Ω] | +40°C max. [A] | +85°C [A] | | | FELSIC 039 [BC] | FELSIC 037 [BD] | | |
| Rated voltage 250 V | | | | | | | | | | | | |
| 220 | 36 | [1,417] | 47 | [1,850] | 250 | 800 | 270 | 0,3 | 5 | 1,2 | A 728480 | A 738490 |
| 330 | 36 | [1,417] | 60 | [2,362] | 180 | 450 | 200 | 0,5 | 7 | 1,8 | A 728481 | A 738491 |
| 470 | 36 | [1,417] | 80 | [3,150] | 120 | 300 | 150 | 0,7 | 9 | 2,3 | A 728482 | A 738492 |
| 680 | 51 | [2,008] | 62 | [2,441] | 100 | 200 | 120 | 1 | 11 | 3 | A 728483 | A 738493 |
| 1000 | 51 | [2,008] | 81 | [3,189] | 80 | 160 | 90 | 1,5 | 14 | 3,7 | A 728484 | A 738494 |
| 3300 | 73 | [2,874] | 112 | [4,409] | 25 | 45 | 40 | 4 | 36 | 9,6 | A 728487 | A 738497 |
| 4700 | 77 | [3,031] | 144 | [5,669] | 20 | 37 | 22 | 6 | 43 | 11,5 | A 728488 | A 738498 |
| Rated voltage 350 V | | | | | | | | | | | | |
| 150 | 36 | [1,417] | 47 | [1,850] | 530 | 800 | 360 | 0,3 | 5 | 1,2 | A 728800 | A 738810 |
| 220 | 36 | [1,417] | 60 | [2,362] | 350 | 580 | 290 | 0,4 | 5 | 1,4 | A 728801 | A 738811 |
| 330 | 36 | [1,417] | 80 | [3,150] | 230 | 390 | 170 | 0,7 | 7 | 1,9 | A 728802 | A 738812 |
| 470 | 51 | [2,008] | 62 | [2,441] | 180 | 300 | 160 | 0,9 | 10 | 2,6 | A 728803 | A 738813 |
| 680 | 51 | [2,008] | 81 | [3,189] | 120 | 200 | 110 | 1,4 | 14 | 3,6 | A 728804 | A 738814 |
| 1000 | 51 | [2,008] | 112 | [4,409] | 80 | 120 | 70 | 2 | 19 | 5 | A 728805 | A 738815 |
| 1500 | 66 | [2,598] | 112 | [4,409] | 60 | 90 | 48 | 3 | 26 | 6,8 | A 728806 | A 738816 |
| 2200 | 73 | [2,874] | 112 | [4,409] | 50 | 70 | 44 | 4 | 30 | 7,9 | A 728807 | A 738817 |
| 3300 | 77 | [3,031] | 144 | [5,669] | 30 | 45 | 26 | 6 | 43 | 11,5 | A 728808 | A 738818 |
| Rated voltage 400 V | | | | | | | | | | | | |
| 100 | 36 | [1,417] | 47 | [1,850] | 700 | 1500 | 1100 | 1,1 | 3 | 0,8 | A 728830 | A 738840 |
| 150 | 36 | [1,417] | 60 | [2,362] | 560 | 1200 | 760 | 1,4 | 4 | 1,0 | A 728831 | A 738841 |
| 220 | 36 | [1,417] | 80 | [3,150] | 400 | 850 | 520 | 1,7 | 5 | 1,4 | A 728832 | A 738842 |
| 330 | 51 | [2,008] | 62 | [2,441] | 300 | 550 | 380 | 2,0 | 7 | 1,8 | A 728833 | A 738843 |
| 470 | 51 | [2,008] | 81 | [3,189] | 170 | 320 | 160 | 2,5 | 10 | 2,6 | A 728834 | A 738844 |
| 680 | 51 | [2,008] | 112 | [4,409] | 130 | 230 | 180 | 3,0 | 13 | 3,5 | A 728835 | A 738845 |
| 1000 | 66 | [2,598] | 112 | [4,409] | 80 | 150 | 120 | 3,5 | 19 | 5,0 | A 728836 | A 738846 |
| 1500 | 73 | [2,874] | 112 | [4,409] | 55 | 100 | 95 | 4,0 | 24 | 6,3 | A 728837 | A 738847 |
| 2200 | 77 | [3,031] | 144 | [5,669] | 40 | 85 | 60 | 5,0 | 30 | 8,0 | A 728848 | A 738848 |

FELSIC 039 - FELIC 037

CO 37 - CO 39

32 000 h / 85°C

PEAK VOLTAGE (V)

1000 cycles, without ripple current

Up: Repetitive standard peak voltage (30 s)

Us: Repetitive surge voltage (0,1 s)

Do not exceed this value safely

| U _R | 10 V | 16 V | 25 V | 40 V | 63 V | 100 V | 160 V | 250 V | 350 V | 400 V |
|----------------|------|------|------|------|------|-------|-------|-------|-------|-------|
| Up | 11,5 | 18 | 29 | 46 | 72 | 115 | 184 | 288 | 385 | 440 |
| Us | | | | | | | 235 | 290 | 405 | 450 |

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I_~: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | 50 000 |
|--------|----------------------|----------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| I | 0,8 x I _~ | I _~ | 1,2 x I _~ | 1,3 x I _~ | 1,35 x I _~ | 1,5 x I _~ | 1,6 x I _~ |

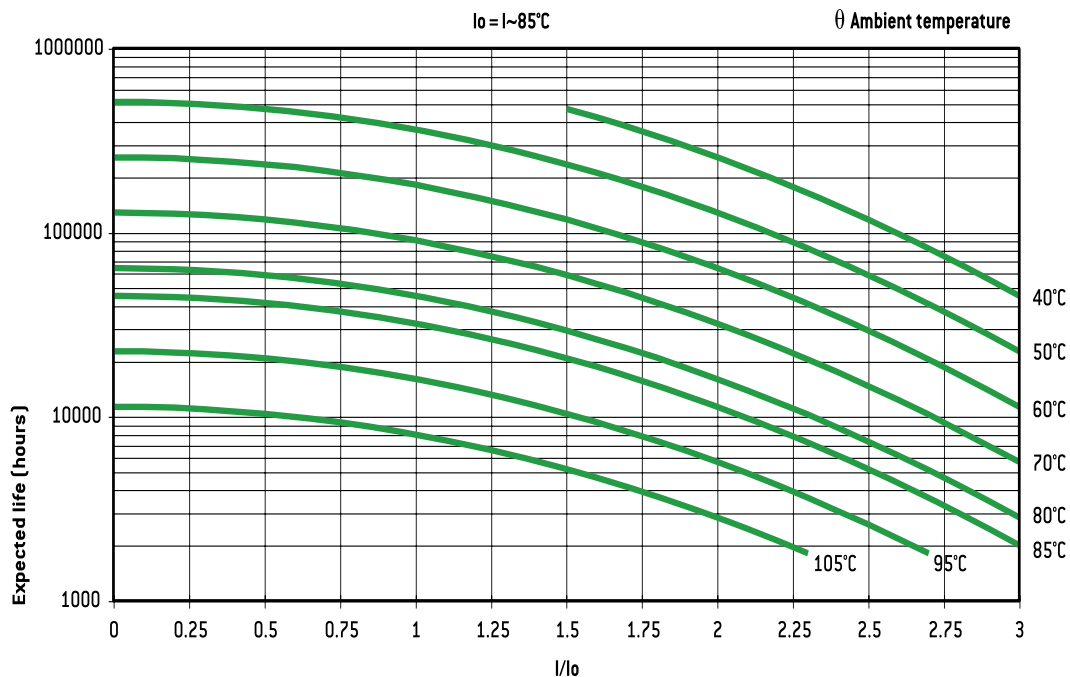
PERMISSIBLE REPETITIVE PEAK CURRENT I_p:

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows:

| DIMENSIONS in mm (inches) | | I _p (A) | I _~ max. (A) | | |
|---------------------------|---------|--------------------|-------------------------|------|----|
| Ø | H | | | | |
| 36 | (1,417) | 47 | (1,850) | 400 | 22 |
| 36 | (1,417) | 60 | (2,362) | 450 | 22 |
| 36 | (1,417) | 80 | (3,150) | 600 | 22 |
| 51 | (2,008) | 62 | (2,441) | 700 | 25 |
| 51 | (2,008) | 81 | (3,189) | 800 | 25 |
| 51 | (2,008) | 112 | (4,409) | 1100 | 25 |
| 66 | (2,598) | 112 | (4,409) | 1900 | 50 |
| 73 | (2,874) | 112 | (4,409) | 3000 | 50 |
| 77 | (3,031) | 144 | (5,669) | 4200 | 55 |

SCREW TERMINALS

EXPECTED LIFE as a function of temperature and ripple current



FELSIC 85 M

CO 54 - CO 53

15 000 h / 85°C

| | | | | |
|----------------|--------------------------------|---|---------------|----------------|
| 10 V ... 630 V | 68 μ F ... 330 000 μ F | \emptyset 36 (1,417) ... \emptyset 90 (3,543) | - 55°C + 85°C | Long Life Time |
|----------------|--------------------------------|---|---------------|----------------|



APPLICATIONS

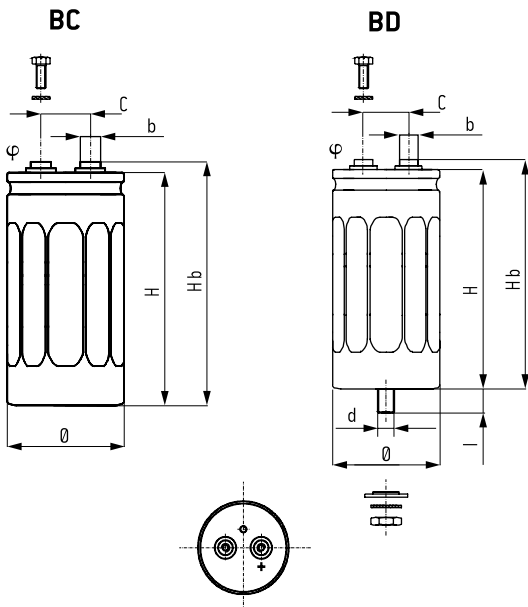
- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current

Fixing: Clip or stud fixing

Screw terminals: M5 or M6

Tolerance on capacitance at 20°C: -20 +20 %

Operating temperature: - 55°C + 85°C



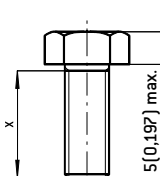
| BC | BD |
|--|---|
| Insulated aluminum can | Aluminum can with sleeve |
| Hexagonal screws | Hexagonal screws |
| Spring washers | Spring washers |
| Fixing clip must be ordered separately | Stud fixing delivered with capacitor (steel hex nut, spring washer) |

DIMENSIONS in mm (inches)

| $\emptyset \pm 1$ (0,039) | H ± 2 (0,079) | Hb ± 2 (0,079) | c $\pm 0,5$ (0,020) | Φ | b |
|---------------------------|-------------------|--------------------|---------------------|--------|------------|
| 36 (1,417) | 52 (2,047) | 58 (2,283) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 60 (2,362) | 66 (2,598) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 80 (3,150) | 86 (3,386) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 104 (4,094) | 110 (4,331) | 12,7 (0,500) | M5 | 8 (0,315) |
| 51 (2,008) | 81 (3,189) | 87 (3,425) | 22,2 (0,874) | M5 | 13 (0,512) |
| 51 (2,008) | 104 (4,094) | 110 (4,331) | 22,2 (0,874) | M5 | 13 (0,512) |
| 66 (2,598) | 104 (4,094) | 110 (4,331) | 28,5 (1,122) | M5 | 13 (0,512) |
| 77 (3,031) | 104 (4,094) | 110 (4,331) | 31,7 (1,248) | M5 | 13 (0,512) |
| 77 (3,031) | 144 (5,669) | 150 (5,906) | 31,7 (1,248) | M5 | 13 (0,512) |
| 77 (3,031) | 220 (8,661) | 226 (8,898) | 31,7 (1,248) | M5 | 13 (0,512) |
| 90 (3,543) | 144 (5,669) | 151 (5,945) | 31,7 (1,248) | M6 | 13 (0,512) |
| 90 (3,543) | 200 (7,874) | 207 (8,150) | 31,7 (1,248) | M6 | 13 (0,512) |

| \emptyset | d | l | Max. nut torque |
|-------------------|-----|----------------------------------|-----------------|
| 36 (1,417) | M8 | 12 \pm 1 (0,472 \pm 0,472) | 4 Nm |
| \geq 51 (2,008) | M12 | 16 \pm 1,5 (0,630 \pm 0,059) | 10 Nm |

HEXAGONAL SCREWS mm (inches)

Screwing height between screws and terminals:
3,5 (0,138) maxMax. screw torque: M5: 3 Nm [x min 8 (0,315)]
M6: 6 Nm [x min 10 (0,394)]

SPECIFICATIONS

NFC 83 110 - Long life

DIN 41 240 - Climatic category GPF - 55°C + 85°C / 56 days

CECC 30301-059 Issue 3

CECC 30 301-810

IEC 60 384.4 long life

Standard endurance test at U_R : $U_R \leq 350$ V: 5000 h / 85°C
 $U_R > 350$ V: 2000 h / 85°C

RESISTANCE TO VIBRATIONS

| Hb mm (inches) | >150 (5,906) | \leq 150 (5,906) |
|----------------|----------------------------|-----------------------------|
| f (Hz) | 10 - 55 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 (0,030) | 1,5 (0,059) |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 M Ω

Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V

Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

FELSIC 85 M

CO 54 - CO 53

15 000 h / 85°C

| Capacitance [μF] | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. [mΩ] | II +20°C 5 min max. [mA] | I~ 100 Hz | | Code | | | |
|----------------------------|------------------|------------------|---------------------|--------------|-----------------------------------|-----------------------------------|-------------------|--------------|-------------------|-------------------|----------|----------|
| | ∅ mm [inches] | H mm [inches] | Typic [mΩ] | max. [mΩ] | | | +40°C max. [A] | +85°C [A] | CO 54 (M) (BC) | CO 53 (M) (BD) | | |
| Rated voltage 10 V | | | | | | | | | | | | |
| 33000 | 36 | [1,417] | 52 | [2,047] | 16 | 24 | 25 | 1,8 | 22 | 6,6 | A 746020 | A 747020 |
| Rated voltage 16 V | | | | | | | | | | | | |
| 22000 | 36 | [1,417] | 52 | [2,047] | 16 | 24 | 25 | 2 | 22 | 6,6 | A 746040 | A 747040 |
| 47000 | 36 | [1,417] | 80 | [3,150] | 11 | 16 | 15 | 4 | 22 | 8,8 | A 746041 | A 747041 |
| 100000 | 51 | [2,008] | 81 | [3,189] | 8 | 12 | 10 | 5 | 25 | 13,7 | A 746042 | A 747042 |
| 150000 | 51 | [2,008] | 104 | [4,094] | 7 | 11 | 8 | 5 | 25 | 16,4 | A 746043 | A 747043 |
| 220000 | 66 | [2,598] | 104 | [4,094] | 5 | 8 | 6 | 5 | 50 | 22,3 | A 746044 | A 747044 |
| Rated voltage 25 V | | | | | | | | | | | | |
| 15000 | 36 | [1,417] | 52 | [2,047] | 18 | 27 | 26 | 2 | 22 | 6,2 | A 746060 | A 747060 |
| 22000 | 36 | [1,417] | 52 | [2,047] | 17 | 25 | 24 | 3 | 22 | 6,5 | A 746069 | A 747069 |
| 33000 | 36 | [1,417] | 80 | [3,150] | 15 | 23 | 18 | 4 | 22 | 8,2 | A 746061 | A 747061 |
| 47000 | 36 | [1,417] | 104 | [4,094] | 12 | 18 | 15 | 5 | 25 | 10,3 | A 746070 | A 747070 |
| 47000 | 51 | [2,008] | 81 | [3,189] | 9 | 14 | 10 | 5 | 25 | 12,9 | A 746062 | A 747062 |
| 68000 | 51 | [2,008] | 81 | [3,189] | 8 | 14 | 10 | 5 | 25 | 13,7 | A 746063 | A 747063 |
| 100000 | 51 | [2,008] | 104 | [4,094] | 8 | 14 | 8 | 5 | 25 | 15,3 | A 746064 | A 747064 |
| 220000 | 77 | [3,031] | 104 | [4,094] | 4 | 6 | 7 | 6 | 55 | 26 | A 746066 | A 747066 |
| 330000 | 77 | [3,031] | 144 | [5,669] | 3 | 5 | 6 | 7 | 55 | 36 | A 746067 | A 747067 |
| Rated voltage 40 V | | | | | | | | | | | | |
| 10000 | 36 | [1,417] | 52 | [2,047] | 20 | 30 | 28 | 2 | 21 | 5,9 | A 746080 | A 747080 |
| 15000 | 36 | [1,417] | 80 | [3,150] | 18 | 27 | 23 | 3 | 22 | 7,5 | A 746081 | A 747081 |
| 22000 | 36 | [1,417] | 104 | [4,094] | 15 | 22 | 19 | 5 | 22 | 9,2 | A 746082 | A 747082 |
| 33000 | 51 | [2,008] | 81 | [3,189] | 10 | 15 | 13 | 5 | 25 | 12 | A 746091 | A 747091 |
| 47000 | 51 | [2,008] | 81 | [3,189] | 9 | 14 | 9 | 5 | 25 | 12,9 | A 746083 | A 747083 |
| 68000 | 51 | [2,008] | 104 | [4,094] | 8 | 12 | 8 | 6 | 25 | 14,4 | A 746092 | A 747092 |
| 100000 | 66 | [2,598] | 104 | [4,094] | 7 | 11 | 7 | 6 | 50 | 18,9 | A 746084 | A 747084 |
| 150000 | 77 | [3,031] | 104 | [4,094] | 5 | 8 | 7 | 8 | 55 | 24,5 | A 746085 | A 747085 |
| 220000 | 77 | [3,031] | 144 | [5,669] | 4 | 6 | 6 | 9 | 55 | 31,5 | A 746086 | A 747086 |
| Rated voltage 63 V | | | | | | | | | | | | |
| 4700 | 36 | [1,417] | 52 | [2,047] | 40 | 60 | 48 | 1,6 | 15 | 4,2 | A 746100 | A 747100 |
| 6800 | 36 | [1,417] | 52 | [2,047] | 35 | 50 | 39 | 2,5 | 15 | 4,4 | A 746112 | A 747112 |
| 10000 | 36 | [1,417] | 80 | [3,150] | 23 | 34 | 28 | 3 | 22 | 7 | A 746101 | A 747101 |
| 15000 | 51 | [2,008] | 81 | [3,189] | 13 | 20 | 18 | 5 | 25 | 10,7 | A 746102 | A 747102 |
| 22000 | 51 | [2,008] | 81 | [3,189] | 12 | 18 | 15 | 5 | 25 | 11,1 | A 746103 | A 747103 |
| 33000 | 51 | [2,008] | 104 | [4,094] | 10 | 15 | 14 | 5 | 25 | 13,7 | A 746113 | A 747113 |
| 33000 | 66 | [2,598] | 104 | [4,094] | 10 | 15 | 14 | 5 | 50 | 15,8 | A 746104 | A 747104 |
| 47000 | 66 | [2,598] | 104 | [4,094] | 8 | 12 | 11 | 6 | 50 | 17,7 | A 746105 | A 747105 |
| 68000 | 77 | [3,031] | 104 | [4,094] | 5 | 8 | 8 | 8 | 55 | 24,5 | A 746106 | A 747106 |
| 100000 | 77 | [3,031] | 144 | [5,669] | 3 | 8 | 8 | 9 | 55 | 36 | A 746107 | A 747107 |
| 150000 | 77 | [3,031] | 220 | [8,661] | 3 | 8 | 8 | 11 | 55 | 43 | A 746109 | A 747109 |
| 220000 | 90 | [3,543] | 200 | [7,874] | 3 | 5 | 4 | 15 | 80 | 46 | A 746110 | A 747110 |
| Rated voltage 80 V | | | | | | | | | | | | |
| 10000 | 51 | [2,008] | 81 | [3,189] | 19 | 29 | 23 | 5 | 25 | 8,9 | A 746363 | A 747363 |
| 15000 | 51 | [2,008] | 81 | [3,189] | 17 | 25 | 20 | 5 | 25 | 9,4 | A 746364 | A 747364 |
| 22000 | 51 | [2,008] | 104 | [4,094] | 14 | 21 | 17 | 6 | 25 | 12 | A 746365 | A 747365 |
| 33000 | 66 | [2,598] | 104 | [4,094] | 12 | 18 | 15 | 6 | 49 | 14 | A 746366 | A 747366 |
| Rated voltage 100 V | | | | | | | | | | | | |
| 2200 | 36 | [1,417] | 52 | [2,047] | 70 | 105 | 90 | 1,1 | 11 | 3,1 | A 746120 | A 747120 |
| 4700 | 36 | [1,417] | 80 | [3,150] | 45 | 68 | 54 | 2,5 | 16 | 4,7 | A 746121 | A 747121 |
| 6800 | 51 | [2,008] | 81 | [3,189] | 24 | 36 | 27 | 4 | 25 | 7,9 | A 746122 | A 747122 |
| 10000 | 51 | [2,008] | 81 | [3,189] | 20 | 30 | 21 | 5 | 25 | 8,7 | A 746123 | A 747123 |
| 15000 | 51 | [2,008] | 104 | [4,094] | 17 | 26 | 18 | 6 | 25 | 10,5 | A 746124 | A 747124 |
| 22000 | 66 | [2,598] | 104 | [4,094] | 13 | 19 | 15 | 6 | 49 | 13,9 | A 746125 | A 747125 |
| 33000 | 77 | [3,031] | 104 | [4,094] | 10 | 15 | 13 | 8 | 55 | 17,5 | A 746126 | A 747126 |
| 47000 | 77 | [3,031] | 144 | [5,669] | 7 | 11 | 10 | 9 | 55 | 23 | A 746127 | A 747127 |
| Rated voltage 160 V | | | | | | | | | | | | |
| 1000 | 36 | [1,417] | 52 | [2,047] | 85 | 130 | 80 | 0,9 | 10 | 2,8 | A 746140 | A 747140 |
| 1500 | 36 | [1,417] | 80 | [3,150] | 55 | 85 | 70 | 1,3 | 15 | 4,3 | A 746141 | A 747141 |
| 2200 | 36 | [1,417] | 104 | [4,094] | 48 | 73 | 53 | 2 | 18 | 5,2 | A 746142 | A 747142 |
| 3300 | 51 | [2,008] | 81 | [3,189] | 28 | 42 | 34 | 3 | 25 | 7,3 | A 746143 | A 747143 |
| 4700 | 51 | [2,008] | 104 | [4,094] | 20 | 30 | 28 | 4 | 25 | 9,7 | A 746144 | A 747144 |
| 6800 | 66 | [2,598] | 104 | [4,094] | 17 | 25 | 21 | 5 | 43 | 12,3 | A 746145 | A 747145 |
| 10000 | 77 | [3,031] | 104 | [4,094] | 12 | 18 | 16 | 6 | 55 | 15,8 | A 746146 | A 747146 |
| 15000 | 77 | [3,031] | 144 | [5,669] | 10 | 14 | 13 | 8 | 55 | 20 | A 746147 | A 747147 |
| 22000 | 77 | [3,031] | 220 | [8,661] | 10 | 15 | 13 | 10 | 55 | 24 | A 746148 | A 747148 |
| 33000 | 90 | [3,543] | 200 | [7,874] | 8 | 12 | 11 | 14 | 80 | 28 | A 746150 | A 747150 |

SCREW TERMINALS

FELSIC 85 M

CO 54 - CO 53

15 000 h / 85°C

| Capacitance (μ F) | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. ($m\Omega$) | II +20°C 5 min max. (mA) | I ~ 100 Hz | | Code | | | |
|----------------------------|----------------------------|------------------|------------------------|-----------------------|--|-----------------------------------|-------------------|--------------|-------------------|-------------------|----------|----------|
| | \emptyset mm (inches) | H mm (inches) | Typic ($m\Omega$) | max. ($m\Omega$) | | | +40°C max. (A) | +85°C (A) | CO 54 (M) (BC) | CO 53 (M) (BD) | | |
| Rated voltage 250 V | | | | | | | | | | | | |
| 470 | 36 | (1,417) | 52 | (2,047) | 110 | 170 | 100 | 0,7 | 9 | 2,5 | A 746160 | A 747160 |
| 1000 | 36 | (1,417) | 80 | (3,150) | 70 | 105 | 70 | 1,5 | 13 | 3,8 | A 746161 | A 747161 |
| 1500 | 51 | (2,008) | 81 | (3,189) | 50 | 75 | 50 | 2 | 19 | 5,5 | A 746162 | A 747162 |
| 2200 | 51 | (2,008) | 81 | (3,189) | 48 | 72 | 48 | 3 | 20 | 5,6 | A 746163 | A 747163 |
| 3300 | 51 | (2,008) | 104 | (4,094) | 35 | 50 | 35 | 4 | 25 | 7,6 | A 746164 | A 747164 |
| 4700 | 66 | (2,598) | 104 | (4,094) | 21 | 32 | 20 | 6 | 38 | 10,9 | A 746165 | A 747165 |
| 6800 | 77 | (3,031) | 104 | (4,094) | 16 | 24 | 15 | 8 | 46 | 13 | A 746166 | A 747166 |
| 10000 | 77 | (3,031) | 144 | (5,669) | 14 | 21 | 13 | 9 | 55 | 16,8 | A 746167 | A 747167 |
| 22000 | 90 | (3,543) | 200 | (7,874) | 10 | 15 | 12 | 14 | 80 | 25 | A 746170 | A 747170 |
| Rated voltage 350 V | | | | | | | | | | | | |
| 330 | 36 | (1,417) | 52 | (2,047) | 240 | 360 | 190 | 0,7 | 5,9 | 1,7 | A 746180 | A 747180 |
| 470 | 36 | (1,417) | 80 | (3,150) | 150 | 230 | 140 | 0,9 | 9 | 2,6 | A 746181 | A 747181 |
| 680 | 36 | (1,417) | 104 | (4,094) | 100 | 150 | 100 | 1,4 | 13 | 3,6 | A 746182 | A 747182 |
| 1000 | 51 | (2,008) | 81 | (3,189) | 75 | 110 | 65 | 2 | 16 | 4,5 | A 746183 | A 747183 |
| 1500 | 51 | (2,008) | 104 | (4,094) | 55 | 75 | 55 | 3 | 20 | 5,8 | A 746184 | A 747184 |
| 2200 | 66 | (2,598) | 104 | (4,094) | 30 | 45 | 32 | 4 | 32 | 9,1 | A 746185 | A 747185 |
| 3300 | 77 | (3,031) | 104 | (4,094) | 25 | 38 | 27 | 6 | 38 | 10,9 | A 746186 | A 747186 |
| 4700 | 77 | (3,031) | 104 | (4,094) | 20 | 30 | 18 | 7 | 43 | 12,2 | A 746191 | A 747191 |
| 6800 | 77 | (3,031) | 144 | (5,669) | 17 | 25 | 15 | 7 | 53 | 15,2 | A 746187 | A 747187 |
| Rated voltage 385 V | | | | | | | | | | | | |
| 220 | 36 | (1,417) | 52 | (2,047) | 380 | 570 | 360 | 0,5 | 4,6 | 1,3 | A 746200 | A 747200 |
| 1000 | 51 | (2,008) | 81 | (3,189) | 90 | 135 | 100 | 2,3 | 14 | 4,1 | A 746202 | A 747202 |
| 1500 | 51 | (2,008) | 104 | (4,094) | 70 | 110 | 80 | 3,4 | 18 | 5 | A 746203 | A 747203 |
| 2200 | 66 | (2,598) | 104 | (4,094) | 50 | 75 | 50 | 5 | 25 | 7,1 | A 746204 | A 747204 |
| 3300 | 77 | (3,031) | 104 | (4,094) | 29 | 45 | 30 | 6 | 35 | 10,1 | A 746205 | A 747205 |
| 4700 | 77 | (3,031) | 144 | (5,669) | 22 | 35 | 25 | 7 | 47 | 13,4 | A 746206 | A 747206 |
| 6800 | 77 | (3,031) | 220 | (8,661) | 17 | 25 | 15 | 8 | 55 | 18,4 | A 746207 | A 747207 |
| Rated voltage 400 V | | | | | | | | | | | | |
| 220 | 36 | (1,417) | 52 | (2,047) | 400 | 600 | 500 | 1,7 | 4,6 | 1,3 | A 746220 | A 747220 |
| 330 | 36 | (1,417) | 80 | (3,150) | 280 | 420 | 300 | 2,0 | 6,6 | 1,9 | A 746221 | A 747221 |
| 470 | 36 | (1,417) | 104 | (4,094) | 200 | 300 | 200 | 2,5 | 9 | 2,5 | A 746222 | A 747222 |
| 1000 | 51 | (2,008) | 81 | (3,189) | 90 | 135 | 100 | 3,5 | 14 | 4,1 | A 746223 | A 747223 |
| 1500 | 66 | (2,598) | 104 | (4,094) | 60 | 90 | 60 | 4,0 | 22 | 6,4 | A 746224 | A 747224 |
| 2200 | 66 | (2,598) | 104 | (4,094) | 40 | 70 | 50 | 5,0 | 28 | 7,9 | A 746225 | A 747225 |
| 3300 | 77 | (3,031) | 104 | (4,094) | 29 | 50 | 35 | 6,0 | 35 | 10,1 | A 746226 | A 747226 |
| 4700 | 77 | (3,031) | 144 | (5,669) | 22 | 35 | 25 | 7,0 | 47 | 13,4 | A 746227 | A 747227 |
| 6800 | 90 | (3,543) | 144 | (5,669) | 16 | 25 | 15 | 9,0 | 64 | 18,4 | A 746229 | A 747229 |
| 10000 | 90 | (3,543) | 200 | (7,874) | 11 | 18 | 15 | 12,0 | 80 | 24,0 | A 746230 | A 747230 |
| Rated voltage 450 V | | | | | | | | | | | | |
| 150 | 36 | (1,417) | 52 | (2,047) | 590 | 890 | 700 | 1,5 | 3,9 | 1,1 | A 746240 | A 747240 |
| 330 | 36 | (1,417) | 80 | (3,150) | 260 | 400 | 370 | 2,3 | 7 | 2,0 | A 746242 | A 747242 |
| 470 | 36 | (1,417) | 104 | (4,094) | 170 | 260 | 240 | 2,7 | 9,5 | 2,7 | A 746243 | A 747243 |
| 680 | 51 | (2,008) | 81 | (3,189) | 130 | 190 | 130 | 3,3 | 12 | 3,3 | A 746244 | A 747244 |
| 1000 | 51 | (2,008) | 104 | (4,094) | 85 | 130 | 90 | 4,0 | 16 | 4,7 | A 746245 | A 747245 |
| 1500 | 66 | (2,598) | 104 | (4,094) | 65 | 100 | 85 | 5,0 | 22 | 6,2 | A 746246 | A 747246 |
| 2200 | 66 | (2,598) | 104 | (4,094) | 50 | 85 | 70 | 6,0 | 25 | 7,0 | A 746250 | A 747250 |
| 2200 | 77 | (3,031) | 104 | (4,094) | 38 | 70 | 60 | 6,0 | 31 | 8,8 | A 746247 | A 747247 |
| 3300 | 77 | (3,031) | 144 | (5,669) | 25 | 50 | 40 | 7,3 | 44 | 12,6 | A 746248 | A 747248 |
| 4700 | 77 | (3,031) | 144 | (5,669) | 22 | 40 | 35 | 8,7 | 47 | 13,4 | A 746252 | A 747252 |
| 5600 | 77 | (3,031) | 220 | (8,661) | 20 | 40 | 30 | 9,5 | 55 | 17,0 | A 746249 | A 747249 |
| 6000 | 90 | (3,543) | 144 | (5,669) | 20 | 40 | 30 | 9,9 | 60 | 17,0 | A 746253 | A 747253 |
| 6800 | 90 | (3,543) | 200 | (7,874) | 15 | 30 | 20 | 10,0 | 72 | 20,0 | A 746251 | A 747251 |
| 8000 | 90 | (3,543) | 200 | (7,874) | 12 | 20 | 18 | 11,0 | 80 | 23,0 | A 746255 | A 747255 |
| 10000 | 90 | (3,543) | 200 | (7,874) | 11 | 18 | 16 | 13,0 | 80 | 24,0 | A 746256 | A 747256 |
| Rated voltage 500 V | | | | | | | | | | | | |
| 68 | 36 | (1,417) | 52 | (2,047) | 700 | 1050 | 750 | 1,1 | 3,5 | 1,0 | A 746280 | A 747280 |
| 100 | 36 | (1,417) | 52 | (2,047) | 520 | 800 | 550 | 1,3 | 4 | 1,2 | A 746381 | A 747381 |
| 150 | 36 | (1,417) | 60 | (2,362) | 400 | 700 | 500 | 1,6 | 4,9 | 1,4 | A 746382 | A 747382 |
| 220 | 36 | (1,417) | 80 | (3,150) | 280 | 420 | 300 | 2,0 | 6,6 | 1,9 | A 746383 | A 747383 |
| 330 | 36 | (1,417) | 104 | (4,094) | 240 | 360 | 260 | 2,4 | 8 | 2,3 | A 746384 | A 747384 |
| 470 | 51 | (2,008) | 81 | (3,189) | 170 | 260 | 180 | 2,9 | 10 | 3,0 | A 746385 | A 747385 |
| 680 | 51 | (2,008) | 104 | (4,094) | 120 | 180 | 130 | 3,5 | 14 | 3,9 | A 746386 | A 747386 |
| 1000 | 66 | (2,598) | 104 | (4,094) | 80 | 120 | 80 | 4,2 | 20 | 5,6 | A 746387 | A 747387 |
| 1500 | 77 | (3,031) | 104 | (4,094) | 70 | 105 | 70 | 5,2 | 23 | 6,5 | A 746388 | A 747388 |
| 3300 | 77 | (3,031) | 220 | (8,661) | 30 | 45 | 35 | 7,7 | 49 | 14,0 | A 746390 | A 747390 |

FELSIC 85 M

CO 54 - CO 53

15 000 h / 85°C

| Capacitance [μ F] | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. [m Ω] | II +20°C 5 min max. [mA] | I \sim 100 Hz | | Code | | | |
|----------------------------|----------------------------|------------------|------------------------|-----------------------|--|-----------------------------------|--------------------|--------------|-------------------|-------------------|----------|----------|
| | \emptyset mm (inches) | H mm (inches) | Typic [m Ω] | max. [m Ω] | | | +40°C max. [A] | +85°C [A] | CO 54 (M) [BC] | CO 53 (M) [BD] | | |
| Rated voltage 550 V | | | | | | | | | | | | |
| 68 | 36 | [1,417] | 52 | [2,047] | 850 | 1300 | 900 | 1,5 | 3,2 | 0,9 | A 746302 | A 747302 |
| 100 | 36 | [1,417] | 52 | [2,047] | 600 | 1000 | 700 | 1,9 | 3,8 | 1,1 | A 746303 | A 747303 |
| 150 | 36 | [1,417] | 80 | [3,150] | 500 | 800 | 600 | 2,3 | 5 | 1,4 | A 746304 | A 747304 |
| 220 | 36 | [1,417] | 104 | [4,094] | 400 | 600 | 450 | 2,8 | 6,3 | 1,8 | A 746305 | A 747305 |
| 330 | 51 | [2,008] | 81 | [3,189] | 300 | 450 | 330 | 3,4 | 7,8 | 2,2 | A 746306 | A 747306 |
| 470 | 51 | [2,008] | 104 | [4,094] | 200 | 300 | 230 | 4,1 | 11 | 3,1 | A 746307 | A 747307 |
| 680 | 66 | [2,598] | 104 | [4,094] | 130 | 200 | 150 | 4,9 | 15 | 4,4 | A 746308 | A 747308 |
| 1000 | 77 | [3,031] | 104 | [4,094] | 100 | 150 | 110 | 5,9 | 19 | 5,5 | A 746309 | A 747309 |
| 1500 | 77 | [3,031] | 144 | [5,669] | 80 | 120 | 80 | 7,3 | 25 | 7,0 | A 746310 | A 747310 |
| 2200 | 90 | [3,543] | 144 | [5,669] | 40 | 70 | 55 | 8,8 | 38 | 11,0 | A 746311 | A 747311 |
| 3300 | 90 | [3,543] | 200 | [7,874] | 25 | 45 | 35 | 11,0 | 56 | 16,0 | A 746301 | A 747301 |
| 4700 | 90 | [3,543] | 200 | [7,874] | 20 | 35 | 30 | 13,0 | 62 | 18,0 | A 746313 | A 747313 |
| Rated voltage 630 V | | | | | | | | | | | | |
| 68 | 36 | [1,417] | 52 | [2,047] | 2400 | 3600 | 3000 | 2,0 | 1,9 | 0,5 | A 746400 | A 747400 |
| 100 | 36 | [1,417] | 52 | [2,047] | 2000 | 3000 | 2800 | 2,5 | 2,1 | 0,6 | A 746411 | A 747411 |
| 150 | 36 | [1,417] | 80 | [3,150] | 1100 | 1650 | 1200 | 3,1 | 3,3 | 1,0 | A 746401 | A 747401 |
| 220 | 36 | [1,417] | 104 | [4,094] | 750 | 1150 | 850 | 3,7 | 4,6 | 1,3 | A 746402 | A 747402 |
| 330 | 51 | [2,008] | 81 | [3,189] | 500 | 750 | 550 | 4,6 | 6 | 1,7 | A 746403 | A 747403 |
| 470 | 51 | [2,008] | 104 | [4,094] | 350 | 520 | 400 | 5,4 | 8 | 2,3 | A 746404 | A 747404 |
| 680 | 66 | [2,598] | 104 | [4,094] | 230 | 350 | 270 | 6,5 | 12 | 3,3 | A 746405 | A 747405 |
| 1000 | 77 | [3,031] | 104 | [4,094] | 200 | 300 | 250 | 7,9 | 14 | 3,9 | A 746406 | A 747406 |
| 1500 | 77 | [3,031] | 144 | [5,669] | 180 | 270 | 200 | 9,7 | 16 | 4,7 | A 746407 | A 747407 |
| 2200 | 90 | [3,543] | 144 | [5,669] | 120 | 180 | 120 | 12,0 | 22 | 6,3 | A 746408 | A 747408 |
| 3300 | 90 | [3,543] | 200 | [7,874] | 80 | 120 | 80 | 15,0 | 31 | 8,9 | A 746409 | A 747409 |

SCREW TERMINALS

FELSIC 85 M

CO 54 - CO 53

15 000 h / 85°C

PERMISSIBLE REPETITIVE PEAK CURRENT I_p :

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows:

| DIMENSIONS in mm (inches) | | | | I_p (A) | | I_{\sim} max. |
|---------------------------|---------|-----|---------|-----------|------|-----------------|
| \emptyset | H | | 40°C | 85°C | (A) | |
| 36 | (1,417) | 52 | (2,047) | 400 | 200 | 22 |
| 36 | (1,417) | 60 | (2,362) | 450 | 220 | 22 |
| 36 | (1,417) | 80 | (3,150) | 600 | 300 | 22 |
| 36 | (1,417) | 104 | (4,094) | 700 | 400 | 22 |
| 51 | (2,008) | 81 | (3,189) | 800 | 400 | 25 |
| 51 | (2,008) | 104 | (4,094) | 1100 | 500 | 25 |
| 66 | (2,598) | 104 | (4,094) | 1900 | 800 | 50 |
| 77 | (3,031) | 104 | (4,094) | 3100 | 1200 | 55 |
| 77 | (3,031) | 144 | (5,669) | 4200 | 1800 | 55 |
| 77 | (3,031) | 220 | (8,661) | 5700 | 2400 | 55 |
| 90 | (3,543) | 144 | (5,669) | 5700 | 2400 | 80 |
| 90 | (3,543) | 200 | (7,874) | 7700 | 3200 | 80 |

CONNECTIONS IN SERIES:

Operating voltages exceeding 500 V up to 20000 V will be reached by connecting capacitors with rated voltages higher or equal to 350 V in series.

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

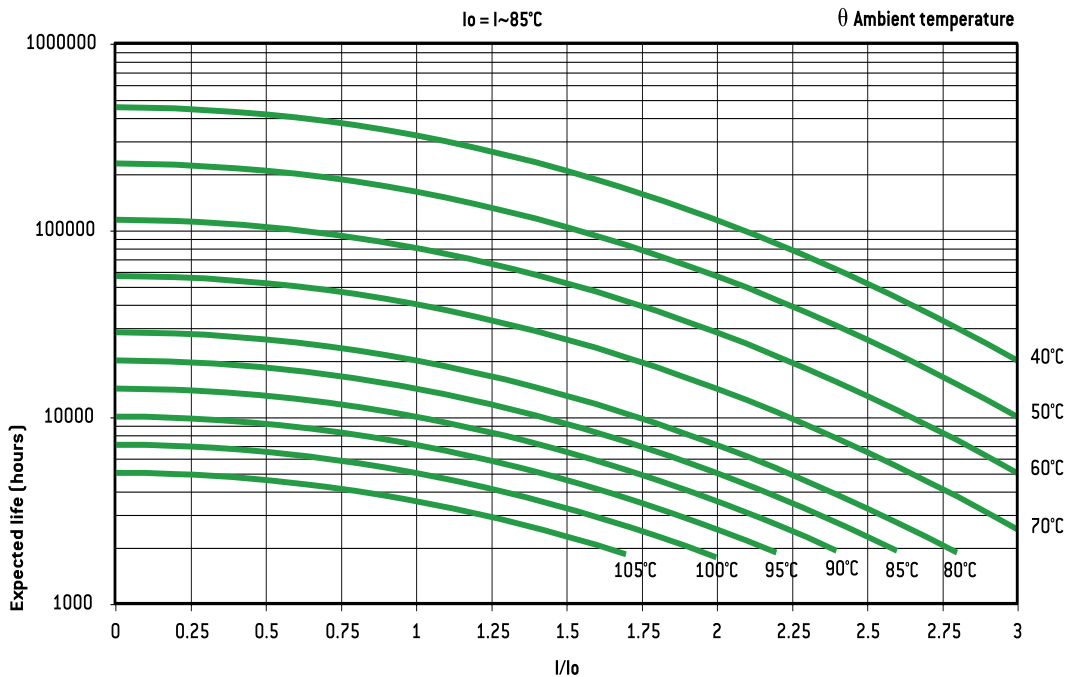
versus frequency f :

I_{\sim} : permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | 50 000 |
|----------|-----------------------|------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|
| I | $0,8 \times I_{\sim}$ | I_{\sim} | $1,2 \times I_{\sim}$ | $1,3 \times I_{\sim}$ | $1,35 \times I_{\sim}$ | $1,5 \times I_{\sim}$ | $1,6 \times I_{\sim}$ |

EXPECTED LIFE

As a function of temperature and ripple current

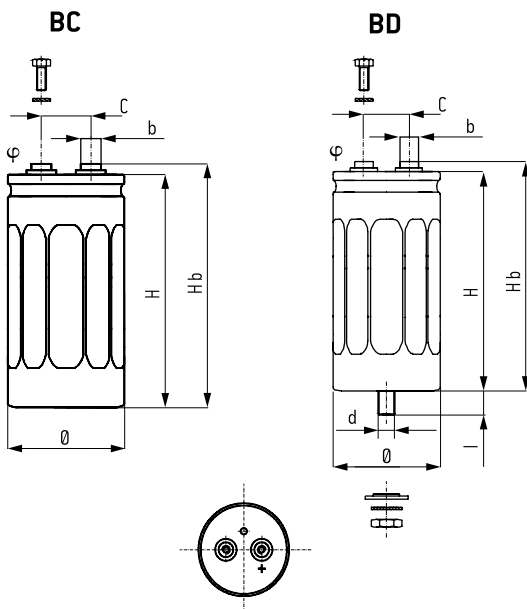


FELSIK 105

BC - BD

8 000 h / 105°C

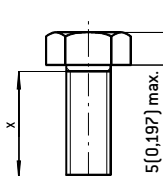
| | | | | |
|----------------|---------------------------------|---|----------------|----------------|
| 16 V ... 450 V | 100 μ F ... 470 000 μ F | \emptyset 36 [1,417] ... \emptyset 90 [3,543] | - 55°C + 105°C | Long Life Time |
|----------------|---------------------------------|---|----------------|----------------|



HEXAGONAL SCREWS mm (inches)

Screwing height between screws and terminals:
3,5 [0,138] max

Max. screw torque: M5: 3 Nm [x min 8 [0,315]]
M6: 6 Nm [x min 10 [0,394]]



SPECIFICATIONS

NFC 83 110
DIN 40 040 - Climatic category FMD - 55°C + 105°C / 56 days
CECC 30301-803 Issue 2 - European standard
IEC 60 384.4 - Long life
Standard endurance test at U_R : 2000 h / 105°C
5000 h / 85°C

APPLICATIONS

- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current

Fixing: Clip or stud fixing

Screw terminals: M5 or M6

Tolerance on capacitance at 20°C: -10 +30 %

Operating temperature: - 55°C + 105°C

| BC | BD |
|--|---|
| Insulated aluminum can | Aluminum can with sleeve |
| Hexagonal screws | Hexagonal screws |
| Spring washers | Spring washers |
| Fixing clip must be ordered separately | Stud fixing delivered with capacitor [steel hex nut, spring washer] |

DIMENSIONS in mm (inches)

| \emptyset ± 1 (0,039) | H ± 2 (0,079) | Hb ± 2 (0,079) | c $\pm 0,5$ (0,020) | ϕ | b |
|-----------------------------|-------------------|--------------------|---------------------|--------|------------|
| 36 [1,417] | 52 [2,047] | 58 [2,283] | 12,7 [0,500] | M5 | 8 [0,315] |
| 36 [1,417] | 60 [2,362] | 66 [2,598] | 12,7 [0,500] | M5 | 8 [0,315] |
| 36 [1,417] | 80 [3,150] | 86 [3,386] | 12,7 [0,500] | M5 | 8 [0,315] |
| 36 [1,417] | 104 [4,094] | 110 [4,331] | 12,7 [0,500] | M5 | 8 [0,315] |
| 51 [2,008] | 81 [3,189] | 87 [3,425] | 22,2 [0,874] | M5 | 13 [0,512] |
| 51 [2,008] | 104 [4,094] | 110 [4,331] | 22,2 [0,874] | M5 | 13 [0,512] |
| 66 [2,598] | 104 [4,094] | 110 [4,331] | 28,5 [1,122] | M5 | 13 [0,512] |
| 77 [3,031] | 104 [4,094] | 110 [4,331] | 31,7 [1,248] | M5 | 13 [0,512] |
| 77 [3,031] | 144 [5,669] | 150 [5,906] | 31,7 [1,248] | M5 | 13 [0,512] |
| 77 [3,031] | 220 [8,661] | 226 [8,898] | 31,7 [1,248] | M5 | 13 [0,512] |
| 90 [3,543] | 144 [5,669] | 151 [5,945] | 31,7 [1,248] | M6 | 13 [0,512] |
| 90 [3,543] | 200 [7,874] | 207 [8,150] | 31,7 [1,248] | M6 | 13 [0,512] |

| \emptyset | d | l | Max. nut torque |
|-------------------|-----|-----------------------------------|-----------------|
| 36 [1,417] | M8 | 12 ± 1 [0,472 $\pm 0,472$] | 4 Nm |
| ≥ 51 [2,008] | M12 | 16 $\pm 1,5$ [0,630 $\pm 0,059$] | 10 Nm |

RESISTANCE TO VIBRATIONS

| Hb mm (inches) | >150 [5,906] | ≤ 150 [5,906] |
|----------------|----------------------------|-----------------------------|
| f (Hz) | 10 - 55 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 [0,030] | 1,5 [0,059] |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 M Ω

Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V

Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

FELSIC 105

BC - BD

8 000 h / 105°C

| Capacitance [μF] | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. [mΩ] | II +20°C 5 min max. [mA] | I ~ 100 Hz | | | Code | | | |
|----------------------------|------------------|------------------|---------------------|--------------|-----------------------------------|-----------------------------------|-------------------|--------------|---------------|------|------|----------|----------|
| | Ø mm [inches] | H mm [inches] | Typic [mΩ] | max. [mΩ] | | | +40°C max. [A] | +85°C [A] | +105°C [A] | BC | BD | | |
| | | | | | | | | | | | | | |
| Rated voltage 16 V | | | | | | | | | | | | | |
| 10000 | 36 | (1,417) | 52 | (2,047) | 22 | 32 | 20 | 0,32 | 22 | 13 | 6,9 | A 756040 | A 757040 |
| 15000 | 36 | (1,417) | 80 | (3,150) | 18 | 26 | 16 | 0,48 | 22 | 17 | 9 | A 756042 | A 757042 |
| 22000 | 36 | (1,417) | 104 | (4,094) | 14 | 21 | 15 | 0,70 | 22 | 22 | 11,7 | A 756044 | A 757044 |
| 33000 | 51 | (2,008) | 81 | (3,189) | 12 | 18 | 12 | 1,05 | 25 | 25 | 13,7 | A 756046 | A 757046 |
| 47000 | 51 | (2,008) | 104 | (4,094) | 11 | 15 | 10 | 1,50 | 25 | 25 | 16 | A 756047 | A 757047 |
| 68000 | 66 | (2,598) | 104 | (4,094) | 10 | 14 | 10 | 2,18 | 50 | 35 | 18,5 | A 756049 | A 757049 |
| 100000 | 77 | (3,031) | 104 | (4,094) | 8 | 11 | 10 | 3,20 | 55 | 35 | 19,4 | A 756050 | A 757050 |
| 150000 | 77 | (3,031) | 144 | (5,669) | 7 | 10 | 9 | 4,80 | 55 | 41 | 23,8 | A 756052 | A 757052 |
| Rated voltage 25 V | | | | | | | | | | | | | |
| 4700 | 36 | (1,417) | 52 | (2,047) | 22 | 50 | 25 | 0,23 | 22 | 13 | 6,9 | A 756080 | A 757080 |
| 6800 | 36 | (1,417) | 52 | (2,047) | 20 | 30 | 22 | 0,36 | 22 | 14 | 7,2 | A 756081 | A 757081 |
| 10000 | 36 | (1,417) | 80 | (3,150) | 18 | 28 | 20 | 0,50 | 22 | 17 | 9 | A 756083 | A 757083 |
| 15000 | 36 | (1,417) | 104 | (4,094) | 17 | 25 | 20 | 0,75 | 22 | 20 | 10,6 | A 756085 | A 757085 |
| 22000 | 51 | (2,008) | 81 | (3,189) | 13 | 20 | 15 | 1,10 | 25 | 25 | 13,2 | A 756087 | A 757087 |
| 33000 | 51 | (2,008) | 104 | (4,094) | 11 | 16 | 12 | 1,65 | 25 | 25 | 16 | A 756089 | A 757089 |
| 47000 | 66 | (2,598) | 104 | (4,094) | 10 | 14 | 12 | 2,35 | 50 | 37 | 19,4 | A 756091 | A 757091 |
| 68000 | 77 | (3,031) | 104 | (4,094) | 7 | 10 | 8 | 3,40 | 55 | 37 | 20,6 | A 756093 | A 757093 |
| 100000 | 77 | (3,031) | 144 | (5,669) | 7 | 10 | 8 | 5,00 | 55 | 41 | 23,8 | A 756095 | A 757095 |
| 220000 | 77 | (3,031) | 220 | (8,661) | 7 | 10 | 8 | 6,00 | 55 | 50 | 28,7 | A 756097 | A 757097 |
| 470000 | 90 | (3,543) | 144 | (5,669) | 4 | 10 | 8 | 8,00 | 80 | 65 | 34 | A 756098 | A 757098 |
| Rated voltage 40 V | | | | | | | | | | | | | |
| 3300 | 36 | (1,417) | 52 | (2,047) | 22 | 50 | 25 | 0,27 | 22 | 13 | 6,9 | A 756120 | A 757120 |
| 4700 | 36 | (1,417) | 80 | (3,150) | 18 | 28 | 20 | 0,38 | 22 | 17 | 9 | A 756121 | A 757121 |
| 10000 | 36 | (1,417) | 80 | (3,150) | 16 | 24 | 16 | 0,80 | 22 | 18 | 9,7 | A 756123 | A 757123 |
| 15000 | 51 | (2,008) | 81 | (3,189) | 12 | 18 | 13 | 1,20 | 25 | 25 | 13,7 | A 756126 | A 757126 |
| 22000 | 51 | (2,008) | 104 | (4,094) | 11 | 17 | 12 | 1,76 | 25 | 25 | 16 | A 756128 | A 757128 |
| 33000 | 66 | (2,598) | 104 | (4,094) | 10 | 16 | 12 | 2,64 | 50 | 37 | 19,4 | A 756130 | A 757130 |
| 47000 | 77 | (3,031) | 104 | (4,094) | 7 | 10 | 10 | 3,76 | 55 | 37 | 20,6 | A 756132 | A 757132 |
| 68000 | 77 | (3,031) | 144 | (5,669) | 7 | 10 | 8 | 5,44 | 55 | 41 | 23 | A 756134 | A 757134 |
| 100000 | 77 | (3,031) | 144 | (5,669) | 5 | 10 | 8 | 8,00 | 55 | 48 | 27 | A 756135 | A 757135 |
| 150000 | 90 | (3,543) | 144 | (5,669) | 4 | 10 | 8 | 10,00 | 80 | 65 | 34 | A 756137 | A 757137 |
| Rated voltage 63 V | | | | | | | | | | | | | |
| 2200 | 36 | (1,417) | 52 | (2,047) | 36 | 54 | 40 | 0,27 | 20 | 10 | 5,4 | A 756160 | A 757160 |
| 3300 | 36 | (1,417) | 80 | (3,150) | 25 | 38 | 25 | 0,41 | 22 | 15 | 7,8 | A 756162 | A 757162 |
| 4700 | 36 | (1,417) | 104 | (4,094) | 22 | 32 | 22 | 0,59 | 22 | 18 | 9,3 | A 756164 | A 757164 |
| 6800 | 51 | (2,008) | 81 | (3,189) | 15 | 22 | 16 | 0,86 | 25 | 23 | 12,2 | A 756166 | A 757166 |
| 10000 | 51 | (2,008) | 104 | (4,094) | 11 | 16 | 11 | 1,26 | 25 | 25 | 16 | A 756168 | A 757168 |
| 15000 | 66 | (2,598) | 104 | (4,094) | 10 | 15 | 10 | 1,89 | 50 | 37 | 19,4 | A 756170 | A 757170 |
| 22000 | 77 | (3,031) | 104 | (4,094) | 7 | 11 | 8 | 2,77 | 55 | 37 | 20,6 | A 756172 | A 757172 |
| 33000 | 77 | (3,031) | 144 | (5,669) | 6 | 10 | 8 | 4,16 | 55 | 44 | 25,7 | A 756174 | A 757174 |
| 47000 | 77 | (3,031) | 144 | (5,669) | 6 | 10 | 8 | 5,92 | 55 | 44 | 25,7 | A 756175 | A 757175 |
| 68000 | 77 | (3,031) | 220 | (8,661) | 5 | 10 | 8 | 8,56 | 55 | 55 | 33 | A 756176 | A 757176 |
| 100000 | 90 | (3,543) | 144 | (5,669) | 4 | 10 | 8 | 10,00 | 80 | 65 | 34 | A 756179 | A 757179 |
| Rated voltage 100 V | | | | | | | | | | | | | |
| 1000 | 36 | (1,417) | 52 | (2,047) | 85 | 130 | 75 | 0,20 | 13 | 6,6 | 3,5 | A 756200 | A 757200 |
| 2200 | 36 | (1,417) | 80 | (3,150) | 40 | 60 | 40 | 0,44 | 22 | 12 | 6,2 | A 756202 | A 757202 |
| 3300 | 51 | (2,008) | 81 | (3,189) | 30 | 45 | 30 | 0,66 | 25 | 16 | 8,7 | A 756204 | A 757204 |
| 4700 | 51 | (2,008) | 104 | (4,094) | 27 | 40 | 24 | 0,94 | 25 | 19 | 10,2 | A 756206 | A 757206 |
| 6800 | 66 | (2,598) | 104 | (4,094) | 21 | 27 | 20 | 1,36 | 50 | 25 | 13,4 | A 756208 | A 757208 |
| 10000 | 66 | (2,598) | 104 | (4,094) | 16 | 23 | 15 | 2,00 | 50 | 29 | 15,3 | A 756209 | A 757209 |
| 15000 | 77 | (3,031) | 144 | (5,669) | 10 | 15 | 12 | 3,00 | 55 | 35 | 20 | A 756211 | A 757211 |
| 22000 | 77 | (3,031) | 144 | (5,669) | 8 | 12 | 10 | 4,40 | 55 | 40 | 23 | A 756212 | A 757212 |
| 33000 | 77 | (3,031) | 220 | (8,661) | 5 | 10 | 8 | 6,60 | 55 | 55 | 33 | A 756213 | A 757213 |
| 47000 | 90 | (3,543) | 144 | (5,669) | 4 | 10 | 8 | 9,00 | 80 | 65 | 34 | A 756216 | A 757216 |
| Rated voltage 160 V | | | | | | | | | | | | | |
| 470 | 36 | (1,417) | 52 | (2,047) | 120 | 180 | 100 | 0,15 | 9 | 4,1 | 2,4 | A 756240 | A 757240 |
| 680 | 36 | (1,417) | 80 | (3,150) | 70 | 105 | 60 | 0,21 | 14 | 6,6 | 3,8 | A 756241 | A 757241 |
| 1000 | 36 | (1,417) | 104 | (4,094) | 50 | 75 | 50 | 0,32 | 19 | 8,8 | 5,1 | A 756242 | A 757242 |
| 1500 | 51 | (2,008) | 81 | (3,189) | 42 | 63 | 40 | 0,48 | 23 | 10 | 6 | A 756243 | A 757243 |
| 2200 | 51 | (2,008) | 104 | (4,094) | 30 | 45 | 30 | 0,70 | 25 | 14 | 7,9 | A 756245 | A 757245 |
| 3300 | 66 | (2,598) | 104 | (4,094) | 20 | 30 | 20 | 1,05 | 42 | 19 | 11,2 | A 756246 | A 757246 |
| 4700 | 77 | (3,031) | 104 | (4,094) | 15 | 23 | 15 | 1,50 | 53 | 24 | 14,1 | A 756248 | A 757248 |
| 6800 | 77 | (3,031) | 144 | (5,669) | 10 | 15 | 11 | 2,18 | 55 | 38 | 22 | A 756250 | A 757250 |
| 10000 | 77 | (3,031) | 144 | (5,669) | 8 | 12 | 10 | 3,20 | 55 | 40 | 23 | A 756251 | A 757251 |
| 15000 | 77 | (3,031) | 220 | (8,661) | 6 | 10 | 8 | 4,80 | 55 | 52 | 30 | A 756252 | A 757252 |
| 15000 | 90 | (3,543) | 144 | (5,669) | 6 | 10 | 8 | 4,80 | 80 | 52 | 30 | A 756253 | A 757253 |

8 000 h / 105°C

| Capacitance [μ F] | Can | | | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. [m Ω] | II +20°C 5 min max. [mA] | I~ 100 Hz | | | Code | |
|----------------------------|-------------|-------------|-------------|-------------|------------------------|-----------------------|--|-----------------------------------|-------------------|--------------|---------------|----------|----------|
| | Ø | | H | | Typic [m Ω] | max. [m Ω] | | | +40°C max. [A] | +85°C [A] | +105°C [A] | BC | BD |
| | mm [inches] | mm [inches] | mm [inches] | mm [inches] | | | | | | | | | |
| Rated voltage 250 V | | | | | | | | | | | | | |
| 470 | 36 | (1,417) | 80 | (3,150) | 105 | 160 | 90 | 0,23 | 12 | 5,4 | 3,1 | A 756281 | A 757281 |
| 680 | 51 | (2,008) | 81 | (3,189) | 60 | 90 | 55 | 0,34 | 19 | 8,7 | 5 | A 756283 | A 757283 |
| 1000 | 51 | (2,008) | 81 | (3,189) | 45 | 68 | 42 | 0,50 | 22 | 10 | 5,8 | A 756284 | A 757284 |
| 1500 | 51 | (2,008) | 104 | (4,094) | 34 | 51 | 34 | 0,75 | 25 | 13 | 7,4 | A 756286 | A 757286 |
| 2200 | 66 | (2,598) | 104 | (4,094) | 26 | 39 | 26 | 1,13 | 37 | 17 | 9,8 | A 756287 | A 757287 |
| 3300 | 77 | (3,031) | 104 | (4,094) | 19 | 29 | 20 | 1,65 | 47 | 22 | 12,5 | A 756289 | A 757289 |
| 4700 | 77 | (3,031) | 144 | (5,669) | 10 | 15 | 11 | 2,35 | 55 | 34 | 20 | A 756291 | A 757291 |
| 6800 | 77 | (3,031) | 144 | (5,669) | 9 | 14 | 10 | 3,40 | 55 | 38 | 22 | A 756292 | A 757292 |
| 10000 | 77 | (3,031) | 220 | (8,661) | 8 | 12 | 10 | 4,50 | 55 | 45 | 26 | A 756293 | A 757293 |
| 15000 | 90 | (3,543) | 144 | (5,669) | 5 | 10 | 8 | 7,00 | 80 | 54 | 31 | A 756296 | A 757296 |
| Rated voltage 350 V | | | | | | | | | | | | | |
| 220 | 36 | (1,417) | 80 | (3,150) | 290 | 380 | 280 | 0,16 | 7 | 3,2 | 1,9 | A 756321 | A 757321 |
| 330 | 36 | (1,417) | 104 | (4,094) | 220 | 290 | 200 | 0,24 | 9 | 4,1 | 2,4 | A 756323 | A 757323 |
| 470 | 51 | (2,008) | 81 | (3,189) | 95 | 145 | 90 | 0,33 | 15 | 6,8 | 4 | A 756325 | A 757325 |
| 680 | 51 | (2,008) | 104 | (4,094) | 75 | 115 | 70 | 0,48 | 19 | 8,6 | 5 | A 756327 | A 757327 |
| 1000 | 51 | (2,008) | 104 | (4,094) | 65 | 95 | 65 | 0,70 | 20 | 9,2 | 5,4 | A 756328 | A 757328 |
| 1500 | 66 | (2,598) | 104 | (4,094) | 60 | 80 | 55 | 1,05 | 26 | 12,1 | 7 | A 756329 | A 757329 |
| 2200 | 77 | (3,031) | 104 | (4,094) | 30 | 46 | 34 | 1,50 | 38 | 17 | 10 | A 756330 | A 757330 |
| 3300 | 77 | (3,031) | 104 | (4,094) | 23 | 34 | 27 | 2,30 | 43 | 20 | 11,4 | A 756338 | A 757338 |
| 3300 | 77 | (3,031) | 144 | (5,669) | 20 | 30 | 25 | 2,30 | 53 | 24,0 | 14 | A 756331 | A 757331 |
| 4700 | 77 | (3,031) | 144 | (5,669) | 18 | 27 | 21 | 3,30 | 55 | 26,0 | 15 | A 756332 | A 757332 |
| 6000 | 77 | (3,031) | 220 | (8,661) | 12 | 20 | 20 | 4,20 | 55 | 29 | 17 | A 756333 | A 757333 |
| 6000 | 90 | (3,543) | 144 | (5,669) | 12 | 20 | 15 | 4,20 | 75 | 35 | 20 | A 756334 | A 757334 |
| 10000 | 90 | (3,543) | 200 | (7,874) | 10 | 15 | 12 | 5,00 | 80 | 43 | 25 | A 756337 | A 757337 |
| Rated voltage 400 V | | | | | | | | | | | | | |
| 150 | 36 | (1,417) | 60 | (2,362) | 380 | 500 | 400 | 0,12 | 5 | 2,4 | 1,4 | A 756361 | A 757361 |
| 220 | 36 | (1,417) | 80 | (3,150) | 260 | 400 | 350 | 0,18 | 7,5 | 3,5 | 2 | A 756362 | A 757362 |
| 330 | 36 | (1,417) | 104 | (4,094) | 195 | 300 | 250 | 0,27 | 10 | 4,5 | 2,6 | A 756363 | A 757363 |
| 470 | 51 | (2,008) | 81 | (3,189) | 140 | 220 | 150 | 0,38 | 12 | 5,7 | 3,3 | A 756364 | A 757364 |
| 680 | 51 | (2,008) | 104 | (4,094) | 100 | 150 | 100 | 0,55 | 16 | 7,4 | 4,3 | A 756366 | A 757366 |
| 1000 | 51 | (2,008) | 104 | (4,094) | 90 | 140 | 90 | 0,80 | 17 | 8 | 4,6 | A 756367 | A 757367 |
| 1500 | 51 | (2,008) | 104 | (4,094) | 65 | 85 | 60 | 1,20 | 20 | 9,5 | 5,4 | A 756375 | A 757375 |
| 1500 | 66 | (2,598) | 104 | (4,094) | 65 | 85 | 60 | 1,20 | 23 | 11 | 6,2 | A 756368 | A 757368 |
| 2200 | 77 | (3,031) | 104 | (4,094) | 40 | 60 | 45 | 1,80 | 32 | 15 | 8,6 | A 756369 | A 757369 |
| 3300 | 77 | (3,031) | 144 | (5,669) | 25 | 38 | 25 | 2,70 | 47 | 22,9 | 12,6 | A 756370 | A 757370 |
| 4700 | 77 | (3,031) | 220 | (8,661) | 20 | 30 | 20 | 3,80 | 55 | 28 | 16 | A 756371 | A 757371 |
| 6800 | 90 | (3,543) | 200 | (7,874) | 15 | 25 | 15 | 5,50 | 75 | 35 | 20 | A 756374 | A 757374 |
| Rated voltage 450 V | | | | | | | | | | | | | |
| 100 | 36 | (1,417) | 52 | (2,047) | 600 | 900 | 600 | 0,27 | 5 | 2,1 | 1,2 | A 756400 | A 757400 |
| 150 | 36 | (1,417) | 60 | (2,362) | 480 | 720 | 500 | 0,40 | 5 | 2,2 | 1,3 | A 756401 | A 757401 |
| 220 | 36 | (1,417) | 80 | (3,150) | 410 | 600 | 450 | 0,59 | 6 | 2,7 | 1,6 | A 756402 | A 757402 |
| 330 | 36 | (1,417) | 104 | (4,094) | 340 | 500 | 380 | 0,89 | 7 | 3,4 | 1,9 | A 756403 | A 757403 |
| 470 | 51 | (2,008) | 81 | (3,189) | 170 | 260 | 170 | 1,26 | 11 | 5,2 | 3 | A 756404 | A 757404 |
| 680 | 51 | (2,008) | 104 | (4,094) | 160 | 240 | 160 | 1,83 | 13 | 5,9 | 3,4 | A 756405 | A 757405 |
| 1000 | 66 | (2,598) | 104 | (4,094) | 70 | 105 | 70 | 2,70 | 22 | 10 | 6 | A 756406 | A 757406 |
| 1500 | 77 | (3,031) | 104 | (4,094) | 45 | 68 | 45 | 4,00 | 31 | 14 | 8,1 | A 756407 | A 757407 |
| 2200 | 77 | (3,031) | 144 | (5,669) | 30 | 45 | 30 | 5,90 | 43 | 20 | 11,5 | A 756408 | A 757408 |
| 3300 | 77 | (3,031) | 220 | (8,661) | 25 | 38 | 25 | 8,90 | 55 | 26 | 15 | A 756409 | A 757409 |
| 4700 | 77 | (3,031) | 220 | (8,661) | 20 | 30 | 23 | 10,00 | 55 | 29 | 17 | A 756411 | A 757411 |
| 6800 | 90 | (3,543) | 200 | (7,874) | 15 | 25 | 16 | 12,00 | 75 | 35 | 20 | A 756413 | A 757413 |

FELSIC 105

BC - BD

8 000 h / 105°C

PERMISSIBLE REPETITIVE PEAK CURRENT I_p :

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows

| DIMENSIONS in mm (inches) | | | | I_p (A) | | $I \sim \text{max.}$ (A) |
|---------------------------|---------|-----|---------|-----------|-------|-----------------------------|
| \emptyset | H | | | 40°C | 105°C | |
| 36 | (1,417) | 52 | (2,047) | 400 | 200 | 22 |
| 36 | (1,417) | 60 | (2,362) | 450 | 220 | 22 |
| 36 | (1,417) | 80 | (3,150) | 600 | 300 | 22 |
| 36 | (1,417) | 104 | (4,094) | 700 | 400 | 22 |
| 51 | (2,008) | 81 | (3,189) | 800 | 400 | 25 |
| 51 | (2,008) | 104 | (4,094) | 1100 | 500 | 25 |
| 66 | (2,598) | 104 | (4,094) | 1900 | 800 | 50 |
| 77 | (3,031) | 104 | (4,094) | 3100 | 1200 | 55 |
| 77 | (3,031) | 144 | (5,669) | 4200 | 1800 | 55 |
| 77 | (3,031) | 220 | (8,661) | 5700 | 2400 | 55 |
| 90 | (3,543) | 144 | (5,669) | 5700 | 2400 | 80 |
| 90 | (3,543) | 200 | (7,874) | 7700 | 3200 | 80 |

PEAK VOLTAGE (V)

1000 cycles, without ripple current
 U_p : Repetitive standard peak voltage (30 s)
 U_s : Repetitive surge voltage (0,1 s)
 Do not overstep this value without damage.

| U_R | 16 V | 25 V | 40 V | 63 V | 100 V | 160 V | 250 V | 350 V | 400 V | 450 V | |
|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-----|
| U_p | 18 | 29 | 46 | 72 | 115 | 184 | 288 | 385 | 440 | 495 | |
| U_s | | | | | | | 235 | 340 | 450 | 495 | 540 |

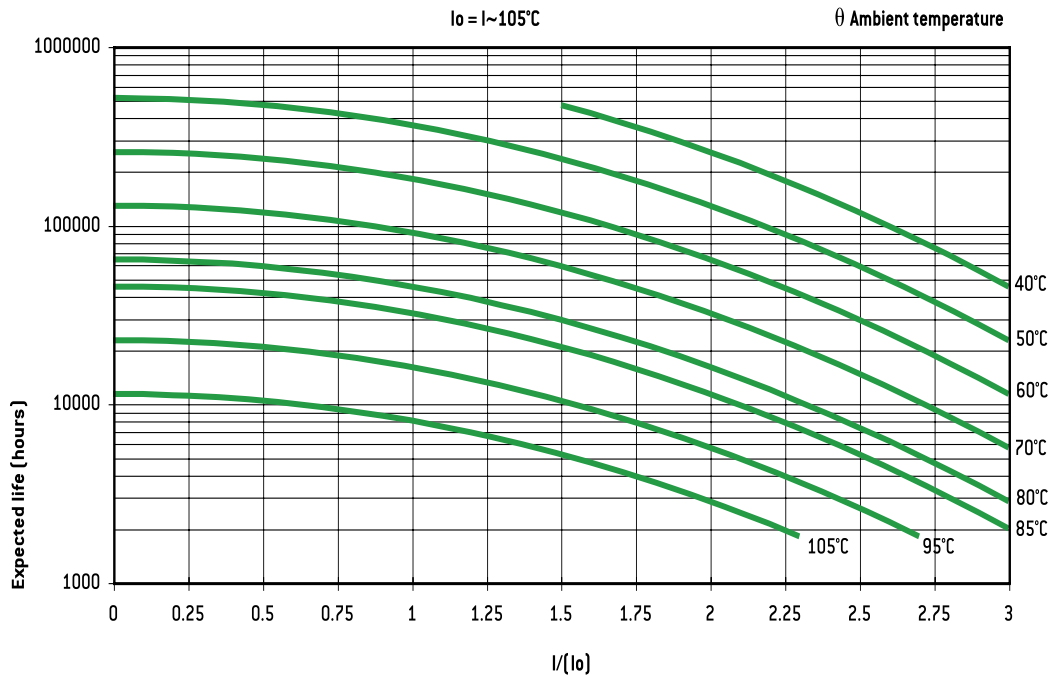
PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f :
 $I \sim$: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | 50 000 |
|----------|---------------------|----------|---------------------|---------------------|----------------------|---------------------|---------------------|
| I | $0,8 \times I \sim$ | $I \sim$ | $1,2 \times I \sim$ | $1,3 \times I \sim$ | $1,35 \times I \sim$ | $1,5 \times I \sim$ | $1,6 \times I \sim$ |

EXPECTED LIFE

As a function of temperature and ripple current



$U_R \leq 350 \text{ V}$: θ max 115°C
 $U_R > 350 \text{ V}$: θ max 105°C

FELSIC 105 TFRS**CO 45 BC - BD****8 000 h / 105°C****Very low serie resistance**

| | | | | |
|----------------|--------------------------------|---|----------------|----------------|
| 10 V ... 100 V | 470 μ F ... 68 000 μ F | \emptyset 36 (1,417) ... \emptyset 77 (3,031) | - 55°C + 105°C | Long Life Time |
|----------------|--------------------------------|---|----------------|----------------|

**APPLICATIONS**

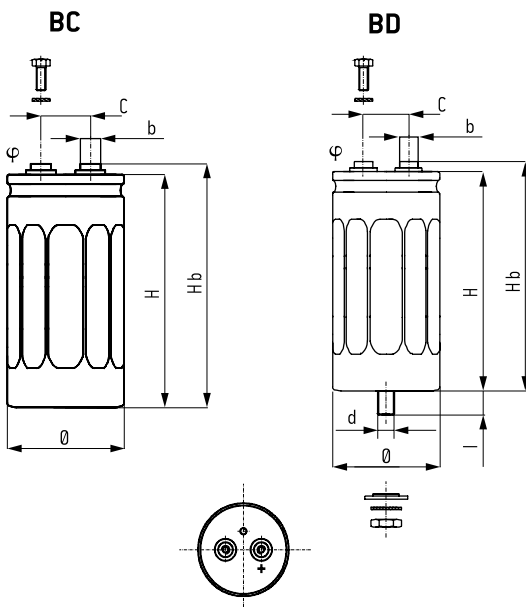
- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current

Fixing: Clip or stud fixing

Screw terminals: M4 or M5

Tolerance on capacitance at 20°C: -10 +50 %

Operating temperature: - 55°C + 105°C

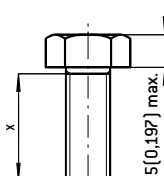


| BC | BD |
|--|---|
| Insulated aluminum can | Aluminum can with sleeve |
| Hexagonal screws | Hexagonal screws |
| Spring washers | Spring washers |
| Fixing clip must be ordered separately | Stud fixing delivered with capacitor [steel hex nut, spring washer] |

DIMENSIONS in mm (inches)

| $\emptyset \pm 1$ (0,039) | H ± 2 (0,079) | Hb ± 2 (0,079) | C $\pm 0,5$ (0,020) | ϕ | b |
|---------------------------|-------------------|--------------------|---------------------|--------|------------|
| 36 (1,417) | 47 (1,850) | 53 (2,087) | 12,7 (0,500) | M4 | 8 (0,315) |
| 36 (1,417) | 60 (2,362) | 66 (2,598) | 12,7 (0,500) | M4 | 8 (0,315) |
| 36 (1,417) | 80 (3,150) | 86 (3,386) | 12,7 (0,500) | M4 | 8 (0,315) |
| 51 (2,008) | 81 (3,189) | 87 (3,425) | 22,2 (0,874) | M5 | 13 (0,512) |
| 51 (2,008) | 104 (4,094) | 110 (4,331) | 22,2 (0,874) | M5 | 13 (0,512) |
| 66 (2,598) | 104 (4,094) | 110 (4,331) | 28,5 (1,122) | M5 | 13 (0,512) |
| 73 (2,874) | 104 (4,094) | 110 (4,331) | 31,7 (1,248) | M5 | 13 (0,512) |
| 77 (3,031) | 144 (5,669) | 140 (5,512) | 31,7 (1,248) | M5 | 13 (0,512) |

| \emptyset | d | l | Max. nut torque |
|-------------------|-----|----------------------------------|-----------------|
| 36 (1,417) | M8 | 12 \pm 1 (0,472 \pm 0,472) | 4 Nm |
| \geq 51 (2,008) | M12 | 16 \pm 1,5 (0,630 \pm 0,059) | 10 Nm |

HEXAGONAL SCREWS mm (inches)Screwing height between screws and terminals:
3,5 (0,138) maxMax. screw torque: M4: 2 Nm [x min 8 (0,315)]
M5: 3 Nm [x min 8 (0,315)]**SPECIFICATIONS**

NFC 83 110 - CO 45

DIN 40 040 - Climatic category FMD - 55°C + 105°C / 56 days

CECC 30301-040

IEC 60 384.4 long life

Standard endurance test at U_R : 2000 h / 105°C
5000 h / 85°C**RESISTANCE TO VIBRATIONS**

| Hb mm (inches) | >150 (5,906) | \leq 150 (5,906) |
|----------------|----------------------------|-----------------------------|
| f (Hz) | 10 - 55 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 (0,030) | 1,5 (0,059) |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals

and mounting hardware: 100 M Ω

Test voltage at 50 Hz 1 min between terminals and mounting hardware: 2000 V

Fire resistance: self extinguish 15 s (IEC 60 695-2-2).

FELSIC 105 TFRS

CO 45 BC - BD

8 000 h / 105°C

| Capacitance (μF) | Can | | ESR 100 Hz +20°C | | Z +20°C 10 kHz max. | II +20°C 5 min. max. | I ~ 100 Hz | | Code | | | |
|----------------------------------|----------------------------|------------------|-------------------------------|------------------------------|---------------------------|----------------------------|-------------------|---------------|------|------|----------|----------|
| | \emptyset mm (inches) | H mm (inches) | Typic ($\text{m}\Omega$) | max. ($\text{m}\Omega$) | | | +40°C max. (A) | +105°C (A) | BC | BD | | |
| Rated voltage 10 V | | | | | | | | | | | | |
| 4700 | 36 | (1,417) | 47 | (1,850) | 15 | 23 | 15 | 0,09 | 22 | 7,7 | A 762020 | A 763020 |
| 6800 | 36 | (1,417) | 60 | (2,362) | 11 | 16 | 11 | 0,14 | 22 | 10,3 | A 762021 | A 763021 |
| 10000 | 36 | (1,417) | 80 | (3,150) | 10 | 13 | 9 | 0,20 | 22 | 12,3 | A 762022 | A 763022 |
| 15000 | 51 | (2,008) | 81 | (3,189) | 9 | 11 | 8 | 0,30 | 25 | 13 | A 762023 | A 763023 |
| 22000 | 51 | (2,008) | 104 | (4,094) | 7 | 9 | 7 | 0,44 | 25 | 16 | A 762024 | A 763024 |
| 33000 | 66 | (2,598) | 104 | (4,094) | 4 | 6 | 5 | 0,66 | 50 | 25 | A 762025 | A 763025 |
| 47000 | 73 | (2,874) | 104 | (4,094) | 3 | 4 | 2 | 0,94 | 55 | 31 | A 762026 | A 763026 |
| 68000 | 77 | (3,031) | 144 | (5,669) | 2 | 3 | 2 | 1,40 | 55 | 44 | A 762027 | A 763027 |
| Rated voltage 16 V | | | | | | | | | | | | |
| 3300 | 36 | (1,417) | 47 | (1,850) | 19 | 28 | 16 | 0,10 | 22 | 6,9 | A 762040 | A 763040 |
| 4700 | 36 | (1,417) | 60 | (2,362) | 13 | 20 | 13 | 0,15 | 22 | 9,5 | A 762041 | A 763041 |
| 6800 | 36 | (1,417) | 80 | (3,150) | 11 | 15 | 12 | 0,21 | 22 | 11,7 | A 762042 | A 763042 |
| 10000 | 51 | (2,008) | 81 | (3,189) | 10 | 13 | 8 | 0,32 | 25 | 13 | A 762043 | A 763043 |
| 15000 | 51 | (2,008) | 104 | (4,094) | 7 | 10 | 8 | 0,48 | 25 | 16 | A 762044 | A 763044 |
| 22000 | 66 | (2,598) | 104 | (4,094) | 5 | 7 | 7 | 0,70 | 50 | 22 | A 762045 | A 763045 |
| 33000 | 73 | (2,874) | 104 | (4,094) | 3 | 5 | 3 | 1,05 | 55 | 31 | A 762046 | A 763046 |
| 47000 | 77 | (3,031) | 144 | (5,669) | 3 | 4 | 2 | 1,50 | 55 | 36 | A 762047 | A 763047 |
| Rated voltage 25 V | | | | | | | | | | | | |
| 2200 | 36 | (1,417) | 47 | (1,850) | 22 | 33 | 18 | 0,11 | 22 | 6,4 | A 762060 | A 763060 |
| 3300 | 36 | (1,417) | 60 | (2,362) | 15 | 23 | 14 | 0,16 | 22 | 8,8 | A 762061 | A 763061 |
| 4700 | 36 | (1,417) | 80 | (3,150) | 12 | 18 | 13 | 0,23 | 22 | 10,1 | A 762062 | A 763062 |
| 6800 | 51 | (2,008) | 81 | (3,189) | 11 | 15 | 9 | 0,34 | 25 | 12 | A 762063 | A 763063 |
| 10000 | 51 | (2,008) | 104 | (4,094) | 9 | 12 | 9 | 0,50 | 25 | 14 | A 762064 | A 763064 |
| 15000 | 66 | (2,598) | 104 | (4,094) | 7 | 9 | 7 | 0,75 | 50 | 19 | A 762065 | A 763065 |
| 22000 | 73 | (2,874) | 104 | (4,094) | 3 | 5 | 3 | 1,10 | 55 | 31 | A 762066 | A 763066 |
| 33000 | 77 | (3,031) | 144 | (5,669) | 3 | 5 | 3 | 1,65 | 55 | 36 | A 762067 | A 763067 |
| Rated voltage 40 V | | | | | | | | | | | | |
| 1500 | 36 | (1,417) | 47 | (1,850) | 27 | 40 | 20 | 0,12 | 22 | 5,8 | A 762080 | A 763080 |
| 2200 | 36 | (1,417) | 60 | (2,362) | 19 | 28 | 16 | 0,17 | 22 | 7,8 | A 762081 | A 763081 |
| 3300 | 36 | (1,417) | 80 | (3,150) | 14 | 21 | 15 | 0,26 | 22 | 10,4 | A 762082 | A 763082 |
| 4700 | 51 | (2,008) | 81 | (3,189) | 12 | 18 | 10 | 0,37 | 25 | 11 | A 762083 | A 763083 |
| 6800 | 51 | (2,008) | 104 | (4,094) | 10 | 14 | 10 | 0,54 | 25 | 14 | A 762084 | A 763084 |
| 10000 | 66 | (2,598) | 104 | (4,094) | 7 | 10 | 8 | 0,80 | 50 | 19 | A 762085 | A 763085 |
| 15000 | 73 | (2,874) | 104 | (4,094) | 5 | 8 | 3 | 1,20 | 55 | 24 | A 762086 | A 763086 |
| 22000 | 77 | (3,031) | 144 | (5,669) | 3 | 5 | 3 | 1,80 | 55 | 36 | A 762087 | A 763087 |
| Rated voltage 63 V | | | | | | | | | | | | |
| 680 | 36 | (1,417) | 47 | (1,850) | 31 | 47 | 28 | 0,09 | 20 | 5,4 | A 762100 | A 763100 |
| 1000 | 36 | (1,417) | 60 | (2,362) | 22 | 32 | 20 | 0,12 | 22 | 7,3 | A 762101 | A 763101 |
| 1500 | 36 | (1,417) | 80 | (3,150) | 18 | 25 | 18 | 0,19 | 22 | 9,2 | A 762102 | A 763102 |
| 2200 | 51 | (2,008) | 81 | (3,189) | 16 | 21 | 13 | 0,28 | 25 | 9,7 | A 762103 | A 763103 |
| 3300 | 51 | (2,008) | 104 | (4,094) | 12 | 16 | 12 | 0,41 | 25 | 12 | A 762104 | A 763104 |
| 4700 | 66 | (2,598) | 104 | (4,094) | 9 | 12 | 10 | 0,59 | 50 | 17 | A 762105 | A 763105 |
| 6800 | 73 | (2,874) | 104 | (4,094) | 5 | 7 | 4 | 0,86 | 55 | 24 | A 762106 | A 763106 |
| 10000 | 77 | (3,031) | 144 | (5,669) | 4 | 6 | 4 | 1,30 | 55 | 31 | A 762107 | A 763107 |
| Rated voltage 100 V | | | | | | | | | | | | |
| 470 | 36 | (1,417) | 47 | (1,850) | 39 | 59 | 40 | 0,10 | 18 | 4,8 | A 762120 | A 763120 |
| 680 | 36 | (1,417) | 60 | (2,362) | 27 | 40 | 28 | 0,14 | 22 | 6,6 | A 762121 | A 763121 |
| 1000 | 36 | (1,417) | 80 | (3,150) | 22 | 31 | 20 | 0,20 | 22 | 8,3 | A 762122 | A 763122 |
| 1500 | 51 | (2,008) | 81 | (3,189) | 20 | 26 | 15 | 0,30 | 25 | 8,7 | A 762123 | A 763123 |
| 2200 | 51 | (2,008) | 104 | (4,094) | 15 | 19 | 13 | 0,44 | 25 | 11 | A 762124 | A 763124 |
| 3300 | 66 | (2,598) | 104 | (4,094) | 12 | 15 | 10 | 0,66 | 50 | 14 | A 762125 | A 763125 |
| 4700 | 73 | (2,874) | 104 | (4,094) | 6 | 8 | 5 | 0,94 | 55 | 22 | A 762126 | A 763126 |
| 6800 | 77 | (3,031) | 144 | (5,669) | 5 | 7 | 5 | 1,40 | 55 | 24 | A 762127 | A 763127 |

FELSIC 105 TFRS

CO 45 BC - BD

8 000 h / 105°C

PERMISSIBLE REPETITIVE PEAK CURRENT I_p :

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows:

| DIMENSIONS in mm (inches) | | I_p (A) | | I_{\sim} max. (A) |
|---------------------------|-------------|-----------|-------|------------------------|
| \emptyset | H | 40°C | 105°C | |
| 36 (1,417) | 47 (1,850) | 400 | 200 | 22 |
| 36 (1,417) | 60 (2,362) | 450 | 220 | 22 |
| 36 (1,417) | 80 (3,150) | 600 | 300 | 22 |
| 51 (2,008) | 81 (3,189) | 800 | 400 | 25 |
| 51 (2,008) | 104 (4,094) | 1100 | 500 | 25 |
| 66 (2,598) | 104 (4,094) | 1900 | 800 | 50 |
| 73 (2,874) | 104 (4,094) | 3100 | 1200 | 55 |
| 77 (3,031) | 104 (4,094) | 4200 | 1800 | 55 |

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f :

I_{\sim} : permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | 50 000 |
|----------|-----------------------|------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|
| I | $0,8 \times I_{\sim}$ | I_{\sim} | $1,2 \times I_{\sim}$ | $1,3 \times I_{\sim}$ | $1,35 \times I_{\sim}$ | $1,5 \times I_{\sim}$ | $1,6 \times I_{\sim}$ |

PEAK VOLTAGE (V)

1000 cycles, without ripple current

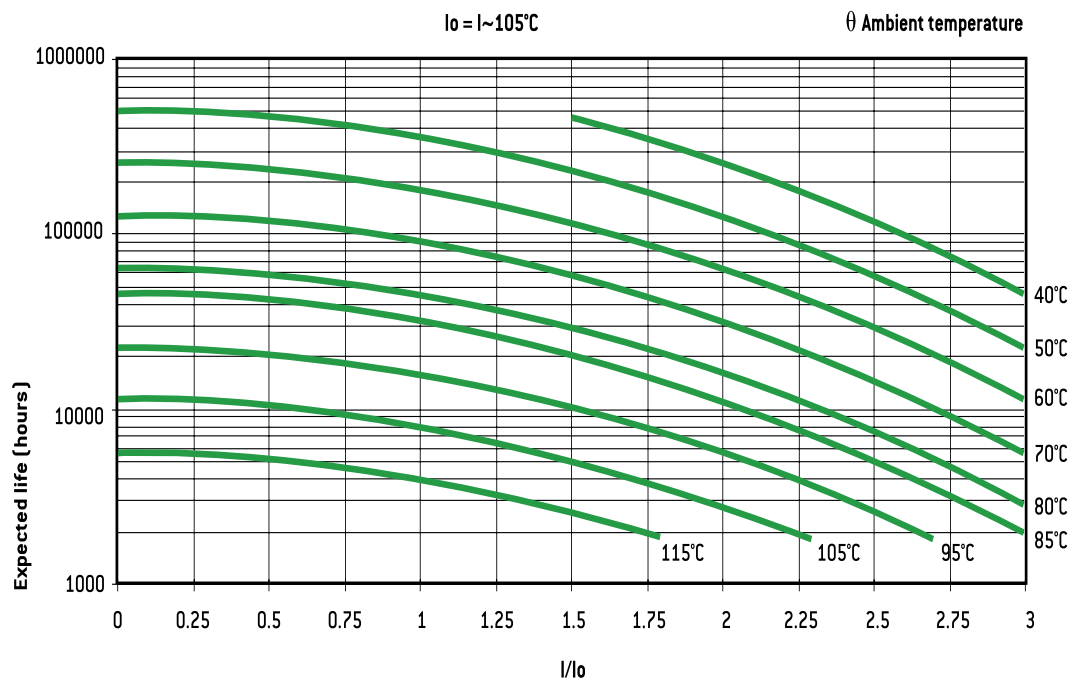
U_p : Repetitive standard peak Voltage (30 s)

Do not overstep this value without damage

| U_R | 10 V | 16 V | 25 V | 40 V | 63 V | 100 V |
|-------|------|------|------|------|------|-------|
| U_p | 11,5 | 18 | 29 | 46 | 72 | 115 |

EXPECTED LIFE

As a function of temperature and ripple current



FELSIC 105 LP

BC

8 000 h / 105°C

| | | | | |
|--------------|------------------------|-------------------------------|----------------|----------------|
| 10V ... 450V | 1500 μF ... 220 000 μF | Ø 90 (3,543) ... H 67 (2,638) | - 55°C + 105°C | Long Life Time |
|--------------|------------------------|-------------------------------|----------------|----------------|



APPLICATIONS

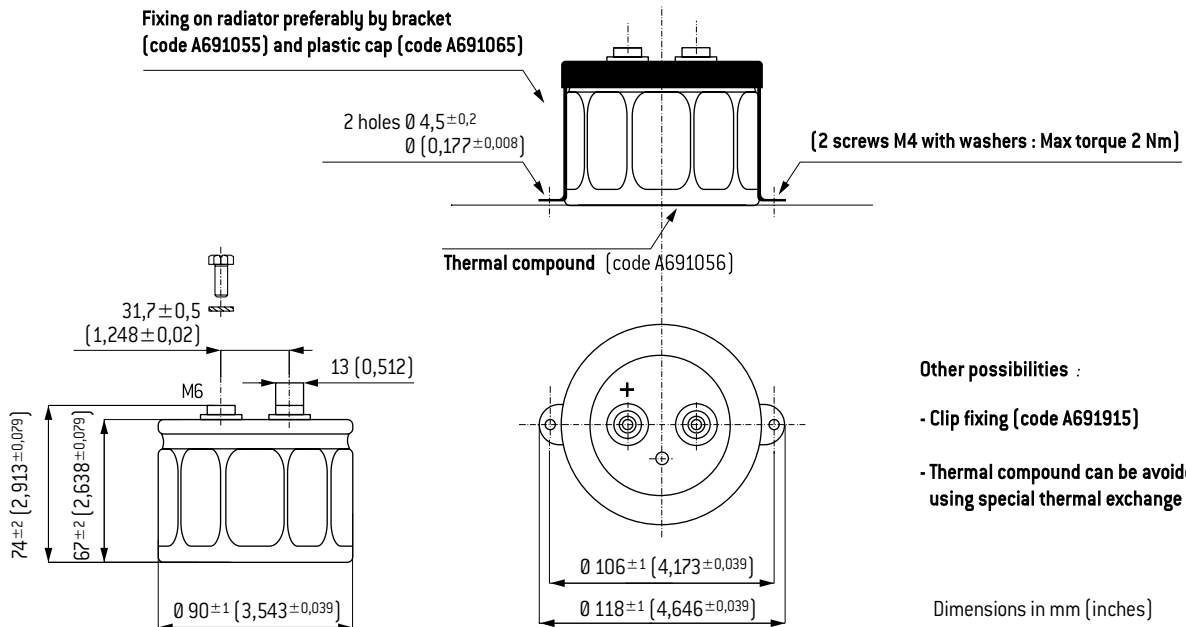
- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current

Fixing: Clip or stud fixing

Screw terminals: M6

Tolerance on capacitance at 20°C: -10 +30 %

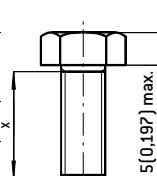
Operating temperature: - 55°C +105°C



HEXAGONAL SCREWS mm (inches)

Screwing height between screws and terminals:
2 (0,079) max

Max. screw torque: M6: 6 Nm [x min 10 (0,394)]



RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|----------------------------|
| f (Hz) | 10 - 55 Hz |
| Amplitude | 0,75 (0,030) |
| Acceleration | 10 g - 98 m/s ² |
| t (h) | 3 x 2 h |

SPECIFICATIONS

NFC 83 110 - Long life

DIN 40 040 - Climatic category FMD - 55°C + 105°C / 56 days

CECC 30 300 - Long life

IEC 60 384.4 - Long life

Standard endurance test at U_R: 2000 h / 105°C
5000 h / 85°C

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 MΩ

Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V

Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

8 000 h / 105°C

| Rated voltage (V) | Capacitance (μ F) | Can | | ESR 100 Hz +20°C | | Z +20°C 10 kHz max. (m Ω) | I +20°C 5 min. max. (mA) | I \sim | | Code |
|----------------------|---------------------------|----------------------------|------------------|------------------------|-----------------------|---|--------------------------------------|-------------------|---------------|----------|
| | | \emptyset mm (inches) | H mm (inches) | Typic (m Ω) | max. (m Ω) | | | +40°C max. (A) | +105°C (A) | |
| 10 | 220000 | 90 (3,543) | 67 (2,638) | 4 | 5 | 5 | 5 | 150 | 61 | A 756032 |
| 16 | 150000 | 90 (3,543) | 67 (2,638) | 5 | 8 | 8 | 5 | 150 | 55 | A 756057 |
| 25 | 100000 | 90 (3,543) | 67 (2,638) | 6 | 9 | 9 | 5 | 150 | 50 | A 756099 |
| 40 | 68000 | 90 (3,543) | 67 (2,638) | 7 | 11 | 11 | 6 | 150 | 46 | A 756138 |
| 63 | 33000 | 90 (3,543) | 67 (2,638) | 10 | 15 | 13 | 6 | 146 | 39 | A 756178 |
| 63 | 47000 | 90 (3,543) | 67 (2,638) | 7 | 11 | 9 | 6 | 150 | 46 | A 756180 |
| 100 | 15000 | 90 (3,543) | 67 (2,638) | 12 | 20 | 16 | 6 | 131 | 35 | A 756215 |
| 160 | 6800 | 90 (3,543) | 67 (2,638) | 14 | 21 | 18 | 6 | 100 | 27 | A 756254 |
| 250 | 3300 | 90 (3,543) | 67 (2,638) | 19 | 29 | 23 | 6 | 86 | 23 | A 756295 |
| 350 | 2200 | 90 (3,543) | 67 (2,638) | 30 | 45 | 35 | 6 | 68 | 18 | A 756336 |
| 350 | 3300 | 90 (3,543) | 67 (2,638) | 25 | 38 | 30 | 6 | 75 | 20 | A 756339 |
| 400 | 2200 | 90 (3,543) | 67 (2,638) | 40 | 60 | 45 | 6 | 60 | 16 | A 756373 |
| 450 | 1500 | 90 (3,543) | 67 (2,638) | 45 | 68 | 48 | 6 | 56 | 15 | A 756412 |
| 450 | 2000 | 90 (3,543) | 67 (2,638) | 40 | 60 | 50 | 6 | 60 | 16 | A 756415 |
| 450 | 2200 | 90 (3,543) | 67 (2,638) | 30 | 44 | 35 | 6 | 68 | 18 | A 756416 |

PEAK VOLTAGE (V)

1000 cycles, without ripple current

Up: Repetitive standard peak voltage (30 s)

Us: Repetitive surge voltage (0,1 s)

Do not overstep this value without damage.

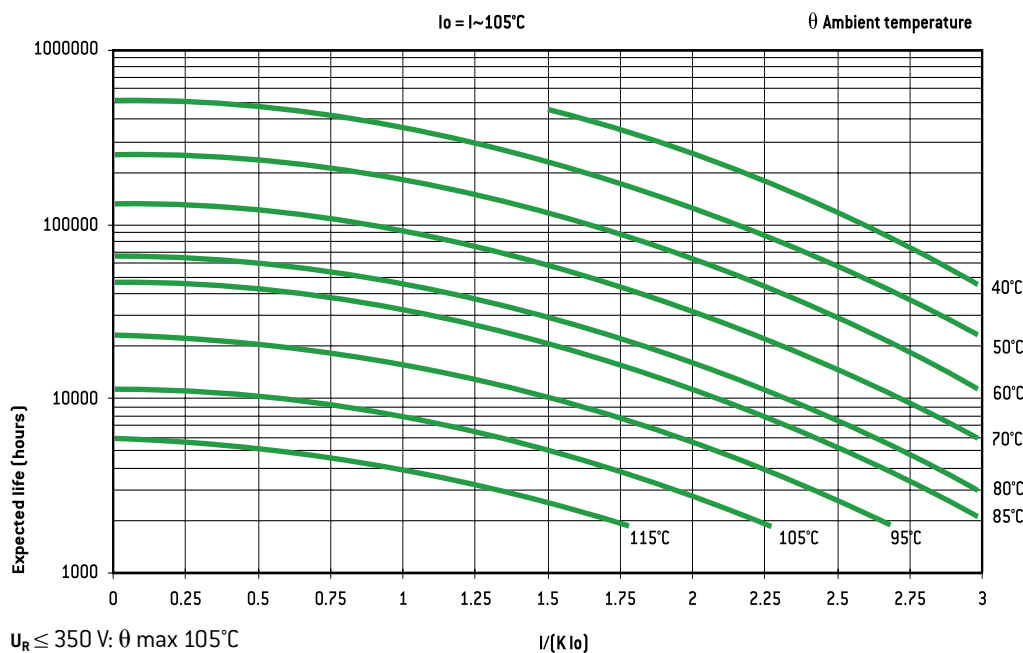
| U _R | 10 V | 16 V | 25 V | 40 V | 63 V | 100 V | 160 V | 250 V | 350 V | 400 V | 450 V |
|----------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| Up | 11,5 | 18 | 29 | 46 | 72 | 115 | 184 | 288 | 385 | 440 | 495 |
| Us | | | | | | | 235 | 340 | 450 | 495 | 540 |

MAXIMUM PERMISSIBLE RIPPLE CURRENT 150 A

For r.m.s. current above 80 A, standard cover with \emptyset 13 aluminum terminals can be replaced by special cover with \emptyset 18 aluminum terminals, on request.

EXPECTED LIFE

As a function of temperature and ripple current



PERMISSIBLE REPETITIVE PEAK CURRENT I_p:

If given permissible ripple currents are not exceeded, and with a maximum ambient temperature of 40°C

I_p = 5700 A

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I \sim : permissible r.m.s. current at 100 Hz

| f [Hz] | 50 | 100 | 300 | 600 | 1 000 | 10 000 | 50 000 |
|--------|----------------|----------|----------------|----------------|-----------------|----------------|----------------|
| I | 0,8 x I \sim | I \sim | 1,2 x I \sim | 1,3 x I \sim | 1,35 x I \sim | 1,5 x I \sim | 1,6 x I \sim |

| | Without cooling and without radiator | Air cooling without radiator 0,2 - 0,5 m/s | With radiator and thermal compound and without water cooling | With radiator thermal compound and water cooling |
|-------------------------|--------------------------------------|---|--|--|
| K | 0,5 | 0,6 | 1 | 1,3 |
| Thermal resistance °C/W | 4 | 2,5 | 1 | 0,6 |

FELSIC HC

BC - BD

8 000 h / 85°C

| | | | | |
|--------------|-------------------------|-------------------------------|---------------|----------------|
| 10V ... 500V | 390 μF ... 2 700 000 μF | Ø 36 (1,417) ... Ø 90 (3,543) | - 40°C + 85°C | Long Life Time |
|--------------|-------------------------|-------------------------------|---------------|----------------|



APPLICATIONS

- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash

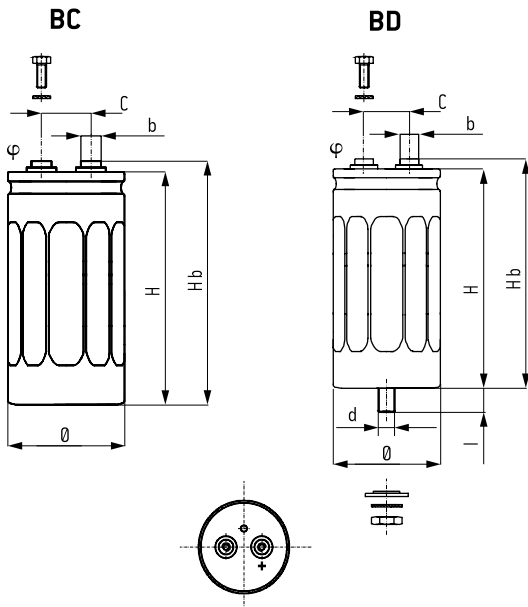
Fixing: Clip or stud fixing

Screw terminals: M5 or M6

Tolerance on capacitance at 20°C: ± 20 %

Operating temperature : - 40°C + 85°C

Subject to change. Qualification in progress



| BC | BD |
|--|---|
| Insulated aluminum can | Aluminum can with sleeve |
| Hexagonal screws | Hexagonal screws |
| Spring washers | Spring washers |
| Fixing clip must be ordered separately | Stud fixing delivered with capacitor (steel hex nut, spring washer) |

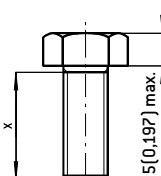
DIMENSIONS in mm (inches)

| Ø ±1 (0,039) | H ±2 (0,079) | Hb ±2 (0,079) | c ±0,5 (0,020) | Φ | b |
|--------------|--------------|---------------|----------------|----|------------|
| 36 (1,417) | 44 (1,732) | 50 (1,969) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 52 (2,047) | 58 (2,283) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 60 (2,362) | 66 (2,598) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 80 (3,150) | 86 (3,386) | 12,7 (0,500) | M5 | 8 (0,315) |
| 36 (1,417) | 104 (4,094) | 110 (4,331) | 12,7 (0,500) | M5 | 8 (0,315) |
| 51 (2,008) | 62 (2,441) | 68 (2,677) | 22,2 (0,874) | M5 | 13 (0,512) |
| 51 (2,008) | 81 (3,189) | 87 (3,425) | 22,2 (0,874) | M5 | 13 (0,512) |
| 51 (2,008) | 104 (4,094) | 110 (4,331) | 22,2 (0,874) | M5 | 13 (0,512) |
| 51 (2,008) | 144 (5,669) | 150 (5,906) | 22,2 (0,874) | M5 | 13 (0,512) |
| 66 (2,598) | 104 (4,094) | 110 (4,331) | 28,5 (1,122) | M5 | 13 (0,512) |
| 73 (2,874) | 104 (4,094) | 110 (4,331) | 31,7 (1,248) | M5 | 13 (0,512) |
| 73 (2,874) | 144 (5,669) | 150 (5,906) | 31,7 (1,248) | M5 | 13 (0,512) |
| 77 (3,031) | 104 (4,094) | 110 (4,331) | 31,7 (1,248) | M5 | 13 (0,512) |
| 77 (3,031) | 144 (5,669) | 150 (5,906) | 31,7 (1,248) | M5 | 13 (0,512) |
| 77 (3,031) | 220 (8,661) | 226 (8,898) | 31,7 (1,248) | M5 | 13 (0,512) |
| 90 (3,543) | 144 (5,669) | 151 (5,945) | 31,7 (1,248) | M6 | 13 (0,512) |
| 90 (3,543) | 200 (7,874) | 207 (8,150) | 31,7 (1,248) | M6 | 13 (0,512) |

| Ø | d | l | Max. nut torque |
|--------------|-----|---|-----------------|
| 36 (1,417) | M8 | 12 ^{±1} (0,472 ^{±0,472}) | 4 Nm |
| ≥ 51 (2,008) | M12 | 16 ^{±1,5} (0,630 ^{±0,059}) | 10 Nm |

HEXAGONAL SCREWS mm (inches)

| | |
|---|---|
| Screwing height between screws and terminals: | 3,5 (0,138) max |
| Max. screw torque: | M5: 3 Nm [x min 8 (0,315)] M6: 6 Nm [x min 10 (0,394)] |



SPECIFICATIONS

NFC 83 110 - long life
 DIN 41 240 - Climatic category GPF
 - 40°C + 85°C / 56 days
 CECC 30 300
 IEC 60 384.4 long life
 Standard endurance test at U_R: 2000 h / 85°C

RESISTANCE TO VIBRATIONS

| Hb mm (inches) | >150 (5,906) | ≤150 (5,906) |
|----------------|----------------------------|-----------------------------|
| f [Hz] | 10 - 55 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 (0,030) | 1,5 (0,059) |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 MΩ
 Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V
 Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

8 000 h / 85°C

| Capacitance (μF) | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. | I +20°C 5 min max. | I \sim 100 Hz | | Code | | | |
|----------------------------------|----------------------------|------------------|-------------------------------|------------------------------|---------------------------|--------------------------|--------------------|--------------|------|------|---------|---------|
| | \emptyset mm (inches) | H mm (inches) | Typic ($\text{m}\Omega$) | max. ($\text{m}\Omega$) | | | +40°C max. (A) | +85°C (A) | BC | BD | | |
| Rated voltage 10 V | | | | | | | | | | | | |
| 50 000 | 36 | [1,417] | 44 | [1,732] | 12 | 18 | 20 | 2,7 | 22 | 7,1 | A777001 | A778001 |
| 74 000 | 36 | [1,417] | 52 | [2,047] | 8 | 11 | 20 | 3,6 | 22 | 9,5 | A777002 | A778002 |
| 80000 | 36 | [1,417] | 60 | [2,362] | 9 | 13 | 17 | 3,8 | 22 | 9,6 | A777003 | A778003 |
| 130000 | 36 | [1,417] | 80 | [3,150] | 6 | 9 | 13 | 5,3 | 22 | 12,8 | A777004 | A778004 |
| 174000 | 36 | [1,417] | 104 | [4,094] | 6 | 9 | 13 | 6,5 | 25 | 14,4 | A777005 | A778005 |
| 183000 | 51 | [2,008] | 62 | [2,441] | 7 | 10 | 13 | 6,7 | 25 | 13,5 | A777006 | A778006 |
| 296000 | 51 | [2,008] | 81 | [3,189] | 4 | 7 | 10 | 9,4 | 25 | 18,4 | A777007 | A778007 |
| 395000 | 51 | [2,008] | 104 | [4,094] | 4 | 7 | 10 | 11,6 | 25 | 20,5 | A777008 | A778008 |
| 593000 | 51 | [2,008] | 144 | [5,669] | 4 | 6 | 10 | 15,3 | 25 | 24,4 | A777009 | A778009 |
| 664000 | 66 | [2,598] | 104 | [4,094] | 4 | 6 | 10 | 16,6 | 25 | 24,3 | A777010 | A778010 |
| 837000 | 73 | [2,874] | 104 | [4,094] | 3 | 5 | 7 | 19,5 | 50 | 29,4 | A777011 | A778011 |
| 1255000 | 73 | [2,874] | 144 | [5,669] | 3 | 4 | 6 | 26,0 | 80 | 37,4 | A777012 | A778012 |
| 972000 | 77 | [3,031] | 104 | [4,094] | 3 | 4 | 6 | 21,7 | 50 | 33,5 | A777013 | A778013 |
| 1458000 | 77 | [3,031] | 144 | [5,669] | 3 | 4 | 6 | 28,8 | 80 | 38,6 | A777014 | A778014 |
| 2272000 | 77 | [3,031] | 220 | [8,661] | 2 | 3 | 6 | 39,3 | 80 | 51,3 | A777015 | A778015 |
| 2081000 | 90 | [3,543] | 144 | [5,669] | 2 | 3 | 6 | 37,0 | 80 | 46,3 | A777016 | A778016 |
| 2774000 | 90 | [3,543] | 200 | [7,874] | 3 | 4 | 6 | 45,2 | 80 | 48,8 | A777017 | A778017 |
| 3121000 | 90 | [3,543] | 220 | [8,661] | 3 | 4 | 6 | 49,1 | 80 | 50,9 | A777018 | A778018 |
| Rated voltage 16 V | | | | | | | | | | | | |
| 39000 | 36 | [1,417] | 44 | [1,732] | 10 | 15 | 26 | 3,2 | 20 | 7,7 | A777019 | A778019 |
| 57000 | 36 | [1,417] | 52 | [2,047] | 9 | 14 | 24 | 4,2 | 22 | 8,6 | A777020 | A778020 |
| 62000 | 36 | [1,417] | 60 | [2,362] | 10 | 15 | 18 | 4,4 | 22 | 8,8 | A777021 | A778021 |
| 101000 | 36 | [1,417] | 80 | [3,150] | 8 | 11 | 15 | 6,2 | 22 | 11,5 | A777022 | A778022 |
| 135000 | 36 | [1,417] | 104 | [4,094] | 8 | 11 | 15 | 7,6 | 22 | 12,9 | A777023 | A778023 |
| 142000 | 51 | [2,008] | 62 | [2,441] | 7 | 11 | 13 | 7,8 | 25 | 13,0 | A777024 | A778024 |
| 230000 | 51 | [2,008] | 81 | [3,189] | 5 | 8 | 11 | 11,0 | 25 | 17,0 | A777025 | A778025 |
| 306000 | 51 | [2,008] | 104 | [4,094] | 5 | 8 | 9 | 13,4 | 25 | 18,8 | A777026 | A778026 |
| 460000 | 51 | [2,008] | 144 | [5,669] | 4 | 6 | 7 | 17,8 | 25 | 25,6 | A777027 | A778027 |
| 515000 | 66 | [2,598] | 104 | [4,094] | 4 | 6 | 7 | 19,3 | 50 | 25,6 | A777028 | A778028 |
| 649000 | 73 | [2,874] | 104 | [4,094] | 3 | 4 | 5 | 22,7 | 50 | 31,1 | A777029 | A778029 |
| 974000 | 73 | [2,874] | 144 | [5,669] | 2 | 3 | 5 | 30,2 | 80 | 40,0 | A777030 | A778030 |
| 754000 | 77 | [3,031] | 104 | [4,094] | 2 | 3 | 5 | 25,2 | 80 | 35,8 | A777031 | A778031 |
| 1131000 | 77 | [3,031] | 144 | [5,669] | 2 | 3 | 5 | 33,5 | 80 | 41,2 | A777032 | A778032 |
| 1762000 | 77 | [3,031] | 220 | [8,661] | 2 | 3 | 5 | 45,7 | 80 | 55,3 | A777033 | A778033 |
| 1613000 | 90 | [3,543] | 144 | [5,669] | 2 | 3 | 5 | 43,0 | 80 | 49,9 | A777034 | A778034 |
| 2151000 | 90 | [3,543] | 200 | [7,874] | 2 | 3 | 5 | 52,6 | 80 | 52,0 | A777035 | A778035 |
| 2151000 | 90 | [3,543] | 200 | [7,874] | 3 | 5 | 5 | 52,6 | 80 | 43,0 | A777036 | A778036 |
| 2420000 | 90 | [3,543] | 220 | [8,661] | 3 | 5 | 5 | 57,1 | 80 | 44,8 | A777037 | A778037 |
| Rated voltage 25 V | | | | | | | | | | | | |
| 39000 | 36 | [1,417] | 44 | [1,732] | 10 | 15 | 26 | 3,2 | 20 | 7,7 | A777019 | A778019 |
| 57000 | 36 | [1,417] | 52 | [2,047] | 9 | 14 | 24 | 4,2 | 22 | 8,6 | A777020 | A778020 |
| 62000 | 36 | [1,417] | 60 | [2,362] | 10 | 15 | 18 | 4,4 | 22 | 8,8 | A777021 | A778021 |
| 101000 | 36 | [1,417] | 80 | [3,150] | 8 | 11 | 15 | 6,2 | 22 | 11,5 | A777022 | A778022 |
| 135000 | 36 | [1,417] | 104 | [4,094] | 8 | 11 | 15 | 7,6 | 22 | 12,9 | A777023 | A778023 |
| 142000 | 51 | [2,008] | 62 | [2,441] | 7 | 11 | 13 | 7,8 | 25 | 13,0 | A777024 | A778024 |
| 230000 | 51 | [2,008] | 81 | [3,189] | 5 | 8 | 11 | 11,0 | 25 | 17,0 | A777025 | A778025 |
| 306000 | 51 | [2,008] | 104 | [4,094] | 5 | 8 | 9 | 13,4 | 25 | 18,8 | A777026 | A778026 |
| 460000 | 51 | [2,008] | 144 | [5,669] | 4 | 6 | 7 | 17,8 | 25 | 25,6 | A777027 | A778027 |
| 515000 | 66 | [2,598] | 104 | [4,094] | 4 | 6 | 7 | 19,3 | 50 | 25,6 | A777028 | A778028 |
| 649000 | 73 | [2,874] | 104 | [4,094] | 3 | 4 | 5 | 22,7 | 50 | 31,1 | A777029 | A778029 |
| 974000 | 73 | [2,874] | 144 | [5,669] | 2 | 3 | 5 | 30,2 | 80 | 40,0 | A777030 | A778030 |
| 754000 | 77 | [3,031] | 104 | [4,094] | 2 | 3 | 5 | 25,2 | 80 | 35,8 | A777031 | A778031 |
| 1131000 | 77 | [3,031] | 144 | [5,669] | 2 | 3 | 5 | 33,5 | 80 | 41,2 | A777032 | A778032 |
| 1762000 | 77 | [3,031] | 220 | [8,661] | 2 | 3 | 5 | 45,7 | 80 | 55,3 | A777033 | A778033 |
| 1613000 | 90 | [3,543] | 144 | [5,669] | 2 | 3 | 5 | 43,0 | 80 | 49,9 | A777034 | A778034 |
| 2151000 | 90 | [3,543] | 200 | [7,874] | 2 | 3 | 5 | 52,6 | 80 | 52,0 | A777035 | A778035 |
| 2151000 | 90 | [3,543] | 200 | [7,874] | 3 | 5 | 5 | 52,6 | 80 | 43,0 | A777036 | A778036 |
| 2420000 | 90 | [3,543] | 220 | [8,661] | 3 | 5 | 5 | 57,1 | 80 | 44,8 | A777037 | A778037 |

FELSIC HC

BC - BD

8 000 h / 85°C

| Capacitance [μF] | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. [mΩ] | II +20°C 5 min max. [mA] | I~ 100 Hz | | Code | | | |
|---------------------------|------------------|------------------|---------------------|--------------|-----------------------------------|-----------------------------------|-------------------|--------------|------|------|---------|---------|
| | Ø mm [inches] | H mm [inches] | Typic [mΩ] | max. [mΩ] | | | +40°C max. [A] | +85°C [A] | BC | BD | | |
| Rated voltage 40 V | | | | | | | | | | | | |
| 17800 | 36 | [1,417] | 44 | [1,732] | 2 | 3 | 5 | 3,5 | 22 | 16,4 | A777057 | A778057 |
| 26000 | 36 | [1,417] | 52 | [2,047] | 2 | 3 | 5 | 4,6 | 22 | 17,6 | A777058 | A778058 |
| 28700 | 36 | [1,417] | 60 | [2,362] | 10 | 15 | 27 | 4,9 | 22 | 8,8 | A777059 | A778059 |
| 46000 | 36 | [1,417] | 80 | [3,150] | 8 | 12 | 22 | 6,8 | 22 | 11,0 | A777060 | A778060 |
| 62000 | 36 | [1,417] | 104 | [4,094] | 7 | 11 | 18 | 8,3 | 22 | 13,1 | A777061 | A778061 |
| 65000 | 51 | [2,008] | 62 | [2,441] | 7 | 11 | 18 | 8,6 | 25 | 12,7 | A777062 | A778062 |
| 105000 | 51 | [2,008] | 81 | [3,189] | 4 | 6 | 9 | 12,1 | 25 | 19,0 | A777063 | A778063 |
| 141000 | 51 | [2,008] | 104 | [4,094] | 4 | 6 | 8 | 14,8 | 25 | 22,0 | A777064 | A778064 |
| 211000 | 51 | [2,008] | 144 | [5,669] | 3 | 5 | 8 | 19,7 | 25 | 26,9 | A777065 | A778065 |
| 237000 | 66 | [2,598] | 104 | [4,094] | 3 | 5 | 8 | 21,3 | 25 | 26,8 | A777066 | A778066 |
| 298000 | 73 | [2,874] | 104 | [4,094] | 3 | 5 | 7 | 25,0 | 55 | 30,5 | A777067 | A778067 |
| 447000 | 73 | [2,874] | 144 | [5,669] | 3 | 4 | 7 | 33,2 | 80 | 37,7 | A777068 | A778068 |
| 346000 | 77 | [3,031] | 104 | [4,094] | 3 | 4 | 7 | 27,8 | 55 | 33,7 | A777069 | A778069 |
| 519000 | 77 | [3,031] | 144 | [5,669] | 3 | 4 | 7 | 36,9 | 80 | 38,8 | A777070 | A778070 |
| 809000 | 77 | [3,031] | 220 | [8,661] | 3 | 4 | 7 | 50,4 | 80 | 47,0 | A777071 | A778071 |
| 741000 | 90 | [3,543] | 144 | [5,669] | 2 | 3 | 6 | 47,3 | 80 | 51,4 | A777072 | A778072 |
| 988000 | 90 | [3,543] | 200 | [7,874] | 2 | 3 | 5 | 57,9 | 80 | 52,4 | A777073 | A778073 |
| 1111000 | 90 | [3,543] | 220 | [8,661] | 2 | 3 | 5 | 62,9 | 80 | 54,7 | A777074 | A778074 |
| Rated voltage 50 V | | | | | | | | | | | | |
| 9400 | 36 | [1,417] | 44 | [1,732] | 2 | 3 | 5 | 2,6 | 21 | 16,2 | A777075 | A778075 |
| 14000 | 36 | [1,417] | 52 | [2,047] | 15 | 23 | 30 | 3,4 | 20 | 6,7 | A777076 | A778076 |
| 15000 | 36 | [1,417] | 60 | [2,362] | 15 | 23 | 30 | 3,6 | 22 | 7,2 | A777077 | A778077 |
| 25000 | 36 | [1,417] | 80 | [3,150] | 12 | 17 | 24 | 5,1 | 22 | 9,3 | A777078 | A778078 |
| 33000 | 36 | [1,417] | 104 | [4,094] | 12 | 17 | 21 | 6,3 | 22 | 10,5 | A777079 | A778079 |
| 34600 | 51 | [2,008] | 62 | [2,441] | 12 | 17 | 21 | 6,5 | 25 | 10,2 | A777080 | A778080 |
| 56000 | 51 | [2,008] | 81 | [3,189] | 7 | 11 | 15 | 9,1 | 25 | 14,6 | A777081 | A778081 |
| 56000 | 51 | [2,008] | 81 | [3,189] | 10 | 14 | 11 | 9,1 | 25 | 12,6 | A777082 | A778082 |
| 75000 | 51 | [2,008] | 104 | [4,094] | 10 | 14 | 11 | 11,1 | 25 | 14,0 | A777083 | A778083 |
| 112000 | 51 | [2,008] | 144 | [5,669] | 6 | 9 | 10 | 14,8 | 25 | 20,3 | A777084 | A778084 |
| 126000 | 66 | [2,598] | 104 | [4,094] | 6 | 10 | 9 | 16,0 | 50 | 19,8 | A777085 | A778085 |
| 158000 | 73 | [2,874] | 104 | [4,094] | 6 | 10 | 9 | 18,8 | 55 | 21,0 | A777086 | A778086 |
| 237000 | 73 | [2,874] | 144 | [5,669] | 6 | 10 | 9 | 24,9 | 55 | 24,2 | A777087 | A778087 |
| 184000 | 77 | [3,031] | 104 | [4,094] | 6 | 9 | 10 | 20,8 | 55 | 22,3 | A777088 | A778088 |
| 275000 | 77 | [3,031] | 144 | [5,669] | 4 | 6 | 7 | 27,7 | 55 | 30,4 | A777089 | A778089 |
| 430000 | 77 | [3,031] | 220 | [8,661] | 4 | 6 | 7 | 37,8 | 80 | 36,8 | A777090 | A778090 |
| 393000 | 90 | [3,543] | 144 | [5,669] | 3 | 5 | 6 | 35,5 | 80 | 37,4 | A777091 | A778091 |
| 524000 | 90 | [3,543] | 200 | [7,874] | 3 | 5 | 6 | 43,5 | 80 | 43,3 | A777092 | A778092 |
| 590000 | 90 | [3,543] | 220 | [8,661] | 3 | 5 | 6 | 47,2 | 80 | 45,2 | A777093 | A778093 |
| Rated voltage 63 V | | | | | | | | | | | | |
| 6300 | 36 | [1,417] | 44 | [1,732] | 34 | 51 | 52 | 2,3 | 16 | 4,2 | A777094 | A778094 |
| 9300 | 36 | [1,417] | 52 | [2,047] | 24 | 37 | 39 | 3,0 | 19 | 5,3 | A777095 | A778095 |
| 10100 | 36 | [1,417] | 60 | [2,362] | 24 | 37 | 39 | 3,2 | 22 | 5,7 | A777096 | A778096 |
| 16000 | 36 | [1,417] | 80 | [3,150] | 14 | 21 | 28 | 4,5 | 22 | 8,4 | A777097 | A778097 |
| 22000 | 36 | [1,417] | 104 | [4,094] | 15 | 22 | 25 | 5,6 | 22 | 9,4 | A777098 | A778098 |
| 23000 | 51 | [2,008] | 62 | [2,441] | 15 | 22 | 18 | 5,7 | 25 | 9,0 | A777099 | A778099 |
| 37000 | 51 | [2,008] | 81 | [3,189] | 11 | 16 | 15 | 8,0 | 25 | 11,8 | A777100 | A778100 |
| 50000 | 51 | [2,008] | 104 | [4,094] | 11 | 16 | 14 | 9,8 | 25 | 13,3 | A777101 | A778101 |
| 75000 | 51 | [2,008] | 144 | [5,669] | 8 | 13 | 12 | 13,0 | 25 | 17,2 | A777102 | A778102 |
| 83000 | 66 | [2,598] | 104 | [4,094] | 8 | 13 | 12 | 14,1 | 50 | 17,2 | A777103 | A778103 |
| 105000 | 73 | [2,874] | 104 | [4,094] | 8 | 13 | 12 | 16,6 | 55 | 18,2 | A777104 | A778104 |
| 158000 | 73 | [2,874] | 144 | [5,669] | 5 | 7 | 9 | 22,0 | 55 | 28,3 | A777105 | A778105 |
| 122000 | 77 | [3,031] | 104 | [4,094] | 5 | 7 | 9 | 18,4 | 55 | 25,3 | A777106 | A778106 |
| 183000 | 77 | [3,031] | 144 | [5,669] | 5 | 7 | 8 | 24,5 | 55 | 28,3 | A777107 | A778107 |
| 286000 | 77 | [3,031] | 220 | [8,661] | 4 | 6 | 8 | 33,4 | 80 | 37,6 | A777108 | A778108 |
| 261000 | 90 | [3,543] | 144 | [5,669] | 4 | 6 | 8 | 31,4 | 80 | 33,9 | A777109 | A778109 |
| 349000 | 90 | [3,543] | 200 | [7,874] | 3 | 5 | 4 | 38,4 | 80 | 44,7 | A777110 | A778110 |
| 392000 | 90 | [3,543] | 220 | [8,661] | 3 | 5 | 4 | 41,7 | 80 | 46,6 | A777111 | A778111 |

8 000 h / 85°C

| Capacitance [μ F] | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. | II +20°C 5 min max. | I~ 100 Hz | | Code | | | |
|----------------------------|----------------------------|------------------|------------------------|-----------------------|---------------------------|---------------------------|-------------------|--------------|------|------|---------|---------|
| | \emptyset mm (inches) | H mm (inches) | Typic [m Ω] | max. [m Ω] | | | +40°C max. [A] | +85°C [A] | BC | BD | | |
| Rated voltage 80 V | | | | | | | | | | | | |
| 5300 | 36 | [1,417] | 44 | [1,732] | 3 | 5 | 60 | 2,4 | 80 | 0,0 | A777112 | A778112 |
| 7900 | 36 | [1,417] | 52 | [2,047] | 30 | 45 | 60 | 3,2 | 13 | 4,8 | A777113 | A778113 |
| 8600 | 36 | [1,417] | 60 | [2,362] | 30 | 45 | 60 | 3,4 | 22 | 5,1 | A777114 | A778114 |
| 14000 | 36 | [1,417] | 80 | [3,150] | 17 | 26 | 42 | 4,8 | 22 | 7,7 | A777115 | A778115 |
| 18000 | 36 | [1,417] | 104 | [4,094] | 17 | 26 | 42 | 5,8 | 22 | 8,6 | A777116 | A778116 |
| 19000 | 51 | [2,008] | 62 | [2,441] | 12 | 17 | 25 | 6 | 25 | 10,2 | A777117 | A778117 |
| 31000 | 51 | [2,008] | 81 | [3,189] | 8 | 12 | 20 | 8,4 | 25 | 13,6 | A777118 | A778118 |
| 42000 | 51 | [2,008] | 104 | [4,094] | 7 | 11 | 17 | 10,3 | 25 | 16,0 | A777119 | A778119 |
| 63000 | 51 | [2,008] | 144 | [5,669] | 6 | 9 | 15 | 13,7 | 25 | 20,0 | A777120 | A778120 |
| 70000 | 66 | [2,598] | 104 | [4,094] | 7 | 10 | 13 | 14,8 | 50 | 19,3 | A777121 | A778121 |
| 89000 | 73 | [2,874] | 104 | [4,094] | 7 | 10 | 13 | 17,4 | 50 | 20,4 | A777122 | A778122 |
| 133000 | 73 | [2,874] | 144 | [5,669] | 4 | 6 | 10 | 23,1 | 55 | 30,2 | A777123 | A778123 |
| 103000 | 77 | [3,031] | 104 | [4,094] | 4 | 6 | 10 | 19,3 | 55 | 27,0 | A777124 | A778124 |
| 154000 | 77 | [3,031] | 144 | [5,669] | 4 | 6 | 7 | 25,6 | 55 | 31,8 | A777125 | A778125 |
| 241000 | 77 | [3,031] | 220 | [8,661] | 4 | 6 | 7 | 35 | 80 | 38,5 | A777126 | A778126 |
| 220000 | 90 | [3,543] | 144 | [5,669] | 4 | 5 | 7 | 32,9 | 80 | 36,0 | A777127 | A778127 |
| 294000 | 90 | [3,543] | 200 | [7,874] | 4 | 5 | 7 | 40,3 | 80 | 41,6 | A777128 | A778128 |
| 331000 | 90 | [3,543] | 220 | [8,661] | 4 | 5 | 7 | 43,7 | 80 | 43,4 | A777129 | A778129 |
| Rated voltage 100 V | | | | | | | | | | | | |
| 3300 | 36 | [1,417] | 44 | [1,732] | 53 | 80 | 100 | 2 | 10 | 3,4 | A777130 | A778130 |
| 4900 | 36 | [1,417] | 52 | [2,047] | 45 | 67 | 80 | 2,7 | 11 | 3,9 | A777131 | A778131 |
| 5300 | 36 | [1,417] | 60 | [2,362] | 45 | 67 | 80 | 2,8 | 11 | 4,2 | A777132 | A778132 |
| 8700 | 36 | [1,417] | 80 | [3,150] | 24 | 37 | 54 | 4 | 17 | 6,4 | A777133 | A778133 |
| 11700 | 36 | [1,417] | 104 | [4,094] | 24 | 37 | 54 | 4,9 | 17 | 7,2 | A777134 | A778134 |
| 12000 | 51 | [2,008] | 62 | [2,441] | 17 | 26 | 35 | 5,1 | 22 | 8,4 | A777135 | A778135 |
| 19700 | 51 | [2,008] | 81 | [3,189] | 10 | 15 | 21 | 7,1 | 25 | 12,2 | A777136 | A778136 |
| 19700 | 51 | [2,008] | 81 | [3,189] | 14 | 21 | 19 | 7,1 | 25 | 10,5 | A777137 | A778137 |
| 26000 | 51 | [2,008] | 104 | [4,094] | 14 | 21 | 19 | 8,7 | 25 | 11,7 | A777138 | A778138 |
| 39000 | 51 | [2,008] | 144 | [5,669] | 9 | 14 | 18 | 11,5 | 25 | 16,7 | A777139 | A778139 |
| 44000 | 66 | [2,598] | 104 | [4,094] | 9 | 14 | 15 | 12,5 | 50 | 16,7 | A777140 | A778140 |
| 56000 | 73 | [2,874] | 104 | [4,094] | 9 | 14 | 15 | 14,7 | 55 | 17,6 | A777141 | A778141 |
| 83000 | 73 | [2,874] | 144 | [5,669] | 5 | 7 | 10 | 19,5 | 55 | 28,7 | A777142 | A778142 |
| 64000 | 77 | [3,031] | 104 | [4,094] | 5 | 7 | 10 | 16,3 | 55 | 25,7 | A777143 | A778143 |
| 97000 | 77 | [3,031] | 144 | [5,669] | 5 | 8 | 10 | 21,6 | 55 | 27,7 | A777144 | A778144 |
| 151000 | 77 | [3,031] | 220 | [8,661] | 5 | 8 | 10 | 29,6 | 55 | 33,6 | A777145 | A778145 |
| 138000 | 90 | [3,543] | 144 | [5,669] | 4 | 7 | 7 | 27,8 | 80 | 32,9 | A777146 | A778146 |
| 184000 | 90 | [3,543] | 200 | [7,874] | 3 | 4 | 4 | 34 | 80 | 48,1 | A777147 | A778147 |
| 207000 | 90 | [3,543] | 220 | [8,661] | 3 | 4 | 100 | 36,9 | 80 | 50,2 | A777148 | A778148 |
| Rated voltage 120 V | | | | | | | | | | | | |
| 2100 | 36 | [1,417] | 44 | [1,732] | 3 | 4 | 80 | 1,7 | 11 | 14,9 | A777149 | A778149 |
| 3100 | 36 | [1,417] | 52 | [2,047] | 3 | 4 | 80 | 2,2 | 11 | 15,9 | A777150 | A778150 |
| 3300 | 36 | [1,417] | 60 | [2,362] | 3 | 4 | 54 | 2,3 | 17 | 16,9 | A777151 | A778151 |
| 5400 | 36 | [1,417] | 80 | [3,150] | 3 | 4 | 54 | 3,3 | 17 | 19,2 | A777152 | A778152 |
| 7300 | 36 | [1,417] | 104 | [4,094] | 3 | 4 | 35 | 4 | 22 | 21,7 | A777153 | A778153 |
| 7600 | 51 | [2,008] | 62 | [2,441] | 3 | 4 | 21 | 4,1 | 25 | 21,0 | A777154 | A778154 |
| 12000 | 51 | [2,008] | 81 | [3,189] | 3 | 4 | 19 | 5,8 | 25 | 23,5 | A777155 | A778155 |
| 16000 | 51 | [2,008] | 104 | [4,094] | 3 | 4 | 19 | 7,1 | 25 | 26,2 | A777156 | A778156 |
| 24700 | 51 | [2,008] | 144 | [5,669] | 3 | 4 | 18 | 9,4 | 25 | 30,4 | A777157 | A778157 |
| 27700 | 66 | [2,598] | 104 | [4,094] | 3 | 4 | 15 | 10,2 | 50 | 30,3 | A777158 | A778158 |
| 35000 | 73 | [2,874] | 104 | [4,094] | 3 | 4 | 15 | 12 | 55 | 32,1 | A777159 | A778159 |
| 52000 | 73 | [2,874] | 144 | [5,669] | 3 | 4 | 10 | 15,9 | 80 | 37,0 | A777160 | A778160 |
| 40000 | 77 | [3,031] | 104 | [4,094] | 3 | 4 | 10 | 13,3 | 55 | 33,1 | A777161 | A778161 |
| 61000 | 77 | [3,031] | 144 | [5,669] | 3 | 4 | 10 | 17,7 | 80 | 38,1 | A777162 | A778162 |
| 95000 | 77 | [3,031] | 220 | [8,661] | 3 | 4 | 10 | 24,2 | 80 | 46,1 | A777163 | A778163 |
| 87000 | 90 | [3,543] | 144 | [5,669] | 3 | 4 | 7 | 22,7 | 80 | 41,6 | A777164 | A778164 |
| 115000 | 90 | [3,543] | 200 | [7,874] | 3 | 4 | 4 | 27,8 | 80 | 48,1 | A777165 | A778165 |
| 130000 | 90 | [3,543] | 220 | [8,661] | 3 | 5 | 4 | 30,2 | 80 | 47,8 | A777166 | A778166 |

FELSIC HC

BC - BD

8 000 h / 85°C

| Capacitance (μF) | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. | II +20°C 5 min max. | I \sim 100 Hz | | Code | | | |
|----------------------------------|----------------------------|------------------|-------------------------------|------------------------------|---------------------------|---------------------------|--------------------|--------------|------|------|---------|---------|
| | \emptyset mm (inches) | H mm (inches) | Typic ($\text{m}\Omega$) | max. ($\text{m}\Omega$) | | | +40°C max. (A) | +85°C (A) | BC | BD | | |
| Rated voltage 160 V | | | | | | | | | | | | |
| 1400 | 36 | [1,417] | 44 | [1,732] | 3 | 4 | 120 | 1,6 | 80 | 50,2 | A777167 | A778167 |
| 2100 | 36 | [1,417] | 52 | [2,047] | 48 | 71 | 90 | 2,1 | 11 | 3,5 | A777168 | A778168 |
| 2300 | 36 | [1,417] | 60 | [2,362] | 46 | 68 | 70 | 2,2 | 13 | 3,9 | A777169 | A778169 |
| 3800 | 36 | [1,417] | 80 | [3,150] | 35 | 52 | 50 | 3,1 | 16 | 4,7 | A777170 | A778170 |
| 5100 | 36 | [1,417] | 104 | [4,094] | 32 | 49 | 36 | 3,8 | 21 | 5,6 | A777171 | A778171 |
| 5300 | 51 | [2,008] | 62 | [2,441] | 32 | 48 | 36 | 4 | 21 | 6,3 | A777172 | A778172 |
| 8600 | 51 | [2,008] | 81 | [3,189] | 32 | 48 | 30 | 5,5 | 25 | 6,1 | A777173 | A778173 |
| 11000 | 51 | [2,008] | 104 | [4,094] | 17 | 26 | 23 | 6,7 | 25 | 9,3 | A777174 | A778174 |
| 17000 | 51 | [2,008] | 144 | [5,669] | 12 | 18 | 17 | 9 | 25 | 12,6 | A777175 | A778175 |
| 19000 | 66 | [2,598] | 104 | [4,094] | 12 | 17 | 17 | 9,7 | 50 | 14,6 | A777176 | A778176 |
| 24000 | 73 | [2,874] | 104 | [4,094] | 11 | 17 | 14 | 11,4 | 53 | 15,0 | A777177 | A778177 |
| 36000 | 73 | [2,874] | 144 | [5,669] | 7 | 11 | 11 | 15,1 | 55 | 19,6 | A777178 | A778178 |
| 28000 | 77 | [3,031] | 104 | [4,094] | 7 | 17 | 11 | 12,7 | 55 | 22,5 | A777179 | A778179 |
| 42000 | 77 | [3,031] | 144 | [5,669] | 7 | 17 | 11 | 16,8 | 55 | 20,2 | A777180 | A778180 |
| 66000 | 77 | [3,031] | 220 | [8,661] | 11 | 17 | 8 | 23 | 55 | 18,9 | A777181 | A778181 |
| 60000 | 90 | [3,543] | 144 | [5,669] | 11 | 7 | 8 | 21,6 | 80 | 22,9 | A777182 | A778182 |
| 80000 | 90 | [3,543] | 200 | [7,874] | 5 | 7 | 7 | 26,4 | 80 | 31,6 | A777183 | A778183 |
| 91000 | 90 | [3,543] | 220 | [8,661] | 5 | 6 | 7 | 28,7 | 80 | 36,6 | A777184 | A778184 |
| Rated voltage 200 V | | | | | | | | | | | | |
| 1200 | 36 | [1,417] | 44 | [1,732] | 4 | 6 | 110 | 1,6 | 80 | 41,5 | A777185 | A778185 |
| 1780 | 36 | [1,417] | 52 | [2,047] | 67 | 101 | 90 | 2,1 | 10 | 3,0 | A777186 | A778186 |
| 2000 | 36 | [1,417] | 60 | [2,362] | 48 | 73 | 85 | 2,3 | 11 | 3,8 | A777187 | A778187 |
| 3200 | 36 | [1,417] | 80 | [3,150] | 41 | 61 | 75 | 3,2 | 13 | 4,4 | A777188 | A778188 |
| 3200 | 36 | [1,417] | 80 | [3,150] | 25 | 38 | 60 | 3,2 | 14 | 6,3 | A777189 | A778189 |
| 4200 | 36 | [1,417] | 104 | [4,094] | 20 | 31 | 50 | 3,9 | 18 | 7,9 | A777190 | A778190 |
| 4400 | 51 | [2,008] | 62 | [2,441] | 20 | 23 | 50 | 4,1 | 22 | 7,7 | A777191 | A778191 |
| 7200 | 51 | [2,008] | 81 | [3,189] | 15 | 23 | 38 | 5,7 | 23 | 9,9 | A777192 | A778192 |
| 9600 | 51 | [2,008] | 104 | [4,094] | 15 | 23 | 33 | 7 | 25 | 11,1 | A777193 | A778193 |
| 14000 | 51 | [2,008] | 144 | [5,669] | 9 | 13 | 25 | 9,2 | 25 | 16,9 | A777194 | A778194 |
| 16000 | 66 | [2,598] | 104 | [4,094] | 7 | 11 | 21 | 10 | 41 | 18,3 | A777195 | A778195 |
| 20000 | 73 | [2,874] | 104 | [4,094] | 6 | 9 | 18 | 11,7 | 46 | 21,6 | A777196 | A778196 |
| 30000 | 73 | [2,874] | 144 | [5,669] | 7 | 10 | 14 | 15,6 | 55 | 23,4 | A777197 | A778197 |
| 23600 | 77 | [3,031] | 104 | [4,094] | 7 | 8 | 14 | 13,1 | 55 | 21,0 | A777198 | A778198 |
| 35000 | 77 | [3,031] | 144 | [5,669] | 5 | 8 | 12 | 17,3 | 55 | 27,7 | A777199 | A778199 |
| 55000 | 77 | [3,031] | 220 | [8,661] | 5 | 8 | 12 | 23,7 | 55 | 33,5 | A777200 | A778200 |
| 50000 | 90 | [3,543] | 144 | [5,669] | 5 | 8 | 12 | 22,3 | 80 | 30,3 | A777201 | A778201 |
| 67000 | 90 | [3,543] | 200 | [7,874] | 5 | 8 | 8 | 27,2 | 80 | 35,0 | A777202 | A778202 |
| 67000 | 90 | [3,543] | 200 | [7,874] | 5 | 8 | 8 | 27,2 | 80 | 35,0 | A777203 | A778203 |
| 76000 | 90 | [3,543] | 220 | [8,661] | 6 | 9 | 9 | 29,6 | 80 | 33,8 | A777204 | A778204 |
| Rated voltage 250 V | | | | | | | | | | | | |
| 780 | 36 | [1,417] | 44 | [1,732] | 5 | 8 | 120 | 1,4 | 80 | 36,5 | A777205 | A778205 |
| 1200 | 36 | [1,417] | 52 | [2,047] | 57 | 86 | 90 | 1,9 | 9 | 3,2 | A777206 | A778206 |
| 1300 | 36 | [1,417] | 60 | [2,362] | 52 | 78 | 85 | 2 | 11 | 3,6 | A777207 | A778207 |
| 2100 | 36 | [1,417] | 80 | [3,150] | 41 | 62 | 65 | 2,8 | 14 | 4,3 | A777208 | A778208 |
| 2900 | 36 | [1,417] | 104 | [4,094] | 34 | 52 | 60 | 3,5 | 16 | 5,4 | A777209 | A778209 |
| 3000 | 51 | [2,008] | 62 | [2,441] | 34 | 66 | 60 | 3,6 | 21 | 6,1 | A777210 | A778210 |
| 4900 | 51 | [2,008] | 81 | [3,189] | 44 | 66 | 40 | 5,1 | 21 | 5,2 | A777211 | A778211 |
| 6400 | 51 | [2,008] | 104 | [4,094] | 21 | 31 | 36 | 6,2 | 25 | 8,5 | A777212 | A778212 |
| 9700 | 51 | [2,008] | 144 | [5,669] | 17 | 26 | 38 | 8,2 | 25 | 10,5 | A777213 | A778213 |
| 10900 | 66 | [2,598] | 104 | [4,094] | 17 | 28 | 38 | 8,9 | 25 | 12,1 | A777214 | A778214 |
| 13700 | 73 | [2,874] | 104 | [4,094] | 19 | 28 | 23 | 10,4 | 41 | 11,6 | A777215 | A778215 |
| 20000 | 73 | [2,874] | 144 | [5,669] | 10 | 15 | 18 | 13,8 | 53 | 16,7 | A777216 | A778216 |
| 16000 | 77 | [3,031] | 104 | [4,094] | 10 | 23 | 18 | 11,6 | 37 | 19,3 | A777217 | A778217 |
| 24000 | 77 | [3,031] | 144 | [5,669] | 10 | 23 | 18 | 15,4 | 47 | 17,3 | A777218 | A778218 |
| 37000 | 77 | [3,031] | 220 | [8,661] | 10 | 23 | 18 | 21 | 60 | 19,9 | A777219 | A778219 |
| 34000 | 90 | [3,543] | 144 | [5,669] | 15 | 23 | 12 | 19,8 | 76 | 19,6 | A777220 | A778220 |
| 45000 | 90 | [3,543] | 200 | [7,874] | 5 | 7 | 10 | 24,1 | 80 | 31,0 | A777221 | A778221 |
| 51000 | 90 | [3,543] | 220 | [8,661] | 5 | 8 | 10 | 26,2 | 80 | 35,9 | A777222 | A778222 |

8 000 h / 85°C

| Capacitance [μF] | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. | II +20°C 5 min max. | I~ 100 Hz | | Code | | | |
|----------------------------|------------------|------------------|---------------------|--------------|---------------------------|---------------------------|-------------------|--------------|------|------|---------|---------|
| | Ø mm (inches) | H mm (inches) | Typic [mΩ] | max. [mΩ] | | | +40°C max. [A] | +85°C [A] | BC | BD | | |
| Rated voltage 300 V | | | | | | | | | | | | |
| 650 | 36 | [1,417] | 44 | [1,732] | 5 | 8 | 120 | 1,4 | 80 | 37,4 | A777223 | A778223 |
| 1000 | 36 | [1,417] | 52 | [2,047] | 5 | 8 | 90 | 1,9 | 9 | 11,9 | A777224 | A778224 |
| 1100 | 36 | [1,417] | 60 | [2,362] | 5 | 8 | 85 | 2 | 11 | 12,6 | A777225 | A778225 |
| 1890 | 36 | [1,417] | 80 | [3,150] | 5 | 8 | 65 | 3 | 14 | 14,3 | A777226 | A778226 |
| 2400 | 36 | [1,417] | 104 | [4,094] | 5 | 8 | 60 | 3,6 | 16 | 16,2 | A777227 | A778227 |
| 2550 | 51 | [2,008] | 62 | [2,441] | 5 | 8 | 60 | 3,7 | 21 | 15,7 | A777228 | A778228 |
| 4200 | 51 | [2,008] | 81 | [3,189] | 5 | 8 | 40 | 5,2 | 21 | 17,5 | A777229 | A778229 |
| 5550 | 51 | [2,008] | 104 | [4,094] | 5 | 8 | 36 | 6,3 | 25 | 19,6 | A777230 | A778230 |
| 8300 | 51 | [2,008] | 144 | [5,669] | 5 | 8 | 38 | 8,4 | 25 | 22,7 | A777231 | A778231 |
| 9300 | 66 | [2,598] | 104 | [4,094] | 5 | 8 | 38 | 9,1 | 25 | 22,6 | A777232 | A778232 |
| 11800 | 73 | [2,874] | 104 | [4,094] | 5 | 8 | 23 | 10,7 | 41 | 23,9 | A777233 | A778233 |
| 17700 | 73 | [2,874] | 144 | [5,669] | 5 | 8 | 18 | 14,2 | 53 | 27,6 | A777234 | A778234 |
| 13700 | 77 | [3,031] | 104 | [4,094] | 5 | 8 | 18 | 11,9 | 37 | 24,7 | A777235 | A778235 |
| 20600 | 77 | [3,031] | 144 | [5,669] | 5 | 8 | 18 | 15,8 | 47 | 28,4 | A777236 | A778236 |
| 25800 | 77 | [3,031] | 220 | [8,661] | 5 | 8 | 18 | 18,5 | 80 | 34,4 | A777237 | A778237 |
| 23700 | 90 | [3,543] | 144 | [5,669] | 5 | 8 | 12 | 17,4 | 76 | 31,0 | A777238 | A778238 |
| 31600 | 90 | [3,543] | 200 | [7,874] | 5 | 8 | 10 | 21,3 | 80 | 35,9 | A777239 | A778239 |
| 35000 | 90 | [3,543] | 220 | [8,661] | 5 | 8 | 10 | 23,1 | 80 | 37,4 | A777240 | A778240 |
| Rated voltage 350 V | | | | | | | | | | | | |
| 550 | 36 | [1,417] | 44 | [1,732] | 5 | 8 | 250 | 1,4 | 5 | 10,8 | A777241 | A778241 |
| 780 | 36 | [1,417] | 52 | [2,047] | 118 | 178 | 170 | 1,8 | 7 | 2,4 | A777242 | A778242 |
| 890 | 36 | [1,417] | 60 | [2,362] | 118 | 158 | 170 | 2 | 8 | 2,6 | A777243 | A778243 |
| 1400 | 36 | [1,417] | 80 | [3,150] | 106 | 158 | 100 | 2,7 | 10 | 3,1 | A777244 | A778244 |
| 1400 | 36 | [1,417] | 80 | [3,150] | 65 | 97 | 88 | 2,7 | 11 | 3,9 | A777245 | A778245 |
| 1890 | 36 | [1,417] | 104 | [4,094] | 65 | 74 | 88 | 3,3 | 16 | 4,4 | A777246 | A778246 |
| 2000 | 51 | [2,008] | 62 | [2,441] | 65 | 74 | 88 | 3,4 | 17 | 4,3 | A777247 | A778247 |
| 3100 | 51 | [2,008] | 81 | [3,189] | 49 | 74 | 60 | 4,7 | 18 | 5,5 | A777248 | A778248 |
| 3100 | 51 | [2,008] | 81 | [3,189] | 29 | 44 | 55 | 4,7 | 18 | 7,2 | A777249 | A778249 |
| 4200 | 51 | [2,008] | 104 | [4,094] | 29 | 43 | 60 | 5,8 | 21 | 8,0 | A777250 | A778250 |
| 6300 | 51 | [2,008] | 144 | [5,669] | 28 | 42 | 35 | 7,7 | 25 | 9,5 | A777251 | A778251 |
| 6300 | 51 | [2,008] | 144 | [5,669] | 18 | 27 | 30 | 7,7 | 25 | 11,8 | A777252 | A778252 |
| 7100 | 66 | [2,598] | 104 | [4,094] | 18 | 30 | 30 | 8,4 | 35 | 11,7 | A777253 | A778253 |
| 8900 | 73 | [2,874] | 104 | [4,094] | 20 | 30 | 24 | 9,8 | 38 | 11,9 | A777254 | A778254 |
| 13000 | 73 | [2,874] | 144 | [5,669] | 12 | 18 | 17 | 13 | 53 | 17,5 | A777255 | A778255 |
| 10300 | 77 | [3,031] | 104 | [4,094] | 12 | 23 | 17 | 10,9 | 53 | 15,6 | A777256 | A778256 |
| 15000 | 77 | [3,031] | 144 | [5,669] | 12 | 23 | 17 | 14,4 | 53 | 18,0 | A777257 | A778257 |
| 19000 | 77 | [3,031] | 220 | [8,661] | 16 | 23 | 14 | 16,9 | 55 | 19,3 | A777258 | A778258 |
| 17900 | 90 | [3,543] | 144 | [5,669] | 16 | 15 | 14 | 15,9 | 55 | 17,4 | A777259 | A778259 |
| 23800 | 90 | [3,543] | 200 | [7,874] | 10 | 15 | 12 | 19,5 | 80 | 25,0 | A777260 | A778260 |
| 26800 | 90 | [3,543] | 220 | [8,661] | 10 | 11 | 12 | 21,2 | 80 | 26,1 | A777261 | A778261 |
| Rated voltage 385 V | | | | | | | | | | | | |
| 400 | 36 | [1,417] | 44 | [1,732] | 8 | 11 | 480 | 1,3 | 4 | 8,8 | A777262 | A778262 |
| 670 | 36 | [1,417] | 52 | [2,047] | 164 | 246 | 280 | 1,7 | 5 | 2,0 | A777263 | A778263 |
| 670 | 36 | [1,417] | 60 | [2,362] | 148 | 222 | 210 | 1,7 | 7 | 2,3 | A777264 | A778264 |
| 1100 | 36 | [1,417] | 80 | [3,150] | 94 | 141 | 180 | 2,4 | 8 | 3,3 | A777265 | A778265 |
| 1560 | 36 | [1,417] | 104 | [4,094] | 84 | 126 | 140 | 3,1 | 11 | 3,9 | A777266 | A778266 |
| 1560 | 51 | [2,008] | 62 | [2,441] | 84 | 135 | 140 | 3,1 | 13 | 3,8 | A777267 | A778267 |
| 2560 | 51 | [2,008] | 81 | [3,189] | 90 | 135 | 80 | 4,4 | 15 | 4,1 | A777268 | A778268 |
| 3400 | 51 | [2,008] | 104 | [4,094] | 35 | 53 | 60 | 5,4 | 20 | 7,3 | A777269 | A778269 |
| 5100 | 51 | [2,008] | 144 | [5,669] | 26 | 39 | 50 | 7,1 | 25 | 9,9 | A777270 | A778270 |
| 5800 | 66 | [2,598] | 104 | [4,094] | 26 | 43 | 50 | 7,7 | 28 | 9,8 | A777271 | A778271 |
| 7200 | 73 | [2,874] | 104 | [4,094] | 28 | 43 | 35 | 9 | 34 | 9,9 | A777272 | A778272 |
| 10900 | 73 | [2,874] | 144 | [5,669] | 13 | 19 | 22 | 12 | 50 | 17,0 | A777273 | A778273 |
| 8400 | 77 | [3,031] | 104 | [4,094] | 13 | 22 | 22 | 10,1 | 50 | 15,2 | A777274 | A778274 |
| 12700 | 77 | [3,031] | 144 | [5,669] | 13 | 22 | 22 | 13,4 | 50 | 17,5 | A777275 | A778275 |
| 18000 | 77 | [3,031] | 220 | [8,661] | 15 | 22 | 17 | 17,3 | 55 | 19,9 | A777276 | A778276 |
| 16700 | 90 | [3,543] | 144 | [5,669] | 15 | 13 | 17 | 16,2 | 55 | 18,0 | A777277 | A778277 |
| 22000 | 90 | [3,543] | 200 | [7,874] | 9 | 13 | 13 | 19,8 | 80 | 26,8 | A777278 | A778278 |
| 22000 | 90 | [3,543] | 200 | [7,874] | 7 | 11 | 12 | 19,8 | 80 | 29,4 | A777279 | A778279 |
| 25000 | 90 | [3,543] | 220 | [8,661] | 7 | 12 | 12 | 21,6 | 80 | 30,7 | A777280 | A778280 |

FELSIC HC

BC - BD

8 000 h / 85°C

| Capacitance (μF) | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. ($\text{m}\Omega$) | II +20°C 5 min max. (mA) | I \sim 100 Hz | | Code | | | |
|----------------------------------|----------------------------|------------------|-------------------------------|------------------------------|---|-----------------------------------|--------------------|--------------|------|------|---------|---------|
| | \emptyset mm (inches) | H mm (inches) | Typic ($\text{m}\Omega$) | max. ($\text{m}\Omega$) | | | +40°C max. (A) | +85°C (A) | BC | BD | | |
| Rated voltage 400 V | | | | | | | | | | | | |
| 400 | 36 | (1,417) | 44 | (1,732) | 8 | 12 | 520 | 1,3 | 4 | 8,7 | A777281 | A778281 |
| 670 | 36 | (1,417) | 52 | (2,047) | 182 | 273 | 330 | 1,8 | 5 | 1,9 | A777282 | A778282 |
| 670 | 36 | (1,417) | 60 | (2,362) | 171 | 256 | 240 | 1,8 | 6 | 2,1 | A777283 | A778283 |
| 1100 | 36 | (1,417) | 80 | (3,150) | 108 | 162 | 200 | 2,5 | 8 | 3,0 | A777284 | A778284 |
| 1550 | 36 | (1,417) | 104 | (4,094) | 88 | 132 | 150 | 3,2 | 10 | 3,8 | A777285 | A778285 |
| 1550 | 51 | (2,008) | 62 | (2,441) | 88 | 148 | 150 | 3,2 | 13 | 3,7 | A777286 | A778286 |
| 2550 | 51 | (2,008) | 81 | (3,189) | 99 | 148 | 85 | 4,5 | 15 | 3,9 | A777287 | A778287 |
| 2550 | 51 | (2,008) | 81 | (3,189) | 47 | 71 | 80 | 4,5 | 16 | 5,6 | A777288 | A778288 |
| 3400 | 51 | (2,008) | 104 | (4,094) | 40 | 60 | 70 | 5,5 | 20 | 6,8 | A777289 | A778289 |
| 5100 | 51 | (2,008) | 144 | (5,669) | 30 | 45 | 50 | 7,3 | 28 | 9,1 | A777290 | A778290 |
| 5800 | 66 | (2,598) | 104 | (4,094) | 23 | 34 | 40 | 7,9 | 28 | 10,5 | A777291 | A778291 |
| 7200 | 73 | (2,874) | 104 | (4,094) | 18 | 28 | 35 | 9,3 | 34 | 12,4 | A777292 | A778292 |
| 10900 | 73 | (2,874) | 144 | (5,669) | 13 | 19 | 26 | 12,4 | 46 | 17,0 | A777293 | A778293 |
| 10900 | 73 | (2,874) | 144 | (5,669) | 11 | 17 | 22 | 12,4 | 50 | 18,1 | A777294 | A778294 |
| 8400 | 77 | (3,031) | 104 | (4,094) | 11 | 22 | 22 | 10,4 | 50 | 16,2 | A777295 | A778295 |
| 12700 | 77 | (3,031) | 144 | (5,669) | 15 | 22 | 19 | 13,8 | 55 | 16,5 | A777296 | A778296 |
| 18000 | 77 | (3,031) | 220 | (8,661) | 7 | 11 | 16 | 17,7 | 55 | 28,2 | A777297 | A778297 |
| 16700 | 90 | (3,543) | 144 | (5,669) | 8 | 12 | 18 | 16,7 | 62 | 24,3 | A777298 | A778298 |
| 22000 | 90 | (3,543) | 200 | (7,874) | 7 | 10 | 13 | 20,4 | 80 | 30,7 | A777299 | A778299 |
| 22000 | 90 | (3,543) | 200 | (7,874) | 8 | 12 | 13 | 20,4 | 80 | 28,5 | A777300 | A778300 |
| 25000 | 90 | (3,543) | 220 | (8,661) | 8 | 10 | 13 | 22,1 | 80 | 29,8 | A777301 | A778301 |
| Rated voltage 450 V | | | | | | | | | | | | |
| 330 | 36 | (1,417) | 44 | (1,732) | 7 | 10 | 700 | 1,2 | 4 | 9,4 | A777302 | A778302 |
| 560 | 36 | (1,417) | 52 | (2,047) | 236 | 354 | 500 | 1,7 | 4 | 1,7 | A777303 | A778303 |
| 560 | 36 | (1,417) | 60 | (2,362) | 236 | 401 | 500 | 1,7 | 6 | 1,8 | A777304 | A778304 |
| 890 | 36 | (1,417) | 80 | (3,150) | 267 | 401 | 330 | 2,3 | 7 | 1,9 | A777305 | A778305 |
| 1200 | 36 | (1,417) | 104 | (4,094) | 267 | 141 | 330 | 2,9 | 8 | 2,2 | A777306 | A778306 |
| 1300 | 51 | (2,008) | 62 | (2,441) | 94 | 141 | 210 | 3,1 | 9 | 3,6 | A777307 | A778307 |
| 2100 | 51 | (2,008) | 81 | (3,189) | 58 | 87 | 150 | 4,3 | 12 | 5,1 | A777308 | A778308 |
| 2100 | 51 | (2,008) | 81 | (3,189) | 57 | 86 | 100 | 4,3 | 14 | 5,1 | A777309 | A778309 |
| 2780 | 51 | (2,008) | 104 | (4,094) | 57 | 73 | 100 | 5,2 | 16 | 5,7 | A777310 | A778310 |
| 4100 | 51 | (2,008) | 144 | (5,669) | 49 | 73 | 70 | 6,8 | 23 | 7,2 | A777311 | A778311 |
| 4670 | 66 | (2,598) | 104 | (4,094) | 35 | 53 | 60 | 7,4 | 25 | 8,4 | A777312 | A778312 |
| 5900 | 73 | (2,874) | 104 | (4,094) | 28 | 42 | 50 | 8,7 | 29 | 10,0 | A777313 | A778313 |
| 8800 | 73 | (2,874) | 144 | (5,669) | 18 | 27 | 38 | 11,6 | 39 | 14,5 | A777314 | A778314 |
| 8 800 | 73 | (2,874) | 144 | (5,669) | 16 | 24 | 32 | 11,6 | 43 | 15 | A777315 | A778315 |
| 6 800 | 77 | (3,031) | 104 | (4,094) | 22 | 33 | 38 | 9,6 | 35 | 12 | A777316 | A778316 |
| 10 200 | 77 | (3,031) | 144 | (5,669) | 14 | 21 | 32 | 12,9 | 52 | 17 | A777317 | A778317 |
| 14 800 | 77 | (3,031) | 220 | (8,661) | 12 | 18 | 20 | 16,6 | 55 | 22 | A777318 | A778318 |
| 13 600 | 90 | (3,543) | 144 | (5,669) | 9 | 14 | 18 | 15,7 | 67 | 23 | A777319 | A778319 |
| 18 000 | 90 | (3,543) | 200 | (7,874) | 7 | 11 | 15 | 19,1 | 80 | 29 | A777320 | A778320 |
| 20 000 | 90 | (3,543) | 220 | (8,661) | 7 | 12 | 15 | 20,7 | 80 | 30 | A777321 | A778321 |
| Rated voltage 500 V | | | | | | | | | | | | |
| 100 | 36 | (1,417) | 44 | (1,732) | 900 | 1350 | 1100 | 0,6 | 1,9 | 0,8 | A777322 | A778322 |
| 200 | 36 | (1,417) | 52 | (2,047) | 550 | 825 | 750 | 0,9 | 2,6 | 1,1 | A777323 | A778323 |
| 200 | 36 | (1,417) | 60 | (2,362) | 550 | 825 | 650 | 0,9 | 2,8 | 1,2 | A777324 | A778324 |
| 400 | 36 | (1,417) | 80 | (3,150) | 350 | 525 | 430 | 1,5 | 4,0 | 1,7 | A777325 | A778325 |
| 560 | 36 | (1,417) | 104 | (4,094) | 250 | 375 | 370 | 1,8 | 5,3 | 2,3 | A777326 | A778326 |
| 670 | 51 | (2,008) | 62 | (2,441) | 200 | 300 | 310 | 2 | 5,7 | 2,4 | A777327 | A778327 |
| 1 000 | 51 | (2,008) | 81 | (3,189) | 180 | 270 | 220 | 2,7 | 6,8 | 2,9 | A777328 | A778328 |
| 1 300 | 51 | (2,008) | 104 | (4,094) | 150 | 225 | 185 | 3,3 | 8,3 | 3,5 | A777329 | A778329 |
| 2 000 | 51 | (2,008) | 144 | (5,669) | 100 | 150 | 160 | 4,4 | 11,8 | 5,0 | A777330 | A778330 |
| 2 200 | 66 | (2,598) | 104 | (4,094) | 100 | 150 | 120 | 4,8 | 11,7 | 5,0 | A777331 | A778331 |
| 2 900 | 73 | (2,874) | 104 | (4,094) | 80 | 120 | 100 | 5,7 | 13,9 | 5,9 | A777332 | A778332 |
| 4 300 | 73 | (2,874) | 144 | (5,669) | 50 | 75 | 61 | 7,6 | 20,2 | 8,6 | A777333 | A778333 |
| 3 300 | 77 | (3,031) | 104 | (4,094) | 45 | 68 | 65 | 6,3 | 19,1 | 8,1 | A777334 | A778334 |
| 5 000 | 77 | (3,031) | 144 | (5,669) | 40 | 60 | 52 | 8,4 | 23,3 | 9,9 | A777335 | A778335 |
| 7 600 | 77 | (3,031) | 220 | (8,661) | 30 | 45 | 42 | 11,2 | 32,6 | 13,9 | A777336 | A778336 |
| 7 000 | 90 | (3,543) | 144 | (5,669) | 27 | 41 | 36 | 10,6 | 31,0 | 13,2 | A777337 | A778337 |
| 9 300 | 90 | (3,543) | 200 | (7,874) | 20 | 30 | 20 | 13 | 41,6 | 17,7 | A777338 | A778338 |
| 10 600 | 90 | (3,543) | 220 | (8,661) | 18 | 27 | 16 | 14,2 | 45,8 | 19,5 | A777339 | A778339 |

8 000 h / 85°C

PEAK VOLTAGE (V)

1000 cycles, without ripple current

Up: Repetitive standard peak voltage (30 s)

Us: Repetitive surge voltage (0,1 s)

Do not overstep this value without damage.

| U _R | 10 V | 16 V | 25 V | 40 V | 50 V | 63 V | 80 V | 100 V | 160 V | 200 V |
|----------------|------|------|------|------|------|------|------|-------|-------|---------|
| U _p | 11,5 | 18 | 29 | 46 | 58 | 72 | 92 | 115 | 184 | 230 |
| U _s | | | | | | | | | | 200 235 |

| U _R | 250 V | 305 V | 350 V | 360 V | 385 V | 400 V | 410 V | 415 V | 450 V | 460 V | 500 V |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| U _p | 288 | 330 | 385 | 390 | 424 | 440 | 450 | 457 | 495 | 506 | 550 |
| U _s | 290 | 335 | 405 | 405 | 430 | 450 | 468 | 468 | 500 | 540 | 600 |

PERMISSIBLE REPETITIVE PEAK CURRENT I_p:

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows:

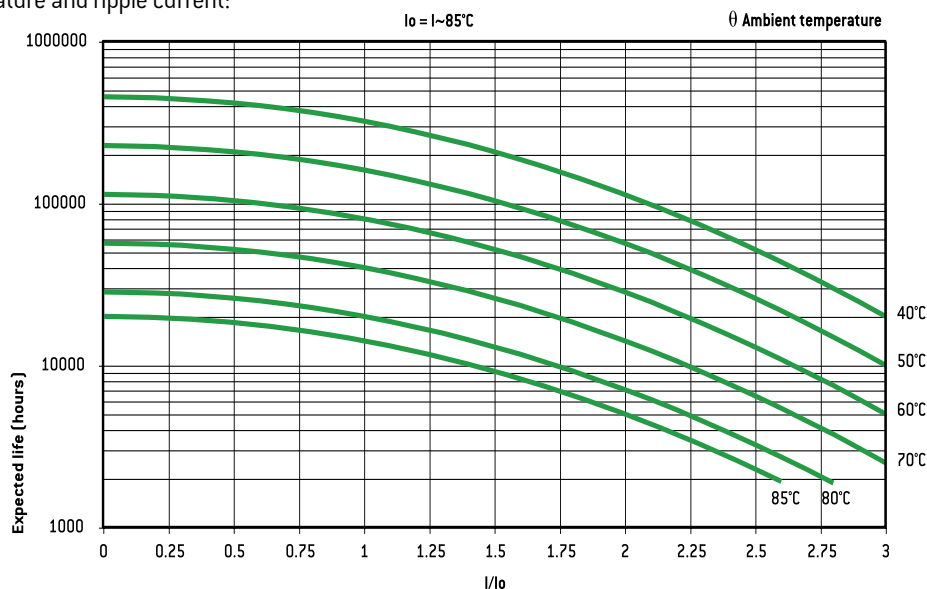
| DIMENSIONS in mm (inches) | | | | I _p (A) | | I _{rms} max. (A) |
|---------------------------|---------|-----|---------|--------------------|------|---------------------------|
| Ø | H | | | 40°C | 85°C | |
| 36 | (1,417) | 44 | (1,732) | 330 | 170 | 22 |
| 36 | (1,417) | 52 | (2,047) | 400 | 200 | 22 |
| 36 | (1,417) | 60 | (2,362) | 450 | 220 | 22 |
| 36 | (1,417) | 80 | (3,150) | 600 | 300 | 22 |
| 36 | (1,417) | 104 | (4,094) | 700 | 400 | 22 |
| 51 | (2,008) | 62 | (2,441) | 700 | 400 | 25 |
| 51 | (2,008) | 81 | (3,189) | 800 | 400 | 25 |
| 51 | (2,008) | 104 | (4,094) | 1100 | 500 | 25 |
| 51 | (2,008) | 144 | (5,669) | 1300 | 600 | 25 |
| 66 | (2,598) | 104 | (4,094) | 1900 | 800 | 50 |
| 73 | (2,874) | 104 | (4,094) | 3000 | 1100 | 55 |
| 73 | (2,874) | 144 | (5,669) | 4000 | 1700 | 55 |
| 77 | (3,031) | 104 | (4,094) | 3100 | 1200 | 55 |
| 77 | (3,031) | 144 | (5,669) | 4200 | 1800 | 55 |
| 77 | (3,031) | 220 | (8,661) | 5700 | 2400 | 55 |
| 90 | (3,543) | 144 | (5,669) | 5700 | 2400 | 80 |
| 90 | (3,543) | 200 | (7,874) | 7700 | 3200 | 80 |

CONNECTIONS IN SERIES:

Operating voltages exceeding 500 V up to 20000 V will be reached by connecting capacitors with rated voltages higher or equal to 350 V in series.

EXPECTED LIFE

as a function of temperature and ripple current:



EXPECTED LIFE WITH ID:

- 1 to 5 discharges per minute For I = I_d 48 000 000 cycles
- 10 discharges per minute For I = I_d 36 000 000 cycles
- 15 discharges per minute For I = I_d 18 000 000 cycles
I = I_d/2 > 1 x 10⁹ cycles

- 15 to 60 discharges per minute

To have the highest dissipated power, use preferably FELSIC HC 500 V and calculate r.m.s. current (general technical data § 6.4.2.).

In order to have the highest value of stored energy use preferably FELSIC HC 305 V, 360 V, 410 V and 460 V (0.4 Wh/kg).

FAST DISCHARGES WORKING (ID)

Discharge current I_d = peak current of 3 ms per cycle of 1 to 60 s, at 40°C.I_d as a function of case

| DIMENSIONS in mm (inches) | | | | I _d (A) |
|---------------------------|---------|-----|---------|--------------------|
| Ø | H | | | |
| 36 | (1,417) | 44 | (1,732) | 200 |
| 36 | (1,417) | 52 | (2,047) | 230 |
| 36 | (1,417) | 60 | (2,362) | 300 |
| 36 | (1,417) | 80 | (3,150) | 440 |
| 36 | (1,417) | 104 | (4,094) | 580 |
| 51 | (2,008) | 62 | (2,441) | 600 |
| 51 | (2,008) | 81 | (3,189) | 740 |
| 51 | (2,008) | 104 | (4,094) | 990 |
| 51 | (2,008) | 144 | (5,669) | 1280 |
| 66 | (2,598) | 104 | (4,094) | 1400 |
| 73 | (2,874) | 104 | (4,094) | 1570 |
| 73 | (2,874) | 144 | (5,669) | 2200 |
| 77 | (3,031) | 104 | (4,094) | 2000 |
| 77 | (3,031) | 144 | (5,669) | 2800 |
| 77 | (3,031) | 220 | (8,661) | 3700 |
| 90 | (3,543) | 144 | (5,669) | 3900 |
| 90 | (3,543) | 200 | (7,874) | 4800 |

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I_{rms}: permissible r.m.s. current at 100 Hz

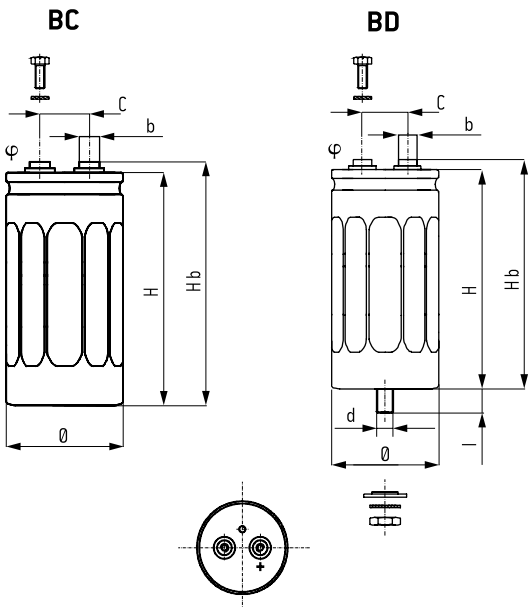
| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | ≥ 50 000 |
|--------|------------------------|------------------|------------------------|------------------------|-------------------------|------------------------|------------------------|
| I | 0,8 x I _{rms} | I _{rms} | 1,2 x I _{rms} | 1,3 x I _{rms} | 1,35 x I _{rms} | 1,5 x I _{rms} | 1,6 x I _{rms} |

FELSIC HV

BC - BD

8 000 h / 105°C

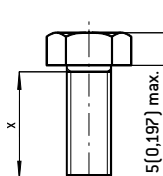
| | | | | |
|-----------------|---------------------------------|---|----------------|----------------|
| 160 V ... 450 V | 1000 μ F ... 47 000 μ F | \emptyset 51 (2,008) ... \emptyset 90 (3,543) | - 55°C + 105°C | Long Life Time |
|-----------------|---------------------------------|---|----------------|----------------|



HEXAGONAL SCREWS mm (inches)

Screwing height between screws and terminals:
3,5 (0,138) max

Max. screw torque: M5: 3 Nm [x min 8 (0,315)]
M6: 6 Nm [x min 10 (0,394)]



SPECIFICATIONS

NFC 83 110
DIN 40 040 - Climatic category FMD - 55°C + 105°C / 56 days
IEC 60 384.4 long life
Standard endurance test at U_R : 5000 h / 105°C

APPLICATIONS

- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current

Fixing: Clip or stud fixing

Screw terminals: M5 or M6

Tolerance on capacitance at 20°C: $\pm 20\%$

Operating temperature : - 55°C + 105°C

| BC | BD |
|--|---|
| Insulated aluminum can | Aluminum can with sleeve |
| Hexagonal screws | Hexagonal screws |
| Spring washers | Spring washers |
| Fixing clip must be ordered separately | Stud fixing delivered with capacitor (steel hex nut, spring washer) |

DIMENSIONS in mm (inches)

| $\emptyset \pm 1 (0,039)$ | H $\pm 2 (0,079)$ | Hb $\pm 2 (0,079)$ | c $\pm 0,5 (0,020)$ | \emptyset | b |
|---------------------------|-------------------|--------------------|---------------------|-------------|------------|
| 51 (2,008) | 81 (3,189) | 87 (3,425) | 22,2 (0,874) | M5 | 13 (0,512) |
| 51 (2,008) | 104 (4,094) | 110 (4,331) | 22,2 (0,874) | M5 | 13 (0,512) |
| 51 (2,008) | 144 (5,669) | 150 (5,906) | 22,2 (0,874) | M5 | 13 (0,512) |
| 66 (2,598) | 104 (4,094) | 111 (4,370) | 28,5 (1,122) | M5 | 13 (0,512) |
| 77 (3,031) | 104 (4,094) | 111 (4,370) | 31,7 (1,248) | M6 | 13 (0,512) |
| 77 (3,031) | 144 (5,669) | 151 (5,945) | 31,7 (1,248) | M6 | 13 (0,512) |
| 77 (3,031) | 220 (8,661) | 227 (8,937) | 31,7 (1,248) | M6 | 13 (0,512) |
| 90 (3,543) | 144 (5,669) | 151 (5,945) | 31,7 (1,248) | M6 | 13 (0,512) |
| 90 (3,543) | 200 (7,874) | 207 (8,150) | 31,7 (1,248) | M6 | 13 (0,512) |

| \emptyset | d | l | Max. nut torque |
|-------------------|-----|-----------------------------------|-----------------|
| 36 (1,417) | M8 | 12 ± 1 (0,472 $\pm 0,472$) | 4 Nm |
| ≥ 51 (2,008) | M12 | 16 $\pm 1,5$ (0,630 $\pm 0,059$) | 10 Nm |

RESISTANCE TO VIBRATIONS

| Hb mm (inches) | >150 (5,906) | ≤ 150 (5,906) |
|----------------|----------------------------|-----------------------------|
| f (Hz) | 10 - 55 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 (0,030) | 1,5 (0,059) |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 M Ω

Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V

Fire resistance: self extinguish 15 s (IEC 60 695-2-2).

8 000 h / 105°C

| Capacitance (μ F) | Case | | ESR 100 Hz +20°C | | Z +20°C 10 kHz max. (m Ω) | I +20°C 5 min. max. (mA) | I ~ | | Code | | | |
|----------------------------|----------------------------|------------------|------------------------|-----------------------|---|-----------------------------------|----------------------|---------------|------|----|----------|----------|
| | \emptyset mm (inches) | H mm (inches) | Typic (m Ω) | max. (m Ω) | | | +40°C max. (A) | +105°C (A) | BC | BD | | |
| Rated voltage 160 V | | | | | | | | | | | | |
| 4700 | 51 | [2,008] | 104 | [4,094] | 20 | 30 | 28 | 1,50 | 25 | 12 | A 764080 | A 765080 |
| 6800 | 66 | [2,598] | 104 | [4,094] | 18 | 26 | 18 | 2,18 | 50 | 14 | A 764082 | A 765082 |
| 10000 | 77 | [3,031] | 104 | [4,094] | 12 | 18 | 16 | 3,20 | 60 | 19 | A 764084 | A 765084 |
| 15000 | 77 | [3,031] | 144 | [5,669] | 10 | 14 | 13 | 4,80 | 60 | 24 | A 764085 | A 765085 |
| 22000 | 77 | [3,031] | 144 | [5,669] | 9 | 13 | 12 | 7,00 | 60 | 26 | A 764086 | A 765086 |
| 33000 | 77 | [3,031] | 220 | [8,661] | 8 | 12 | 11 | 10,00 | 60 | 33 | A 764087 | A 765087 |
| 47000 | 90 | [3,543] | 200 | [7,874] | 6 | 9 | 8 | 15,00 | 80 | 40 | A 764088 | A 765088 |
| Rated voltage 250 V | | | | | | | | | | | | |
| 3300 | 51 | [2,008] | 104 | [4,094] | 28 | 45 | 30 | 1,65 | 25 | 10 | A 764100 | A 765100 |
| 4700 | 66 | [2,598] | 104 | [4,094] | 20 | 30 | 20 | 2,35 | 50 | 14 | A 764102 | A 765102 |
| 6800 | 77 | [3,031] | 104 | [4,094] | 16 | 24 | 16 | 3,40 | 60 | 17 | A 764104 | A 765104 |
| 10000 | 77 | [3,031] | 144 | [5,669] | 14 | 21 | 14 | 4,50 | 60 | 21 | A 764105 | A 765105 |
| 22000 | 90 | [3,543] | 200 | [7,874] | 10 | 15 | 10 | 10,00 | 80 | 31 | A 764108 | A 765108 |
| Rated voltage 350 V | | | | | | | | | | | | |
| 1500 | 51 | [2,008] | 104 | [4,094] | 45 | 68 | 50 | 1,05 | 25 | 8 | A 764020 | A 765020 |
| 2200 | 51 | [2,008] | 144 | [5,669] | 25 | 38 | 23 | 1,50 | 25 | 12 | A 764021 | A 765021 |
| 3300 | 51 | [2,008] | 144 | [5,669] | 23 | 35 | 22 | 2,30 | 25 | 13 | A 764023 | A 765023 |
| 3300 | 66 | [2,598] | 104 | [4,094] | 25 | 38 | 28 | 2,30 | 45 | 12 | A 764022 | A 765022 |
| 4700 | 77 | [3,031] | 104 | [4,094] | 20 | 30 | 25 | 3,30 | 56 | 15 | A 764024 | A 765024 |
| 5600 | 77 | [3,031] | 104 | [4,094] | 18 | 27 | 22 | 3,90 | 59 | 16 | A 764027 | A 765027 |
| 6800 | 77 | [3,031] | 144 | [5,669] | 16 | 25 | 20 | 4,50 | 60 | 19 | A 764025 | A 765025 |
| 10000 | 77 | [3,031] | 220 | [8,661] | 10 | 16 | 14 | 5,00 | 60 | 29 | A 764026 | A 765026 |
| 15000 | 90 | [3,543] | 200 | [7,874] | 8 | 12 | 10 | 8,00 | 80 | 34 | A 764028 | A 765028 |
| Rated voltage 400 V | | | | | | | | | | | | |
| 1000 | 51 | [2,008] | 81 | [3,189] | 75 | 100 | 70 | 0,80 | 21 | 6 | A 764049 | A 765049 |
| 1500 | 51 | [2,008] | 104 | [4,094] | 65 | 85 | 60 | 1,20 | 25 | 7 | A 764040 | A 765040 |
| 2200 | 51 | [2,008] | 144 | [5,669] | 56 | 80 | 65 | 1,80 | 25 | 8 | A 764041 | A 765041 |
| 2200 | 66 | [2,598] | 104 | [4,094] | 42 | 63 | 45 | 1,80 | 35 | 9 | A 764042 | A 765042 |
| 3300 | 66 | [2,598] | 104 | [4,094] | 37 | 56 | 42 | 2,70 | 38 | 10 | A 764043 | A 765043 |
| 4700 | 77 | [3,031] | 104 | [4,094] | 25 | 38 | 30 | 3,80 | 50 | 13 | A 764044 | A 765044 |
| 4700 | 77 | [3,031] | 144 | [5,669] | 13 | 21 | 17 | 3,80 | 60 | 21 | A 764048 | A 765048 |
| 6800 | 77 | [3,031] | 144 | [5,669] | 12 | 20 | 16 | 5,50 | 60 | 22 | A 764045 | A 765045 |
| 8200 | 77 | [3,031] | 220 | [8,661] | 15 | 23 | 18 | 6,60 | 60 | 24 | A 764046 | A 765046 |
| 10000 | 77 | [3,031] | 220 | [8,661] | 14 | 21 | 17 | 8,00 | 60 | 25 | A 764050 | A 765050 |
| 10000 | 90 | [3,543] | 144 | [5,669] | 12 | 19 | 15 | 8,00 | 80 | 24 | A 764047 | A 765047 |
| 15000 | 90 | [3,543] | 200 | [7,874] | 11 | 19 | 14 | 13,00 | 80 | 29 | A 764051 | A 765051 |
| Rated voltage 450 V | | | | | | | | | | | | |
| 1500 | 51 | [2,008] | 104 | | 75 | 120 | 85 | 4,00 | 23 | 6 | A 764060 | A 765060 |
| 2200 | 66 | [2,598] | 104 | | 50 | 75 | 60 | 5,90 | 32 | 9 | A 764062 | A 765062 |
| 3300 | 77 | [3,031] | 104 | | 35 | 52 | 42 | 7,30 | 42 | 11 | A 764064 | A 765064 |
| 4700 | 77 | [3,031] | 144 | | 24 | 36 | 29 | 8,70 | 59 | 16 | A 764065 | A 765065 |
| 6800 | 77 | [3,031] | 220 | | 20 | 30 | 24 | 10,00 | 60 | 21 | A 764066 | A 765066 |
| 8200 | 90 | [3,543] | 200 | | 16 | 24 | 19 | 11,00 | 80 | 24 | A 764068 | A 765068 |
| 10000 | 90 | [3,543] | 200 | | 14 | 21 | 17 | 12,70 | 80 | 26 | A 764069 | A 765069 |
| 12000 | 90 | [3,543] | 200 | | 12 | 20 | 15 | 15,00 | 80 | 28 | A 764070 | A 765070 |

FELSIC HV

BC - BD

8 000 h / 105°C

PEAK VOLTAGE (V)

1000 cycles, without ripple current

Up: Repetitive standard peak voltage (30 s)

Us: Repetitive surge voltage (0,1 s)

Do not overstep this value without damage.

| U _R | 160 V | 250 V | 350 V | 400 V | 450 V |
|----------------|-------|-------|-------|-------|-------|
| U _p | 184 | 288 | 385 | 440 | 495 |
| U _s | 235 | 340 | 450 | 495 | 540 |

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f

I_~: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | 50 000 |
|--------|----------------------|----------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| I | 0,8 x I _~ | I _~ | 1,2 x I _~ | 1,3 x I _~ | 1,35 x I _~ | 1,5 x I _~ | 1,6 x I _~ |

PERMISSIBLE REPETITIVE PEAK CURRENT I_p:

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows:

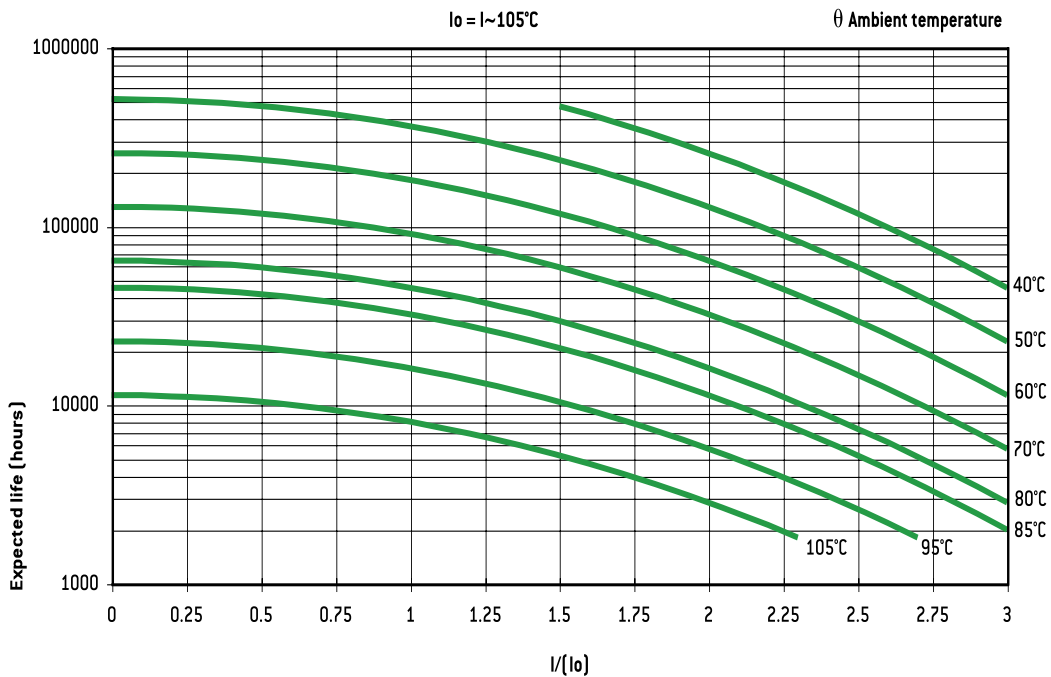
| DIMENSIONS in mm (inches) | | | | I _p (A) | | I _~ max. (A) |
|---------------------------|---------|-----|---------|--------------------|------|-------------------------|
| Ø | H | | 40°C | 105°C | | |
| 51 | (2,008) | 81 | (3,189) | 800 | 400 | 25 |
| 51 | (2,008) | 104 | (4,094) | 1100 | 500 | 25 |
| 51 | (2,008) | 144 | (5,669) | 1300 | 600 | 25 |
| 66 | (2,598) | 104 | (4,094) | 1900 | 800 | 50 |
| 77 | (3,031) | 104 | (4,094) | 3100 | 1200 | 60 |
| 77 | (3,031) | 144 | (5,669) | 4200 | 1800 | 60 |
| 77 | (3,031) | 220 | (8,661) | 5700 | 2400 | 60 |
| 90 | (3,543) | 144 | (5,669) | 5700 | 2400 | 80 |
| 90 | (3,543) | 200 | (7,874) | 7700 | 3200 | 80 |

EXPECTED LIFE

As a function of temperature and ripple current

CONNECTIONS IN SERIES:

Operating voltages exceeding 500 V up to 20000 V will be reached by connecting capacitors with rated voltages higher or equal to 350 V in series (see FELSIC in bank).



FELSIC 125 FRS

CO 46 - CO 47

3 500 h / 125°C

| | | | | |
|----------------|---------------------------------|---|----------------|----------------|
| 16 V ... 350 V | 220 μ F ... 150 000 μ F | \emptyset 36 [1,417] ... \emptyset 90 [3,543] | - 55°C + 125°C | Long Life Time |
|----------------|---------------------------------|---|----------------|----------------|



APPLICATIONS

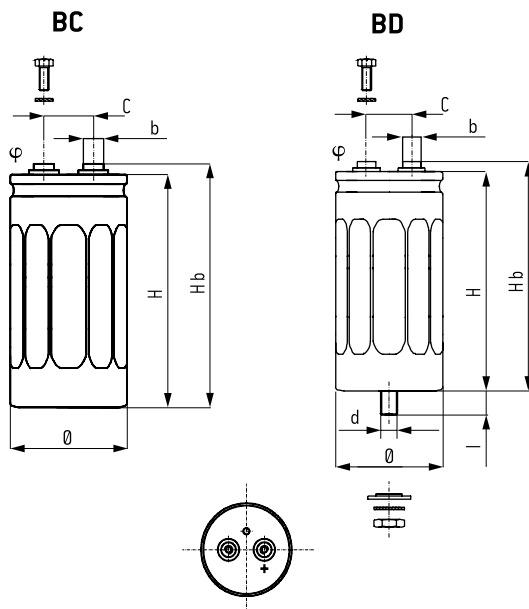
- Power electronics: converters, current inverters
- Switch mode power supplies
- Magnetization, welding machines, flash
- Circuit with high impulse current

Fixing: Clip or stud fixing

Screw terminals: M5 or M6

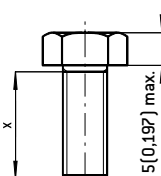
Tolerance on capacitance at 20°C: -10 +30 %

Operating temperature : - 55°C +125°C



HEXAGONAL SCREWS mm (inches)

| | |
|---|---|
| Screwing height between screws and terminals: | 3,5 [0,138] max |
| Max. screw torque: | M5: 3 Nm [x min 8 [0,315]] M6: 6 Nm [x min 10 [0,394]] |



SPECIFICATIONS

NFC 83 110 - Models CO 46, CO 47 - Long life
 DIN 41 240 - Climatic category FKD - 55°C + 125°C / 56 days
 CECC 30301-804 Issue 2
 IEC 60 384.4 long life
 Standard endurance test at U_R : 2000 h / 125°C

| BC | BD |
|--|---|
| Insulated aluminum can | Aluminum can with sleeve |
| Hexagonal screws | Hexagonal screws |
| Spring washers | Spring washers |
| Fixing clip must be ordered separately | Stud fixing delivered with capacitor [steel hex nut, spring washer] |

DIMENSIONS in mm (inches)

| $\emptyset \pm 1$ [0,039] | H ± 2 [0,079] | Hb ± 2 [0,079] | c $\pm 0,5$ [0,020] | ϕ | b |
|---------------------------|-------------------|--------------------|---------------------|--------|------------|
| 36 [1,417] | 53 [2,087] | 58 [2,283] | 12,7 [0,500] | M5 | 8 [0,315] |
| 36 [1,417] | 81 [3,189] | 86 [3,386] | 12,7 [0,500] | M5 | 8 [0,315] |
| 36 [1,417] | 105 [4,134] | 110 [4,331] | 12,7 [0,500] | M5 | 8 [0,315] |
| 51 [2,008] | 82 [3,228] | 87 [3,425] | 22,2 [0,874] | M5 | 13 [0,512] |
| 51 [2,008] | 105 [4,134] | 110 [4,331] | 22,2 [0,874] | M5 | 13 [0,512] |
| 66 [2,598] | 105 [4,134] | 110 [4,331] | 28,5 [1,122] | M5 | 13 [0,512] |
| 77 [3,031] | 105 [4,134] | 110 [4,331] | 31,7 [1,248] | M5 | 13 [0,512] |
| 77 [3,031] | 145 [5,709] | 150 [5,906] | 31,7 [1,248] | M5 | 13 [0,512] |
| 90 [3,543] | 145 [5,709] | 151 [5,945] | 31,7 [1,248] | M6 | 13 [0,512] |

| \emptyset | d | l | Max. nut torque |
|-------------------|-----|-----------------------------------|-----------------|
| 36 [1,417] | M8 | 12 ± 1 [0,472 $\pm 0,472$] | 4 Nm |
| ≥ 51 [2,008] | M12 | 16 $\pm 1,5$ [0,630 $\pm 0,059$] | 10 Nm |

RESISTANCE TO VIBRATIONS

| Hb mm (inches) | >150 [5,906] | ≤ 150 [5,906] |
|----------------|----------------------------|-----------------------------|
| f [Hz] | 10 - 55 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 [0,030] | 1,5 [0,059] |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between terminals and mounting hardware: 100 M Ω
 Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 3500 V
 Fire resistance: self extinguish 30 s [IEC 60 695-2-2] without PVC

FELSIC 125 FRS

CO 46 - CO 47

3 500 h / 125°C

| Capacitance [μF] | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. [mΩ] | I +20°C 5 min max. [mA] | I ~ 100 Hz | | | Code | | | |
|----------------------------|------------------|------------------|---------------------|--------------|--------------------------------------|-------------------------------------|-----------------------|--------------|---------------|---------------|---------------|----------|----------|
| | Ø mm (inches) | H mm (inches) | Typic [mΩ] | max. [mΩ] | | | + 40°C max. [A] | +85°C [A] | +125°C [A] | CO 47 [BC] | CO 46 [BD] | | |
| Rated voltage 16 V | | | | | | | | | | | | | |
| 10000 | 36 | (1,417) | 53 | (2,087) | 22 | 32 | 20 | 0,32 | 22 | 13 | 5,6 | A 740200 | A 741200 |
| 15000 | 36 | (1,417) | 81 | (3,189) | 18 | 26 | 16 | 0,48 | 22 | 17 | 7,5 | A 740201 | A 741201 |
| 22000 | 36 | (1,417) | 105 | (4,134) | 14 | 21 | 15 | 0,70 | 22 | 22 | 9,6 | A 740202 | A 741202 |
| 33000 | 51 | (2,008) | 82 | (3,228) | 12 | 18 | 12 | 1,05 | 25 | 25 | 11 | A 740203 | A 741203 |
| 47000 | 51 | (2,008) | 105 | (4,134) | 11 | 15 | 10 | 1,50 | 25 | 25 | 13 | A 740204 | A 741204 |
| 68000 | 66 | (2,598) | 105 | (4,134) | 10 | 14 | 10 | 2,18 | 50 | 35 | 15 | A 740205 | A 741205 |
| 100000 | 77 | (3,031) | 105 | (4,134) | 8 | 11 | 10 | 3,20 | 55 | 35 | 16 | A 740206 | A 741206 |
| 150000 | 77 | (3,031) | 145 | (5,709) | 7 | 10 | 9 | 4,80 | 55 | 41 | 20 | A 740207 | A 741207 |
| Rated voltage 25 V | | | | | | | | | | | | | |
| 4700 | 36 | (1,417) | 53 | (2,087) | 22 | 50 | 25 | 0,23 | 22 | 13 | 5,6 | A 740220 | A 741220 |
| 10000 | 36 | (1,417) | 81 | (3,189) | 18 | 28 | 20 | 0,50 | 22 | 17 | 7,5 | A 740221 | A 741221 |
| 15000 | 36 | (1,417) | 105 | (4,134) | 17 | 25 | 20 | 0,75 | 22 | 20 | 8,7 | A 740222 | A 741222 |
| 22000 | 51 | (2,008) | 82 | (3,228) | 13 | 20 | 15 | 1,10 | 25 | 25 | 10 | A 740223 | A 741223 |
| 33000 | 51 | (2,008) | 105 | (4,134) | 11 | 16 | 12 | 1,65 | 25 | 25 | 13 | A 740224 | A 741224 |
| 47000 | 66 | (2,598) | 105 | (4,134) | 10 | 14 | 12 | 2,35 | 50 | 37 | 15 | A 740225 | A 741225 |
| 68000 | 77 | (3,031) | 105 | (4,134) | 7 | 10 | 8 | 3,40 | 55 | 37 | 17 | A 740226 | A 741226 |
| 100000 | 77 | (3,031) | 145 | (5,709) | 7 | 10 | 8 | 5,00 | 55 | 41 | 20 | A 740227 | A 741227 |
| Rated voltage 40 V | | | | | | | | | | | | | |
| 4700 | 36 | (1,417) | 81 | (3,189) | 18 | 28 | 20 | 0,38 | 22 | 17 | 7,5 | A 740241 | A 741241 |
| 10000 | 36 | (1,417) | 105 | (4,134) | 17 | 25 | 17 | 0,80 | 22 | 20 | 8,7 | A 740242 | A 741242 |
| 15000 | 51 | (2,008) | 82 | (3,228) | 15 | 23 | 15 | 1,20 | 25 | 23 | 10 | A 740243 | A 741243 |
| 22000 | 51 | (2,008) | 105 | (4,134) | 11 | 17 | 12 | 1,76 | 25 | 25 | 13 | A 740244 | A 741244 |
| 33000 | 66 | (2,598) | 105 | (4,134) | 10 | 16 | 12 | 2,64 | 50 | 37 | 15 | A 740245 | A 741245 |
| 47000 | 77 | (3,031) | 105 | (4,134) | 7 | 10 | 10 | 3,76 | 55 | 37 | 17 | A 740246 | A 741246 |
| 68000 | 77 | (3,031) | 145 | (5,709) | 7 | 10 | 8 | 5,44 | 55 | 41 | 20 | A 740247 | A 741247 |
| Rated voltage 63 V | | | | | | | | | | | | | |
| 2200 | 36 | (1,417) | 53 | (2,087) | 36 | 54 | 40 | 0,27 | 20 | 10 | 4,4 | A 740260 | A 741260 |
| 3300 | 36 | (1,417) | 81 | (3,189) | 25 | 38 | 25 | 0,41 | 22 | 15 | 6,4 | A 740261 | A 741261 |
| 4700 | 36 | (1,417) | 105 | (4,134) | 22 | 32 | 22 | 0,59 | 22 | 18 | 7,6 | A 740262 | A 741262 |
| 6800 | 51 | (2,008) | 82 | (3,228) | 15 | 22 | 16 | 0,86 | 25 | 23 | 10 | A 740263 | A 741263 |
| 10000 | 51 | (2,008) | 105 | (4,134) | 11 | 16 | 11 | 1,26 | 25 | 25 | 13 | A 740264 | A 741264 |
| 15000 | 66 | (2,598) | 105 | (4,134) | 10 | 15 | 10 | 1,89 | 50 | 37 | 15 | A 740265 | A 741265 |
| 22000 | 77 | (3,031) | 105 | (4,134) | 7 | 11 | 8 | 2,77 | 55 | 37 | 16 | A 740266 | A 741266 |
| 33000 | 77 | (3,031) | 145 | (5,709) | 6 | 10 | 8 | 4,16 | 55 | 44 | 18 | A 740267 | A 741267 |
| 100000 | 90 | (3,543) | 145 | (5,709) | 4 | 10 | 8 | 10,00 | 80 | 65 | 24 | A 740268 | A 741268 |
| Rated voltage 100 V | | | | | | | | | | | | | |
| 1000 | 36 | (1,417) | 53 | (2,087) | 70 | 115 | 75 | 0,20 | 14 | 7,3 | 3,1 | A 740280 | A 741280 |
| 2200 | 36 | (1,417) | 81 | (3,189) | 40 | 60 | 40 | 0,44 | 22 | 12 | 5 | A 740281 | A 741281 |
| 3300 | 51 | (2,008) | 82 | (3,228) | 30 | 45 | 30 | 0,66 | 25 | 16 | 7,1 | A 740283 | A 741283 |
| 4700 | 51 | (2,008) | 105 | (4,134) | 27 | 40 | 24 | 0,94 | 25 | 19 | 8,4 | A 740284 | A 741284 |
| 6800 | 66 | (2,598) | 105 | (4,134) | 21 | 27 | 20 | 1,36 | 50 | 25 | 11 | A 740285 | A 741285 |
| 10000 | 77 | (3,031) | 105 | (4,134) | 14 | 21 | 15 | 2,00 | 55 | 29 | 13 | A 740286 | A 741286 |
| 15000 | 77 | (3,031) | 145 | (5,709) | 10 | 15 | 12 | 3,00 | 55 | 35 | 17 | A 740287 | A 741287 |
| 47000 | 90 | (3,543) | 145 | (5,709) | 4 | 10 | 8 | 9,00 | 80 | 65 | 24 | A 740288 | A 741288 |
| Rated voltage 160 V | | | | | | | | | | | | | |
| 470 | 36 | (1,417) | 53 | (2,087) | 120 | 180 | 100 | 0,15 | 9 | 5,2 | 2,1 | A 740300 | A 741300 |
| 680 | 36 | (1,417) | 81 | (3,189) | 70 | 105 | 50 | 0,21 | 14 | 8,3 | 3,3 | A 740301 | A 741301 |
| 1000 | 36 | (1,417) | 105 | (4,134) | 50 | 75 | 35 | 0,32 | 19 | 11 | 4,4 | A 740302 | A 741302 |
| 1500 | 51 | (2,008) | 82 | (3,228) | 45 | 65 | 30 | 0,48 | 23 | 12 | 5 | A 740303 | A 741303 |
| 2200 | 51 | (2,008) | 105 | (4,134) | 30 | 45 | 27 | 0,70 | 25 | 17 | 6,9 | A 740304 | A 741304 |
| 3300 | 66 | (2,598) | 105 | (4,134) | 25 | 35 | 21 | 1,05 | 42 | 21 | 8,7 | A 740305 | A 741305 |
| 4700 | 77 | (3,031) | 105 | (4,134) | 16 | 24 | 18 | 1,50 | 53 | 29 | 11 | A 740306 | A 741306 |
| 6800 | 77 | (3,031) | 145 | (5,709) | 12 | 18 | 12 | 2,18 | 55 | 39 | 15 | A 740307 | A 741307 |
| 22000 | 90 | (3,543) | 145 | (5,709) | 4 | 10 | 8 | 7,00 | 80 | 65 | 24 | A 740308 | A 741308 |

FELSIC 125 FRS

CO 46 - CO 47

3 500 h / 125°C

| Capacitance (μF) | Can | | ESR 100 Hz +20°C | | Z 10 kHz +20°C max. ($\text{m}\Omega$) | II +20°C 5 min max. (mA) | I~ 100 Hz | | | Code | | | |
|----------------------------------|----------------------------|------------------|-------------------------------|------------------------------|--|--------------------------------------|----------------------|--------------|---------------|---------------|---------------|----------|----------|
| | \emptyset mm (inches) | H mm (inches) | Typic ($\text{m}\Omega$) | max. ($\text{m}\Omega$) | | | +40°C max. (A) | +85°C (A) | +125°C (A) | CO 47 (BC) | CO 46 (BD) | | |
| Rated voltage 250 V | | | | | | | | | | | | | |
| 220 | 36 | (1,417) | 53 | (2,087) | 150 | 230 | 135 | 0,11 | 5,6 | 4,8 | 1,9 | A 740320 | A 741320 |
| 330 | 36 | (1,417) | 81 | (3,189) | 95 | 140 | 85 | 0,16 | 9,2 | 7 | 2,8 | A 740321 | A 741321 |
| 470 | 36 | (1,417) | 105 | (4,134) | 70 | 105 | 62 | 0,23 | 11 | 9,3 | 3,7 | A 740322 | A 741322 |
| 680 | 51 | (2,008) | 82 | (3,228) | 60 | 90 | 60 | 0,34 | 17 | 11 | 4,3 | A 740323 | A 741323 |
| 1500 | 51 | (2,008) | 105 | (4,134) | 30 | 50 | 30 | 0,75 | 25 | 17 | 6,9 | A 740324 | A 741324 |
| 2200 | 66 | (2,598) | 105 | (4,134) | 30 | 45 | 24 | 1,13 | 37 | 20 | 7,9 | A 740325 | A 741325 |
| 3300 | 77 | (3,031) | 105 | (4,134) | 15 | 23 | 15 | 1,65 | 55 | 30 | 12 | A 740326 | A 741326 |
| 4700 | 77 | (3,031) | 145 | (5,709) | 10 | 15 | 11 | 2,35 | 55 | 34 | 14 | A 740327 | A 741327 |
| 10000 | 90 | (3,543) | 145 | (5,709) | 8 | 12 | 10 | 4,50 | 80 | 41 | 17 | A 740328 | A 741328 |
| Rated voltage 350 V | | | | | | | | | | | | | |
| 220 | 36 | (1,417) | 81 | (3,189) | 400 | 600 | 400 | 0,16 | 7 | 3,3 | 1,1 | A 740340 | A 741340 |
| 330 | 36 | (1,417) | 105 | (4,134) | 300 | 450 | 280 | 0,24 | 9 | 4,5 | 1,5 | A 740341 | A 741341 |
| 470 | 51 | (2,008) | 82 | (3,228) | 150 | 230 | 150 | 0,33 | 14 | 6,6 | 2,2 | A 740342 | A 741342 |
| 680 | 51 | (2,008) | 105 | (4,134) | 130 | 200 | 130 | 0,48 | 15 | 8,1 | 2,7 | A 740343 | A 741343 |
| 1000 | 51 | (2,008) | 105 | (4,134) | 80 | 120 | 80 | 0,70 | 19 | 10 | 3,4 | A 740344 | A 741344 |
| 1500 | 66 | (2,598) | 105 | (4,134) | 70 | 100 | 70 | 1,05 | 26 | 13 | 4,2 | A 740345 | A 741345 |
| 2200 | 77 | (3,031) | 105 | (4,134) | 40 | 60 | 40 | 1,50 | 37 | 18 | 6,1 | A 740346 | A 741346 |
| 3300 | 77 | (3,031) | 145 | (5,709) | 30 | 45 | 30 | 2,30 | 50 | 24 | 8,1 | A 740347 | A 741347 |
| 4700 | 90 | (3,543) | 145 | (5,709) | 15 | 25 | 20 | 3,30 | 78 | 39 | 13 | A 740348 | A 741348 |
| 6800 | 90 | (3,543) | 145 | (5,709) | 12 | 20 | 18 | 4,20 | 80 | 42 | 14 | A 740349 | A 741349 |

PEAK VOLTAGE (V)

1000 cycles, without ripple current

Up: Repetitive standard peak voltage (30 s)

Us: Repetitive surge voltage (0,1 s)

| U _R | 16 V | 25 V | 40 V | 63 V | 100 V | 160 V | 250 V | 350 V |
|----------------|------|------|------|------|-------|-------|-------|-------|
| Up | 18 | 29 | 46 | 72 | 115 | 184 | 288 | 385 |
| Us | | | | | | 235 | 340 | 495 |

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | 50 000 |
|--------|----------|-----|----------|----------|-----------|----------|----------|
| I | 0,8 x I~ | I~ | 1,2 x I~ | 1,3 x I~ | 1,35 x I~ | 1,5 x I~ | 1,6 x I~ |

PERMISSIBLE REPETITIVE PEAK CURRENT I_p:

If given corresponding max r.m.s. currents are not exceeded, peak current values are as follows:

| DIMENSIONS in mm (inches) | | | | I _p | I~ max. |
|---------------------------|---------|-----|---------|----------------|---------|
| \emptyset | H | | | (A) | (A) |
| 36 | (1,417) | 53 | (2,087) | 400 | 22 |
| 36 | (1,417) | 81 | (3,189) | 600 | 22 |
| 36 | (1,417) | 105 | (4,134) | 700 | 22 |
| 51 | (2,008) | 82 | (3,228) | 800 | 25 |
| 51 | (2,008) | 105 | (4,134) | 1100 | 25 |
| 66 | (2,598) | 105 | (4,134) | 1900 | 50 |
| 77 | (3,031) | 105 | (4,134) | 3100 | 55 |
| 77 | (3,031) | 145 | (5,709) | 4200 | 55 |
| 90 | (3,543) | 145 | (5,709) | 5700 | 80 |

CONNECTIONS IN SERIES:

Operating voltages exceeding 500 V up to 20000 V w III be reached by connecting capacitors with rated voltages higher or equal to 350 V in series.

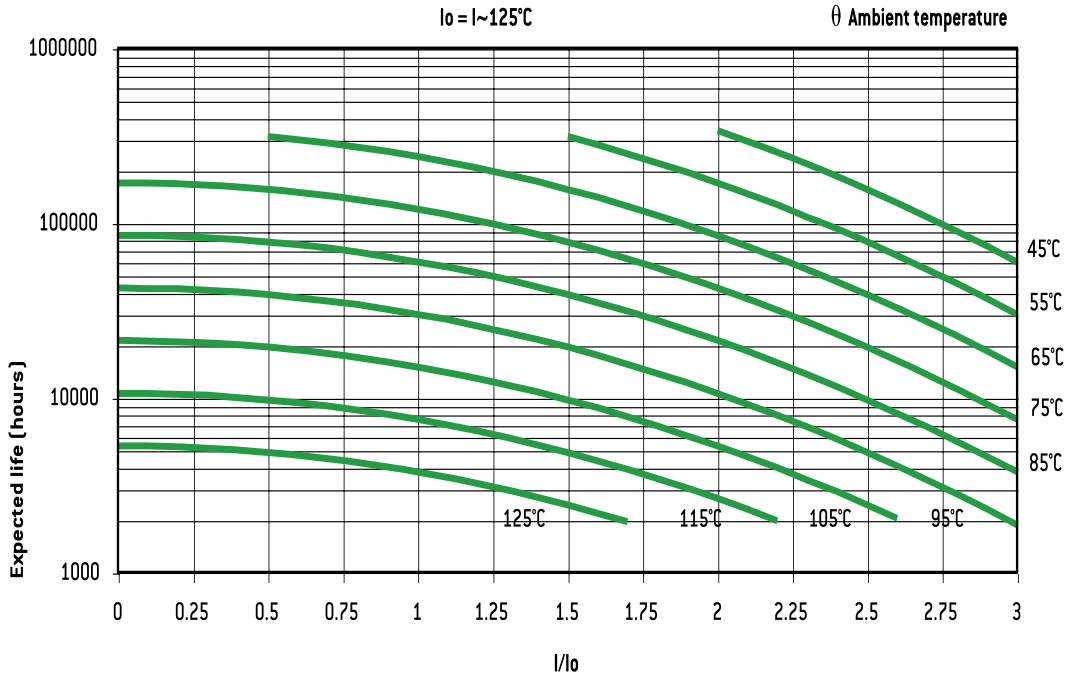
FELSIC 125 FRS

CO 46 - CO 47

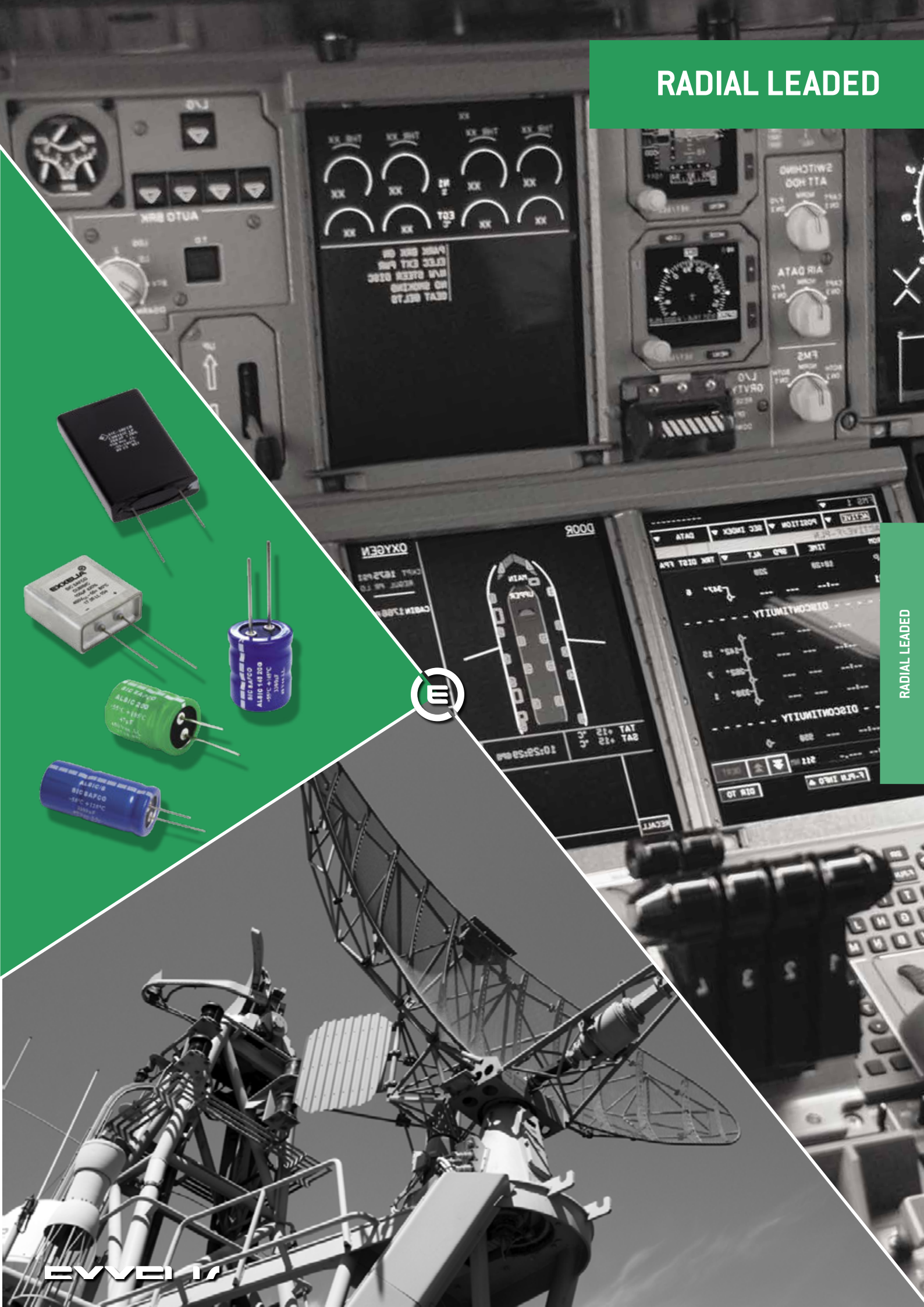
3 500 h / 125°C

EXPECTED LIFE

As a function of temperature and ripple current



RADIAL LEADED



RADIAL LEADED



ALSIC 145 20G

2 000 h / 145°C

| | | | | |
|----------------|--------------------|---------------------------------|----------------|----------------|
| 10 V ... 110 V | 220 μF ... 3300 μF | ∅ 18 (0,709) ... ∅ 22,5 (0,886) | - 55°C + 145°C | Long life time |
|----------------|--------------------|---------------------------------|----------------|----------------|

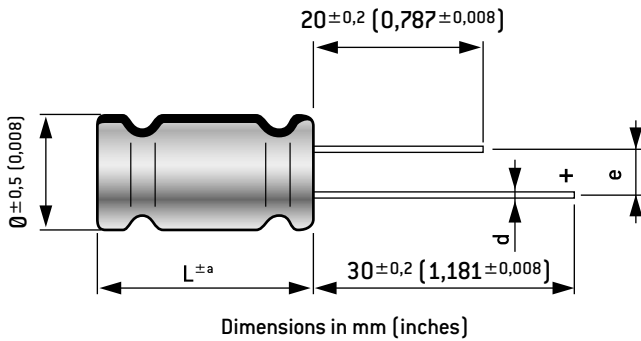


APPLICATIONS

- Automotive
- High frequency switched mode power supplies
- High ripple current
- Low inductance
- Low impedance

Insulating aluminum case
Tin coated leads
Negative pole marked

Tolerance on capacitance at 20°C : ± 20 %
Operating temperature : - 55°C + 145°C



DIMENSIONS in mm (inches)

| ∅ | e ± 0,5 (0,020) | d | b | c | ± a |
|------------|-----------------|-------------|------------|------------|-----------|
| 18 (0,709) | 7,5 (0,295) | 0,8 (0,031) | 15 (0,591) | 20 (0,787) | 1 (0,039) |
| 18 (0,709) | 7,5 (0,295) | 0,8 (0,031) | 25 (0,984) | 30 (1,181) | 2 (0,079) |

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|----------------------------|
| f (Hz) | 10 – 55 Hz |
| Amplitude | 0,75 mm |
| Acceleration | 20 g - 98 m/s ² |
| t (h) | 3 x 2 h |

SPECIFICATIONS

NFC 83 110 - Long life
CECC 30 300
IEC 60 384-4 Long life
Standard endurance test at U_R: 5000h / 125°C
Climatic category GPF: -55°C + 145°C / 56 days

MAX ESR 100 Hz, 20°C

ESR max ≅ ESR typ. x 1.3

MAX IMPEDANCE 100 kHz, 20°C

Z max ≅ Z typ. x 1.3

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between leads and mounting hardware : 100 MΩ
Test voltage at 50 Hz 1 min. between terminals and mounting hardware : 1 000 V
Fire resistance : self extinguish 30 s (IEC 60 695-2-2) without PVC

ALSIC 145 20G

2 000 h / 145°C

| Capacitance (μF) | Case | | ESR 100 Hz +20°C Typic ($\text{m}\Omega$) | Z 100 kHz | | I. leak +20°C 5 min. max. (mA) | I \sim +145°C | | Code | | |
|---|------------------------------|------------------|--|-------------------------------------|-------------------------------------|---|--------------------|----------------|------|-----|---------|
| | \varnothing mm (inches) | L mm (inches) | | +20° C typ. ($\text{m}\Omega$) | -10° C typ. ($\text{m}\Omega$) | | 100 Hz (A) | 100 kHz (A) | | | |
| Rated voltage / Peak voltage: 10/12V | | | | | | | | | | | |
| 2200 | 18 | (0,709) | 35 | (1,378) | 50 | 25 | 50 | 70 | 2,6 | 4,1 | A776000 |
| 2200 | 18 | (0,709) | 40 | (1,575) | 50 | 40 | 80 | 70 | 2,8 | 4,5 | A776001 |
| Rated voltage / Peak voltage: 16/18V | | | | | | | | | | | |
| 1500 | 18 | (0,709) | 40 | (1,575) | 80 | 60 | 120 | 75 | 2,2 | 3,6 | A776002 |
| Rated voltage / Peak voltage: 40/46V | | | | | | | | | | | |
| 2200 | 18 | (0,709) | 30 | (1,181) | 50 | 40 | 80 | 270 | 2,5 | 4 | A776003 |
| 3300 | 18 | (0,709) | 35 | (1,378) | 45 | 35 | 70 | 400 | 2,7 | 4,4 | A776004 |
| 3300 | 22,5 | (0,886) | 40 | (1,575) | 30 | 20 | 40 | 400 | 4 | 6,3 | A776005 |
| Rated voltage / Peak voltage: 50/58V | | | | | | | | | | | |
| 1800 | 18 | (0,709) | 35 | (1,378) | 60 | 50 | 100 | 270 | 2,4 | 3,8 | A776006 |
| 2200 | 18 | (0,709) | 35 | (1,378) | 70 | 45 | 85 | 330 | 2,2 | 3,5 | A776007 |
| 2700 | 18 | (0,709) | 40 | (1,575) | 50 | 40 | 80 | 400 | 2,8 | 4,5 | A776008 |
| Rated voltage / Peak voltage: 63/72V | | | | | | | | | | | |
| 470 | 18 | (0,709) | 35 | (1,378) | 145 | 90 | 170 | 93 | 1,5 | 2,4 | A776009 |
| 560 | 18 | (0,709) | 35 | (1,378) | 135 | 85 | 160 | 110 | 1,7 | 2,8 | A776010 |
| 680 | 18 | (0,709) | 35 | (1,378) | 80 | 30 | 55 | 130 | 2 | 3,3 | A776011 |
| 820 | 18 | (0,709) | 35 | (1,378) | 75 | 28 | 52 | 160 | 2,1 | 3,4 | A776012 |
| 1000 | 18 | (0,709) | 30 | (1,181) | 70 | 50 | 100 | 190 | 2,1 | 3,3 | A776013 |
| Rated voltage / Peak voltage: 100/115V | | | | | | | | | | | |
| 220 | 18 | (0,709) | 25 | (0,984) | 480 | 280 | 510 | 70 | 0,7 | 1,1 | A776014 |
| 330 | 18 | (0,709) | 25 | (0,984) | 450 | 250 | 450 | 105 | 0,7 | 1,2 | A776015 |
| 330 | 18 | (0,709) | 35 | (1,378) | 390 | 190 | 340 | 105 | 0,9 | 1,5 | A776016 |
| 470 | 18 | (0,709) | 35 | (1,378) | 300 | 150 | 270 | 140 | 1,1 | 1,7 | A776017 |

ESR max. 100 Hz - 20°C
ESR max. \approx ESR typ x 1,3

Max. Impedance 100 kHz
Z max. \approx Z typ x 1,3

EXPECTED LIFE

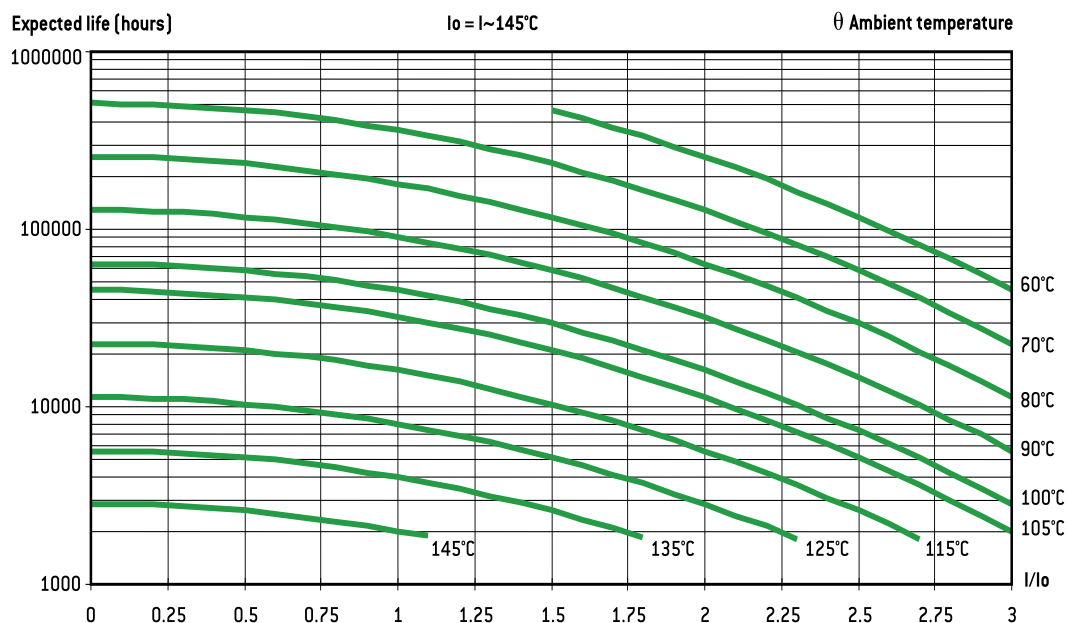
As a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

Versus frequency f:

I \sim : permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | \geq 50 000 |
|--------|----------------|----------|----------------|----------------|-----------------|----------------|----------------|
| I | 0,8 x I \sim | I \sim | 1,2 x I \sim | 1,3 x I \sim | 1,35 x I \sim | 1,5 x I \sim | 1,6 x I \sim |



ALSIC 20G

8 000 h / 105°C

| | | | | |
|----------------|-------------------------------|---|----------------|----------------|
| 10 V ... 500 V | 33 μ F ... 80 000 μ F | \emptyset 18 (0,709) ... \emptyset 35,5 (1,398) | - 55°C + 105°C | Long life time |
|----------------|-------------------------------|---|----------------|----------------|



APPLICATIONS

- Automotive
- High frequency switched mode power supplies
- High ripple current
- Low inductance
- Low impedance

Insulating aluminum case

Tin coated leads

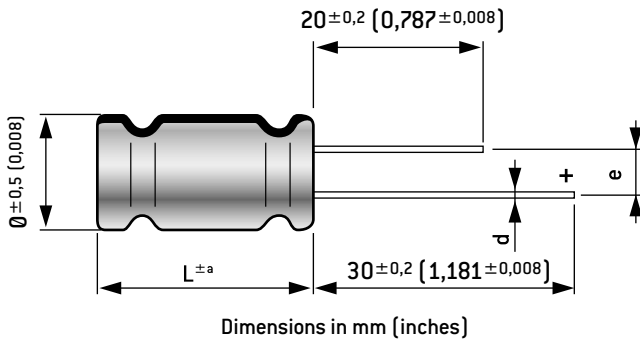
Negative pole marked

Tolerance on capacitance at 20°C

: $\pm 20\%$

Operating temperature

: - 55°C + 105°C



DIMENSIONS in mm (inches)

| \emptyset | $e \pm 0,5 (0,020)$ | d | $b \pm 2 (0,079)$ | $\pm a$ | $c \pm 2 (0,079)$ |
|--------------|---------------------|-------------|-------------------|-----------|-------------------|
| 18 (0,709) | 7,5 (0,295) | 0,8 (0,031) | 15 (0,591) | 1 (0,039) | 20 (0,787) |
| 22,5 (0,886) | 8,3 (0,327) | 1,2 (0,047) | 25 (0,984) | 2 (0,079) | 30 (1,181) |
| 35,5 (1,398) | | | | | |

SPECIFICATIONS

NFC 83 110 - Long life

CECC 30 300

IEC 60 384-4 Long life

Standard endurance test at U_R : 5000h / 105°C

Climatic category GPF: - 55°C + 105°C / 56 days

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|-----------------------------|
| f (Hz) | 10 - 2000 Hz |
| Amplitude | 1,5 (0,059) |
| Acceleration | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between

leads and mounting hardware

: 100 M Ω

Test voltage at 50 Hz 1 min. between

terminals and mounting hardware

: 1 000 V

Fire resistance

: self extinguish 30 s
(IEC 60 695-2-2)

8 000 h / 105°C

| Capacitance (μ F) | Case | | Tan δ max. (%) | Z F(1) +20°C max. (Ω) | I. leak +20°C 5 min. max. (mA) | I \sim +105°C 100 Hz (A) | Code | | |
|---|----------------------------|------------------|-----------------------------|---|---|-------------------------------------|---------|------|---------|
| | \emptyset mm (inches) | L mm (inches) | | | | | | | |
| Rated voltage/Peak voltage: 10 / 12 V | | | | | | | | | |
| 15000 | 18 | [0,709] | 40 | [1,575] | 25 | 20 | 0,9 | 3,9 | A776100 |
| Rated voltage/Peak voltage: 16 / 18V | | | | | | | | | |
| 8200 | 18 | [0,709] | 35 | [1,378] | 40 | 25 | 0,4 | 2,9 | A776101 |
| 14000 | 18 | [0,709] | 40 | [1,575] | 25 | 20 | 1,3 | 3,9 | A776102 |
| 66000 | 35,5 | [1,398] | 45 | [1,772] | 13 | 11 | 6,3 | 20 | A776103 |
| 80000 | 35,5 | [1,398] | 50 | [1,969] | 13 | 11 | 8,1 | 20 | A776104 |
| Rated voltage/Peak voltage: 25 / 29V | | | | | | | | | |
| 3700 | 22,5 | [0,886] | 40 | [1,575] | 35 | 25 | 0,6 | 3,7 | A776105 |
| Rated voltage/Peak voltage: 35 / 40V | | | | | | | | | |
| 2200 | 18 | [0,709] | 35 | [1,378] | 40 | 30 | 0,42 | 2,9 | A776106 |
| 2700 | 18 | [0,709] | 35 | [1,378] | 30 | 18 | 0,29 | 3,3 | A776107 |
| 3300 | 18 | [0,709] | 30 | [1,181] | 35 | 26 | 0,35 | 2,9 | A776108 |
| 4700 | 18 | [0,709] | 35 | [1,378] | 30 | 25 | 0,5 | 3,3 | A776109 |
| 5800 | 18 | [0,709] | 40 | [1,575] | 30 | 25 | 1,2 | 3,5 | A776110 |
| Rated voltage/Peak voltage: 50 / 58V | | | | | | | | | |
| 2200 | 18 | [0,709] | 35 | [1,378] | 40 | 27 | 0,33 | 2,9 | A776111 |
| 2700 | 18 | [0,709] | 35 | [1,378] | 30 | 18 | 0,41 | 3,3 | A776112 |
| 3000 | 18 | [0,709] | 35 | [1,378] | 40 | 27 | 0,45 | 2,9 | A776113 |
| 3300 | 18 | [0,709] | 40 | [1,575] | 25 | 15 | 0,5 | 3,9 | A776114 |
| Rated voltage/Peak voltage: 63 / 72V | | | | | | | | | |
| 600 | 22,5 | [0,886] | 25 | [0,984] | 75 | 33 | 0,3 | 2,1 | A776115 |
| 2700 | 25,5 | [1,004] | 40 | [1,575] | 8 | 30 | 0,51 | 4,3 | A776116 |
| 3000 | 18 | [0,709] | 40 | [1,575] | 30 | 20 | 0,57 | 3,5 | A776117 |
| 4700 | 25,5 | [1,004] | 40 | [1,575] | 15 | 35 | 1,8 | 3,2 | A776118 |
| Rated voltage/Peak voltage: 100 / 115V | | | | | | | | | |
| 2200 | 25,5 | [1,004] | 40 | [1,575] | 10 | 10 | A776119 | | |
| Rated voltage: 160 V | | | | | | | | | |
| 220 | 22,5 | [0,886] | 25 | [0,984] | 12 | 0,5 | 210 | 0,8 | A776120 |
| 330 | 22,5 | [0,886] | 30 | [1,181] | 12 | 0,3 | 320 | 1,1 | A776121 |
| 470 | 25,5 | [1,004] | 30 | [1,181] | 12 | 0,2 | 450 | 1,5 | A776122 |
| 1000 | 25,5 | [1,004] | 40 | [1,575] | 12 | 0,1 | 960 | 2,3 | A776123 |
| 2200 | 35,5 | [1,398] | 40 | [1,575] | 17 | 0,07 | 2100 | 3,4 | A776124 |
| Rated voltage: 200 V | | | | | | | | | |
| 220 | 22,5 | [0,886] | 25 | [0,984] | 12 | 0,5 | 260 | 0,8 | A776125 |
| 330 | 22,5 | [0,886] | 30 | [1,181] | 12 | 0,3 | 390 | 1,1 | A776126 |
| 470 | 25,5 | [1,004] | 30 | [1,181] | 12 | 0,2 | 560 | 1,5 | A776127 |
| 680 | 25,5 | [1,004] | 40 | [1,575] | 12 | 0,15 | 810 | 1,9 | A776128 |
| 1000 | 25,5 | [1,004] | 50 | [1,969] | 12 | 0,1 | 1200 | 2,6 | A776129 |
| 1500 | 30,5 | [1,201] | 50 | [1,969] | 15 | 0,09 | 1800 | 3 | A776130 |
| 2200 | 35,5 | [1,398] | 50 | [1,969] | 15 | 0,055 | 2600 | 4,2 | A776131 |
| Rated voltage: 250 V | | | | | | | | | |
| 100 | 22,5 | [0,886] | 25 | [0,984] | 12 | 0,8 | 150 | 0,62 | A776132 |
| 150 | 22,5 | [0,886] | 25 | [0,984] | 12 | 0,6 | 220 | 0,72 | A776133 |
| 220 | 22,5 | [0,886] | 30 | [1,181] | 12 | 0,4 | 330 | 1 | A776134 |
| 330 | 25,5 | [1,004] | 30 | [1,181] | 12 | 0,25 | 500 | 1,3 | A776135 |
| 390 | 22,5 | [0,886] | 40 | [1,575] | 12 | 0,22 | 600 | 1,4 | A776136 |
| 470 | 25,5 | [1,004] | 40 | [1,575] | 12 | 0,16 | 700 | 1,8 | A776137 |
| 680 | 25,5 | [1,004] | 50 | [1,969] | 12 | 0,13 | 1000 | 2,3 | A776138 |
| 1000 | 30,5 | [1,201] | 50 | [1,969] | 12 | 0,1 | 1500 | 2,9 | A776139 |
| 1500 | 35,5 | [1,398] | 50 | [1,969] | 12 | 0,07 | 2300 | 3,7 | A776140 |

F(1): $\emptyset \leq 18$ mm = 100 kHz
 $\emptyset > 18$ mm = 10 kHz

ALSIC 20G

8 000 h / 105°C

| Capacitance (μF) | Case | | Tan δ max. (%) | Z F(1) | I _{leak} +20°C 5 min. max. (mA) | I _~ +105°C 100 Hz (A) | Code |
|----------------------------------|----------------------------|------------------|-----------------------------|----------------------------|---|---|---------|
| | \emptyset mm (inches) | L mm (inches) | | +20°C max. (Ω) | | | |
| Rated voltage: 350V | | | | | | | |
| 100 | 22,5 (0,886) | 25 (0,984) | 12 | 0,7 | 210 | 0,67 | A776141 |
| 220 | 22,5 (0,886) | 40 (1,575) | 12 | 0,35 | 460 | 1,2 | A776142 |
| 470 | 30,5 (1,201) | 40 (1,575) | 12 | 0,15 | 1000 | 2,1 | A776143 |
| 680 | 35,5 (1,398) | 40 (1,575) | 12 | 0,11 | 1400 | 2,7 | A776144 |
| Rated voltage: 400V | | | | | | | |
| 68 | 22,5 (0,886) | 25 (0,984) | 10 | 1,2 | 650 | 0,51 | A776145 |
| 100 | 22,5 (0,886) | 30 (1,181) | 10 | 0,9 | 800 | 0,64 | A776146 |
| 150 | 22,5 (0,886) | 40 (1,575) | 10 | 0,6 | 1000 | 0,89 | A776147 |
| 220 | 25,5 (1,004) | 40 (1,575) | 10 | 0,4 | 1200 | 1,3 | A776148 |
| 330 | 30,5 (1,201) | 40 (1,575) | 10 | 0,3 | 1500 | 1,5 | A776149 |
| 470 | 30,5 (1,201) | 50 (1,969) | 10 | 0,2 | 1800 | 2 | A776150 |
| 680 | 35,5 (1,398) | 50 (1,969) | 12 | 0,15 | 2100 | 2,5 | A776151 |
| Rated voltage: 450V | | | | | | | |
| 33 | 18 (0,709) | 35 (1,378) | 5 | 1,8 | 730 | 0,43 | A776152 |
| 47 | 18 (0,709) | 25 (0,984) | 10 | 2 | 600 | 0,33 | A776153 |
| 47 | 18 (0,709) | 35 (1,378) | 10 | 2 | 600 | 0,41 | A776154 |
| 47 | 22,5 (0,886) | 25 (0,984) | 10 | 1,7 | 600 | 0,43 | A776155 |
| 68 | 22,5 (0,886) | 25 (0,984) | 10 | 1,2 | 700 | 0,51 | A776156 |
| 100 | 22,5 (0,886) | 40 (1,575) | 10 | 1,1 | 800 | 0,65 | A776157 |
| 150 | 22,5 (0,886) | 40 (1,575) | 10 | 0,7 | 1000 | 0,82 | A776158 |
| 220 | 25,5 (1,004) | 50 (1,969) | 10 | 0,4 | 1250 | 1,3 | A776159 |
| 330 | 30,5 (1,201) | 40 (1,575) | 10 | 0,3 | 1500 | 1,5 | A776160 |
| 470 | 35,5 (1,398) | 40 (1,575) | 10 | 0,2 | 1800 | 2 | A776161 |
| Rated voltage: 500V | | | | | | | |
| 47 | 22,5 (0,886) | 30 (1,181) | 12 | 3 | 620 | 0,35 | A776162 |
| 100 | 25,5 (1,004) | 40 (1,575) | 12 | 1,8 | 900 | 0,55 | A776163 |
| 150 | 30,5 (1,201) | 40 (1,575) | 12 | 1 | 1100 | 0,82 | A776164 |
| 220 | 30,5 (1,201) | 50 (1,969) | 12 | 0,4 | 1350 | 1,4 | A776165 |
| 330 | 35,5 (1,398) | 50 (1,969) | 12 | 0,3 | 1600 | 1,8 | A776166 |

F(1): $\emptyset \leq 18 \text{ mm} = 100 \text{ kHz}$
 $\emptyset > 18 \text{ mm} = 10 \text{ kHz}$

MAX ESR 100 Hz, 20°C

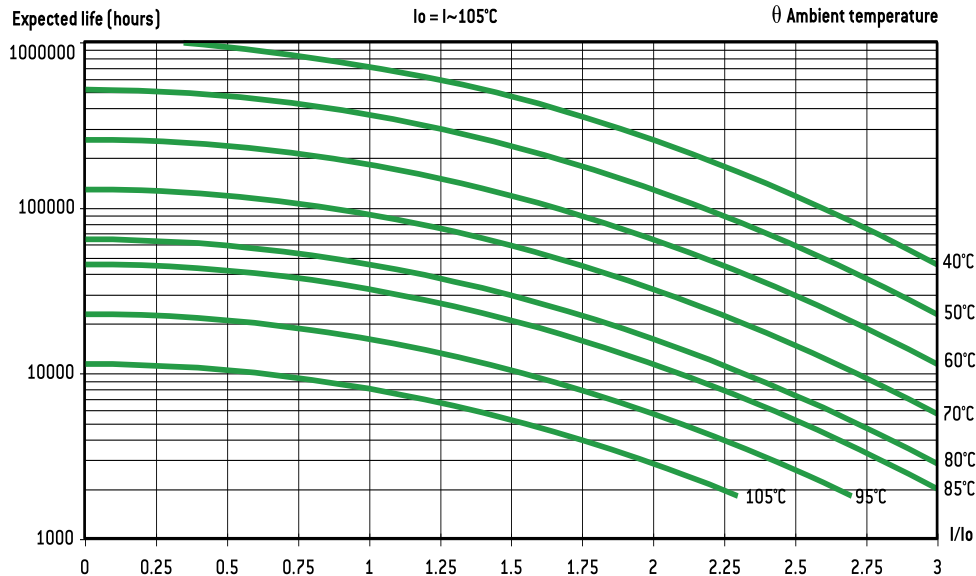
ESR max \cong ESR typ. x 1.3

MAX IMPEDANCE 100 kHz, 20°C

Z max \cong Z typ. x 1.3

EXPECTED LIFE

As a function of temperature and ripple current.



PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I_~: permissible r.m.s. current at 100 Hz

| f(Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | $\geq 50 000$ |
|-------|----------------------|----------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| I | 0,8 x I _~ | I _~ | 1,2 x I _~ | 1,3 x I _~ | 1,35 x I _~ | 1,5 x I _~ | 1,6 x I _~ |

8 000 h / 105°C

| | | | | |
|----------------|--------------------------------|--------------------------------------|----------------|----------------|
| 10 V ... 400 V | 100 μ F ... 33 000 μ F | 35 (1,378) x 35 (1,378) x 16 (0,630) | - 55°C + 105°C | Long Life Time |
| 450 V | 100 μ F ... 220 μ F | 35 (1,378) x 50 (1,969) x 16 (0,630) | - 55°C + 85°C | |



APPLICATIONS

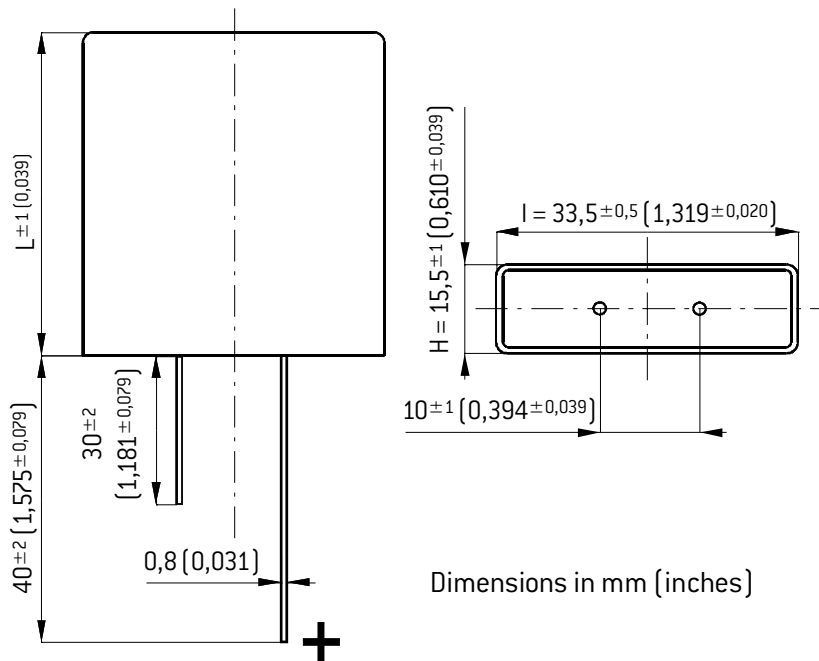
- Low profile printed circuit mounting
- Possible thermal dissipation per conduction through lower and upper surface
- Switch mode power supplies, impulse current

Aluminum case: Tin coated leads

Negative pole marked

Tolerance on capacitance at 20°C: $\pm 20\%$

Operating temperature : - 55°C + 105°C



Dimensions in mm (inches)

SPECIFICATIONS

CECC 30300 Long life

IEC 60 384-4 Long life

DIN 41 240 climatic category: - 55 + 105°C

and GPF: - 55°C + 105°C / 56 days

- 55°C + 85°C / 56 days

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|-----------------------------|
| f (Hz) | 10 - 2000 Hz |
| Amplitude | 1,5 [0,059] |
| Acceleration | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h |

CUBIC

8 000 h / 105°C

| Capacitance (μF) | Case | | | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | I +20°C 5 min. max. (mA) | I ~ 100 Hz | | Code | | | |
|----------------------------------|------------------|------------------|------------------|---|--|--|--------------------------------------|----------------------|--|------|------|-----|----------|
| | I mm (inches) | L mm (inches) | H mm (inches) | | | | | +40°C max. (A) | +105°C U _R < 450 V +85°C U _R = 450 V (A) | | | | |
| Rated voltage 10 V | | | | | | | | | | | | | |
| 15000 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 28 | 20 | 18 | 0,90 | 16,8 | 4,5 | A 710000 |
| 22000 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 35 | 17 | 14 | 1,30 | 20 | 5,8 | A 710001 |
| 33000 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 47 | 15 | 11 | 1,98 | 20 | 6,1 | A 710002 |
| Rated voltage 16 V | | | | | | | | | | | | | |
| 10000 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 18 | 19 | 17 | 0,96 | 17,3 | 4,7 | A 710020 |
| 15000 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 25 | 18 | 15 | 1,40 | 18 | 4,8 | A 710022 |
| 22000 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 30 | 16 | 13 | 2,10 | 20 | 5,9 | A 710021 |
| Rated voltage 25 V | | | | | | | | | | | | | |
| 6800 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 17 | 27 | 19 | 1,00 | 14,5 | 3,9 | A 710040 |
| 10000 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 17 | 18 | 15 | 1,50 | 20 | 5,6 | A 710041 |
| 15000 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 21 | 15 | 13 | 2,20 | 20 | 6,1 | A 710042 |
| Rated voltage 35 V | | | | | | | | | | | | | |
| 5600 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 14 | 27 | 19 | 1,20 | 14,5 | 3,9 | A 710060 |
| 6800 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 15 | 24 | 17 | 1,40 | 15,4 | 4,1 | A 710061 |
| 10000 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 17 | 19 | 13 | 2,10 | 20 | 5,5 | A 710062 |
| Rated voltage 40 V | | | | | | | | | | | | | |
| 4700 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 12 | 26 | 18 | 1,10 | 15 | 4 | A 710080 |
| 6800 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 13 | 21 | 13 | 1,60 | 19 | 5,2 | A 710081 |
| Rated voltage 50 V | | | | | | | | | | | | | |
| 3300 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 33 | 26 | 0,99 | 13 | 3,5 | A 710100 |
| 5000 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 20 | 12 | 1,50 | 17 | 4,5 | A 710101 |
| 8200 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 15 | 20 | 12 | 2,50 | 20 | 5,3 | A 710102 |
| Rated voltage 63 V | | | | | | | | | | | | | |
| 2200 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 42 | 25 | 0,83 | 12 | 3,2 | A 710120 |
| 3300 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 10 | 31 | 20 | 1,20 | 16 | 4,3 | A 710121 |
| 4700 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 12 | 28 | 18 | 1,80 | 17 | 4,5 | A 710122 |
| Rated voltage 80 V | | | | | | | | | | | | | |
| 1500 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 52 | 30 | 0,72 | 10,4 | 2,8 | A 710140 |
| 2200 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 10 | 43 | 17 | 1,10 | 13,6 | 3,6 | A 710141 |
| Rated voltage 100 V | | | | | | | | | | | | | |
| 1000 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 51 | 35 | 0,60 | 10,8 | 2,8 | A 710160 |
| 1500 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 10 | 36 | 23 | 0,90 | 14,9 | 4 | A 710161 |
| 1800 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 10 | 29 | 19 | 1,1 | 16,6 | 4,4 | A 710162 |
| Rated voltage 160 V | | | | | | | | | | | | | |
| 470 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 11 | 170 | 130 | 0,45 | 5,8 | 1,6 | A 710180 |
| 680 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 11 | 150 | 110 | 0,66 | 7,3 | 1,9 | A 710181 |
| Rated voltage 200 V | | | | | | | | | | | | | |
| 330 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 12 | 250 | 160 | 0,39 | 4,8 | 1,3 | A 710200 |
| 470 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 12 | 160 | 120 | 0,56 | 7,1 | 1,9 | A 710201 |
| 680 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 12 | 150 | 110 | 0,81 | 7,3 | 1,9 | A 710202 |
| Rated voltage 250 V | | | | | | | | | | | | | |
| 330 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 12 | 260 | 170 | 0,50 | 4,7 | 1,3 | A 710220 |
| 470 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 12 | 160 | 120 | 0,70 | 7,1 | 1,9 | A 710221 |
| Rated voltage 350 V | | | | | | | | | | | | | |
| 220 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 280 | 130 | 0,46 | 4,6 | 1,2 | A 710240 |
| 330 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 10 | 180 | 80 | 0,69 | 6,6 | 1,8 | A 710241 |
| Rated voltage 400 V | | | | | | | | | | | | | |
| 100 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 420 | 260 | 0,80 | 3,8 | 1 | A 710260 |
| 150 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 280 | 150 | 1,00 | 4,6 | 1,2 | A 710262 |
| 220 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 10 | 200 | 130 | 1,20 | 6,3 | 1,7 | A 710261 |
| Rated voltage 450 V | | | | | | | | | | | | | |
| 100 | 35 | (1,378) | 35 | (1,378) | 16 | (0,630) | 10 | 600 | 320 | 0,80 | 3,1 | 0,8 | A 710280 |
| 150 | 34 | (1,339) | 50 | (1,969) | 16 | (0,630) | 10 | 420 | 220 | 1,00 | 4,4 | 1,2 | A 710281 |
| 220 | 35 | (1,378) | 50 | (1,969) | 16 | (0,630) | 10 | 300 | 160 | 1,30 | 5,2 | 1,4 | A 710282 |

8 000 h / 105°C

EXPECTED LIFE

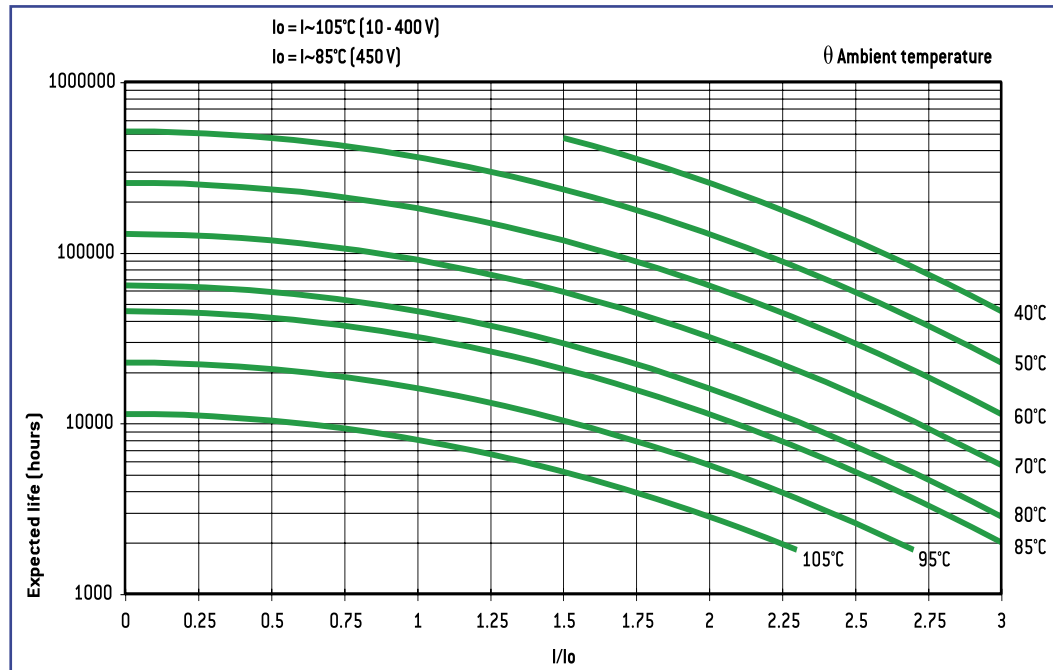
as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I ~: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | ≥ 50 000 |
|--------|----------|-----|----------|----------|-----------|----------|----------|
| I | 0,8 x I~ | I~ | 1,2 x I~ | 1,3 x I~ | 1,35 x I~ | 1,5 x I~ | 1,6 x I~ |



CUBISIC LP

8 000 h / 105°C

| | | | | |
|----------------|----------------------|--|----------------|----------------|
| 10 V ... 400 V | 120 μF ... 68 000 μF | 45 (1,772) x 12 (0,472) x 35 (1,378) 45 (1,772) x 12 (0,472) x 50 (1,969) 45 (1,772) x 12 (0,472) x 75 (2,953) | - 55°C + 105°C | Long Life Time |
|----------------|----------------------|--|----------------|----------------|

APPLICATIONS

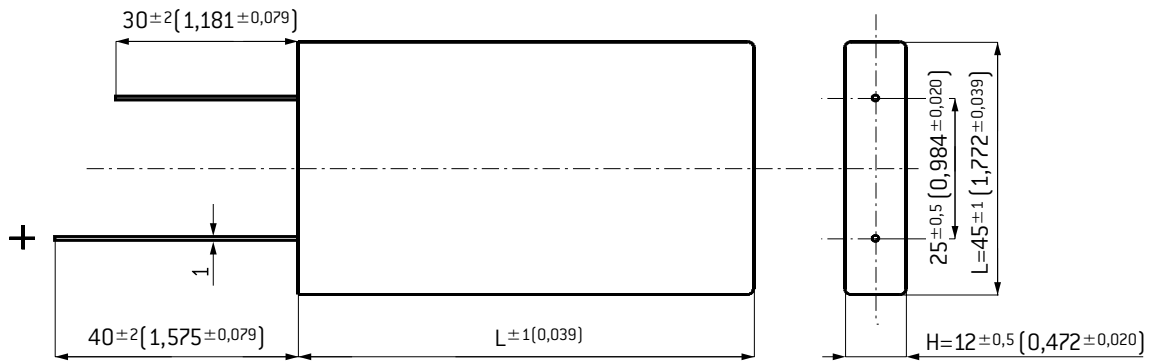
- Low profile printed circuit mounting
- Possible mounting with 45 x 12 bracket (A691057)
- Possible thermal dissipation per conduction through lower and upper surface
- Switch mode power supplies, impulse current

Aluminum case: Tin coated leads
Negative pole marked

Tolerance on capacitance at 20°C: ± 20 %
Operating temperature : - 55°C + 105°C



12 (0,472) height. The best capacitance per area unit



Dimensions in mm (inches)

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|-----------------------------|
| f (Hz) | 10 - 2000 Hz |
| Amplitude | 1,5 (0,059) |
| Acceleration | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h |

SPECIFICATIONS

CECC 30300 Long life
IEC 60 384-4 Long life
DIN 41 240 climatic category: - 55 + 105°C
and GPF: - 55°C + 105°C / 56 days

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulating resistance at 20°C between leads and mounting hardware: 100 MΩ
Test voltage at 50 Hz 1 min. between leads and mounting hardware: 2000 V
Fire resistance: self extinguish 15 s. (IEC 60 695-2-2)

8 000 h / 105°C

| Capacitance (μF) | Case | | | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | I +20°C 5 min. max. (mA) | I \sim 100 Hz | | Code | | | |
|----------------------------------|------------------|------------------|------------------|--|---|--|--------------------------------------|----------------------|-----------------------|------|-----|-----|----------|
| | I mm (inches) | L mm (inches) | H mm (inches) | | | | | +40°C max. (A) | +105°C max. (A) | | | | |
| Rated voltage 10 V | | | | | | | | | | | | | |
| 22000 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 62 | 30 | 22 | 0,7 | 17 | 4,6 | A 712000 |
| 47000 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 84 | 19 | 15 | 1,4 | 20 | 6,9 | A 712001 |
| 68000 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 96 | 15 | 10 | 2,0 | 20 | 7,8 | A 712002 |
| Rated voltage 16 V | | | | | | | | | | | | | |
| 15000 | 45 | (1,772) | 35 | (1,378) | 12 | (0,472) | 59 | 42 | 31 | 0,7 | 12 | 3,3 | A 712020 |
| 22000 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 62 | 30 | 22 | 1,1 | 17 | 4,6 | A 712021 |
| 33000 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 78 | 25 | 20 | 1,6 | 19 | 5,0 | A 712022 |
| 47000 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 88 | 20 | 16 | 2,2 | 20 | 6,7 | A 712023 |
| Rated voltage 25 V | | | | | | | | | | | | | |
| 22000 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 66 | 32 | 24 | 1,7 | 17 | 4,4 | A 712040 |
| 33000 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 68 | 22 | 18 | 2,5 | 20 | 6,4 | A 712041 |
| Rated voltage 35 V | | | | | | | | | | | | | |
| 10000 | 45 | (1,772) | 35 | (1,378) | 12 | (0,472) | 42 | 45 | 35 | 1,1 | 12 | 3,2 | A 712060 |
| 15000 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 45 | 32 | 22 | 1,6 | 17 | 4,4 | A 712061 |
| 22000 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 56 | 27 | 24 | 2,3 | 20 | 5,8 | A 712062 |
| Rated voltage 40 V | | | | | | | | | | | | | |
| 6800 | 45 | (1,772) | 35 | (1,378) | 12 | (0,472) | 32 | 50 | 38 | 0,8 | 11 | 3,0 | A 712080 |
| 10000 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 32 | 34 | 26 | 1,2 | 16 | 4,3 | A 712081 |
| Rated voltage 50 V | | | | | | | | | | | | | |
| 10000 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 33 | 35 | 27 | 1,5 | 16 | 4,2 | A 712100 |
| 15000 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 28 | 20 | 15 | 2,3 | 20 | 6,7 | A 712101 |
| Rated voltage 63 V | | | | | | | | | | | | | |
| 6800 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 23 | 36 | 25 | 1,3 | 16 | 4,2 | A 712120 |
| 10000 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 21 | 22 | 17 | 1,9 | 20 | 6,4 | A 712121 |
| Rated voltage 80 V | | | | | | | | | | | | | |
| 4700 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 15 | 35 | 23 | 1,1 | 16 | 4,2 | A 712140 |
| 6800 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 16 | 25 | 19 | 1,6 | 20 | 6,0 | A 712141 |
| Rated voltage 100 V | | | | | | | | | | | | | |
| 2200 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 10 | 40 | 25 | 0,7 | 15 | 3,9 | A 712160 |
| 3300 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 10 | 30 | 22 | 1,0 | 20 | 5,5 | A 712161 |
| Rated voltage 160 V | | | | | | | | | | | | | |
| 1000 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 10 | 90 | 70 | 0,5 | 10 | 2,6 | A 712180 |
| 1500 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 10 | 70 | 48 | 0,7 | 14 | 3,6 | A 712181 |
| Rated voltage 200 V | | | | | | | | | | | | | |
| 470 | 45 | (1,772) | 35 | (1,378) | 12 | (0,472) | 10 | 200 | 130 | 0,3 | 5,6 | 1,5 | A 712200 |
| 680 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 10 | 100 | 63 | 0,4 | 9,3 | 2,5 | A 712201 |
| 1000 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 10 | 90 | 57 | 0,6 | 12 | 3,2 | A 712202 |
| Rated voltage 250 V | | | | | | | | | | | | | |
| 470 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 10 | 180 | 120 | 0,4 | 7 | 1,9 | A 712220 |
| 680 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 10 | 100 | 63 | 0,5 | 11 | 3,0 | A 712221 |
| Rated voltage 350 V | | | | | | | | | | | | | |
| 330 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 10 | 280 | 180 | 0,3 | 5,6 | 1,5 | A 712240 |
| 470 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 10 | 220 | 100 | 0,5 | 7,6 | 2,0 | A 712241 |
| Rated voltage 400 V | | | | | | | | | | | | | |
| 220 | 45 | (1,772) | 50 | (1,969) | 12 | (0,472) | 10 | 320 | 220 | 0,3 | 5,2 | 1,4 | A 712260 |
| 330 | 45 | (1,772) | 75 | (2,953) | 12 | (0,472) | 10 | 220 | 110 | 0,4 | 7,6 | 2,0 | A 712261 |

CUBISIC LP

8 000 h / 105°C

EXPECTED LIFE

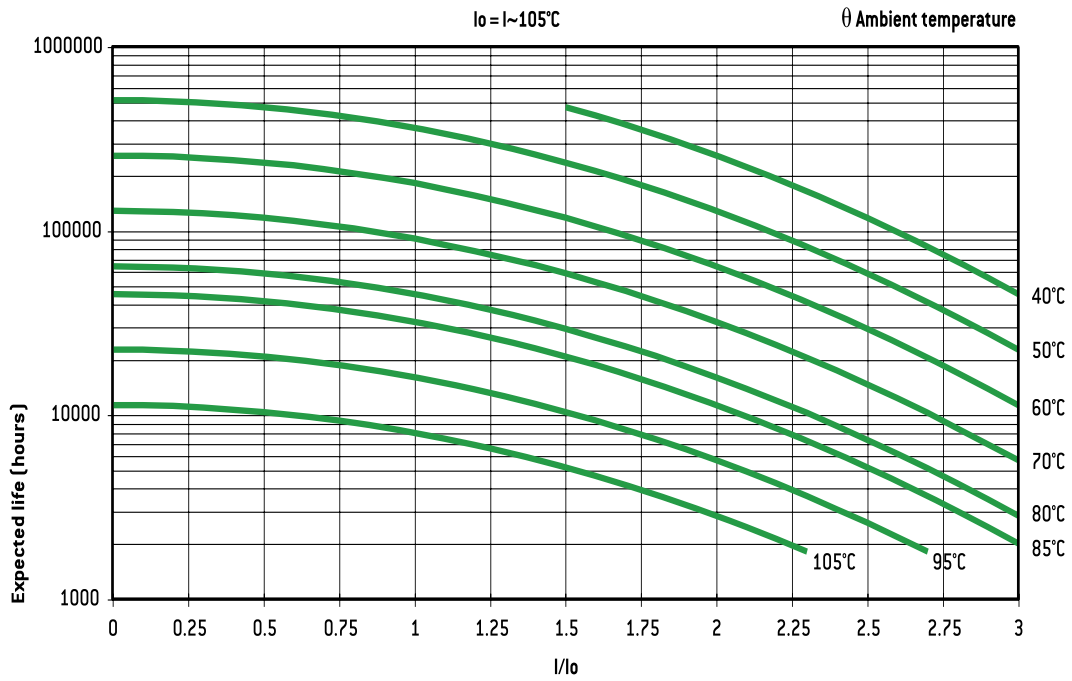
as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I ~: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | ≥ 50 000 |
|--------|----------|-----|----------|----------|-----------|----------|----------|
| I | 0,8 x I~ | I~ | 1,2 x I~ | 1,3 x I~ | 1,35 x I~ | 1,5 x I~ | 1,6 x I~ |





SNAPSIC

10 000 h / 85°C

| | | | | |
|----------------|---------------------|-------------------------------|---------------|----------------|
| 16 V ... 500 V | 22 µF ... 47 000 µF | Ø 22 (0,866) ... Ø 35 (1,378) | - 55°C + 85°C | Long Life Time |
|----------------|---------------------|-------------------------------|---------------|----------------|



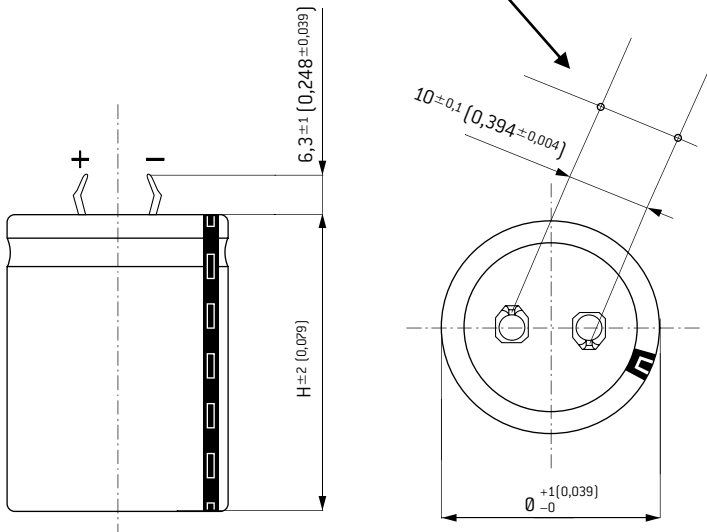
APPLICATIONS

- For solid PC board mounting
- Switch mode power supplies
- Impulse current

Fixing: Printed SNAP-IN pins

Tolerance on capacitance at 20°C : ± 20 %
 Operating temperature : - 55°C + 85°C

Ø PC board holes: $2 \pm 0,1$ (0,079 ± 0,004)



Dimensions in mm (inches)

Standard pins can be replaced by 4,5(0,177) max pins on request

DIMENSIONS in mm (inches)

| Can size | Ø | | H | |
|----------|----|---------|----|---------|
| 1 | 22 | (0,866) | 25 | (0,984) |
| 2 | 22 | (0,866) | 30 | (1,181) |
| 3 | 22 | (0,866) | 40 | (1,575) |
| 4 | 25 | (0,984) | 25 | (0,984) |
| 5 | 25 | (0,984) | 30 | (1,181) |
| 6 | 25 | (0,984) | 40 | (1,575) |
| 7* | 25 | (0,984) | 50 | (1,969) |
| 8* | 30 | (1,181) | 25 | (0,984) |
| 9 | 30 | (1,181) | 30 | (1,181) |
| 10* | 30 | (1,181) | 35 | (1,378) |
| 11 | 30 | (1,181) | 40 | (1,575) |
| 12* | 30 | (1,181) | 45 | (1,772) |
| 13 | 30 | (1,181) | 50 | (1,969) |
| 14 | 35 | (1,378) | 30 | (1,181) |
| 15* | 35 | (1,378) | 35 | (1,378) |
| 16 | 35 | (1,378) | 40 | (1,575) |
| 17* | 35 | (1,378) | 45 | (1,772) |
| 18 | 35 | (1,378) | 50 | (1,969) |

* Out of range

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|----------------------------|
| f (Hz) | 10 - 500 Hz |
| Amplitude | 0,75 (0,030) |
| Acceleration | 10 g - 98 m/s ² |
| t (h) | 3 x 10 sweep cycles |

SPECIFICATIONS

CECC 30301-811 Issue 1
 DIN 41 240 - Climatic category GPF - 55°C + 85°C / 56 days
 IEC 60 384.4 long life

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between pins and mounting hardware: 100 MΩ.

Test voltage at 50 Hz 1 min between terminals and mounting hardware

Fire resistance: self extinguish 15 s (IEC 60 695-2-2).

10 000 h / 85°C

| Capacitance (μ F) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | II +20°C 5 min. max. (mA) | I ~ 100 Hz | | Code | | |
|---|----------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|----------------------|------|-----|----------|
| | \emptyset mm (inches) | H mm (inches) | | | | | | +40°C max. (A) | +85°C max. (A) | | | |
| Rated voltage / Peaked voltage 16/18 V | | | | | | | | | | | | |
| 4700 | 22 | (0,866) | 30 | (1,181) | 2 | 20 | 45 | 35 | 0,46 | 8,7 | 2,9 | A 704020 |
| 10000 | 22 | (0,866) | 40 | (1,575) | 3 | 35 | 35 | 30 | 0,96 | 11 | 3,7 | A 704022 |
| 10000 | 30 | (1,181) | 30 | (1,181) | 9 | 35 | 30 | 30 | 0,96 | 13 | 4,2 | A 704023 |
| 22000 | 30 | (1,181) | 40 | (1,575) | 11 | 40 | 25 | 25 | 2,1 | 16 | 5,2 | A 704026 |
| 47000 | 35 | (1,378) | 50 | (1,969) | 18 | 55 | 15 | 15 | 4,5 | 20 | 8 | A 704028 |
| Rated voltage 25/30 V | | | | | | | | | | | | |
| 3300 | 22 | (0,866) | 30 | (1,181) | 2 | 22 | 53 | 40 | 0,5 | 7,8 | 2,6 | A 704040 |
| 4700 | 22 | (0,866) | 30 | (1,181) | 2 | 22 | 50 | 40 | 0,7 | 8,1 | 2,7 | A 704041 |
| 4700 | 25 | (0,984) | 25 | (0,984) | 4 | 25 | 60 | 45 | 0,7 | 7,5 | 2,5 | A 704042 |
| 6800 | 25 | (0,984) | 40 | (1,575) | 6 | 25 | 30 | 25 | 1 | 13 | 4,3 | A 704049 |
| 6800 | 30 | (1,181) | 30 | (1,181) | 9 | 25 | 30 | 25 | 1 | 13 | 4,2 | A 704044 |
| 10000 | 25 | (0,984) | 40 | (1,575) | 6 | 25 | 28 | 25 | 1,5 | 13 | 4,4 | A 704045 |
| 15000 | 30 | (1,181) | 40 | (1,575) | 11 | 45 | 28 | 25 | 2,3 | 15 | 4,9 | A 704047 |
| 22000 | 35 | (1,378) | 50 | (1,969) | 18 | 57 | 24 | 20 | 3 | 19 | 6,4 | A 704048 |
| 33000 | 35 | (1,378) | 50 | (1,969) | 18 | 70 | 20 | 18 | 5 | 20 | 7 | A 704050 |
| Rated voltage 40/48 V | | | | | | | | | | | | |
| 2200 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 55 | 38 | 0,53 | 7,8 | 2,6 | A 704060 |
| 3300 | 25 | (0,984) | 30 | (1,181) | 5 | 15 | 48 | 40 | 0,79 | 9 | 3 | A 704061 |
| 4700 | 22 | (0,866) | 40 | (1,575) | 3 | 15 | 35 | 25 | 1,1 | 11 | 3,7 | A 704062 |
| 4700 | 30 | (1,181) | 30 | (1,181) | 9 | 18 | 42 | 32 | 1,1 | 11 | 3,6 | A 704063 |
| 6800 | 30 | (1,181) | 40 | (1,575) | 11 | 20 | 30 | 23 | 1,6 | 14 | 4,7 | A 704064 |
| 10000 | 30 | (1,181) | 50 | (1,969) | 13 | 23 | 20 | 17 | 2,4 | 19 | 6,4 | A 704066 |
| 10000 | 35 | (1,378) | 40 | (1,575) | 16 | 31 | 30 | 23 | 2,4 | 16 | 5,2 | A 704067 |
| 15000 | 35 | (1,378) | 50 | (1,969) | 18 | 34 | 24 | 18 | 3,6 | 19 | 6,4 | A 704068 |
| Rated voltage 50/58 V | | | | | | | | | | | | |
| 2200 | 22 | (0,866) | 30 | (1,181) | 2 | 12 | 60 | 42 | 0,66 | 7,4 | 2,5 | A 704080 |
| 3300 | 25 | (0,984) | 30 | (1,181) | 5 | 15 | 50 | 35 | 0,99 | 8,7 | 2,9 | A 704081 |
| 4700 | 25 | (0,984) | 40 | (1,575) | 6 | 20 | 30 | 22 | 1,4 | 11 | 3,6 | A 704082 |
| 10000 | 35 | (1,378) | 40 | (1,575) | 16 | 32 | 32 | 23 | 3 | 14 | 4,8 | A 704086 |
| 15000 | 35 | (1,378) | 50 | (1,969) | 18 | 38 | 26 | 18 | 4,5 | 18 | 6,1 | A 704087 |
| Rated voltage 63/76 V | | | | | | | | | | | | |
| 1000 | 22 | (0,866) | 30 | (1,181) | 2 | 7 | 60 | 40 | 0,38 | 7,4 | 2,5 | A 704100 |
| 1500 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 110 | 80 | 0,56 | 5,5 | 1,8 | A 704102 |
| 2200 | 22 | (0,866) | 40 | (1,575) | 3 | 10 | 40 | 30 | 0,83 | 10 | 3,4 | A 704103 |
| 2200 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 50 | 30 | 0,83 | 8,8 | 2,9 | A 704104 |
| 3300 | 25 | (0,984) | 40 | (1,575) | 6 | 12 | 36 | 30 | 1,2 | 12 | 3,9 | A 704105 |
| 3300 | 30 | (1,181) | 30 | (1,181) | 9 | 15 | 50 | 35 | 1,2 | 9,8 | 3,3 | A 704106 |
| 4700 | 30 | (1,181) | 40 | (1,575) | 11 | 15 | 28 | 22 | 1,8 | 15 | 4,9 | A 704107 |
| 4700 | 35 | (1,378) | 30 | (1,181) | 14 | 20 | 50 | 35 | 1,8 | 11 | 3,6 | A 704108 |
| 6800 | 35 | (1,378) | 40 | (1,575) | 16 | 25 | 30 | 28 | 2,6 | 16 | 5,2 | A 704110 |
| 10000 | 35 | (1,378) | 50 | (1,969) | 18 | 25 | 25 | 20 | 3 | 19 | 6,2 | A 704111 |
| Rated voltage 100/115 V | | | | | | | | | | | | |
| 470 | 22 | (0,866) | 30 | (1,181) | 2 | 5 | 80 | 50 | 0,29 | 6,4 | 2,1 | A 704120 |
| 680 | 22 | (0,866) | 30 | (1,181) | 2 | 5 | 70 | 40 | 0,4 | 6,9 | 2,3 | A 704121 |
| 1000 | 22 | (0,866) | 40 | (1,575) | 3 | 7 | 50 | 35 | 0,6 | 9,2 | 3,1 | A 704123 |
| 1000 | 25 | (0,984) | 30 | (1,181) | 5 | 7 | 70 | 40 | 0,6 | 7,4 | 2,5 | A 704124 |
| 1500 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 60 | 40 | 0,9 | 9 | 3 | A 704125 |
| 1500 | 30 | (1,181) | 30 | (1,181) | 9 | 10 | 70 | 50 | 0,9 | 8,3 | 2,8 | A 704126 |
| 2200 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 35 | 25 | 1,3 | 13 | 4,4 | A 704127 |
| 2200 | 35 | (1,378) | 30 | (1,181) | 14 | 11 | 50 | 35 | 1,3 | 11 | 3,6 | A 704129 |
| 3300 | 35 | (1,378) | 40 | (1,575) | 16 | 12 | 35 | 27 | 2 | 14 | 4,8 | A 704128 |
| Rated voltage 200/230 V | | | | | | | | | | | | |
| 100 | 22 | (0,866) | 30 | | 2 | 10 | 600 | 400 | 0,12 | 2,3 | 0,8 | A 704140 |
| 150 | 25 | (0,984) | 25 | | 4 | 12 | 800 | 500 | 0,18 | 2 | 0,7 | A 704141 |
| 220 | 22 | (0,866) | 30 | | 2 | 12 | 400 | 250 | 0,26 | 2,9 | 1 | A 704142 |
| 220 | 25 | (0,984) | 25 | | 4 | 12 | 500 | 300 | 0,26 | 2,6 | 0,9 | A 704143 |
| 330 | 25 | (0,984) | 30 | | 5 | 12 | 250 | 170 | 0,39 | 3,9 | 1,3 | A 704144 |
| 470 | 25 | (0,984) | 40 | | 6 | 12 | 160 | 110 | 0,56 | 5,5 | 1,8 | A 704145 |
| 470 | 30 | (1,181) | 30 | | 9 | 12 | 180 | 130 | 0,56 | 5,2 | 1,7 | A 704146 |
| 680 | 30 | (1,181) | 40 | | 11 | 12 | 150 | 100 | 0,81 | 6,3 | 2,1 | A 704147 |
| 680 | 35 | (1,378) | 30 | | 14 | 12 | 160 | 110 | 0,81 | 6 | 2 | A 704148 |
| 1000 | 35 | (1,378) | 40 | | 16 | 14 | 110 | 70 | 1,2 | 8,1 | 2,7 | A 704149 |
| 1500 | 35 | (1,378) | 50 | | 18 | 16 | 90 | 60 | 1,8 | 9,8 | 3,3 | A 704150 |

| Capacitance [μ F] | Dimensions | | Can size | Tan δ 100 Hz +20°C max. [%] | ESR 100 Hz +20°C Typic [m Ω] | Z 10 kHz +20°C Typic [m Ω] | II +20°C 5 min. max. [mA] | I \sim 100 Hz | | Code | | |
|--------------------------------|----------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|----------------------|------|------|----------|
| | \emptyset mm [inches] | H mm [inches] | | | | | | +40°C max. [A] | +85°C max. [A] | | | |
| Rated voltage 250/290 V | | | | | | | | | | | | |
| 150 | 25 | (0,984) | 25 | (0,984) | 4 | 12 | 500 | 320 | 0,22 | 2,6 | 0,9 | A 704160 |
| 220 | 25 | (0,984) | 30 | (1,181) | 5 | 12 | 270 | 170 | 0,33 | 3,8 | 1,3 | A 704169 |
| 330 | 30 | (1,181) | 30 | (1,181) | 9 | 12 | 250 | 150 | 0,49 | 4,3 | 1,5 | A 704163 |
| 470 | 30 | (1,181) | 40 | (1,575) | 11 | 12 | 150 | 120 | 0,7 | 6,3 | 2,1 | A 704164 |
| 470 | 35 | (1,378) | 30 | (1,181) | 14 | 12 | 170 | 140 | 0,7 | 5,8 | 1,9 | A 704165 |
| 680 | 30 | (1,181) | 50 | (1,969) | 13 | 12 | 110 | 80 | 1 | 8,2 | 2,7 | A 704166 |
| 680 | 35 | (1,378) | 40 | (1,575) | 16 | 12 | 120 | 90 | 1 | 7,8 | 2,6 | A 704167 |
| 1000 | 35 | (1,378) | 50 | (1,969) | 18 | 14 | 95 | 65 | 1,5 | 9,6 | 3,2 | A 704168 |
| Rated voltage 350/385 V | | | | | | | | | | | | |
| 100 | 22 | (0,866) | 30 | (0,866) | 2 | 10 | 640 | 410 | 0,21 | 2 | 0,7 | A 704180 |
| 150 | 22 | (0,866) | 40 | (0,866) | 3 | 10 | 320 | 220 | 0,31 | 2,8 | 0,9 | A 704182 |
| 220 | 25 | (0,984) | 40 | (0,984) | 6 | 10 | 260 | 180 | 0,46 | 3,7 | 1,2 | A 704184 |
| 470 | 35 | (1,378) | 40 | (1,378) | 16 | 10 | 140 | 115 | 0,98 | 6,5 | 2,2 | A 704187 |
| 560 | 35 | (1,378) | 50 | (1,378) | 18 | 10 | 130 | 90 | 1,2 | 7,5 | 2,5 | A 704188 |
| Rated voltage 385/425 V | | | | | | | | | | | | |
| 68 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 1170 | 800 | 0,15 | 1,7 | 0,6 | A 704201 |
| 100 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 800 | 450 | 0,23 | 2,2 | 0,7 | A 704202 |
| 150 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 530 | 350 | 0,35 | 3 | 1 | A 704203 |
| 150 | 30 | (1,181) | 30 | (1,181) | 9 | 10 | 530 | 350 | 0,35 | 3 | 1 | A 704204 |
| 220 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 320 | 220 | 0,5 | 4,3 | 1,4 | A 704205 |
| 220 | 35 | (1,378) | 30 | (1,181) | 14 | 10 | 450 | 340 | 0,5 | 3,6 | 1,2 | A 704206 |
| 330 | 30 | (1,181) | 50 | (1,969) | 13 | 10 | 240 | 200 | 0,8 | 5,5 | 1,8 | A 704207 |
| 330 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 240 | 200 | 0,8 | 5,5 | 1,8 | A 704208 |
| 470 | 35 | (1,378) | 50 | (1,969) | 18 | 10 | 170 | 150 | 1,1 | 7,2 | 2,4 | A 704209 |
| Rated voltage 400/450 V | | | | | | | | | | | | |
| 47 | 22 | (0,866) | 25 | (0,984) | 1 | 10 | 1500 | 1100 | 0,55 | 1,4 | 0,45 | A 704232 |
| 68 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 1000 | 700 | 0,65 | 1,8 | 0,6 | A 704220 |
| 68 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 1300 | 900 | 0,65 | 1,6 | 0,5 | A 704221 |
| 100 | 22 | (0,866) | 40 | (1,575) | 3 | 10 | 900 | 800 | 0,8 | 2,2 | 0,7 | A 704222 |
| 100 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 1000 | 700 | 0,8 | 2 | 0,7 | A 704223 |
| 150 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 530 | 350 | 1 | 3 | 1 | A 704224 |
| 220 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 310 | 220 | 1,2 | 4,4 | 1,5 | A 704226 |
| 220 | 35 | (1,378) | 30 | (1,181) | 14 | 10 | 340 | 240 | 1,2 | 4,1 | 1,4 | A 704227 |
| 330 | 30 | (1,181) | 50 | (1,969) | 13 | 12 | 230 | 150 | 1,5 | 5,6 | 1,9 | A 704228 |
| 330 | 35 | (1,378) | 40 | (1,575) | 16 | 12 | 230 | 150 | 1,5 | 5,6 | 1,9 | A 704229 |
| 470 | 35 | (1,378) | 50 | (1,969) | 18 | 12 | 150 | 105 | 1,8 | 7,6 | 2,5 | A 704230 |
| Rated voltage 450/500 V | | | | | | | | | | | | |
| 33 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 1800 | 1300 | 0,7 | 1,4 | 0,5 | A 704239 |
| 47 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 1500 | 1100 | 0,8 | 1,5 | 0,5 | A 704240 |
| 68 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 1400 | 1000 | 1 | 1,5 | 0,5 | A 704241 |
| 100 | 22 | (0,866) | 40 | (1,575) | 3 | 10 | 1200 | 950 | 1,3 | 1,9 | 0,6 | A 704242 |
| 150 | 30 | (1,181) | 30 | (1,181) | 9 | 10 | 600 | 500 | 1,6 | 3,1 | 1 | A 704244 |
| 220 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 390 | 280 | 1,9 | 3,9 | 1,3 | A 704245 |
| 220 | 35 | (1,378) | 30 | (1,181) | 14 | 10 | 500 | 350 | 1,9 | 3,4 | 1,1 | A 704248 |
| 330 | 35 | (1,378) | 50 | (1,969) | 18 | 13 | 280 | 200 | 2,3 | 5,6 | 1,9 | A 704246 |
| 470 | 35 | (1,378) | 50 | (1,969) | 18 | 13 | 250 | 170 | 2,8 | 5,9 | 2 | A 704247 |
| Rated voltage 500/550 V | | | | | | | | | | | | |
| 22 | 22 | (0,866) | 25 | (0,984) | 1 | 10 | 5000 | 3400 | 0,63 | 0,8 | 0,3 | A 704272 |
| 47 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 2200 | 1500 | 0,92 | 1,3 | 0,4 | A 704274 |
| 100 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 900 | 500 | 1,3 | 2,6 | 0,9 | A 704276 |
| 150 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 600 | 450 | 1,6 | 3,5 | 1,2 | A 704278 |
| 220 | 35 | (1,378) | 50 | (1,969) | 18 | 10 | 350 | 240 | 2 | 5 | 1,7 | A 704279 |

10 000 h / 85°C

EXPECTED LIFE

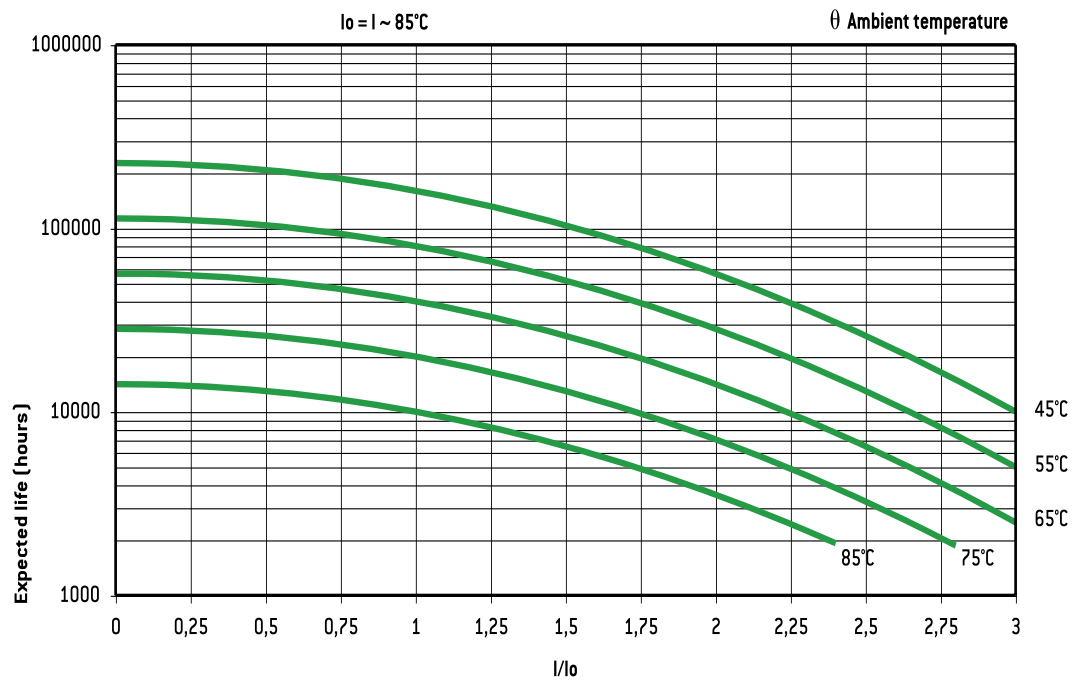
as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I \sim : permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | $\geq 50\ 000$ |
|--------|----------------|----------|----------------|----------------|-----------------|----------------|----------------|
| I | 0,8 x I \sim | I \sim | 1,2 x I \sim | 1,3 x I \sim | 1,35 x I \sim | 1,5 x I \sim | 1,6 x I \sim |



SNAPSIC 105

8 000 h / 105°C

| | | | | |
|----------------|-------------------------------|---|----------------|----------------|
| 16 V ... 500 V | 22 μ F ... 68 000 μ F | \emptyset 22 (0,866) ... \emptyset 35 (1,378) | - 55°C + 115°C | Long Life Time |
|----------------|-------------------------------|---|----------------|----------------|



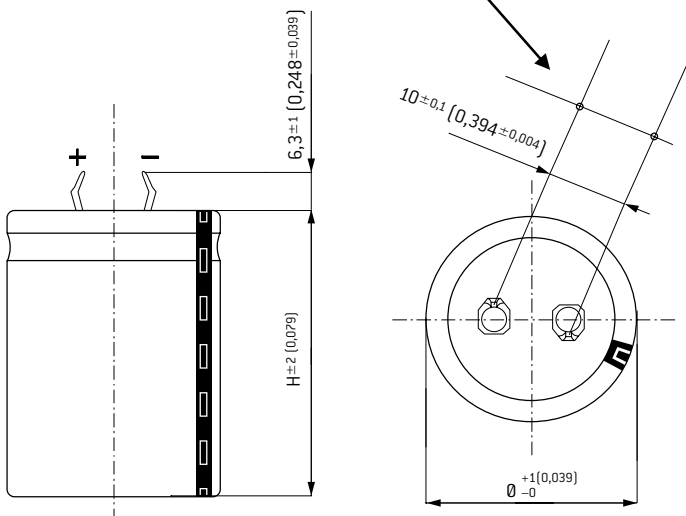
APPLICATIONS

- For solid PC board mounting
- Switch mode power supplies
- Impulse current

Fixing: Printed SNAP-IN pins

Tolerance on capacitance at 20°C : $\pm 20\%$
 Operating temperature : - 55°C + 105°C

\emptyset PC board holes: $2 \pm 0,1$ (0,079 \pm 0,004)



Dimensions in mm (inches)

Standard pins can be replaced by 4,5 (0,177) max pins on request

SPECIFICATIONS

CECC 30300 - Long life
 DIN 41 240 - Climatic category: -55 + 105°C / 56 days
 IEC 60 384.4 Long life
 Standard endurance test at U_R : 2000 h / 105°C

DIMENSIONS in mm (inches)

| Can size | \emptyset | | H | |
|----------|-------------|---------|----|---------|
| 1 | 22 | (0,866) | 25 | (0,984) |
| 2 | 22 | (0,866) | 30 | (1,181) |
| 3 | 22 | (0,866) | 40 | (1,575) |
| 4 | 25 | (0,984) | 25 | (0,984) |
| 5 | 25 | (0,984) | 30 | (1,181) |
| 6 | 25 | (0,984) | 40 | (1,575) |
| 7* | 25 | (0,984) | 50 | (1,969) |
| 8* | 30 | (1,181) | 25 | (0,984) |
| 9 | 30 | (1,181) | 30 | (1,181) |
| 10 | 30 | (1,181) | 35 | (1,378) |
| 11 | 30 | (1,181) | 40 | (1,575) |
| 12* | 30 | (1,181) | 45 | (1,772) |
| 13* | 30 | (1,181) | 50 | (1,969) |
| 14 | 35 | (1,378) | 30 | (1,181) |
| 15 | 35 | (1,378) | 35 | (1,378) |
| 16 | 35 | (1,378) | 40 | (1,575) |
| 17 | 35 | (1,378) | 45 | (1,772) |
| 18 | 35 | (1,378) | 50 | (1,969) |

* Out of range

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|----------------------------|
| f (Hz) | 10 - 500 Hz |
| Amplitude | 0,75 (0,030) |
| Acceleration | 10 g - 98 m/s ² |
| t (h) | 3 x 10 sweep cycles |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between pins and mounting hardware: 100 M Ω

Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V

Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

SNAPSIK 105

8 000 h / 105°C

| Capacitance (μF) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | II +20°C 5 min. max. (mA) | I ~ 100 Hz | | Code | | |
|--|----------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|-----------------------|------|-----|----------|
| | \emptyset mm (inches) | H mm (inches) | | | | | | +40°C max. (A) | +105°C max. (A) | | | |
| Rated voltage / Peak voltage: 16/18 V | | | | | | | | | | | | |
| 4700 | 22 | (0,866) | 25 | (0,984) | 1 | 30 | 65 | 55 | 0,5 | 6,8 | 1,8 | A 705020 |
| 6800 | 22 | (0,866) | 30 | (1,181) | 2 | 30 | 55 | 50 | 0,7 | 7,8 | 2,1 | A 705021 |
| 10000 | 22 | (0,866) | 30 | (1,181) | 2 | 38 | 40 | 33 | 1,0 | 9,3 | 2,5 | A 705026 |
| 15000 | 25 | (0,984) | 40 | (1,575) | 6 | 43 | 35 | 28 | 1,4 | 12 | 3,2 | A 705023 |
| 22000 | 25 | (0,984) | 40 | (1,575) | 6 | 49 | 30 | 22 | 2,1 | 13 | 3,5 | A 705027 |
| 33000 | 30 | (1,181) | 40 | (1,575) | 11 | 60 | 25 | 20 | 3,0 | 16 | 4,2 | A 705030 |
| 47000 | 35 | (1,378) | 40 | (1,575) | 16 | 65 | 17 | 15 | 4,5 | 20 | 5,6 | A 705028 |
| 68000 | 35 | (1,378) | 50 | (1,969) | 18 | 67 | 12 | 10 | 6,5 | 20 | 7,3 | A 705029 |
| Rated voltage / Peak voltage: 25/29 V | | | | | | | | | | | | |
| 2200 | 22 | (0,866) | 25 | (0,984) | 1 | 15 | 70 | 45 | 0,3 | 7 | 1,7 | A 705040 |
| 3300 | 22 | (0,866) | 25 | (0,984) | 1 | 18 | 60 | 42 | 0,5 | 7 | 1,9 | A 705048 |
| 4700 | 22 | (0,866) | 30 | (1,181) | 2 | 22 | 50 | 40 | 0,7 | 7,8 | 2,2 | A 705041 |
| 4700 | 25 | (0,984) | 25 | (0,984) | 4 | 25 | 60 | 45 | 0,7 | 6,9 | 2 | A 705042 |
| 6800 | 22 | (0,866) | 40 | (1,575) | 3 | 25 | 35 | 30 | 1,0 | 11 | 3 | A 705043 |
| 10000 | 22 | (0,866) | 40 | (1,575) | 3 | 28 | 32 | 25 | 1,5 | 12 | 3,1 | A 705046 |
| 22000 | 35 | (1,378) | 40 | (1,575) | 16 | 58 | 26 | 20 | 3,0 | 17 | 4,5 | A 705045 |
| 33000 | 35 | (1,378) | 50 | (1,969) | 18 | 70 | 20 | 18 | 5,0 | 20 | 5,7 | A 705047 |
| Rated voltage / Peak voltage: 35/40 V | | | | | | | | | | | | |
| 2200 | 22 | (0,866) | 25 | (0,984) | 1 | 15 | 60 | 47 | 0,5 | 7 | 1,9 | A 705060 |
| 3300 | 22 | (0,866) | 30 | (1,181) | 2 | 16 | 50 | 35 | 0,7 | 8,3 | 2,2 | A 705065 |
| 4700 | 25 | (0,984) | 30 | (1,181) | 3 | 17 | 32 | 22 | 1,0 | 12 | 3,1 | A 705061 |
| 6800 | 25 | (0,984) | 40 | (1,575) | 6 | 22 | 35 | 25 | 1,4 | 12 | 3,2 | A 705066 |
| 10000 | 30 | (1,181) | 40 | (1,575) | 11 | 28 | 30 | 25 | 2,1 | 14 | 3,9 | A 705067 |
| 15000 | 35 | (1,378) | 40 | (1,575) | 16 | 37 | 28 | 23 | 3,1 | 16 | 4,4 | A 705068 |
| 18000 | 35 | (1,378) | 45 | (1,772) | 17 | 40 | 25 | 21 | 3,8 | 18 | 4,9 | A 705070 |
| 22000 | 35 | (1,378) | 50 | (1,969) | 18 | 46 | 22 | 19 | 4,6 | 20 | 5,4 | A 705069 |
| Rated voltage / Peak voltage: 50/58 V | | | | | | | | | | | | |
| 1000 | 22 | (0,866) | 25 | (0,984) | 1 | 10 | 90 | 60 | 0,3 | 5,7 | 1,5 | A 705080 |
| 2200 | 22 | (0,866) | 30 | (1,181) | 2 | 12 | 60 | 42 | 0,7 | 7,5 | 2 | A 705081 |
| 3300 | 25 | (0,984) | 30 | (1,181) | 5 | 15 | 50 | 35 | 1,0 | 9 | 2,4 | A 705085 |
| 4700 | 25 | (0,984) | 40 | (1,575) | 6 | 20 | 30 | 22 | 1,4 | 13 | 3,5 | A 705082 |
| 6800 | 30 | (1,181) | 40 | (1,575) | 11 | 25 | 30 | 22 | 2,0 | 14 | 3,9 | A 705086 |
| 10000 | 35 | (1,378) | 40 | (1,575) | 16 | 32 | 32 | 23 | 3,0 | 15 | 4,1 | A 705083 |
| 15000 | 35 | (1,378) | 50 | (1,969) | 18 | 38 | 26 | 18 | 4,5 | 18 | 5 | A 705084 |
| 22000 | 35 | (1,378) | 50 | (1,969) | 18 | 46 | 22 | 15 | 6,6 | 20 | 5,4 | A 705087 |
| Rated voltage / Peak voltage: 63/72 V | | | | | | | | | | | | |
| 1000 | 22 | (0,866) | 25 | (0,984) | 1 | 10 | 110 | 80 | 0,4 | 5,2 | 1,4 | A 705100 |
| 1500 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 60 | 40 | 0,6 | 7,6 | 2 | A 705106 |
| 2200 | 22 | (0,866) | 40 | (1,575) | 3 | 10 | 40 | 30 | 0,8 | 11 | 2,8 | A 705107 |
| 2200 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 50 | 30 | 0,8 | 9 | 2,4 | A 705108 |
| 3300 | 25 | (0,984) | 40 | (1,575) | 6 | 12 | 36 | 30 | 1,2 | 12 | 3,2 | A 705109 |
| 4700 | 30 | (1,181) | 40 | (1,575) | 11 | 15 | 28 | 22 | 1,8 | 15 | 4 | A 705110 |
| 6800 | 35 | (1,378) | 40 | (1,575) | 16 | 25 | 30 | 28 | 2,6 | 16 | 4,2 | A 705111 |
| 10000 | 35 | (1,378) | 50 | (1,969) | 18 | 25 | 25 | 20 | 3,0 | 19 | 5,1 | A 705112 |
| Rated voltage / Peak voltage: 80/92 V | | | | | | | | | | | | |
| 1000 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 100 | 65 | 0,5 | 5,9 | 1,6 | A 705113 |
| 1500 | 22 | (0,866) | 40 | (1,575) | 3 | 12 | 70 | 50 | 0,7 | 7,9 | 2,1 | A 705114 |
| 2200 | 25 | (0,984) | 40 | (1,575) | 6 | 15 | 60 | 45 | 1,1 | 9,2 | 2,5 | A 705115 |
| 3300 | 30 | (1,181) | 40 | (1,575) | 11 | 15 | 40 | 30 | 1,6 | 13 | 3,3 | A 705116 |
| 4700 | 35 | (1,378) | 40 | (1,575) | 16 | 16 | 35 | 25 | 2,2 | 15 | 3,9 | A 705117 |
| 6800 | 35 | (1,378) | 50 | (1,969) | 18 | 20 | 30 | 25 | 3,2 | 17 | 4,6 | A 705118 |
| 10000 | 35 | (1,378) | 50 | (1,969) | 18 | 30 | 25 | 22 | 4,8 | 19 | 5,1 | A 705119 |
| Rated voltage / Peak voltage: 100/115 V | | | | | | | | | | | | |
| 330 | 22 | (0,866) | 25 | (0,984) | 1 | 5 | 150 | 90 | 0,2 | 4,4 | 1,2 | A 705120 |
| 470 | 22 | (0,866) | 30 | (1,181) | 2 | 5 | 80 | 50 | 0,3 | 6,6 | 1,8 | A 705121 |
| 680 | 22 | (0,866) | 30 | (1,181) | 2 | 5 | 70 | 40 | 0,4 | 7 | 1,9 | A 705124 |
| 1000 | 22 | (0,866) | 40 | (1,575) | 3 | 7 | 50 | 35 | 0,6 | 9,4 | 2,5 | A 705122 |
| 1500 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 50 | 30 | 0,9 | 10 | 2,7 | A 705125 |
| 2200 | 30 | (1,181) | 35 | (1,378) | 10 | 10 | 40 | 30 | 1,3 | 12 | 3,2 | A 705128 |
| 2200 | 35 | (1,378) | 30 | (1,181) | 14 | 11 | 50 | 35 | 1,3 | 11 | 2,9 | A 705129 |
| 3300 | 35 | (1,378) | 40 | (1,575) | 16 | 12 | 35 | 25 | 2,0 | 15 | 3,9 | A 705126 |
| 4700 | 35 | (1,378) | 50 | (1,969) | 18 | 15 | 28 | 20 | 2,8 | 18 | 4,8 | A 705127 |

SNAPSIC 105

8 000 h / 105°C

| Capacitance (μ F) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | II +20°C 5 min. max. (mA) | I \sim 100 Hz | | Code | | |
|--|----------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|-----------------------|------|-----|----------|
| | \emptyset mm (inches) | H mm (inches) | | | | | | +40°C max. (A) | +105°C max. (A) | | | |
| Rated voltage / Peak voltage: 160/185 V | | | | | | | | | | | | |
| 100 | 22 | (0,866) | 25 | (0,984) | 1 | 10 | 500 | 250 | 0,1 | 2,4 | 0,6 | A 705140 |
| 220 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 300 | 150 | 0,2 | 3,4 | 0,9 | A 705141 |
| 330 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 200 | 110 | 0,3 | 4,5 | 1,2 | A 705142 |
| 470 | 30 | (1,181) | 30 | (1,181) | 9 | 10 | 170 | 120 | 0,5 | 5,4 | 1,4 | A 705143 |
| 680 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 140 | 100 | 0,7 | 6,7 | 1,8 | A 705144 |
| 1000 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 70 | 50 | 1,0 | 10 | 2,8 | A 705145 |
| 1500 | 35 | (1,378) | 50 | (1,969) | 18 | 10 | 70 | 50 | 1,4 | 11 | 3,0 | A 705146 |
| 2200 | 35 | (1,378) | 50 | (1,969) | 18 | 15 | 60 | 40 | 2,1 | 12 | 3,3 | A 705147 |
| Rated voltage / Peak voltage: 200/230 V | | | | | | | | | | | | |
| 150 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 500 | 300 | 0,2 | 2,6 | 0,7 | A 705152 |
| 220 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 240 | 150 | 0,3 | 3,8 | 1,0 | A 705151 |
| 330 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 200 | 130 | 0,4 | 4,4 | 1,2 | A 705153 |
| 470 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 140 | 80 | 0,6 | 6 | 1,6 | A 705154 |
| 560 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 130 | 90 | 0,7 | 6,3 | 1,7 | A 705158 |
| 680 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 100 | 70 | 0,8 | 7,9 | 2,1 | A 705155 |
| 1000 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 90 | 60 | 1,2 | 9,2 | 2,4 | A 705156 |
| 1500 | 35 | (1,378) | 50 | (1,969) | 18 | 10 | 70 | 50 | 1,8 | 11 | 3,0 | A 705157 |
| 1800 | 35 | (1,378) | 50 | (1,969) | 18 | 11 | 65 | 45 | 2,2 | 12 | 3,2 | A 705159 |
| Rated voltage / Peak voltage: 250/290 V | | | | | | | | | | | | |
| 150 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 700 | 500 | 0,2 | 2,2 | 0,6 | A 705163 |
| 220 | 22 | (0,866) | 40 | (1,575) | 3 | 10 | 450 | 280 | 0,3 | 3,1 | 0,8 | A 705160 |
| 330 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 280 | 180 | 0,5 | 4,3 | 1,1 | A 705164 |
| 470 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 210 | 150 | 0,7 | 5,5 | 1,5 | A 705161 |
| 680 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 140 | 110 | 1,0 | 7,3 | 2,0 | A 705165 |
| 1000 | 35 | (1,378) | 50 | (1,969) | 18 | 11 | 110 | 75 | 1,5 | 9,1 | 2,4 | A 705166 |
| Rated voltage / Peak voltage: 350/385 V | | | | | | | | | | | | |
| 68 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 650 | 340 | 0,1 | 2,1 | 0,6 | A 705180 |
| 100 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 450 | 280 | 0,2 | 3 | 0,8 | A 705181 |
| 150 | 30 | (1,181) | 30 | (1,181) | 9 | 10 | 360 | 240 | 0,3 | 3,7 | 1,0 | A 705182 |
| 220 | 30 | (1,181) | 30 | (1,181) | 9 | 10 | 340 | 220 | 0,5 | 3,8 | 1,0 | A 705185 |
| 330 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 210 | 150 | 0,7 | 5,5 | 1,5 | A 705186 |
| 470 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 140 | 115 | 1,0 | 7,3 | 2,0 | A 705187 |
| 560 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 130 | 105 | 1,2 | 7,6 | 2,0 | A 705189 |
| 680 | 35 | (1,378) | 50 | (1,969) | 18 | 10 | 120 | 100 | 1,4 | 8,7 | 2,3 | A 705188 |
| Rated voltage / Peak voltage: 400/450 V | | | | | | | | | | | | |
| 68 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 1000 | 700 | 0,7 | 1,9 | 0,5 | A 705200 |
| 100 | 22 | (0,866) | 40 | (1,575) | 3 | 10 | 700 | 450 | 0,8 | 2,5 | 0,7 | A 705201 |
| 100 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 1100 | 800 | 0,8 | 1,8 | 0,5 | A 705211 |
| 150 | 22 | (0,866) | 40 | (1,575) | 3 | 10 | 550 | 350 | 1,0 | 2,8 | 0,8 | A 705210 |
| 150 | 30 | (1,181) | 30 | (1,181) | 9 | 10 | 550 | 350 | 1,0 | 3 | 0,8 | A 705214 |
| 220 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 300 | 210 | 1,2 | 4,6 | 1,2 | A 705202 |
| 220 | 35 | (1,378) | 30 | (1,181) | 14 | 10 | 360 | 260 | 1,2 | 4,1 | 1,1 | A 705203 |
| 330 | 30 | (1,181) | 40 | (1,575) | 11 | 12 | 300 | 200 | 1,5 | 4,6 | 1,2 | A 705212 |
| 330 | 35 | (1,378) | 35 | (1,378) | 15 | 12 | 290 | 200 | 1,5 | 4,8 | 1,3 | A 705207 |
| 470 | 35 | (1,378) | 35 | (1,378) | 15 | 12 | 260 | 170 | 1,8 | 5,1 | 1,4 | A 705215 |
| 470 | 35 | (1,378) | 40 | (1,575) | 16 | 12 | 180 | 120 | 1,8 | 6,4 | 1,7 | A 705216 |
| 470 | 35 | (1,378) | 45 | (1,772) | 17 | 12 | 180 | 130 | 1,8 | 6,8 | 1,8 | A 705208 |
| 560 | 35 | (1,378) | 50 | (1,969) | 18 | 12 | 140 | 100 | 1,9 | 8 | 2,1 | A 705209 |
| 680 | 35 | (1,378) | 50 | (1,969) | 18 | 12 | 130 | 100 | 2,1 | 8,4 | 2,2 | A 705213 |
| Rated voltage / Peak voltage: 450/500 V | | | | | | | | | | | | |
| 47 | 25 | (0,984) | 25 | (0,984) | 4 | 10 | 1500 | 1100 | 0,6 | 1,8 | 0,5 | A 705220 |
| 68 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 1100 | 1000 | 0,7 | 1,8 | 0,5 | A 705227 |
| 100 | 22 | (0,866) | 40 | (1,575) | 3 | 10 | 1000 | 800 | 0,8 | 2,3 | 0,6 | A 705221 |
| 100 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 1100 | 900 | 0,8 | 1,9 | 0,5 | A 705230 |
| 150 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 650 | 450 | 1,0 | 2,8 | 0,7 | A 705228 |
| 220 | 30 | (1,181) | 40 | (1,575) | 11 | 10 | 450 | 350 | 1,3 | 3,8 | 1,0 | A 705225 |
| 220 | 35 | (1,378) | 35 | (1,378) | 15 | 10 | 420 | 330 | 1,3 | 4 | 1,1 | A 705226 |
| 330 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 360 | 260 | 1,5 | 4,5 | 1,2 | A 705229 |
| 330 | 35 | (1,378) | 50 | (1,969) | 18 | 10 | 290 | 200 | 1,5 | 5,6 | 1,5 | A 705223 |
| 470 | 35 | (1,378) | 50 | (1,969) | 18 | 10 | 200 | 130 | 1,8 | 6,7 | 1,8 | A 705224 |

SNAPSI^C 105

8 000 h / 105°C

| Capacitance (μF) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. [%] | ESR 100 Hz +20°C Typic [m Ω] | Z 10 kHz +20°C Typic [m Ω] | II +20°C 5 min. max. [mA] | I \sim 100 Hz | | Code |
|---|----------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|-----------------------|----------|
| | \emptyset mm [inches] | H mm [inches] | | | | | | +40°C max. [A] | +105°C max. [A] | |
| Rated voltage / Peak voltage: 500/550 V | | | | | | | | | | |
| 22 | 22 [0,866] | 30 [1,181] | 2 | 10 | 3500 | 2200 | 0,4 | 1,1 | 0,3 | A 705240 |
| 33 | 22 [0,866] | 30 [1,181] | 2 | 10 | 2400 | 1500 | 0,5 | 1,2 | 0,3 | A 705245 |
| 47 | 25 [0,984] | 40 [1,575] | 6 | 10 | 1600 | 1100 | 0,6 | 1,9 | 0,5 | A 705241 |
| 68 | 25 [0,984] | 40 [1,575] | 6 | 10 | 1200 | 900 | 0,7 | 2,1 | 0,6 | A 705246 |
| 100 | 30 [1,181] | 40 [1,575] | 11 | 10 | 720 | 470 | 0,9 | 3,4 | 0,9 | A 705247 |
| 150 | 35 [1,378] | 40 [1,575] | 16 | 10 | 480 | 310 | 1,1 | 4 | 1,1 | A 705248 |
| 220 | 35 [1,378] | 50 [1,969] | 18 | 10 | 380 | 260 | 1,4 | 4,7 | 1,3 | A 705249 |

EXPECTED LIFE

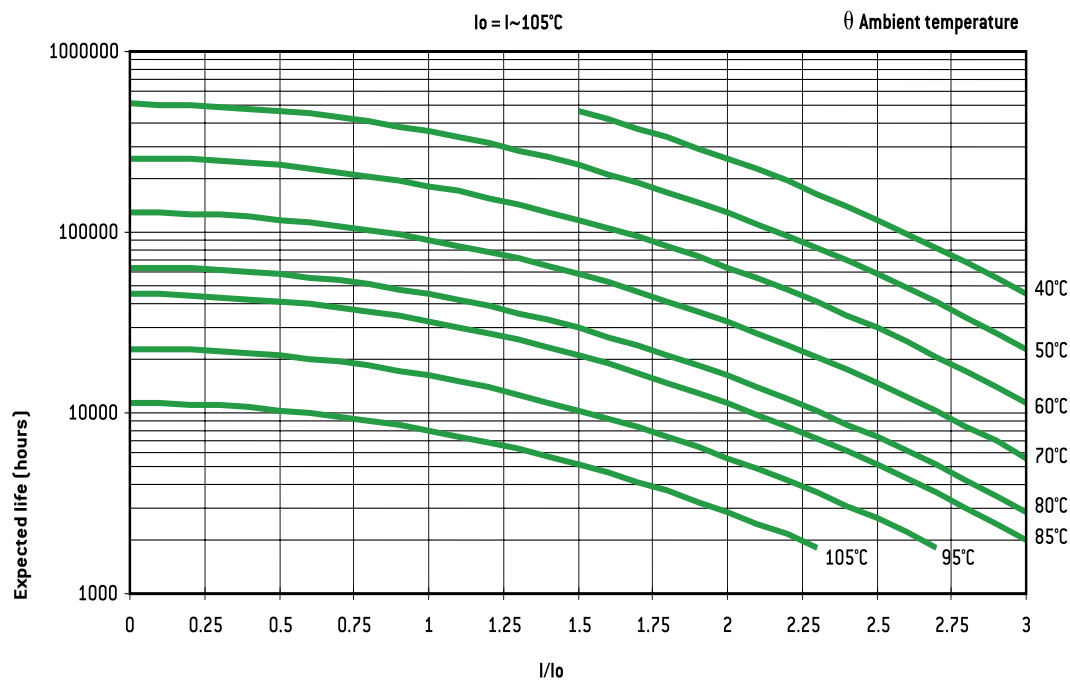
as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I \sim : permissible r.m.s. current at 100 Hz

| f [Hz] | 50 | 100 | 300 | 600 | 1 000 | 10 000 | $\geq 50 000$ |
|--------|----------------|----------|----------------|----------------|-----------------|----------------|----------------|
| I | 0,8 x I \sim | I \sim | 1,2 x I \sim | 1,3 x I \sim | 1,35 x I \sim | 1,5 x I \sim | 1,6 x I \sim |



SNAPSIC HC

8 000 h / 85°C

| | | | | |
|--------------|---------------------|-------------------------------|---------------|----------------|
| 25V ... 450V | 47 µF ... 47 000 µF | Ø 22 (0,866) ... Ø 35 (1,378) | - 40°C + 85°C | Long Life Time |
|--------------|---------------------|-------------------------------|---------------|----------------|



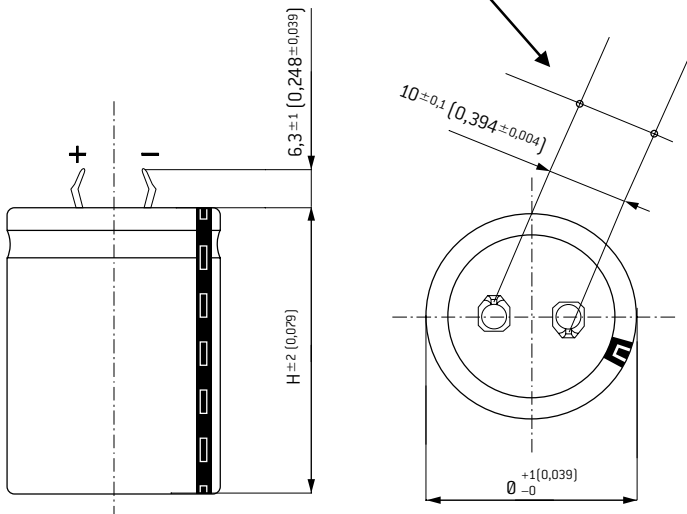
APPLICATIONS

- For solid PC board mounting
- Switch mode power supplies
- Impulse current

Fixing: Printed SNAP-IN pins

Tolerance on capacitance at 20°C : ± 20 %
 Operating temperature : - 40°C + 85°C

Ø PC board holes: 2 ± 0,1 (0,079 ± 0,004)



Dimensions in mm (inches)

Standard pins can be replaced by 4,5 (0,177) max pins on request

DIMENSIONS in mm (inches)

| Can size | Ø | | H | |
|----------|----|---------|----|---------|
| 1 | 22 | (0,866) | 25 | (0,984) |
| 2 | 22 | (0,866) | 30 | (1,181) |
| 3 | 22 | (0,866) | 40 | (1,575) |
| 4 | 25 | (0,984) | 25 | (0,984) |
| 5 | 25 | (0,984) | 30 | (1,181) |
| 6 | 25 | (0,984) | 40 | (1,575) |
| 7* | 25 | (0,984) | 50 | (1,969) |
| 8 | 30 | (1,181) | 25 | (0,984) |
| 9 | 30 | (1,181) | 30 | (1,181) |
| 10 | 30 | (1,181) | 35 | (1,378) |
| 11 | 30 | (1,181) | 40 | (1,575) |
| 12* | 30 | (1,181) | 45 | (1,772) |
| 13 | 30 | (1,181) | 50 | (1,969) |
| 14 | 35 | (1,378) | 30 | (1,181) |
| 15 | 35 | (1,378) | 35 | (1,378) |
| 16 | 35 | (1,378) | 40 | (1,575) |
| 17 | 35 | (1,378) | 45 | (1,772) |
| 18 | 35 | (1,378) | 50 | (1,969) |

* Out of range

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|--------------|
| f (Hz) | 10 - 2000 Hz |
| Amplitude | 1,5 (0,059) |
| Acceleration | 20 g |
| t (h) | 3 x 2 h |

SPECIFICATIONS

CECC 30300 Long life
 DIN 41 240 - Climatic category and GPF: -40 +85°C / 56 days
 IEC 60 384.4 long life
 Standard endurance test at U_R: 2000 h / 85°C

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between pins and mounting hardware:
 100 MΩ
 Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V
 Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

8 000 h / 85°C

| Capacitance [μ F] | Dimensions | | Tan δ 100 Hz +20°C max. [%] | ESR 100 Hz +20°C Typic [m Ω] | Z 10 kHz +20°C Typic [m Ω] | I +20°C 5 min. max. [mA] | I \sim 100 Hz | | Code | | |
|---------------------------|----------------------------|------------------|---|---|--|--------------------------------------|----------------------|----------------------|------|-----|---------|
| | \emptyset mm [inches] | H mm [inches] | | | | | +40°C max. [A] | +85°C max. [A] | | | |
| Rated voltage 25 V | | | | | | | | | | | |
| 5600 | 22 | [0,866] | 25 | [0,984] | 24 | 45 | 40 | 0,8 | 5,0 | 2,2 | A780001 |
| 7200 | 22 | [0,866] | 30 | [1,181] | 24 | 35 | 37 | 1,1 | 6,2 | 2,6 | A780002 |
| 10000 | 22 | [0,866] | 35 | [1,378] | 24 | 25 | 33 | 1,5 | 7,8 | 3,3 | A780003 |
| 12000 | 22 | [0,866] | 40 | [1,575] | 24 | 21 | 31 | 1,8 | 9,0 | 3,8 | A780004 |
| 7200 | 25 | [0,984] | 25 | [0,984] | 29 | 43 | 35 | 1,1 | 5,6 | 2,4 | A780005 |
| 10000 | 25 | [0,984] | 30 | [1,181] | 29 | 31 | 33 | 1,5 | 7,1 | 3,0 | A780006 |
| 12000 | 25 | [0,984] | 35 | [1,378] | 29 | 26 | 31 | 1,8 | 8,3 | 3,6 | A780007 |
| 15000 | 25 | [0,984] | 40 | [1,575] | 29 | 21 | 29 | 2,3 | 9,9 | 4,2 | A780008 |
| 18000 | 25 | [0,984] | 45 | [1,772] | 29 | 17 | 27 | 2,7 | 11,4 | 4,9 | A780009 |
| 22000 | 25 | [0,984] | 50 | [1,969] | 29 | 14 | 25 | 3,3 | 13,2 | 5,6 | A780010 |
| 12000 | 30 | [1,181] | 25 | [0,984] | 47 | 42 | 40 | 1,8 | 6,4 | 2,7 | A780011 |
| 15000 | 30 | [1,181] | 30 | [1,181] | 47 | 33 | 29 | 2,3 | 7,6 | 3,3 | A780012 |
| 22000 | 30 | [1,181] | 35 | [1,378] | 47 | 23 | 25 | 3,3 | 9,9 | 4,2 | A780013 |
| 27000 | 30 | [1,181] | 40 | [1,575] | 62 | 24 | 25 | 4,1 | 10,1 | 4,3 | A780014 |
| 33000 | 30 | [1,181] | 45 | [1,772] | 62 | 20 | 22 | 5 | 11,7 | 5,0 | A780015 |
| 36000 | 30 | [1,181] | 50 | [1,969] | 62 | 18 | 22 | 5,4 | 12,8 | 5,4 | A780016 |
| 18000 | 35 | [1,378] | 25 | [0,984] | 62 | 37 | 27 | 2,7 | 7,5 | 3,2 | A780017 |
| 22000 | 35 | [1,378] | 30 | [1,181] | 62 | 30 | 25 | 3,3 | 8,9 | 3,8 | A780018 |
| 27000 | 35 | [1,378] | 35 | [1,378] | 75 | 29 | 22 | 4,1 | 9,5 | 4,0 | A780019 |
| 36000 | 35 | [1,378] | 40 | [1,575] | 75 | 22 | 22 | 5,4 | 11,5 | 4,9 | A780020 |
| 42000 | 35 | [1,378] | 45 | [1,772] | 84 | 21 | 19 | 6,3 | 12,4 | 5,3 | A780021 |
| 47000 | 35 | [1,378] | 50 | [1,969] | 84 | 19 | 20 | 7,1 | 13,7 | 5,8 | A780022 |
| Rated voltage 35 V | | | | | | | | | | | |
| 2700 | 22 | [0,866] | 25 | [0,984] | 17 | 67 | 42 | 0,6 | 4,2 | 1,8 | A780023 |
| 3300 | 22 | [0,866] | 30 | [1,181] | 22 | 71 | 30 | 0,7 | 4,4 | 1,9 | A780024 |
| 4700 | 22 | [0,866] | 35 | [1,378] | 22 | 50 | 47 | 1 | 5,6 | 2,4 | A780025 |
| 5600 | 22 | [0,866] | 40 | [1,575] | 22 | 42 | 22 | 1,2 | 6,4 | 2,7 | A780026 |
| 3600 | 25 | [0,984] | 25 | [0,984] | 22 | 65 | 40 | 0,8 | 4,6 | 1,9 | A780027 |
| 4700 | 25 | [0,984] | 30 | [1,181] | 22 | 50 | 47 | 1 | 5,6 | 2,4 | A780028 |
| 6800 | 25 | [0,984] | 35 | [1,378] | 22 | 34 | 38 | 1,4 | 7,2 | 3,1 | A780029 |
| 8200 | 25 | [0,984] | 40 | [1,575] | 34 | 44 | 25 | 1,7 | 6,7 | 2,9 | A780030 |
| 10000 | 25 | [0,984] | 45 | [1,772] | 34 | 36 | 31 | 2,1 | 7,8 | 3,3 | A780031 |
| 10000 | 25 | [0,984] | 50 | [1,969] | 34 | 36 | 31 | 2,1 | 8,2 | 3,5 | A780032 |
| 5600 | 30 | [1,181] | 25 | [0,984] | 35 | 66 | 45 | 1,2 | 5,0 | 2,1 | A780033 |
| 8000 | 30 | [1,181] | 30 | [1,181] | 34 | 45 | 35 | 1,7 | 6,6 | 2,8 | A780034 |
| 10000 | 30 | [1,181] | 35 | [1,378] | 34 | 36 | 31 | 2,1 | 7,8 | 3,3 | A780035 |
| 12000 | 30 | [1,181] | 40 | [1,575] | 45 | 40 | 24 | 2,5 | 7,9 | 3,4 | A780036 |
| 15000 | 30 | [1,181] | 45 | [1,772] | 45 | 32 | 25 | 3,2 | 9,2 | 3,9 | A780037 |
| 15000 | 30 | [1,181] | 50 | [1,969] | 45 | 32 | 25 | 3,2 | 9,7 | 4,1 | A780038 |
| 8200 | 35 | [1,378] | 25 | [0,984] | 45 | 58 | 34 | 1,7 | 5,9 | 2,5 | A780039 |
| 11000 | 35 | [1,378] | 30 | [1,181] | 45 | 43 | 29 | 2,3 | 7,3 | 3,1 | A780040 |
| 14000 | 35 | [1,378] | 35 | [1,378] | 45 | 34 | 26 | 2,9 | 8,8 | 3,8 | A780041 |
| 17000 | 35 | [1,378] | 40 | [1,575] | 45 | 28 | 23 | 3,6 | 10,2 | 4,4 | A780042 |
| 21000 | 35 | [1,378] | 45 | [1,772] | 47 | 24 | 22 | 4,4 | 11,7 | 5,0 | A780043 |
| 21000 | 35 | [1,378] | 45 | [1,772] | 65 | 33 | 20 | 4,4 | 9,9 | 4,2 | A780044 |
| 22000 | 35 | [1,378] | 50 | [1,969] | 65 | 31 | 20 | 4,6 | 10,6 | 4,5 | A780045 |
| Rated voltage 40 V | | | | | | | | | | | |
| 3600 | 22 | [0,866] | 25 | [0,984] | 13 | 38 | 49 | 0,9 | 5,5 | 2,3 | A780046 |
| 4700 | 22 | [0,866] | 30 | [1,181] | 17 | 38 | 50 | 1,1 | 5,9 | 2,5 | A780047 |
| 6200 | 22 | [0,866] | 35 | [1,378] | 17 | 29 | 38 | 1,5 | 7,3 | 3,1 | A780048 |
| 8200 | 22 | [0,866] | 40 | [1,575] | 17 | 22 | 32 | 2 | 8,9 | 3,8 | A780049 |
| 4700 | 25 | [0,984] | 25 | [0,984] | 17 | 38 | 43 | 1,1 | 5,9 | 2,5 | A780050 |
| 6800 | 25 | [0,984] | 30 | [1,181] | 19 | 30 | 35 | 1,6 | 7,3 | 3,1 | A780051 |
| 6800 | 25 | [0,984] | 30 | [1,181] | 21 | 33 | 35 | 1,6 | 6,9 | 2,9 | A780052 |
| 8200 | 25 | [0,984] | 35 | [1,378] | 21 | 27 | 30 | 2 | 8,1 | 3,5 | A780053 |
| 10000 | 25 | [0,984] | 40 | [1,575] | 23 | 24 | 28 | 2,4 | 9,0 | 3,9 | A780054 |
| 12000 | 25 | [0,984] | 45 | [1,772] | 23 | 20 | 28 | 2,9 | 10,4 | 4,4 | A780055 |
| 15000 | 25 | [0,984] | 50 | [1,969] | 23 | 16 | 23 | 3,6 | 12,2 | 5,2 | A780056 |
| 8200 | 30 | [1,181] | 25 | [0,984] | 30 | 39 | 32 | 2 | 6,6 | 2,8 | A780057 |
| 10000 | 30 | [1,181] | 30 | [1,181] | 30 | 32 | 50 | 2,4 | 7,8 | 3,3 | A780058 |
| 12000 | 30 | [1,181] | 35 | [1,378] | 31 | 27 | 26 | 2,9 | 9,0 | 3,8 | A780059 |
| 15000 | 30 | [1,181] | 40 | [1,575] | 31 | 22 | 24 | 3,6 | 10,6 | 4,5 | A780060 |
| 20000 | 30 | [1,181] | 45 | [1,772] | 31 | 16 | 19 | 4,8 | 12,9 | 5,5 | A780061 |
| 22000 | 30 | [1,181] | 50 | [1,969] | 31 | 15 | 18 | 5,3 | 14,1 | 6,0 | A780062 |
| 10000 | 35 | [1,378] | 25 | [0,984] | 31 | 33 | 28 | 2,4 | 7,9 | 3,4 | A780063 |
| 15000 | 35 | [1,378] | 30 | [1,181] | 31 | 22 | 23 | 3,6 | 10,3 | 4,4 | A780064 |
| 18000 | 35 | [1,378] | 35 | [1,378] | 37 | 22 | 21 | 4,3 | 11,0 | 4,7 | A780065 |
| 22000 | 35 | [1,378] | 40 | [1,575] | 37 | 18 | 20 | 5,3 | 12,9 | 5,5 | A780066 |
| 27000 | 35 | [1,378] | 45 | [1,772] | 43 | 17 | 17 | 6,5 | 13,9 | 5,9 | A780067 |
| 33000 | 35 | [1,378] | 50 | [1,969] | 43 | 14 | 17 | 7,9 | 16,0 | 6,8 | A780068 |

SNAPSIC HC

8 000 h / 85°C

| Capacitance (μF) | Dimensions | | Tan δ 100 Hz +20°C max. | ESR 100 Hz +20°C Typic | Z 10 kHz +20°C Typic | I +20°C 5 min. max. | I \sim 100 Hz | | Code | | |
|----------------------------------|------------------------------|------------------|--------------------------------------|------------------------------|-------------------------------|------------------------------|----------------------|----------------------|------|-----|---------|
| | \varnothing mm (inches) | H mm (inches) | | | | | +40°C max. [A] | +85°C max. [A] | | | |
| Rated voltage 50 V | | | | | | | | | | | |
| 1800 | 22 | [0,866] | 25 | [0,866] | 11 | 65 | 63 | 0,5 | 4,2 | 1,8 | A780069 |
| 2000 | 22 | [0,866] | 25 | [0,866] | 14 | 74 | 58 | 0,6 | 4,0 | 1,7 | A780070 |
| 2700 | 22 | [0,866] | 30 | [0,866] | 14 | 55 | 55 | 0,8 | 5,0 | 2,1 | A780071 |
| 3600 | 22 | [0,866] | 35 | [0,866] | 14 | 41 | 43 | 1,1 | 6,1 | 2,6 | A780072 |
| 4200 | 22 | [0,866] | 40 | [0,866] | 20 | 51 | 35 | 1,3 | 5,9 | 2,5 | A780073 |
| 2700 | 25 | [0,984] | 25 | [0,984] | 18 | 71 | 48 | 0,8 | 4,4 | 1,9 | A780074 |
| 3600 | 25 | [0,984] | 30 | [0,984] | 18 | 53 | 30 | 1,1 | 5,4 | 2,3 | A780075 |
| 4700 | 25 | [0,984] | 35 | [0,984] | 18 | 41 | 36 | 1,4 | 6,6 | 2,8 | A780076 |
| 5600 | 25 | [0,984] | 40 | [0,984] | 20 | 38 | 29 | 1,7 | 7,3 | 3,1 | A780077 |
| 6800 | 25 | [0,984] | 45 | [0,984] | 20 | 31 | 26 | 2 | 8,4 | 3,6 | A780078 |
| 8200 | 25 | [0,984] | 50 | [0,984] | 20 | 26 | 26 | 2,5 | 9,7 | 4,1 | A780079 |
| 4200 | 30 | [1,181] | 25 | [1,181] | 20 | 51 | 35 | 1,3 | 5,8 | 2,5 | A780080 |
| 5600 | 30 | [1,181] | 30 | [1,181] | 20 | 38 | 29 | 1,7 | 7,2 | 3,1 | A780081 |
| 6800 | 30 | [1,181] | 35 | [1,181] | 20 | 31 | 40 | 2 | 8,4 | 3,6 | A780082 |
| 6800 | 30 | [1,181] | 35 | [1,181] | 26 | 41 | 26 | 2 | 7,4 | 3,1 | A780083 |
| 8200 | 30 | [1,181] | 40 | [1,181] | 26 | 34 | 26 | 2,5 | 8,6 | 3,6 | A780084 |
| 10000 | 30 | [1,181] | 45 | [1,181] | 26 | 28 | 23 | 3 | 9,9 | 4,2 | A780085 |
| 12000 | 30 | [1,181] | 50 | [1,181] | 26 | 23 | 17 | 3,6 | 11,4 | 4,9 | A780086 |
| 5600 | 35 | [1,378] | 25 | [1,378] | 26 | 49 | 29 | 1,7 | 6,4 | 2,7 | A780087 |
| 8200 | 35 | [1,378] | 30 | [1,378] | 26 | 34 | 23 | 2,5 | 8,3 | 3,6 | A780088 |
| 10000 | 35 | [1,378] | 35 | [1,378] | 26 | 28 | 20 | 3 | 9,8 | 4,2 | A780089 |
| 12000 | 35 | [1,378] | 40 | [1,378] | 36 | 32 | 17 | 3,6 | 9,6 | 4,1 | A780090 |
| 15000 | 35 | [1,378] | 45 | [1,378] | 36 | 25 | 15 | 4,5 | 11,3 | 4,8 | A780091 |
| 16000 | 35 | [1,378] | 50 | [1,378] | 46 | 31 | 18 | 4,8 | 10,8 | 4,6 | A780092 |
| Rated voltage 63 V | | | | | | | | | | | |
| 1200 | 22 | [0,866] | 25 | [0,984] | 11 | 97 | 52 | 0,5 | 3,5 | 1,5 | A780093 |
| 1800 | 22 | [0,866] | 30 | [1,181] | 13 | 77 | 19 | 0,7 | 4,2 | 1,8 | A780094 |
| 2200 | 22 | [0,866] | 35 | [1,378] | 13 | 63 | 41 | 0,8 | 5,0 | 2,1 | A780095 |
| 2700 | 22 | [0,866] | 40 | [1,575] | 15 | 59 | 55 | 1 | 5,4 | 2,3 | A780096 |
| 1800 | 25 | [0,984] | 25 | [0,984] | 13 | 77 | 40 | 0,7 | 4,2 | 1,8 | A780097 |
| 2400 | 25 | [0,984] | 30 | [1,181] | 13 | 57 | 40 | 0,9 | 5,2 | 2,2 | A780098 |
| 3100 | 25 | [0,984] | 35 | [1,378] | 13 | 44 | 35 | 1,2 | 6,3 | 2,7 | A780099 |
| 3600 | 25 | [0,984] | 40 | [1,575] | 15 | 44 | 45 | 1,4 | 6,7 | 2,9 | A780100 |
| 4700 | 25 | [0,984] | 45 | [1,772] | 15 | 34 | 30 | 1,8 | 8,1 | 3,4 | A780101 |
| 4700 | 25 | [0,984] | 50 | [1,969] | 15 | 34 | 30 | 1,8 | 8,5 | 3,6 | A780102 |
| 2700 | 30 | [1,181] | 25 | [0,984] | 19 | 75 | 30 | 1 | 4,8 | 2,0 | A780103 |
| 3700 | 30 | [1,181] | 30 | [1,181] | 19 | 54 | 33 | 1,4 | 6,0 | 2,5 | A780104 |
| 4700 | 30 | [1,181] | 35 | [1,378] | 15 | 34 | 30 | 1,8 | 8,1 | 3,4 | A780105 |
| 5600 | 30 | [1,181] | 40 | [1,575] | 29 | 55 | 48 | 2,1 | 6,7 | 2,9 | A780106 |
| 6800 | 30 | [1,181] | 45 | [1,772] | 29 | 45 | 26 | 2,6 | 7,8 | 3,3 | A780107 |
| 8200 | 30 | [1,181] | 50 | [1,969] | 26 | 34 | 30 | 3,1 | 9,4 | 4,0 | A780108 |
| 3700 | 35 | [1,378] | 25 | [0,984] | 26 | 75 | 40 | 1,4 | 5,2 | 2,2 | A780109 |
| 5200 | 35 | [1,378] | 30 | [1,181] | 29 | 59 | 29 | 2 | 6,3 | 2,7 | A780110 |
| 6800 | 35 | [1,378] | 35 | [1,378] | 29 | 45 | 22 | 2,6 | 7,6 | 3,3 | A780111 |
| 8200 | 35 | [1,378] | 40 | [1,575] | 29 | 38 | 24 | 3,1 | 8,9 | 3,8 | A780112 |
| 10000 | 35 | [1,378] | 45 | [1,772] | 26 | 28 | 40 | 3,8 | 10,9 | 4,6 | A780113 |
| 11000 | 35 | [1,378] | 50 | [1,969] | 26 | 25 | 22 | 4,2 | 11,9 | 5,1 | A780114 |
| Rated voltage 80 V | | | | | | | | | | | |
| 1200 | 22 | [0,866] | 25 | [0,984] | 9 | 80 | 58 | 0,6 | 3,8 | 1,6 | A780115 |
| 1500 | 22 | [0,866] | 30 | [1,181] | 9 | 64 | 24 | 0,7 | 4,6 | 2,0 | A780116 |
| 2000 | 22 | [0,866] | 35 | [1,378] | 9 | 48 | 43 | 1 | 5,7 | 2,4 | A780117 |
| 2700 | 22 | [0,866] | 40 | [1,575] | 9 | 35 | 60 | 1,3 | 7,0 | 3,0 | A780118 |
| 1500 | 25 | [0,984] | 25 | [0,984] | 11 | 78 | 45 | 0,7 | 4,2 | 1,8 | A780119 |
| 2200 | 25 | [0,984] | 30 | [1,181] | 12 | 58 | 40 | 1,1 | 5,2 | 2,2 | A780120 |
| 2700 | 25 | [0,984] | 35 | [1,378] | 12 | 47 | 35 | 1,3 | 6,1 | 2,6 | A780121 |
| 3300 | 25 | [0,984] | 40 | [1,575] | 12 | 39 | 45 | 1,6 | 7,2 | 3,1 | A780122 |
| 4200 | 25 | [0,984] | 45 | [1,772] | 12 | 30 | 40 | 2 | 8,5 | 3,6 | A780123 |
| 4200 | 25 | [0,984] | 50 | [1,969] | 12 | 30 | 35 | 2 | 9,0 | 3,8 | A780124 |
| 2200 | 30 | [1,181] | 25 | [0,984] | 12 | 58 | 30 | 1,1 | 5,4 | 2,3 | A780125 |
| 3300 | 30 | [1,181] | 30 | [1,181] | 12 | 39 | 30 | 1,6 | 7,1 | 3,0 | A780126 |
| 4200 | 30 | [1,181] | 35 | [1,378] | 16 | 40 | 30 | 2 | 7,4 | 3,1 | A780127 |
| 5200 | 30 | [1,181] | 40 | [1,575] | 16 | 33 | 40 | 2,5 | 8,7 | 3,7 | A780128 |
| 6200 | 30 | [1,181] | 45 | [1,772] | 16 | 27 | 30 | 3 | 10,0 | 4,3 | A780129 |
| 6800 | 30 | [1,181] | 50 | [1,969] | 16 | 25 | 30 | 3,3 | 10,9 | 4,7 | A780130 |
| 3300 | 35 | [1,378] | 25 | [0,984] | 16 | 51 | 25 | 1,6 | 6,3 | 2,7 | A780131 |
| 4700 | 35 | [1,378] | 30 | [1,181] | 22 | 50 | 20 | 2,3 | 6,9 | 2,9 | A780132 |
| 6000 | 35 | [1,378] | 35 | [1,378] | 22 | 39 | 20 | 2,9 | 8,2 | 3,5 | A780133 |
| 7200 | 35 | [1,378] | 40 | [1,575] | 22 | 32 | 30 | 3,5 | 9,5 | 4,1 | A780134 |
| 9000 | 35 | [1,378] | 45 | [1,772] | 19 | 22 | 25 | 4,3 | 12,0 | 5,1 | A780135 |
| 10000 | 35 | [1,378] | 50 | [1,969] | 19 | 20 | 25 | 4,8 | 13,3 | 5,7 | A780136 |

8 000 h / 85°C

| Capacitance (μF) | Dimensions | | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | II +20°C 5 min. max. (mA) | I ~ 100 Hz | | Code | | |
|----------------------------------|----------------------------|------------------|---|---|--|---------------------------------------|----------------------|----------------------|------|-----|---------|
| | \emptyset mm (inches) | H mm (inches) | | | | | +40°C max. (A) | +85°C max. (A) | | | |
| Rated voltage 100 V | | | | | | | | | | | |
| 680 | 22 | (0,866) | 25 | (0,984) | 6 | 94 | 20 | 0,4 | 3,5 | 1,5 | A780137 |
| 680 | 22 | (0,866) | 25 | (0,984) | 7 | 109 | 20 | 0,4 | 3,3 | 1,4 | A780138 |
| 900 | 22 | (0,866) | 30 | (1,181) | 7 | 83 | 15 | 0,5 | 4,0 | 1,7 | A780139 |
| 1200 | 22 | (0,866) | 35 | (1,378) | 7 | 62 | 140 | 0,7 | 5,0 | 2,1 | A780140 |
| 1500 | 22 | (0,866) | 40 | (1,575) | 7 | 50 | 140 | 0,9 | 5,9 | 2,5 | A780141 |
| 900 | 25 | (0,984) | 25 | (0,984) | 11 | 130 | 95 | 0,5 | 3,2 | 1,4 | A780142 |
| 1200 | 25 | (0,984) | 30 | (1,181) | 11 | 97 | 80 | 0,7 | 4,0 | 1,7 | A780143 |
| 1700 | 25 | (0,984) | 35 | (1,378) | 11 | 69 | 65 | 1 | 5,1 | 2,2 | A780144 |
| 2100 | 25 | (0,984) | 40 | (1,575) | 11 | 56 | 95 | 1,3 | 6,0 | 2,6 | A780145 |
| 2500 | 25 | (0,984) | 45 | (1,772) | 11 | 47 | 80 | 1,5 | 6,9 | 2,9 | A780146 |
| 2700 | 25 | (0,984) | 50 | (1,969) | 11 | 43 | 65 | 1,6 | 7,5 | 3,2 | A780147 |
| 1500 | 30 | (1,181) | 25 | (0,984) | 13 | 92 | 45 | 0,9 | 4,3 | 1,8 | A780148 |
| 2000 | 30 | (1,181) | 30 | (1,181) | 13 | 69 | 40 | 1,2 | 5,3 | 2,3 | A780149 |
| 2500 | 30 | (1,181) | 35 | (1,378) | 13 | 55 | 40 | 1,5 | 6,3 | 2,7 | A780150 |
| 3100 | 30 | (1,181) | 40 | (1,575) | 13 | 44 | 65 | 1,9 | 7,4 | 3,2 | A780151 |
| 3700 | 30 | (1,181) | 45 | (1,772) | 13 | 37 | 45 | 2,2 | 8,5 | 3,6 | A780152 |
| 4000 | 30 | (1,181) | 50 | (1,969) | 13 | 34 | 40 | 2,4 | 9,3 | 4,0 | A780153 |
| 2000 | 35 | (1,378) | 25 | (0,984) | 13 | 69 | 30 | 1,2 | 5,4 | 2,3 | A780154 |
| 2800 | 35 | (1,378) | 30 | (1,181) | 13 | 49 | 25 | 1,7 | 6,9 | 2,9 | A780155 |
| 3600 | 35 | (1,378) | 35 | (1,378) | 13 | 38 | 25 | 2,2 | 8,3 | 3,5 | A780156 |
| 4700 | 35 | (1,378) | 40 | (1,575) | 13 | 29 | 45 | 2,8 | 10,0 | 4,3 | A780157 |
| 5200 | 35 | (1,378) | 45 | (1,772) | 13 | 27 | 40 | 3,1 | 11,1 | 4,7 | A780158 |
| 5700 | 35 | (1,378) | 50 | (1,969) | 14 | 26 | 30 | 3,4 | 11,7 | 5,0 | A780159 |
| 5700 | 35 | (1,378) | 50 | (1,969) | 14 | 26 | 20 | 3,4 | 11,7 | 5,0 | A780160 |
| Rated voltage 160 V | | | | | | | | | | | |
| 300 | 22 | (0,866) | 25 | (0,984) | 19 | 672 | 20 | 0,3 | 1,3 | 0,6 | A780161 |
| 420 | 22 | (0,866) | 30 | (1,181) | 18 | 455 | 20 | 0,4 | 1,7 | 0,7 | A780162 |
| 540 | 22 | (0,866) | 35 | (1,378) | 18 | 354 | 15 | 0,5 | 2,1 | 0,9 | A780163 |
| 670 | 22 | (0,866) | 40 | (1,575) | 18 | 285 | 420 | 0,6 | 2,5 | 1,1 | A780164 |
| 420 | 25 | (0,984) | 25 | (0,984) | 18 | 455 | 290 | 0,4 | 1,7 | 0,7 | A780165 |
| 570 | 25 | (0,984) | 30 | (1,181) | 18 | 335 | 250 | 0,6 | 2,2 | 0,9 | A780166 |
| 730 | 25 | (0,984) | 35 | (1,378) | 18 | 262 | 205 | 0,7 | 2,6 | 1,1 | A780167 |
| 890 | 25 | (0,984) | 40 | (1,575) | 18 | 215 | 325 | 0,9 | 3,1 | 1,3 | A780168 |
| 1100 | 25 | (0,984) | 45 | (1,772) | 18 | 174 | 235 | 1,1 | 3,6 | 1,5 | A780169 |
| 1200 | 25 | (0,984) | 50 | (1,969) | 18 | 159 | 180 | 1,2 | 3,9 | 1,7 | A780170 |
| 680 | 30 | (1,181) | 25 | (0,984) | 16 | 250 | 145 | 0,7 | 2,6 | 1,1 | A780171 |
| 870 | 30 | (1,181) | 30 | (1,181) | 16 | 195 | 115 | 0,8 | 3,2 | 1,3 | A780172 |
| 1200 | 30 | (1,181) | 35 | (1,378) | 16 | 141 | 105 | 1,2 | 3,9 | 1,7 | A780173 |
| 1500 | 30 | (1,181) | 40 | (1,575) | 18 | 127 | 195 | 1,4 | 4,4 | 1,9 | A780174 |
| 1700 | 30 | (1,181) | 45 | (1,772) | 18 | 112 | 150 | 1,6 | 4,9 | 2,1 | A780175 |
| 1800 | 30 | (1,181) | 50 | (1,969) | 18 | 106 | 130 | 1,7 | 5,3 | 2,3 | A780176 |
| 820 | 35 | (1,378) | 25 | (0,984) | 18 | 233 | 85 | 0,8 | 3,0 | 1,3 | A780177 |
| 1200 | 35 | (1,378) | 30 | (1,181) | 18 | 159 | 85 | 1,2 | 3,8 | 1,6 | A780178 |
| 1500 | 35 | (1,378) | 35 | (1,378) | 18 | 127 | 70 | 1,4 | 4,6 | 1,9 | A780179 |
| 2000 | 35 | (1,378) | 40 | (1,575) | 19 | 101 | 160 | 1,9 | 5,4 | 2,3 | A780180 |
| 2500 | 35 | (1,378) | 45 | (1,772) | 19 | 81 | 105 | 2,4 | 6,3 | 2,7 | A780181 |
| 2700 | 35 | (1,378) | 50 | (1,969) | 19 | 75 | 85 | 2,6 | 6,9 | 2,9 | A780182 |
| Rated voltage 200 V | | | | | | | | | | | |
| 250 | 22 | (0,866) | 25 | (0,984) | 12 | 509 | 65 | 0,3 | 1,5 | 0,6 | A780183 |
| 360 | 22 | (0,866) | 30 | (1,181) | 12 | 354 | 55 | 0,4 | 2,0 | 0,8 | A780184 |
| 460 | 22 | (0,866) | 35 | (1,378) | 12 | 277 | 50 | 0,6 | 2,4 | 1,0 | A780185 |
| 570 | 22 | (0,866) | 40 | (1,575) | 12 | 223 | 400 | 0,7 | 2,8 | 1,2 | A780186 |
| 350 | 25 | (0,984) | 25 | (0,984) | 12 | 364 | 265 | 0,4 | 1,9 | 0,8 | A780187 |
| 470 | 25 | (0,984) | 30 | (1,181) | 12 | 271 | 210 | 0,6 | 2,4 | 1,0 | A780188 |
| 620 | 25 | (0,984) | 35 | (1,378) | 12 | 205 | 170 | 0,7 | 2,9 | 1,3 | A780189 |
| 760 | 25 | (0,984) | 40 | (1,575) | 12 | 168 | 275 | 0,9 | 3,5 | 1,5 | A780190 |
| 920 | 25 | (0,984) | 45 | (1,772) | 12 | 138 | 195 | 1,1 | 4,0 | 1,7 | A780191 |
| 1000 | 25 | (0,984) | 50 | (1,969) | 12 | 127 | 155 | 1,2 | 4,4 | 1,9 | A780192 |
| 540 | 30 | (1,181) | 25 | (0,984) | 12 | 236 | 130 | 0,7 | 2,7 | 1,1 | A780193 |
| 680 | 30 | (1,181) | 30 | (1,181) | 12 | 187 | 105 | 0,8 | 3,2 | 1,4 | A780194 |
| 1000 | 30 | (1,181) | 35 | (1,378) | 13 | 138 | 100 | 1,2 | 4,0 | 1,7 | A780195 |
| 1200 | 30 | (1,181) | 40 | (1,575) | 13 | 115 | 180 | 1,4 | 4,6 | 2,0 | A780196 |
| 1400 | 30 | (1,181) | 45 | (1,772) | 13 | 99 | 145 | 1,7 | 5,3 | 2,2 | A780197 |
| 1500 | 30 | (1,181) | 50 | (1,969) | 13 | 92 | 100 | 1,8 | 5,7 | 2,4 | A780198 |
| 760 | 35 | (1,378) | 25 | (0,984) | 13 | 181 | 80 | 0,9 | 3,4 | 1,4 | A780199 |
| 1000 | 35 | (1,378) | 30 | (1,181) | 13 | 138 | 70 | 1,2 | 4,1 | 1,8 | A780200 |
| 1400 | 35 | (1,378) | 35 | (1,378) | 13 | 99 | 65 | 1,7 | 5,2 | 2,2 | A780201 |
| 1600 | 35 | (1,378) | 40 | (1,575) | 14 | 93 | 130 | 1,9 | 5,6 | 2,4 | A780202 |
| 2000 | 35 | (1,378) | 45 | (1,772) | 14 | 74 | 90 | 2,4 | 6,6 | 2,8 | A780203 |
| 2200 | 35 | (1,378) | 50 | (1,969) | 14 | 68 | 70 | 2,6 | 7,3 | 3,1 | A780204 |

SNAPSIC HC

8 000 h / 85°C

| Capacitance (μF) | Dimensions | | Tan δ 100 Hz +20°C max. | ESR 100 Hz +20°C Typic | Z 10 kHz +20°C Typic | I +20°C 5 min. max. | I \sim 100 Hz | | Code | | |
|----------------------------------|------------------------------|------------------|--------------------------------------|------------------------------|-------------------------------|------------------------------|----------------------|----------------------|------|-----|---------|
| | \varnothing mm (inches) | H mm (inches) | | | | | +40°C max. (A) | +85°C max. (A) | | | |
| Rated voltage 250 V | | | | | | | | | | | |
| 190 | 22 | [0,866] | 25 | [0,984] | 10 | 558 | 359 | 0,3 | 1,4 | 0,6 | A780205 |
| 270 | 22 | [0,866] | 30 | [1,181] | 10 | 393 | 249 | 0,4 | 1,9 | 0,8 | A780206 |
| 330 | 22 | [0,866] | 35 | [1,378] | 10 | 322 | 202 | 0,5 | 2,2 | 0,9 | A780207 |
| 420 | 22 | [0,866] | 40 | [1,575] | 10 | 253 | 157 | 0,6 | 2,6 | 1,1 | A780208 |
| 250 | 25 | [0,984] | 25 | [0,984] | 10 | 424 | 270 | 0,4 | 1,8 | 0,8 | A780209 |
| 370 | 25 | [0,984] | 30 | [1,181] | 10 | 287 | 179 | 0,6 | 2,3 | 1,0 | A780210 |
| 470 | 25 | [0,984] | 35 | [1,378] | 10 | 226 | 140 | 0,7 | 2,8 | 1,2 | A780211 |
| 560 | 25 | [0,984] | 40 | [1,575] | 10 | 189 | 116 | 0,8 | 3,2 | 1,4 | A780212 |
| 680 | 25 | [0,984] | 45 | [1,772] | 10 | 156 | 95 | 1 | 3,8 | 1,6 | A780213 |
| 740 | 25 | [0,984] | 50 | [1,969] | 10 | 143 | 87 | 1,1 | 4,1 | 1,8 | A780214 |
| 400 | 30 | [1,181] | 25 | [0,984] | 10 | 265 | 165 | 0,6 | 2,5 | 1,1 | A780215 |
| 520 | 30 | [1,181] | 30 | [1,181] | 10 | 204 | 126 | 0,8 | 3,1 | 1,3 | A780216 |
| 720 | 30 | [1,181] | 35 | [1,378] | 10 | 147 | 89 | 1,1 | 3,9 | 1,6 | A780217 |
| 820 | 30 | [1,181] | 40 | [1,575] | 10 | 129 | 78 | 1,2 | 4,4 | 1,9 | A780218 |
| 1100 | 30 | [1,181] | 45 | [1,772] | 10 | 96 | 57 | 1,7 | 5,3 | 2,3 | A780219 |
| 1200 | 30 | [1,181] | 50 | [1,969] | 10 | 88 | 52 | 1,8 | 5,8 | 2,5 | A780220 |
| 560 | 35 | [1,378] | 25 | [0,984] | 10 | 189 | 116 | 0,8 | 3,3 | 1,4 | A780221 |
| 770 | 35 | [1,378] | 30 | [1,181] | 10 | 138 | 83 | 1,2 | 4,1 | 1,8 | A780222 |
| 1100 | 35 | [1,378] | 35 | [1,378] | 10 | 96 | 57 | 1,7 | 5,2 | 2,2 | A780223 |
| 1200 | 35 | [1,378] | 40 | [1,575] | 10 | 60 | 52 | 1,8 | 7,0 | 3,0 | A780224 |
| 1500 | 35 | [1,378] | 45 | [1,772] | 10 | 71 | 42 | 2,3 | 6,8 | 2,9 | A780225 |
| 1700 | 35 | [1,378] | 50 | [1,969] | 10 | 40 | 60 | 2,6 | 8,4 | 3,6 | A780226 |
| Rated voltage 300 V | | | | | | | | | | | |
| 150 | 22 | [0,866] | 25 | [0,984] | 10 | 707 | 491 | 0,3 | 1,3 | 0,5 | A780227 |
| 220 | 22 | [0,866] | 30 | [1,181] | 10 | 482 | 335 | 0,4 | 1,7 | 0,7 | A780228 |
| 270 | 22 | [0,866] | 35 | [1,378] | 10 | 393 | 273 | 0,5 | 2,0 | 0,8 | A780229 |
| 330 | 22 | [0,866] | 40 | [1,575] | 10 | 322 | 223 | 0,6 | 2,3 | 1,0 | A780230 |
| 180 | 25 | [0,984] | 25 | [0,984] | 10 | 589 | 409 | 0,3 | 1,5 | 0,6 | A780231 |
| 270 | 25 | [0,984] | 30 | [1,181] | 10 | 393 | 273 | 0,5 | 2,0 | 0,9 | A780232 |
| 360 | 25 | [0,984] | 35 | [1,378] | 10 | 295 | 205 | 0,7 | 2,5 | 1,0 | A780233 |
| 470 | 25 | [0,984] | 40 | [1,575] | 10 | 226 | 157 | 0,9 | 3,0 | 1,3 | A780234 |
| 560 | 25 | [0,984] | 45 | [1,772] | 10 | 189 | 132 | 1 | 3,4 | 1,5 | A780235 |
| 630 | 25 | [0,984] | 50 | [1,969] | 10 | 168 | 117 | 1,1 | 3,8 | 1,6 | A780236 |
| 330 | 30 | [1,181] | 25 | [0,984] | 10 | 322 | 223 | 0,6 | 2,3 | 1,0 | A780237 |
| 470 | 30 | [1,181] | 30 | [1,181] | 10 | 226 | 157 | 0,9 | 2,9 | 1,3 | A780238 |
| 560 | 30 | [1,181] | 35 | [1,378] | 10 | 189 | 132 | 1 | 3,4 | 1,5 | A780239 |
| 680 | 30 | [1,181] | 40 | [1,575] | 10 | 156 | 108 | 1,2 | 4,0 | 1,7 | A780240 |
| 820 | 30 | [1,181] | 45 | [1,772] | 10 | 129 | 90 | 1,5 | 4,6 | 2,0 | A780241 |
| 900 | 30 | [1,181] | 50 | [1,969] | 10 | 118 | 82 | 1,6 | 5,0 | 2,1 | A780242 |
| 470 | 35 | [1,378] | 25 | [0,984] | 10 | 226 | 157 | 0,9 | 3,0 | 1,3 | A780243 |
| 620 | 35 | [1,378] | 30 | [1,181] | 10 | 171 | 119 | 1,1 | 3,7 | 1,6 | A780244 |
| 820 | 35 | [1,378] | 35 | [1,378] | 10 | 129 | 90 | 1,5 | 4,5 | 1,9 | A780245 |
| 1000 | 35 | [1,378] | 40 | [1,575] | 10 | 106 | 74 | 1,8 | 5,3 | 2,2 | A780246 |
| 1200 | 35 | [1,378] | 45 | [1,772] | 10 | 88 | 61 | 2,2 | 6,1 | 2,6 | A780247 |
| 1300 | 35 | [1,378] | 50 | [1,969] | 10 | 82 | 57 | 2,3 | 6,6 | 2,8 | A780248 |
| Rated voltage 350 V | | | | | | | | | | | |
| 120 | 22 | [0,866] | 25 | [0,984] | 8 | 707 | 438 | 0,3 | 1,3 | 0,5 | A780249 |
| 150 | 22 | [0,866] | 30 | [1,181] | 8 | 566 | 357 | 0,3 | 1,5 | 0,7 | A780250 |
| 220 | 22 | [0,866] | 35 | [1,378] | 8 | 386 | 252 | 0,5 | 2,0 | 0,9 | A780251 |
| 270 | 22 | [0,866] | 40 | [1,575] | 8 | 314 | 520 | 0,6 | 2,3 | 1,0 | A780252 |
| 150 | 25 | [0,984] | 25 | [0,984] | 8 | 566 | 357 | 0,3 | 1,5 | 0,7 | A780253 |
| 220 | 25 | [0,984] | 30 | [1,181] | 8 | 386 | 252 | 0,5 | 2,0 | 0,9 | A780254 |
| 290 | 25 | [0,984] | 35 | [1,378] | 8 | 293 | 196 | 0,6 | 2,5 | 1,1 | A780255 |
| 350 | 25 | [0,984] | 40 | [1,575] | 8 | 243 | 400 | 0,7 | 2,9 | 1,2 | A780256 |
| 420 | 25 | [0,984] | 45 | [1,772] | 8 | 202 | 230 | 0,9 | 3,3 | 1,4 | A780257 |
| 470 | 25 | [0,984] | 50 | [1,969] | 8 | 181 | 126 | 1 | 3,7 | 1,6 | A780258 |
| 230 | 30 | [1,181] | 25 | [0,984] | 8 | 369 | 242 | 0,5 | 2,1 | 0,9 | A780259 |
| 330 | 30 | [1,181] | 30 | [1,181] | 8 | 257 | 174 | 0,7 | 2,7 | 1,2 | A780260 |
| 470 | 30 | [1,181] | 35 | [1,378] | 8 | 181 | 126 | 1 | 3,5 | 1,5 | A780261 |
| 560 | 30 | [1,181] | 40 | [1,575] | 8 | 152 | 108 | 1,2 | 4,0 | 1,7 | A780262 |
| 640 | 30 | [1,181] | 45 | [1,772] | 8 | 133 | 170 | 1,3 | 4,5 | 1,9 | A780263 |
| 680 | 30 | [1,181] | 50 | [1,969] | 8 | 125 | 100 | 1,4 | 4,9 | 2,1 | A780264 |
| 330 | 35 | [1,378] | 25 | [0,984] | 8 | 257 | 174 | 0,7 | 2,8 | 1,2 | A780265 |
| 470 | 35 | [1,378] | 30 | [1,181] | 8 | 181 | 126 | 1 | 3,6 | 1,5 | A780266 |
| 680 | 35 | [1,378] | 35 | [1,378] | 9 | 140 | 90 | 1,4 | 4,3 | 1,9 | A780267 |
| 680 | 35 | [1,378] | 40 | [1,575] | 9 | 140 | 90 | 1,4 | 4,6 | 2,0 | A780268 |
| 820 | 35 | [1,378] | 45 | [1,772] | 9 | 116 | 76 | 1,7 | 5,3 | 2,3 | A780269 |
| 1000 | 35 | [1,378] | 50 | [1,969] | 10 | 106 | 120 | 2,1 | 5,8 | 2,5 | A780270 |

8 000 h / 85°C

| Capacitance [μF] | Dimensions | | Tanδ 100 Hz +20°C max. [%] | ESR 100 Hz +20°C Typic [mΩ] | Z 10 kHz +20°C Typic [mΩ] | I +20°C 5 min. max. [mA] | I _r 100 Hz | | Code | | |
|----------------------------|------------------|------------------|-------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------|--------------------------|----------------------|------|-----|---------|
| | Ø mm [inches] | H mm [inches] | | | | | +40°C max. [A] | +85°C max. [A] | | | |
| Rated voltage 400 V | | | | | | | | | | | |
| 100 | 22 | (0,866) | 25 | (0,984) | 8 | 849 | 689 | 0,2 | 1,2 | 0,5 | A780271 |
| 150 | 22 | (0,866) | 30 | (1,181) | 9 | 637 | 473 | 0,4 | 1,5 | 0,6 | A780272 |
| 200 | 22 | (0,866) | 35 | (1,378) | 9 | 477 | 60 | 0,5 | 1,8 | 0,8 | A780273 |
| 220 | 22 | (0,866) | 40 | (1,575) | 9 | 434 | 850 | 0,5 | 2,0 | 0,9 | A780274 |
| 150 | 25 | (0,984) | 25 | (0,984) | 9 | 637 | 650 | 0,4 | 1,5 | 0,6 | A780275 |
| 200 | 25 | (0,984) | 30 | (1,181) | 9 | 477 | 362 | 0,5 | 1,8 | 0,8 | A780276 |
| 270 | 25 | (0,984) | 35 | (1,378) | 9 | 354 | 274 | 0,7 | 2,2 | 1,0 | A780277 |
| 330 | 25 | (0,984) | 40 | (1,575) | 10 | 322 | 227 | 0,8 | 2,5 | 1,1 | A780278 |
| 400 | 25 | (0,984) | 45 | (1,772) | 10 | 265 | 190 | 1 | 2,9 | 1,2 | A780279 |
| 440 | 25 | (0,984) | 50 | (1,969) | 10 | 241 | 174 | 1,1 | 3,2 | 1,4 | A780280 |
| 220 | 30 | (1,181) | 25 | (0,984) | 10 | 482 | 400 | 0,5 | 1,9 | 0,8 | A780281 |
| 330 | 30 | (1,181) | 30 | (1,181) | 10 | 322 | 227 | 0,8 | 2,5 | 1,0 | A780282 |
| 410 | 30 | (1,181) | 35 | (1,378) | 10 | 259 | 186 | 1 | 2,9 | 1,2 | A780283 |
| 500 | 30 | (1,181) | 40 | (1,575) | 10 | 212 | 520 | 1,2 | 3,4 | 1,5 | A780284 |
| 620 | 30 | (1,181) | 45 | (1,772) | 10 | 171 | 360 | 1,5 | 4,0 | 1,7 | A780285 |
| 680 | 30 | (1,181) | 50 | (1,969) | 10 | 156 | 116 | 1,6 | 4,4 | 1,9 | A780286 |
| 330 | 35 | (1,378) | 25 | (0,984) | 10 | 322 | 230 | 0,8 | 2,5 | 1,1 | A780287 |
| 440 | 35 | (1,378) | 30 | (1,181) | 10 | 241 | 174 | 1,1 | 3,1 | 1,3 | A780288 |
| 580 | 35 | (1,378) | 35 | (1,378) | 10 | 183 | 135 | 1,4 | 3,8 | 1,6 | A780289 |
| 680 | 35 | (1,378) | 40 | (1,575) | 10 | 156 | 116 | 1,6 | 4,3 | 1,9 | A780290 |
| 820 | 35 | (1,378) | 45 | (1,772) | 10 | 129 | 98 | 2 | 5,0 | 2,1 | A780291 |
| 1000 | 35 | (1,378) | 50 | (1,969) | 12 | 127 | 81 | 2,4 | 5,3 | 2,3 | A780292 |
| Rated voltage 450 V | | | | | | | | | | | |
| 47 | 22 | (0,866) | 25 | (0,984) | 8 | 1806 | 150 | 0,1 | 0,8 | 0,3 | A780293 |
| 66 | 22 | (0,866) | 25 | (0,984) | 8 | 1286 | 130 | 0,2 | 0,9 | 0,4 | A780294 |
| 100 | 22 | (0,866) | 25 | (0,984) | 10 | 1061 | 110 | 0,3 | 1,0 | 0,4 | A780295 |
| 120 | 22 | (0,866) | 30 | (1,181) | 10 | 884 | 1600 | 0,3 | 1,2 | 0,5 | A780296 |
| 150 | 22 | (0,866) | 35 | (1,378) | 10 | 707 | 1300 | 0,4 | 1,5 | 0,6 | A780297 |
| 220 | 22 | (0,866) | 40 | (1,575) | 14 | 675 | 1100 | 0,6 | 1,6 | 0,7 | A780298 |
| 120 | 25 | (0,984) | 25 | (0,984) | 14 | 1238 | 668 | 0,3 | 1,0 | 0,4 | A780299 |
| 160 | 25 | (0,984) | 30 | (1,181) | 11 | 729 | 519 | 0,4 | 1,5 | 0,6 | A780300 |
| 220 | 25 | (0,984) | 35 | (1,378) | 11 | 531 | 700 | 0,6 | 1,8 | 0,8 | A780301 |
| 270 | 25 | (0,984) | 40 | (1,575) | 11 | 432 | 329 | 0,7 | 2,1 | 0,9 | A780302 |
| 330 | 25 | (0,984) | 45 | (1,772) | 11 | 354 | 950 | 0,9 | 2,5 | 1,1 | A780303 |
| 330 | 25 | (0,984) | 50 | (1,969) | 11 | 354 | 276 | 0,9 | 2,6 | 1,1 | A780304 |
| 180 | 30 | (1,181) | 25 | (0,984) | 11 | 648 | 468 | 0,5 | 1,6 | 0,7 | A780305 |
| 270 | 30 | (1,181) | 30 | (1,181) | 11 | 432 | 329 | 0,7 | 2,1 | 0,9 | A780306 |
| 330 | 30 | (1,181) | 35 | (1,378) | 15 | 482 | 276 | 0,9 | 2,1 | 0,9 | A780307 |
| 420 | 30 | (1,181) | 40 | (1,575) | 12 | 303 | 223 | 1,1 | 2,8 | 1,2 | A780308 |
| 470 | 30 | (1,181) | 45 | (1,772) | 12 | 271 | 202 | 1,3 | 3,2 | 1,4 | A780309 |
| 560 | 30 | (1,181) | 50 | (1,969) | 12 | 227 | 520 | 1,5 | 3,6 | 1,5 | A780310 |
| 250 | 35 | (1,378) | 25 | (0,984) | 12 | 509 | 280 | 0,7 | 2,0 | 0,9 | A780311 |
| 330 | 35 | (1,378) | 30 | (1,181) | 12 | 386 | 276 | 0,9 | 2,5 | 1,1 | A780312 |
| 470 | 35 | (1,378) | 35 | (1,378) | 12 | 271 | 202 | 1,3 | 3,1 | 1,3 | A780313 |
| 560 | 35 | (1,378) | 40 | (1,575) | 12 | 227 | 174 | 1,5 | 3,6 | 1,5 | A780314 |
| 680 | 35 | (1,378) | 45 | (1,772) | 12 | 187 | 146 | 1,8 | 4,2 | 1,8 | A780315 |
| 760 | 35 | (1,378) | 50 | (1,969) | 12 | 168 | 280 | 2,1 | 4,6 | 2,0 | A780316 |

SNAPSIC HC

8 000 h / 85°C

EXPECTED LIFE

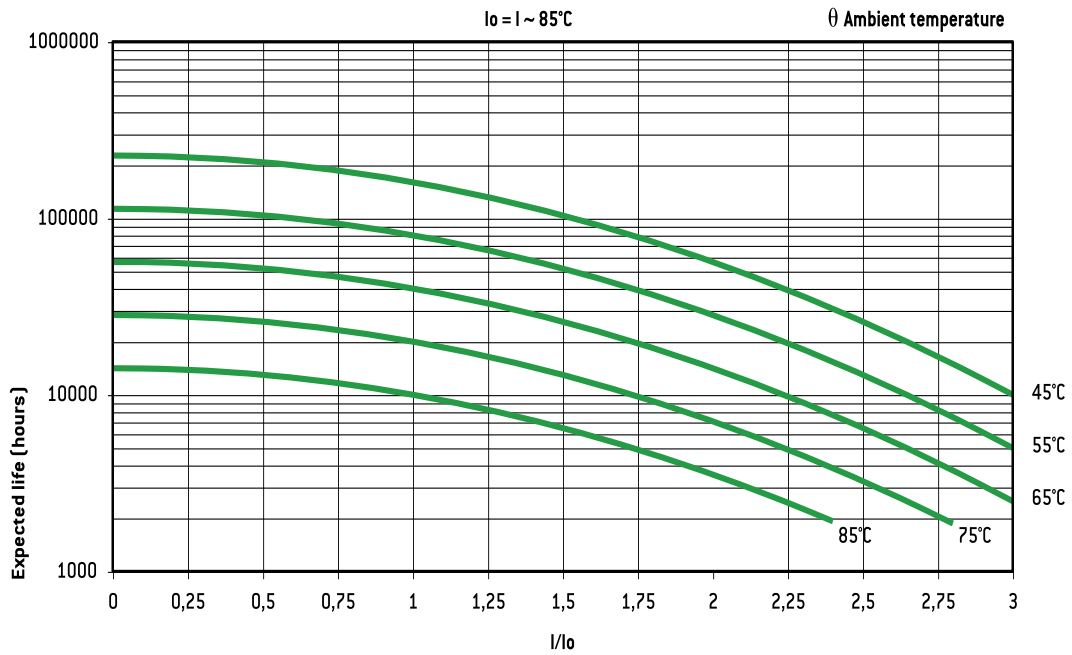
as a function of temperature and ripple current:

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I_r: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | ≥ 50 000 |
|----------------|----------------------|----------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| I _r | 0,8 x I _r | I _r | 1,2 x I _r | 1,3 x I _r | 1,35 x I _r | 1,5 x I _r | 1,6 x I _r |



8 000 h / 105°C

| | | | | |
|-----------------|-----------------------------|---|----------------|----------------|
| 160 V ... 500 V | 47 μ F ... 2200 μ F | \emptyset 22 (0,866) ... \emptyset 35 (1,378) | - 55°C + 105°C | Long Life Time |
|-----------------|-----------------------------|---|----------------|----------------|



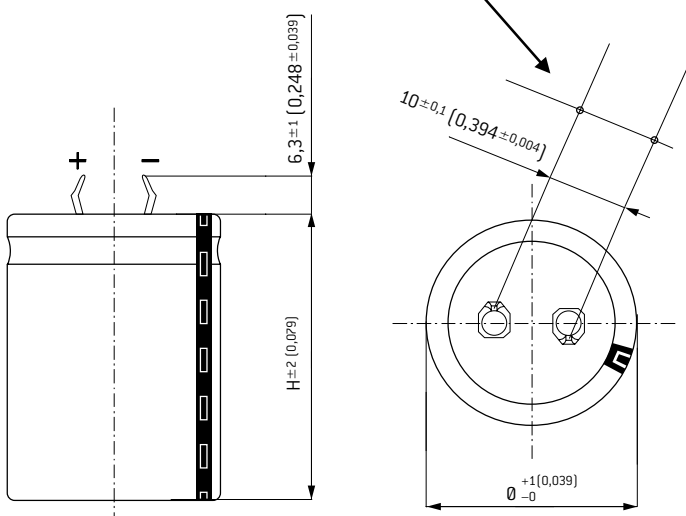
APPLICATIONS

- For solid PC board mounting
- Switch mode power supplies
- Impulse current

Fixing: Printed SNAP-IN pins

Tolerance on capacitance at 20°C : $\pm 20\%$
 Operating temperature : - 55°C + 105°C

\emptyset PC board holes: $2 \pm 0,1$ (0,079 \pm 0,004)



Dimensions in mm (inches)

Standard pins can be replaced by 4,5 (0,177) max pins on request

SPECIFICATIONS

CECC 30300 - Long life
 DIN 41 240 - Climatic category - 55°C + 105°C / 56 days
 IEC 60 384.4 Long life
 Standard endurance test at U_R : 2000 h / 105°C

DIMENSIONS in mm (inches)

| Can size | \emptyset | H |
|----------|-------------|------------|
| 1 | 22 (0,866) | 25 (0,984) |
| 2 | 22 (0,866) | 30 (1,181) |
| 3 | 22 (0,866) | 40 (1,575) |
| 4* | 25 (0,984) | 25 (0,984) |
| 5 | 25 (0,984) | 30 (1,181) |
| 6 | 25 (0,984) | 40 (1,575) |
| 7 | 25 (0,984) | 50 (1,969) |
| 8* | 30 (1,181) | 25 (0,984) |
| 9 | 30 (1,181) | 30 (1,181) |
| 10 | 30 (1,181) | 35 (1,378) |
| 11 | 30 (1,181) | 40 (1,575) |
| 12* | 30 (1,181) | 45 (1,772) |
| 13* | 30 (1,181) | 50 (1,969) |
| 14 | 35 (1,378) | 30 (1,181) |
| 15 | 35 (1,378) | 35 (1,378) |
| 16 | 35 (1,378) | 40 (1,575) |
| 17* | 35 (1,378) | 45 (1,772) |
| 18 | 35 (1,378) | 50 (1,969) |

* Out of range

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|----------------------------|
| f (Hz) | 10 - 500 Hz |
| Amplitude | 0,75 (0,030) |
| Acceleration | 10 g - 98 m/s ² |
| t (h) | 3 x 10 sweep cycles |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between pins and mounting hardware: 100 M Ω
 Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V
 Fire resistance: self extinguish 30 s (IEC 60 695-2-2) without PVC

SNAPSIC HV

8 000 h / 105°C

| Capacitance (μF) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | II +20°C 5 min. max. (mA) | I~ 100 Hz | | Code | | |
|--|----------------------------|------------------|----------|--|---|--|---------------------------------------|-------------------|--------------------|------|-----|----------|
| | \emptyset mm (inches) | H mm (inches) | | | | | | +40°C max. (A) | +105°C max. (A) | | | |
| Rated voltage / Peak voltage: 160/185 V | | | | | | | | | | | | |
| 220 | 22 | (0,866) | 25 | (0,984) | 1 | 10 | 500 | 300 | 0,21 | 3 | 0,8 | A 716020 |
| 330 | 22 | (0,866) | 30 | (1,181) | 2 | 10 | 300 | 200 | 0,32 | 4,2 | 1,1 | A 716021 |
| 470 | 25 | (0,984) | 30 | (1,181) | 5 | 10 | 200 | 130 | 0,45 | 5,5 | 1,5 | A 716024 |
| 680 | 25 | (0,984) | 40 | (1,575) | 6 | 10 | 150 | 110 | 0,66 | 7,1 | 1,9 | A 716025 |
| 1000 | 30 | (1,181) | 35 | (1,378) | 10 | 10 | 100 | 70 | 0,96 | 9,2 | 2,5 | A 716027 |
| 1500 | 35 | (1,378) | 40 | (1,575) | 16 | 12 | 80 | 60 | 1,4 | 12 | 3,2 | A 716031 |
| 2200 | 35 | (1,378) | 50 | (1,969) | 18 | 13 | 60 | 40 | 2,1 | 15 | 4 | A 716032 |
| Rated voltage / Peak voltage: 200/230 V | | | | | | | | | | | | |
| 150 | 22 | (0,866) | 25 | (0,984) | 1 | 9 | 600 | 350 | 0,18 | 2,7 | 0,7 | A 716040 |
| 220 | 22 | (0,866) | 30 | (1,181) | 2 | 9 | 400 | 250 | 0,26 | 3,6 | 1 | A 716041 |
| 330 | 25 | (0,984) | 30 | (1,181) | 5 | 7 | 200 | 130 | 0,39 | 5,5 | 1,5 | A 716044 |
| 470 | 25 | (0,984) | 40 | (1,575) | 6 | 7 | 140 | 80 | 0,56 | 7,4 | 2 | A 716045 |
| 560 | 30 | (1,181) | 30 | (1,181) | 9 | 8 | 150 | 100 | 0,67 | 7,1 | 1,9 | A 716046 |
| 680 | 35 | (1,378) | 30 | (1,181) | 14 | 10 | 150 | 100 | 0,81 | 7,7 | 2,1 | A 716049 |
| 1000 | 35 | (1,378) | 35 | (1,378) | 15 | 12 | 120 | 70 | 1,2 | 9,2 | 2,5 | A 716050 |
| 1500 | 35 | (1,378) | 40 | (1,575) | 16 | 10 | 70 | 50 | 1,8 | 12 | 3,4 | A 716051 |
| 2200 | 35 | (1,378) | 50 | (1,969) | 18 | 12 | 55 | 40 | 2,6 | 15 | 4,2 | A 716052 |
| Rated voltage / Peak voltage: 250/290 V | | | | | | | | | | | | |
| 150 | 22 | (0,866) | 25 | (0,984) | 1 | 8 | 600 | 330 | 0,22 | 2,7 | 0,7 | A 716060 |
| 220 | 22 | (0,866) | 30 | (1,181) | 2 | 8 | 400 | 220 | 0,33 | 3,6 | 1 | A 716061 |
| 330 | 25 | (0,984) | 30 | (1,181) | 5 | 8 | 180 | 110 | 0,5 | 5,8 | 1,5 | A 716064 |
| 470 | 30 | (1,181) | 30 | (1,181) | 9 | 8 | 150 | 120 | 0,7 | 7,1 | 1,9 | A 716066 |
| 680 | 30 | (1,181) | 40 | (1,575) | 11 | 8 | 130 | 95 | 1 | 8,5 | 2,3 | A 716068 |
| 1000 | 35 | (1,378) | 40 | (1,575) | 16 | 9 | 90 | 60 | 1,5 | 12 | 3 | A 716071 |
| 1500 | 35 | (1,378) | 50 | (1,969) | 18 | 10 | 70 | 45 | 2,3 | 14 | 3,7 | A 716072 |
| Rated voltage / Peak voltage: 400/450 V | | | | | | | | | | | | |
| 68 | 22 | (0,866) | 30 | (1,181) | 2 | 6 | 600 | 320 | 0,65 | 2,9 | 0,8 | A 716101 |
| 100 | 22 | (0,866) | 30 | (1,181) | 2 | 6 | 500 | 250 | 0,8 | 3,2 | 0,9 | A 716102 |
| 150 | 22 | (0,866) | 40 | (1,575) | 3 | 6 | 400 | 210 | 1 | 4,1 | 1,1 | A 716103 |
| 220 | 25 | (0,984) | 40 | (1,575) | 6 | 6 | 340 | 190 | 1,2 | 4,7 | 1,3 | A 716105 |
| 220 | 30 | (1,181) | 35 | (1,378) | 10 | 8 | 400 | 280 | 1,2 | 3,8 | 1 | A 716106 |
| 330 | 25 | (0,984) | 50 | (1,969) | 7 | 6 | 200 | 100 | 1,5 | 6,8 | 1,8 | A 716107 |
| 330 | 30 | (1,181) | 40 | (1,575) | 11 | 6 | 220 | 120 | 1,5 | 6,6 | 1,7 | A 716108 |
| 470 | 35 | (1,378) | 40 | (1,575) | 16 | 6 | 150 | 100 | 1,8 | 8,7 | 2,3 | A 716111 |
| 560 | 35 | (1,378) | 50 | (1,969) | 18 | 6 | 120 | 90 | 1,9 | 11 | 2,8 | A 716112 |
| Rated voltage / Peak voltage: 450/500 V | | | | | | | | | | | | |
| 47 | 22 | (0,866) | 30 | (1,181) | 2 | 6 | 800 | 410 | 0,6 | 2,5 | 0,7 | A 716121 |
| 68 | 22 | (0,866) | 30 | (1,181) | 2 | 6 | 600 | 320 | 0,7 | 2,9 | 0,8 | A 716122 |
| 100 | 22 | (0,866) | 40 | (1,575) | 3 | 6 | 500 | 260 | 0,8 | 3,3 | 1 | A 716123 |
| 150 | 25 | (0,984) | 40 | (1,575) | 6 | 6 | 380 | 230 | 1 | 4,5 | 1,2 | A 716125 |
| 220 | 30 | (1,181) | 40 | (1,575) | 11 | 6 | 280 | 170 | 1,25 | 5,8 | 1,5 | A 716128 |
| 220 | 35 | (1,378) | 30 | (1,181) | 14 | 6 | 300 | 190 | 1,25 | 5,5 | 1,5 | A 716129 |
| 330 | 35 | (1,378) | 40 | (1,575) | 16 | 6 | 200 | 130 | 1,5 | 7,5 | 2 | A 716131 |
| 470 | 35 | (1,378) | 50 | (1,969) | 18 | 6 | 150 | 120 | 1,8 | 8,9 | 2,5 | A 716132 |
| Rated voltage / Peak voltage: 500/550 V | | | | | | | | | | | | |
| 47 | 22 | (0,866) | 30 | (1,181) | 2 | 6 | 1200 | 750 | 0,62 | 2,1 | 0,6 | A 716141 |
| 100 | 25 | (0,984) | 40 | (1,575) | 6 | 6 | 650 | 440 | 0,9 | 3,4 | 0,9 | A 716145 |
| 150 | 25 | (0,984) | 50 | (1,969) | 7 | 6 | 290 | 190 | 1,1 | 5,7 | 1,5 | A 716147 |
| 150 | 30 | (1,181) | 40 | (1,575) | 11 | 6 | 320 | 210 | 1,1 | 5,4 | 1,4 | A 716148 |
| 180 | 35 | (1,378) | 30 | (1,181) | 14 | 6 | 300 | 250 | 1,2 | 5,5 | 1,5 | A 716149 |
| 220 | 35 | (1,378) | 40 | (1,575) | 16 | 6 | 260 | 170 | 1,35 | 6,6 | 1,8 | A 716151 |
| 330 | 35 | (1,378) | 50 | (1,969) | 18 | 8 | 200 | 160 | 1,6 | 8 | 2,2 | A 716153 |

8 000 h / 105°C

EXPECTED LIFE

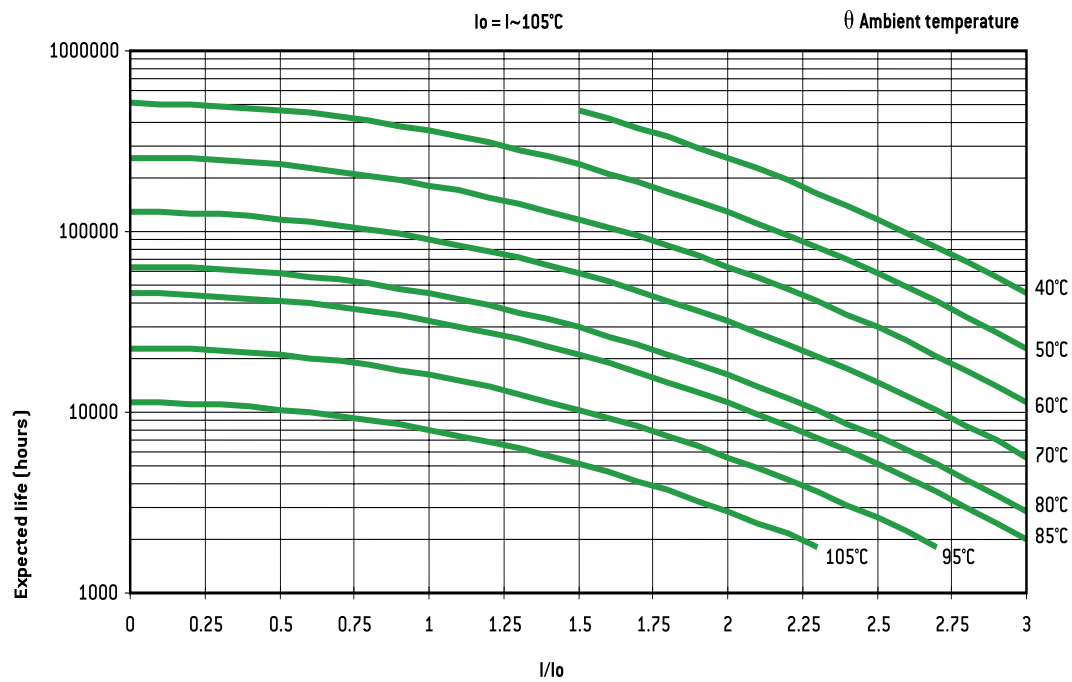
as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I_~: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | ≥ 50 000 |
|--------|----------------------|----------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| I | 0,8 x I _~ | I _~ | 1,2 x I _~ | 1,3 x I _~ | 1,35 x I _~ | 1,5 x I _~ | 1,6 x I _~ |



SNAPSIC 4P

10 000 h / 85°C

| | | | | |
|----------------|-----------------------|-------------------------------|---------------|----------------|
| 16 V ... 500 V | 330 µF ... 150 000 µF | Ø 35 (1,378) ... Ø 45 (1,772) | - 55°C + 85°C | Long Life Time |
|----------------|-----------------------|-------------------------------|---------------|----------------|



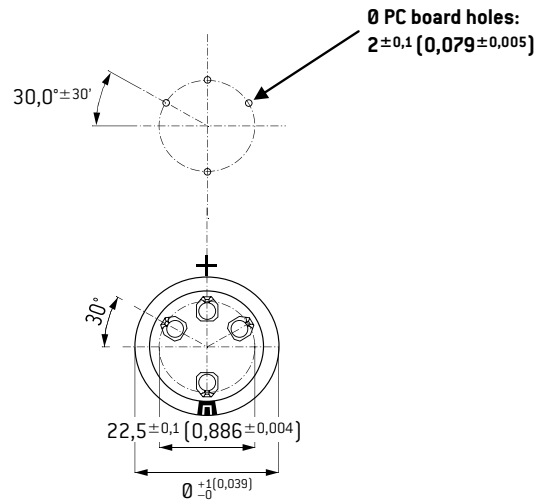
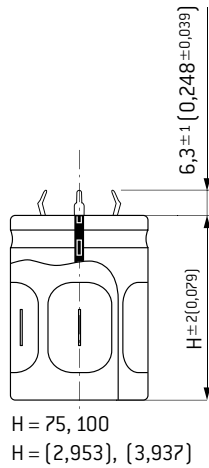
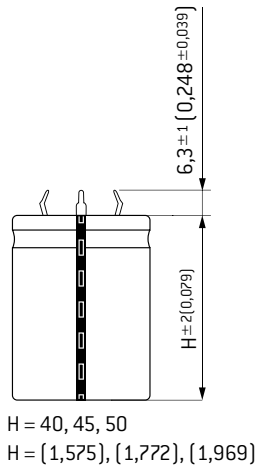
APPLICATIONS

- Printed circuit mounting
- Switch mode power supplies
- Impulse current

Fixing: SNAP-IN pins

Tolerance on capacitance at 20°C : ± 20 %
 Operating temperature : - 55°C +85°C

4 SNAP-IN terminals



Dimensions in mm (inches)

Dummy pins near positive terminal are for mechanical support only. They must be electrically insulated from the positive and the negative terminals.

| Can size | Ø mm (inches) | | Hb mm (inches) | |
|----------|---------------|---------|----------------|---------|
| 1 | 35 | {1,378} | 50 | {1,969} |
| 2 | 35 | {1,378} | 75 | {2,953} |
| 3 | 35 | {1,378} | 100 | {3,937} |
| 4 | 40 | {1,575} | 40 | {1,575} |
| 5 | 40 | {1,575} | 50 | {1,969} |
| 6 | 40 | {1,575} | 75 | {2,953} |
| 7 | 40 | {1,575} | 100 | {3,937} |
| 8 | 45 | {1,772} | 45 | {1,772} |
| 9 | 45 | {1,772} | 50 | {1,969} |
| 10 | 45 | {1,772} | 75 | {2,953} |
| 11 | 45 | {1,772} | 100 | {3,937} |

RESISTANCE TO VIBRATIONS

| Hb mm (inches) | H = 40 (1,575), 45 (1,772), 50 (1,969) | H = 75 (2,953), 100* (3,937) |
|----------------|--|------------------------------|
| f [Hz] | 10 - 500 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 (0,030) | 1,5 (0,059) |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

* and on request for: H = 40 {1,575}, 45 {1,772}, 50 {1,969}

SPECIFICATIONS

CECC 30 300 Long life
 DIN 41 240 - Climatic category FPF - 55°C + 85°C / 56 days
 IEC 60 384.4 long life

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between pins and mounting hardware:
 100 MΩ
 Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V
 Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

SNAPSIIC 4P

10 000 h / 85°C

| Capacitance [μ F] | Dimensions | | Can size | Tan δ 100 Hz +20°C max. [%] | ESR 100 Hz +20°C Typic [m Ω] | Z 10 kHz +20°C Typic [m Ω] | II +20°C 5 min. max. [mA] | I ~ 100 Hz | | Code | | |
|--|----------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|----------------------|------|------|----------|
| | \emptyset mm (inches) | H mm (inches) | | | | | | +40°C max. [A] | +85°C max. [A] | | | |
| Rated voltage / Peak voltage: 16/18 V | | | | | | | | | | | | |
| 47000 | 35 | (1,378) | 50 | (1,969) | 1 | 55 | 15 | 15 | 4.5 | 20 | 8.0 | A 714020 |
| 47000 | 40 | (1,575) | 40 | (1,575) | 4 | 55 | 15 | 15 | 4.5 | 20 | 7.9 | A 714030 |
| 68000 | 35 | (1,378) | 50 | (1,969) | 1 | 67 | 12 | 10 | 6.5 | 20 | 9.0 | A 714021 |
| 100000 | 35 | (1,378) | 75 | (2,953) | 2 | 82 | 10 | 8 | 9.6 | 20 | 12.0 | A 714023 |
| 100000 | 45 | (1,772) | 45 | (1,772) | 8 | 82 | 10 | 8 | 9.6 | 20 | 11.0 | A 714035 |
| 150000 | 40 | (1,575) | 100 | (3,937) | 7 | 122 | 10 | 8 | 14.0 | 20 | 14.0 | A 714034 |
| Rated voltage / Peak voltage: 25/30 V | | | | | | | | | | | | |
| 33000 | 35 | (1,378) | 50 | (1,969) | 1 | 70 | 20 | 18 | 5.0 | 20 | 7.0 | A 714040 |
| 33000 | 40 | (1,575) | 40 | (1,575) | 4 | 100 | 38 | 20 | 5.0 | 15 | 5.0 | A 714050 |
| 47000 | 35 | (1,378) | 75 | (2,953) | 2 | 62 | 15 | 13 | 7.1 | 20 | 9.6 | A 714043 |
| 47000 | 40 | (1,575) | 50 | (1,969) | 5 | 62 | 15 | 13 | 7.1 | 20 | 8.7 | A 714051 |
| 68000 | 40 | (1,575) | 75 | (2,953) | 6 | 67 | 12 | 10 | 10.0 | 20 | 13.0 | A 714053 |
| 100000 | 40 | (1,575) | 100 | (3,937) | 7 | 82 | 10 | 8 | 15.0 | 20 | 16.0 | A 714054 |
| Rated voltage / Peak voltage: 40/48 V | | | | | | | | | | | | |
| 22000 | 35 | (1,378) | 50 | (1,969) | 1 | 43 | 24 | 17 | 5,2 | 19 | 6,4 | A 714060 |
| 22000 | 40 | (1,575) | 40 | (1,575) | 4 | 65 | 36 | 24 | 5,2 | 15 | 5,1 | A 714070 |
| 33000 | 35 | (1,378) | 75 | (2,953) | 2 | 47 | 15 | 13 | 7,9 | 20 | 9,6 | A 714063 |
| 33000 | 45 | (1,772) | 45 | (1,772) | 8 | 47 | 15 | 13 | 7,9 | 20 | 8,9 | A 714075 |
| 47000 | 35 | (1,378) | 100 | (3,937) | 3 | 53 | 12 | 10 | 11,0 | 20 | 12,0 | A 714064 |
| 47000 | 40 | (1,575) | 75 | (2,953) | 6 | 53 | 12 | 9 | 11,0 | 20 | 12,0 | A 714073 |
| Rated voltage / Peak voltage: 50/58 V | | | | | | | | | | | | |
| 15000 | 35 | (1,378) | 50 | (1,969) | 1 | 38 | 26 | 18 | 4,5 | 18 | 6,1 | A 714080 |
| 15000 | 40 | (1,575) | 40 | (1,575) | 4 | 38 | 26 | 18 | 4,5 | 18 | 6,0 | A 714090 |
| 22000 | 35 | (1,378) | 75 | (2,953) | 2 | 40 | 22 | 16 | 6,6 | 20 | 7,9 | A 714083 |
| 22000 | 40 | (1,575) | 50 | (1,969) | 5 | 48 | 35 | 17 | 6,6 | 17 | 5,7 | A 714091 |
| 33000 | 40 | (1,575) | 75 | (2,953) | 6 | 48 | 18 | 14 | 9,9 | 20 | 9,5 | A 714093 |
| 47000 | 40 | (1,575) | 100 | (3,937) | 7 | 57 | 15 | 11 | 14,0 | 20 | 12,0 | A 714094 |
| Rated voltage / Peak voltage: 63/76 V | | | | | | | | | | | | |
| 10000 | 35 | (1,378) | 50 | (1,969) | 1 | 25 | 25 | 20 | 3,0 | 19 | 6,2 | A 714100 |
| 10000 | 40 | (1,575) | 40 | (1,575) | 4 | 30 | 35 | 22 | 3,0 | 16 | 5,2 | A 714110 |
| 15000 | 35 | (1,378) | 75 | (2,953) | 2 | 28 | 22 | 18 | 5,7 | 20 | 7,9 | A 714103 |
| 15000 | 45 | (1,772) | 45 | (1,772) | 8 | 28 | 22 | 18 | 5,7 | 20 | 7,4 | A 714115 |
| 22000 | 35 | (1,378) | 100 | (3,937) | 3 | 32 | 18 | 15 | 8,3 | 20 | 10,0 | A 714104 |
| 22000 | 40 | (1,575) | 75 | (2,953) | 6 | 32 | 18 | 13 | 8,3 | 20 | 10,0 | A 714113 |
| 33000 | 45 | (1,772) | 75 | (2,953) | 10 | 43 | 16 | 11 | 11,0 | 20 | 11,0 | A 714117 |
| 47000 | 45 | (1,772) | 100 | (3,937) | 11 | 50 | 13 | 9 | 13,0 | 20 | 13,0 | A 714118 |
| Rated voltage / Peak voltage: 80/92 V | | | | | | | | | | | | |
| 6800 | 35 | (1,378) | 50 | (1,969) | 1 | 16 | 25 | 20 | 3,2 | 19 | 6,2 | A 714120 |
| 6800 | 40 | (1,575) | 40 | (1,575) | 4 | 22 | 35 | 25 | 3,2 | 16 | 5,2 | A 714130 |
| 8200 | 35 | (1,378) | 50 | (1,969) | 1 | 19 | 25 | 18 | 4,0 | 19 | 6,2 | A 714121 |
| 10000 | 35 | (1,378) | 75 | (2,953) | 2 | 21 | 25 | 21 | 4,8 | 20 | 7,4 | A 714123 |
| 10000 | 45 | (1,772) | 45 | (1,772) | 8 | 21 | 25 | 21 | 4,8 | 20 | 6,9 | A 714135 |
| 15000 | 35 | (1,378) | 100 | (3,937) | 3 | 24 | 20 | 16 | 7,2 | 20 | 9,5 | A 714124 |
| 15000 | 40 | (1,575) | 75 | (2,953) | 6 | 24 | 20 | 13 | 7,2 | 20 | 9,5 | A 714133 |
| Rated voltage 100/115 V | | | | | | | | | | | | |
| 4700 | 35 | (1,378) | 50 | (1,969) | 1 | 11 | 28 | 20 | 2,8 | 18 | 5,9 | A 714140 |
| 4700 | 40 | (1,575) | 40 | (1,575) | 4 | 15 | 38 | 25 | 2,8 | 15 | 5,0 | A 714150 |
| 6800 | 35 | (1,378) | 75 | (2,953) | 2 | 19 | 35 | 23 | 4,0 | 19 | 6,3 | A 714143 |
| 6800 | 45 | (1,772) | 45 | (1,772) | 8 | 19 | 35 | 23 | 4,0 | 18 | 5,8 | A 714155 |
| 10000 | 35 | (1,378) | 100 | (3,937) | 3 | 24 | 30 | 21 | 6,0 | 20 | 7,7 | A 714144 |
| 10000 | 40 | (1,575) | 75 | (2,953) | 6 | 24 | 30 | 20 | 6,0 | 20 | 7,7 | A 714153 |
| Rated voltage / Peak voltage: 160/185 V | | | | | | | | | | | | |
| 2200 | 35 | (1,378) | 50 | (1,969) | 1 | 15 | 60 | 40 | 2,1 | 13 | 4,2 | A 714160 |
| 2200 | 40 | (1,575) | 40 | (1,575) | 4 | 15 | 60 | 40 | 2,1 | 12 | 4,0 | A 714170 |
| 3300 | 35 | (1,378) | 75 | (2,953) | 2 | 10 | 40 | 30 | 3,2 | 18 | 5,9 | A 714163 |
| 3300 | 45 | (1,772) | 45 | (1,772) | 8 | 10 | 40 | 30 | 3,2 | 16 | 5,5 | A 714175 |
| 4700 | 40 | (1,575) | 75 | (2,953) | 6 | 13 | 35 | 27 | 4,5 | 20 | 6,8 | A 714173 |
| Rated voltage / Peak voltage: 200/230 V | | | | | | | | | | | | |
| 1500 | 35 | (1,378) | 50 | (1,969) | 1 | 11 | 80 | 55 | 1,8 | 10,0 | 3,5 | A 714180 |
| 2200 | 35 | (1,378) | 50 | (1,969) | 1 | 11 | 55 | 40 | 2,6 | 13,0 | 4,2 | A 714181 |
| 3300 | 35 | (1,378) | 75 | (2,953) | 2 | 16 | 60 | 40 | 4,0 | 14,0 | 4,8 | A 714185 |
| 3300 | 45 | (1,772) | 45 | (1,772) | 8 | 16 | 60 | 40 | 4,0 | 13,0 | 4,5 | A 714196 |
| 4700 | 40 | (1,575) | 75 | (2,953) | 6 | 20 | 50 | 30 | 5,6 | 17,0 | 5,7 | A 714192 |
| 6800 | 45 | (1,772) | 100 | (3,937) | 11 | 21 | 30 | 20 | 8,2 | 20 | 8,9 | A 714198 |

SNAPSIC 4P

10 000 h / 85°C

| Capacitance [μF] | Dimensions | | Can size | Tanδ 100 Hz +20°C max. [%] | ESR 100 Hz +20°C Typic [mΩ] | Z 10 kHz +20°C Typic [mΩ] | II +20°C 5 min. max. [mA] | I~ 100 Hz | | Code | | |
|--|------------------|------------------|----------|--|---|---------------------------------------|---------------------------------------|----------------------|----------------------|------|-----|----------|
| | Ø mm [inches] | H mm [inches] | | | | | | +40°C max. [A] | +85°C max. [A] | | | |
| Rated voltage / Peak voltage: 250/290 V | | | | | | | | | | | | |
| 1500 | 35 | (1,378) | 50 | (1,969) | 1 | 10 | 70 | 50 | 2.3 | 11 | 3,7 | A 714201 |
| 1500 | 40 | (1,575) | 40 | (1,575) | 4 | 12 | 90 | 60 | 2.3 | 9.7 | 3.2 | A 714209 |
| 2200 | 35 | (1,378) | 75 | (2,953) | 2 | 12 | 65 | 45 | 3.3 | 14.0 | 4.6 | A 714205 |
| 2200 | 40 | (1,575) | 50 | (1,969) | 5 | 12 | 65 | 45 | 3.3 | 13.0 | 4.2 | A 714211 |
| 3300 | 40 | (1,575) | 75 | (2,953) | 6 | 12 | 45 | 30 | 5.0 | 18.0 | 6.0 | A 714212 |
| 4700 | 45 | (1,772) | 75 | (2,953) | 10 | 13 | 35 | 25 | 7.0 | 20.0 | 7.2 | A 714216 |
| Rated voltage / Peak voltage: 350/385 V | | | | | | | | | | | | |
| 1000 | 35 | (1,378) | 50 | (1,969) | 1 | 10 | 80 | 60 | 2.1 | 10,0 | 3,5 | A 714221 |
| 1500 | 35 | (1,378) | 75 | (2,953) | 2 | 12 | 70 | 40 | 3.2 | 13.0 | 4.4 | A 714222 |
| 1500 | 45 | (1,772) | 50 | (1,969) | 9 | 12 | 90 | 60 | 3,2 | 11 | 3,8 | A 714236 |
| 2200 | 45 | (1,772) | 75 | (2,953) | 10 | 12 | 54 | 33 | 4.6 | 17,0 | 5,8 | A 714237 |
| 3300 | 45 | (1,772) | 100 | (3,937) | 11 | 14 | 45 | 30 | 6,9 | 20 | 8,0 | A 714238 |
| Rated voltage 385/425 V | | | | | | | | | | | | |
| 560 | 40 | (1,575) | 40 | (1,575) | 4 | 10 | 160 | 100 | 1.3 | 7,3 | 2,4 | A 714250 |
| 680 | 35 | (1,378) | 50 | (1,969) | 1 | 10 | 180 | 140 | 1.6 | 7,0 | 2,3 | A 714241 |
| 1000 | 35 | (1,378) | 75 | (2,953) | 2 | 10 | 110 | 80 | 2.3 | 11,0 | 3,5 | A 714242 |
| 1000 | 45 | (1,772) | 45 | (1,772) | 8 | 10 | 110 | 80 | 2.3 | 11,0 | 3,7 | A 714255 |
| 1500 | 40 | (1,575) | 75 | (2,953) | 6 | 10 | 80 | 60 | 3.5 | 13,0 | 4,5 | A 714252 |
| 2200 | 45 | (1,772) | 100 | (3,937) | 11 | 13 | 70 | 50 | 5.1 | 17,0 | 5,8 | A 714258 |
| Rated voltage / Peak voltage: 400/450 V | | | | | | | | | | | | |
| 560 | 35 | (1,378) | 50 | (1,969) | 1 | 12 | 220 | 160 | 1.9 | 6,3 | 2,1 | A 714260 |
| 680 | 35 | (1,378) | 50 | (1,969) | 1 | 12 | 210 | 150 | 2.1 | 6,4 | 2,1 | A 714261 |
| 1000 | 35 | (1,378) | 75 | (2,953) | 2 | 12 | 120 | 80 | 2.5 | 10,0 | 3,4 | A 714262 |
| 1000 | 45 | (1,772) | 45 | (1,772) | 8 | 12 | 130 | 90 | 2.5 | 9,1 | 3,0 | A 714275 |
| 1200 | 45 | (1,772) | 50 | (1,969) | 9 | 12 | 120 | 80 | 2,8 | 10 | 3,3 | A 714276 |
| 1500 | 40 | (1,575) | 75 | (2,953) | 6 | 12 | 100 | 70 | 3.1 | 12,0 | 4,0 | A 714272 |
| 2200 | 40 | (1,575) | 100 | (3,937) | 7 | 16 | 90 | 70 | 3,8 | 11 | 4,8 | A 714277 |
| 2200 | 45 | (1,772) | 100 | (3,937) | 11 | 14 | 80 | 50 | 3,8 | 16,0 | 5,4 | A 714278 |
| Rated voltage / Peak voltage: 450/500 V | | | | | | | | | | | | |
| 470 | 35 | (1,378) | 50 | (1,969) | 1 | 13 | 250 | 170 | 2.8 | 5,9 | 2,0 | A 714280 |
| 470 | 40 | (1,575) | 40 | (1,575) | 4 | 13 | 250 | 170 | 2.8 | 5,8 | 1,9 | A 714290 |
| 560 | 35 | (1,378) | 50 | (1,969) | 1 | 13 | 180 | 120 | 3.0 | 7,0 | 2,3 | A 714281 |
| 680 | 35 | (1,378) | 75 | (2,953) | 2 | 13 | 140 | 100 | 3.3 | 9,4 | 3,1 | A 714283 |
| 680 | 45 | (1,772) | 45 | (1,772) | 8 | 13 | 150 | 110 | 3.3 | 8,8 | 2,9 | A 714295 |
| 820 | 35 | (1,378) | 75 | (2,953) | 2 | 13 | 140 | 90 | 3.6 | 9,4 | 3,1 | A 714285 |
| 820 | 45 | (1,772) | 45 | (1,772) | 8 | 13 | 140 | 90 | 3.6 | 8,8 | 2,9 | A 714296 |
| 1000 | 35 | (1,378) | 100 | (3,937) | 3 | 13 | 120 | 90 | 4.1 | 12,0 | 3,9 | A 714284 |
| 1000 | 40 | (1,575) | 75 | (2,953) | 6 | 13 | 120 | 90 | 4.1 | 11,0 | 3,7 | A 714293 |
| 1000 | 45 | (1,772) | 50 | (1,969) | 9 | 13 | 130 | 80 | 4,1 | 9,5 | 3,2 | A 714299 |
| 1500 | 45 | (1,772) | 75 | (2,953) | 10 | 14 | 110 | 80 | 4,9 | 12,0 | 4,1 | A 714297 |
| 2200 | 45 | (1,772) | 100 | (3,937) | 11 | 16 | 90 | 60 | 6,0 | 15,0 | 5,1 | A 714298 |
| Rated voltage / Peak voltage: 500/550 V | | | | | | | | | | | | |
| 330 | 35 | (1,378) | 50 | (1,969) | 1 | 13 | 360 | 270 | 2.4 | 4,9 | 1,6 | A 714301 |
| 470 | 35 | (1,378) | 75 | (2,953) | 2 | 13 | 320 | 230 | 2.9 | 6,2 | 2,1 | A 714303 |
| 470 | 45 | (1,772) | 45 | (1,772) | 8 | 13 | 360 | 260 | 2.9 | 5,5 | 1,8 | A 714315 |
| 680 | 40 | (1,575) | 75 | (2,953) | 6 | 13 | 240 | 170 | 3.5 | 7,8 | 2,6 | A 714313 |
| 1000 | 45 | (1,772) | 75 | (2,953) | 10 | 14 | 160 | 120 | 4.2 | 10,0 | 3,4 | A 714317 |
| 1500 | 45 | (1,772) | 100 | (3,937) | 11 | 16 | 130 | 90 | 5.2 | 13,0 | 4,3 | A 714319 |

10 000 h / 85°C

EXPECTED LIFE

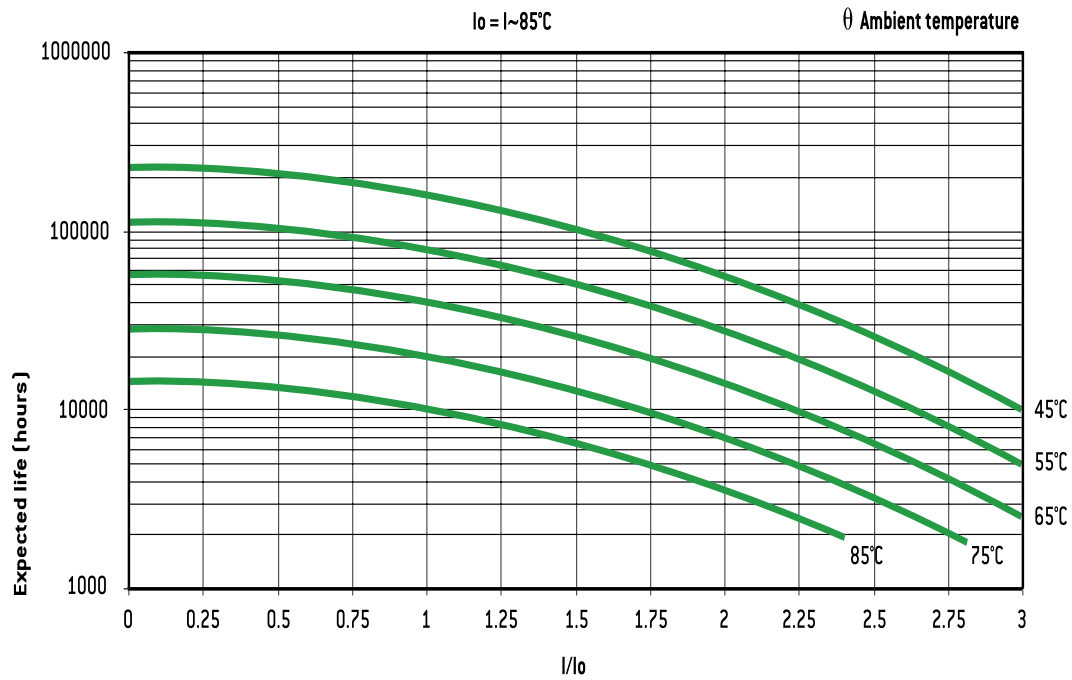
as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I_r: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | ≥ 50 000 |
|--------|----------------------|----------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| I | 0,8 x I _r | I _r | 1,2 x I _r | 1,3 x I _r | 1,35 x I _r | 1,5 x I _r | 1,6 x I _r |



SNAPSIC 105 4P

8 000 h / 105°C

| | | | | |
|----------------|-----------------------|---------------------------|----------------|----------------|
| 16 V ... 500 V | 330 μF ... 150 000 μF | ∅ 35 (1,378) - 45 (1,772) | - 55°C + 105°C | Long Life Time |
|----------------|-----------------------|---------------------------|----------------|----------------|



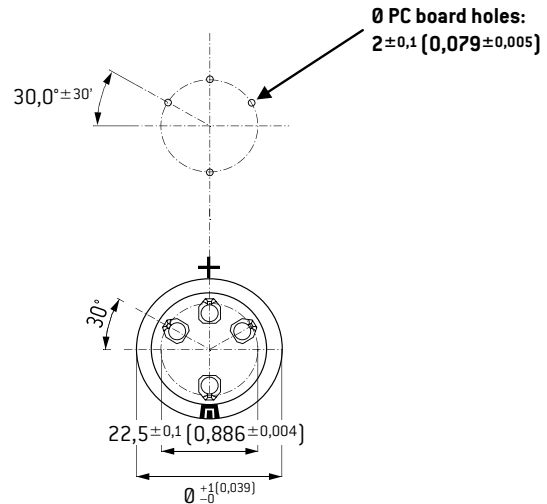
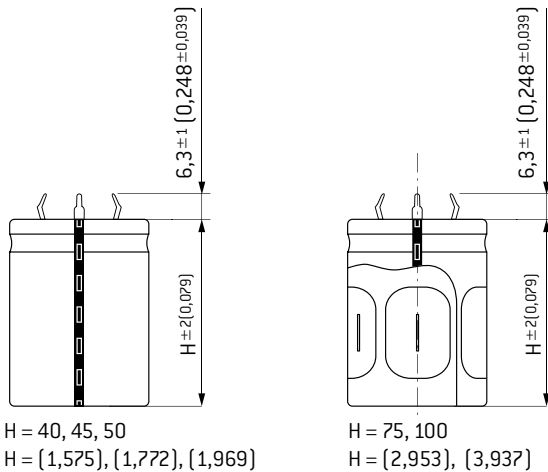
APPLICATIONS

- Printed circuit mounting
- Switch mode power supplies
- Impulse current

Fixing: SNAP-IN pins

Tolerance on capacitance at 20°C : ± 20 %
 Operating temperature : - 55°C + 105°C

4 SNAP-IN terminals



Dimensions in mm (inches)

Dummy pins near positive terminal are for mechanical support only. They must be electrically insulated from the positive and the negative terminals.

| Can size | ∅ mm (inches) | | Hb mm (inches) | |
|----------|---------------|---------|----------------|---------|
| 1 | 35 | [1,378] | 50 | [1,969] |
| 2 | 35 | [1,378] | 75 | [2,953] |
| 3 | 35 | [1,378] | 100 | [3,937] |
| 4 | 40 | [1,575] | 40 | [1,575] |
| 5 | 40 | [1,575] | 50 | [1,969] |
| 6 | 40 | [1,575] | 75 | [2,953] |
| 7 | 40 | [1,575] | 100 | [3,937] |
| 8 | 45 | [1,772] | 45 | [1,772] |
| 9 | 45 | [1,772] | 50 | [1,969] |
| 10 | 45 | [1,772] | 75 | [2,953] |
| 11 | 45 | [1,772] | 100 | [3,937] |

RESISTANCE TO VIBRATIONS

| Hb mm (inches) | H = 40 (1,575), 45 (1,772), 50 (1,969) | H = 75 (2,953), 100 (3,937)* |
|----------------|--|------------------------------|
| f [Hz] | 10 - 500 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 (0,030) | 1,5 (0,059) |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t [h] | 3 x 2 h | 3 x 2 h |

* and on request for: H = 40 [1,575], 45 [1,772], 50 [1,969]

SPECIFICATIONS

CECC 30 300 Long life
 DIN 41 240 - Climatic category: - 55 + 105°C / 56 days
 IEC 60 384.4 long life
 Standard endurance test at U_R: 2000 h 105°C

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between pins and mounting hardware: 100 MΩ
 Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V
 Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

SNAPIC 105 4P

8 000 h / 105°C

| Capacitance (μF) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | II +20°C 5 min. max. (mA) | I ~ 100 Hz | | Code | | |
|--|------------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|----------------------|------|------|----------|
| | \varnothing mm (inches) | H mm (inches) | | | | | | +40°C max. (A) | +85°C max. (A) | | | |
| Rated voltage / Peak voltage: 16/18 V | | | | | | | | | | | | |
| 47000 | 35 | (1,378) | 50 | (1,969) | 1 | 55 | 15 | 15 | 4.5 | 20 | 6.6 | A 715020 |
| 47000 | 40 | (1,575) | 40 | (1,575) | 4 | 55 | 15 | 15 | 4.5 | 20 | 7.1 | A 715030 |
| 68000 | 35 | (1,378) | 50 | (1,969) | 1 | 67 | 12 | 10 | 6.5 | 20 | 7.3 | A 715021 |
| 100000 | 35 | (1,378) | 75 | (2,953) | 2 | 82 | 10 | 8 | 9.6 | 20 | 9.6 | A 715023 |
| 100000 | 45 | (1,772) | 45 | (1,772) | 8 | 82 | 10 | 8 | 9.6 | 20 | 8.9 | A 715035 |
| 150000 | 40 | (1,575) | 100 | (3,937) | 7 | 122 | 10 | 8 | 14.0 | 20 | 12.0 | A 715034 |
| Rated voltage / Peak voltage: 25/30 V | | | | | | | | | | | | |
| 33000 | 35 | (1,378) | 50 | (1,969) | 1 | 70 | 20 | 18 | 5.0 | 20 | 5.7 | A 715040 |
| 33000 | 40 | (1,575) | 40 | (1,575) | 4 | 100 | 38 | 20 | 5.0 | 15 | 4.1 | A 715050 |
| 47000 | 35 | (1,378) | 75 | (2,953) | 2 | 62 | 15 | 13 | 7.1 | 20 | 7.8 | A 715043 |
| 47000 | 40 | (1,575) | 50 | (1,969) | 5 | 62 | 15 | 13 | 7.1 | 20 | 7.1 | A 715051 |
| 68000 | 40 | (1,575) | 75 | (2,953) | 6 | 67 | 12 | 10 | 10.0 | 20 | 9.4 | A 715053 |
| 100000 | 40 | (1,575) | 100 | (3,937) | 7 | 82 | 10 | 8 | 15.0 | 20 | 12.0 | A 715054 |
| Rated voltage / Peak voltage: 35/40 V | | | | | | | | | | | | |
| 22000 | 35 | (1,378) | 50 | (1,969) | 1 | 43 | 24 | 17 | 5.2 | 19 | 5.2 | A 715060 |
| 22000 | 40 | (1,575) | 40 | (1,575) | 4 | 65 | 36 | 24 | 5.2 | 16 | 4.2 | A 715070 |
| 33000 | 35 | (1,378) | 75 | (2,953) | 2 | 47 | 15 | 13 | 7.9 | 20 | 7.8 | A 715063 |
| 33000 | 45 | (1,772) | 45 | (1,772) | 8 | 47 | 15 | 13 | 7.9 | 20 | 7.3 | A 715075 |
| 47000 | 35 | (1,378) | 100 | (3,937) | 3 | 53 | 12 | 10 | 11.0 | 20 | 10.0 | A 715064 |
| 47000 | 40 | (1,575) | 75 | (2,953) | 6 | 53 | 12 | 9 | 11.0 | 20 | 9.4 | A 715073 |
| Rated voltage / Peak voltage: 50/58 V | | | | | | | | | | | | |
| 15000 | 35 | (1,378) | 50 | (1,969) | 1 | 38 | 26 | 18 | 4.5 | 19 | 5.0 | A 715080 |
| 15000 | 40 | (1,575) | 40 | (1,575) | 4 | 38 | 26 | 18 | 4.5 | 18 | 4.9 | A 715090 |
| 22000 | 35 | (1,378) | 75 | (2,953) | 2 | 40 | 22 | 16 | 6.6 | 20 | 6.5 | A 715083 |
| 22000 | 40 | (1,575) | 50 | (1,969) | 5 | 48 | 35 | 17 | 6.6 | 17 | 4.6 | A 715091 |
| 33000 | 40 | (1,575) | 75 | (2,953) | 6 | 48 | 18 | 14 | 9.9 | 20 | 7.7 | A 715093 |
| 47000 | 40 | (1,575) | 100 | (3,937) | 7 | 57 | 15 | 11 | 14.0 | 20 | 9.6 | A 715094 |
| Rated voltage / Peak voltage: 63/76 V | | | | | | | | | | | | |
| 10000 | 35 | (1,378) | 50 | (1,969) | 1 | 25 | 25 | 20 | 3.0 | 19 | 5.1 | A 715100 |
| 10000 | 40 | (1,575) | 40 | (1,575) | 4 | 30 | 35 | 22 | 3.0 | 16 | 4.2 | A 715110 |
| 15000 | 35 | (1,378) | 75 | (2,953) | 2 | 28 | 22 | 18 | 5.7 | 20 | 6.5 | A 715103 |
| 15000 | 45 | (1,772) | 45 | (1,772) | 8 | 28 | 22 | 18 | 5.7 | 20 | 6.0 | A 715115 |
| 22000 | 35 | (1,378) | 100 | (3,937) | 3 | 32 | 18 | 15 | 8.3 | 20 | 8.2 | A 715104 |
| 22000 | 40 | (1,575) | 75 | (2,953) | 6 | 32 | 18 | 13 | 8.3 | 20 | 7.7 | A 715113 |
| 33000 | 45 | (1,772) | 75 | (2,953) | 10 | 43 | 16 | 11 | 11.0 | 20 | 8.7 | A 715117 |
| 47000 | 45 | (1,772) | 100 | (3,937) | 11 | 50 | 13 | 9 | 13.0 | 20 | 9.7 | A 715118 |
| Rated voltage / Peak voltage: 80/92 V | | | | | | | | | | | | |
| 6800 | 35 | (1,378) | 50 | (1,969) | 1 | 16 | 25 | 20 | 3.2 | 19 | 5.1 | A 715120 |
| 6800 | 40 | (1,575) | 40 | (1,575) | 4 | 22 | 35 | 25 | 3.2 | 16 | 4.2 | A 715130 |
| 8200 | 35 | (1,378) | 50 | (1,969) | 1 | 19 | 25 | 18 | 4.0 | 19 | 5.1 | A 715121 |
| 10000 | 35 | (1,378) | 75 | (2,953) | 2 | 21 | 25 | 21 | 4.8 | 20 | 6.1 | A 715123 |
| 10000 | 45 | (1,772) | 45 | (1,772) | 8 | 21 | 25 | 21 | 4.8 | 20 | 5.6 | A 715135 |
| 15000 | 35 | (1,378) | 100 | (3,937) | 3 | 24 | 20 | 16 | 7.2 | 20 | 7.7 | A 715124 |
| 15000 | 40 | (1,575) | 75 | (2,953) | 6 | 24 | 20 | 13 | 7.2 | 20 | 7.3 | A 715133 |
| Rated voltage / Peak voltage: 100/115 V | | | | | | | | | | | | |
| 4700 | 35 | (1,378) | 50 | (1,969) | 1 | 11 | 28 | 20 | 2.8 | 18 | 4.8 | A 715140 |
| 4700 | 40 | (1,575) | 40 | (1,575) | 4 | 15 | 38 | 25 | 2.8 | 15 | 4.1 | A 715150 |
| 6800 | 35 | (1,378) | 75 | (2,953) | 2 | 19 | 35 | 23 | 4.0 | 19 | 5.1 | A 715143 |
| 6800 | 45 | (1,772) | 45 | (1,772) | 8 | 19 | 35 | 23 | 4.0 | 18 | 4.8 | A 715155 |
| 10000 | 35 | (1,378) | 100 | (3,937) | 3 | 24 | 30 | 21 | 6.0 | 20 | 6.3 | A 715144 |
| 10000 | 40 | (1,575) | 75 | (2,953) | 6 | 24 | 30 | 20 | 6.0 | 20 | 6.0 | A 715153 |
| Rated voltage 160/185 V | | | | | | | | | | | | |
| 2200 | 35 | (1,378) | 50 | (1,969) | 1 | 15 | 60 | 40 | 2.1 | 13 | 3.4 | A 715160 |
| 2200 | 40 | (1,575) | 40 | (1,575) | 4 | 15 | 60 | 40 | 2.1 | 12 | 3.2 | A 715170 |
| 3300 | 35 | (1,378) | 75 | (2,953) | 2 | 10 | 40 | 30 | 3.2 | 18 | 4.8 | A 715163 |
| 3300 | 45 | (1,772) | 45 | (1,772) | 8 | 10 | 40 | 30 | 3.2 | 17 | 4.4 | A 715175 |
| 4700 | 40 | (1,575) | 75 | (2,953) | 6 | 13 | 35 | 27 | 4.5 | 20 | 5.5 | A 715173 |
| Rated voltage 200/230 V | | | | | | | | | | | | |
| 1500 | 35 | (1,378) | 50 | (1,969) | 1 | 14 | 90 | 60 | 1.8 | 10.0 | 2.7 | A 715180 |
| 2200 | 35 | (1,378) | 50 | (1,969) | 1 | 14 | 65 | 45 | 2.6 | 12.0 | 3.2 | A 715181 |
| 3300 | 35 | (1,378) | 75 | (2,953) | 2 | 16 | 60 | 40 | 4.0 | 15.0 | 3.9 | A 715182 |
| 3300 | 45 | (1,772) | 45 | (1,772) | 8 | 16 | 60 | 40 | 4.0 | 14.0 | 3.6 | A 715194 |
| 4700 | 40 | (1,575) | 75 | (2,953) | 6 | 20 | 50 | 30 | 5.6 | 17.0 | 4.6 | A 715192 |
| 6800 | 45 | (1,772) | 100 | (3,937) | 11 | 21 | 30 | 20 | 8.2 | 20.0 | 7.2 | A 715197 |

SNAPSIIC 105 4P

8 000 h / 105°C

| Capacitance (μ F) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic (m Ω) | Z 10 kHz +20°C Typic (m Ω) | II +20°C 5 min. max. (mA) | I \sim 100 Hz | | Code | | |
|--|------------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|-----------------------|------|-----|----------|
| | \varnothing mm (inches) | H mm (inches) | | | | | | +40°C max. (A) | +105°C max. (A) | | | |
| Rated voltage / Peak voltage: 250/290 V | | | | | | | | | | | | |
| 1500 | 35 | (1,378) | 50 | (1,969) | 1 | 10 | 70 | 50 | 2.3 | 11,0 | 3,0 | A 715201 |
| 1500 | 40 | (1,575) | 40 | (1,575) | 4 | 12 | 90 | 60 | 2.3 | 10,0 | 2,6 | A 715209 |
| 2200 | 35 | (1,378) | 75 | (2,953) | 2 | 12 | 65 | 45 | 3.3 | 14,0 | 3,8 | A 715202 |
| 2200 | 40 | (1,575) | 50 | (1,969) | 5 | 12 | 65 | 45 | 3.3 | 13,0 | 3,4 | A 715211 |
| 3300 | 40 | (1,575) | 75 | (2,953) | 6 | 12 | 45 | 30 | 5.0 | 18,0 | 4,9 | A 715212 |
| 4700 | 45 | (1,772) | 75 | (2,953) | 10 | 13 | 35 | 25 | 7,0 | 20,0 | 5,9 | A 715217 |
| Rated voltage / Peak voltage: 350/385 V | | | | | | | | | | | | |
| 680 | 35 | (1,378) | 50 | (1,969) | 1 | 10 | 120 | 80 | 1.4 | 8,7 | 2,3 | A 715220 |
| 1500 | 35 | (1,378) | 75 | (2,953) | 2 | 12 | 70 | 40 | 3.2 | 14,0 | 3,6 | A 715222 |
| 1500 | 45 | (1,772) | 50 | (1,969) | 9 | 12 | 90 | 60 | 3,2 | 12,0 | 3,1 | A 715235 |
| 2200 | 45 | (1,772) | 75 | (2,953) | 10 | 12 | 54 | 33 | 4.6 | 18,0 | 4,8 | A 715236 |
| 3300 | 45 | (1,772) | 100 | (3,937) | 11 | 14 | 45 | 30 | 6,9 | 20,0 | 5,9 | A 715237 |
| Rated voltage / Peak voltage: 400/450 V | | | | | | | | | | | | |
| 560 | 35 | (1,378) | 50 | (1,969) | 1 | 12 | 220 | 160 | 1.9 | 6,4 | 1,7 | A 715260 |
| 680 | 35 | (1,378) | 75 | (2,953) | 2 | 12 | 170 | 130 | 2.1 | 8,7 | 2,3 | A 715263 |
| 680 | 40 | (1,575) | 40 | (1,575) | 4 | 12 | 190 | 140 | 2.1 | 6,8 | 1,8 | A 715272 |
| 1000 | 35 | (1,378) | 75 | (2,953) | 2 | 12 | 130 | 90 | 2.5 | 10,0 | 2,7 | A 715265 |
| 1000 | 35 | (1,378) | 100 | (3,937) | 3 | 12 | 120 | 80 | 2.5 | 12,0 | 3,2 | A 715264 |
| 1000 | 45 | (1,772) | 45 | (1,772) | 8 | 12 | 140 | 100 | 2.5 | 8,9 | 2,4 | A 715275 |
| 1500 | 40 | (1,575) | 100 | (3,937) | 7 | 12 | 90 | 60 | 3.1 | 15,0 | 3,9 | A 715274 |
| 1500 | 45 | (1,772) | 75 | (2,953) | 10 | 14 | 100 | 70 | 3.1 | 13,0 | 3,5 | A 715276 |
| 2200 | 45 | (1,772) | 100 | (3,937) | 11 | 16 | 90 | 60 | 3,8 | 16,0 | 4,2 | A 715277 |
| Rated voltage / Peak voltage: 450/500 V | | | | | | | | | | | | |
| 470 | 35 | (1,378) | 50 | (1,969) | 1 | 10 | 200 | 130 | 1.8 | 6,7 | 1,8 | A 715280 |
| 470 | 40 | (1,575) | 40 | (1,575) | 4 | 10 | 200 | 130 | 1.8 | 6,7 | 1,8 | A 715290 |
| 560 | 40 | (1,575) | 50 | (1,969) | 5 | 10 | 170 | 110 | 2.0 | 7,9 | 2,1 | A 715291 |
| 680 | 35 | (1,378) | 75 | (2,953) | 2 | 13 | 140 | 100 | 2.2 | 9,6 | 2,6 | A 715283 |
| 680 | 45 | (1,772) | 45 | (1,772) | 8 | 13 | 150 | 110 | 2.2 | 8,6 | 2,3 | A 715295 |
| 820 | 45 | (1,772) | 50 | (1,969) | 9 | 13 | 140 | 100 | 2,4 | 9,3 | 2,5 | A 715296 |
| 1000 | 35 | (1,378) | 100 | (3,937) | 3 | 13 | 130 | 90 | 2.7 | 11,0 | 3,0 | A 715284 |
| 1000 | 40 | (1,575) | 75 | (2,953) | 6 | 13 | 140 | 100 | 2.7 | 10,0 | 2,8 | A 715292 |
| 1500 | 40 | (1,575) | 100 | (3,937) | 7 | 13 | 110 | 80 | 3.3 | 13,0 | 3,5 | A 715293 |
| Rated voltage / Peak voltage: 500/550 V | | | | | | | | | | | | |
| 330 | 35 | (1,378) | 50 | (1,969) | 1 | 10 | 350 | 250 | 1.6 | 5,1 | 1,4 | A 715301 |
| 470 | 40 | (1,575) | 50 | (1,969) | 5 | 13 | 340 | 240 | 1.9 | 5,6 | 1,5 | A 715308 |
| 560 | 45 | (1,772) | 45 | (1,772) | 8 | 16 | 340 | 240 | 2.1 | 5,7 | 1,5 | A 715318 |
| 680 | 40 | (1,575) | 75 | (2,953) | 6 | 14 | 240 | 200 | 2.3 | 7,9 | 2,1 | A 715309 |
| 1000 | 40 | (1,575) | 100 | (3,937) | 7 | 16 | 190 | 140 | 2.8 | 10,0 | 2,7 | A 715312 |
| 1000 | 45 | (1,772) | 75 | (2,953) | 10 | 16 | 160 | 120 | 2.8 | 10,0 | 2,8 | A 715319 |

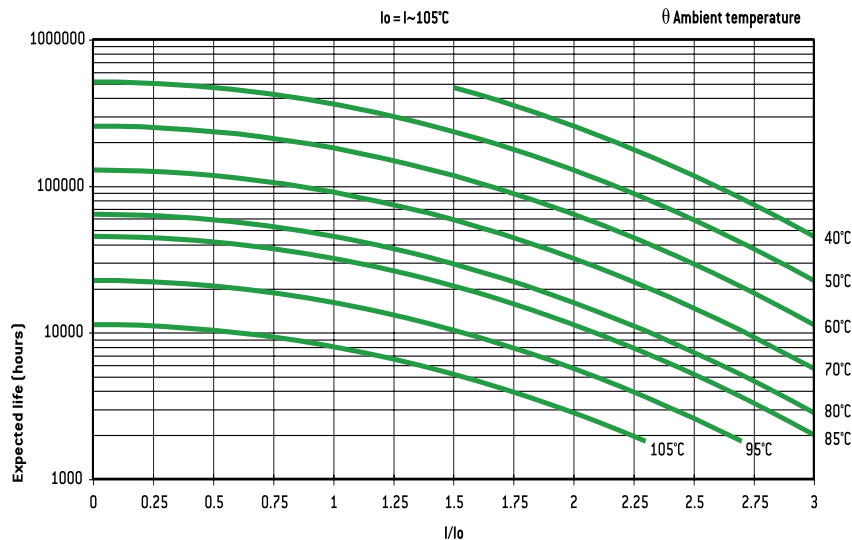
EXPECTED LIFE

as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f: I \sim : permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | \geq 50 000 |
|--------|----------------|----------|----------------|----------------|-----------------|----------------|----------------|
| I | 0,8 x I \sim | I \sim | 1,2 x I \sim | 1,3 x I \sim | 1,35 x I \sim | 1,5 x I \sim | 1,6 x I \sim |



SNAP-105 LP

8 000 h / 105°C

| | | | | |
|----------------|---------------------------------|------------------------|----------------|----------------|
| 16 V ... 500 V | 330 μ F ... 150 000 μ F | \emptyset 45 [1,772] | - 55°C + 105°C | Long Life Time |
|----------------|---------------------------------|------------------------|----------------|----------------|



APPLICATIONS

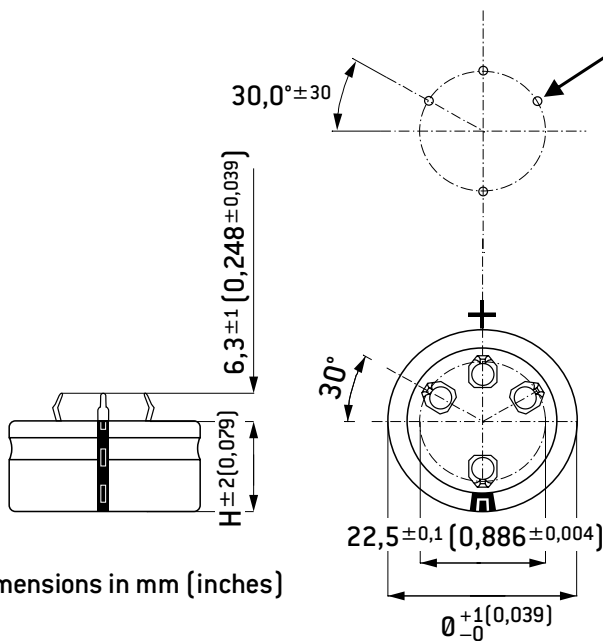
- Printed circuit mounting
- Switch mode power supplies
- Impulse current

Fixing: SNAP-IN pins

Tolerance on capacitance at 20°C : $\pm 20\%$
 Operating temperature : - 55°C + 105°C

Low prof Ile 4 SNAP-IN terminals

\emptyset PC board holes: $2 \pm 0,1$
 (0,079 \pm 0,004)



Dimensions in mm (inches)

| Can size | \emptyset mm (inches) | Hb mm (inches) |
|----------|-------------------------|----------------|
| 1* | 45 [1,772] | 16 [0,630] |
| 2 | 45 [1,772] | 21 [0,827] |
| 3 | 45 [1,772] | 25 [0,984] |
| 4 | 45 [1,772] | 30 [1,181] |
| 5 | 45 [1,772] | 35 [1,378] |
| 6 | 45 [1,772] | 40 [1,575] |

* Out of range

Standard pins can be replaced by 4,5 mm (0,177 inches) max pins on request.

Dummy pins near positive terminal are for mechanical support only.

They must be electrically insulated from the positive and the negative terminals.

SPECIFICATIONS

CECC 30 300 Long life

DIN 41 240 - Climatic category: -55 + 105°C / 56 days

IEC 60 384.4 long life

Standard endurance test at U_R : 2000 h 105°C / 56 days

RESISTANCE TO VIBRATIONS

Frequency range 10 - 500 Hz

Displacement amplitude 0,75 (0,030)

or max acceleration 10 g - 98 m/s²

Duration 3 x 2 hours

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between pins and mounting hardware: 100 M Ω

Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V

Fire resistance: self extinguish 15 s (IEC 60 695-2-2)

SNAPSIC 105 LP

8 000 h / 105°C

| Capacitance (μ F) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. [%] | ESR 100 Hz +20°C Typic [m Ω] | Z 10 kHz +20°C Typic [m Ω] | II +20°C 5 min. max. [mA] | I \sim 100 Hz | | Code | | |
|--|----------------------------|------------------|----------|--|---|---|---------------------------------------|----------------------|-----------------------|------|-----|----------|
| | \emptyset mm (inches) | H mm (inches) | | | | | | +40°C max. [A] | +105°C max. [A] | | | |
| Rated voltage / Peak voltage: 16/18 V | | | | | | | | | | | | |
| 22000 | 45 | (1,772) | 21 | (0,827) | 2 | 117 | 65 | 48 | 2.1 | 14 | 3.7 | A 713020 |
| 33000 | 45 | (1,772) | 25 | (0,984) | 3 | 135 | 50 | 38 | 3.0 | 17 | 4.5 | A 713021 |
| 47000 | 45 | (1,772) | 30 | (1,181) | 4 | 135 | 35 | 26 | 4.5 | 20 | 5.8 | A 713022 |
| 68000 | 45 | (1,772) | 35 | (1,378) | 5 | 140 | 25 | 19 | 6.8 | 20 | 7.2 | A 713023 |
| Rated voltage / Peak voltage: 25/29 V | | | | | | | | | | | | |
| 15000 | 45 | (1,772) | 21 | (0,827) | 2 | 80 | 65 | 50 | 2.2 | 14 | 3.7 | A 713040 |
| 22000 | 45 | (1,772) | 25 | (0,984) | 3 | 90 | 50 | 40 | 3.0 | 17 | 4.5 | A 713041 |
| 33000 | 45 | (1,772) | 30 | (1,181) | 4 | 93 | 30 | 22 | 5.0 | 20 | 6.2 | A 713042 |
| 47000 | 45 | (1,772) | 40 | (1,575) | 6 | 115 | 30 | 20 | 7.0 | 20 | 7.6 | A 713044 |
| Rated voltage / Peak voltage: 35/40 V | | | | | | | | | | | | |
| 10000 | 45 | (1,772) | 21 | (0,827) | 2 | 56 | 68 | 52 | 2.1 | 14 | 3.7 | A 713060 |
| 15000 | 45 | (1,772) | 25 | (0,984) | 3 | 71 | 58 | 46 | 3.1 | 16 | 4.2 | A 713061 |
| 22000 | 45 | (1,772) | 30 | (1,181) | 4 | 86 | 48 | 33 | 4.6 | 19 | 4.9 | A 713064 |
| Rated voltage / Peak voltage: 50/58 V | | | | | | | | | | | | |
| 6800 | 45 | (1,772) | 21 | (0,827) | 2 | 39 | 70 | 53 | 2.0 | 14 | 3.6 | A 713080 |
| 10000 | 45 | (1,772) | 25 | (0,984) | 3 | 47 | 58 | 45 | 3.0 | 16 | 4.2 | A 713081 |
| 15000 | 45 | (1,772) | 35 | (1,378) | 5 | 59 | 48 | 33 | 4.5 | 20 | 5.2 | A 713083 |
| 22000 | 45 | (1,772) | 40 | (1,575) | 6 | 72 | 35 | 25 | 6.6 | 20 | 6.4 | A 713084 |
| Rated voltage / Peak voltage: 63/72 V | | | | | | | | | | | | |
| 4700 | 45 | (1,772) | 21 | (0,827) | 2 | 28 | 75 | 55 | 1.8 | 13 | 3.5 | A 713100 |
| 6800 | 45 | (1,772) | 30 | (1,181) | 4 | 33 | 60 | 45 | 2.6 | 17 | 4.4 | A 713102 |
| 10000 | 45 | (1,772) | 35 | (1,378) | 5 | 41 | 50 | 35 | 3.0 | 19 | 5.1 | A 713103 |
| 15000 | 45 | (1,772) | 40 | (1,575) | 6 | 54 | 33 | 28 | 5.7 | 20 | 6.6 | A 713104 |
| Rated voltage / Peak voltage: 80/92 V | | | | | | | | | | | | |
| 3300 | 45 | (1,772) | 21 | (0,827) | 2 | 20 | 75 | 55 | 1.6 | 13 | 3.5 | A 713120 |
| 4700 | 45 | (1,772) | 30 | (1,181) | 4 | 20 | 60 | 45 | 2.2 | 17 | 4.4 | A 713122 |
| 6800 | 45 | (1,772) | 35 | (1,378) | 5 | 23 | 40 | 30 | 3.2 | 20 | 5.7 | A 713123 |
| 10000 | 45 | (1,772) | 40 | (1,575) | 6 | 30 | 32 | 25 | 4.8 | 20 | 6.7 | A 713124 |
| Rated voltage / Peak voltage: 100/115 V | | | | | | | | | | | | |
| 2200 | 45 | (1,772) | 21 | (0,827) | 2 | 16 | 90 | 70 | 1.3 | 12 | 3.2 | A 713140 |
| 3300 | 45 | (1,772) | 30 | (1,181) | 4 | 20 | 75 | 60 | 2.0 | 15 | 3.9 | A 713142 |
| 4700 | 45 | (1,772) | 35 | (1,378) | 5 | 21 | 55 | 45 | 2.8 | 18 | 4.9 | A 713143 |
| Rated voltage / Peak voltage: 160/185 V | | | | | | | | | | | | |
| 680 | 45 | (1,772) | 21 | (0,827) | 2 | 13 | 230 | 190 | 0.65 | 7.5 | 2.0 | A 713160 |
| 1000 | 45 | (1,772) | 21 | (0,827) | 2 | 17 | 210 | 180 | 1.0 | 7.8 | 2.1 | A 713164 |
| 1500 | 45 | (1,772) | 25 | (0,984) | 3 | 24 | 200 | 170 | 1.4 | 8.5 | 2.3 | A 713165 |
| 2200 | 45 | (1,772) | 30 | (1,181) | 4 | 24 | 130 | 100 | 2.1 | 11 | 3.0 | A 713166 |
| Rated voltage / Peak voltage: 200/230 V | | | | | | | | | | | | |
| 680 | 45 | (1,772) | 21 | (0,827) | 2 | 11 | 170 | 130 | 0.81 | 8.7 | 2.3 | A 713200 |
| 1000 | 45 | (1,772) | 21 | (0,827) | 2 | 15 | 160 | 120 | 1.2 | 9 | 2.4 | A 713203 |
| 1500 | 45 | (1,772) | 30 | (1,181) | 4 | 20 | 140 | 110 | 1.8 | 11 | 2.9 | A 713204 |
| 2200 | 45 | (1,772) | 35 | (1,378) | 5 | 22 | 120 | 100 | 2.6 | 13 | 3.5 | A 713205 |
| Rated voltage / Peak voltage: 250/290 V | | | | | | | | | | | | |
| 470 | 45 | (1,772) | 21 | (0,827) | 2 | 11 | 250 | 200 | 0.70 | 7.2 | 1.9 | A 713200 |
| 680 | 45 | (1,772) | 21 | (0,827) | 2 | 11 | 170 | 130 | 1.0 | 8.7 | 2.3 | A 713203 |
| 1000 | 45 | (1,772) | 25 | (0,984) | 3 | 15 | 160 | 120 | 1.5 | 9.5 | 2.5 | A 713204 |
| 1500 | 45 | (1,772) | 35 | (1,378) | 5 | 20 | 140 | 110 | 2.3 | 11 | 3.1 | A 713205 |
| 2200 | 45 | (1,772) | 40 | (1,575) | 6 | 22 | 120 | 100 | 3.3 | 13 | 3.5 | A 713206 |
| Rated voltage / Peak voltage: 350/385 V | | | | | | | | | | | | |
| 330 | 45 | (1,772) | 21 | (0,827) | 2 | 10 | 290 | 190 | 0.69 | 6.7 | 1.8 | A 713220 |
| 470 | 45 | (1,772) | 25 | (0,984) | 3 | 10 | 220 | 160 | 1.0 | 8.1 | 2.2 | A 713221 |
| 680 | 45 | (1,772) | 30 | (1,181) | 4 | 10 | 150 | 120 | 1.4 | 10 | 2.8 | A 713225 |
| 1000 | 45 | (1,772) | 35 | (1,378) | 5 | 12 | 120 | 100 | 2.1 | 12 | 3.3 | A 713226 |
| Rated voltage / Peak voltage: 400/450 V | | | | | | | | | | | | |
| 220 | 45 | (1,772) | 21 | (0,827) | 2 | 10 | 470 | 360 | 1.2 | 5.2 | 1.4 | A 713240 |
| 330 | 45 | (1,772) | 25 | (0,984) | 3 | 12 | 400 | 280 | 1.5 | 6.0 | 1.6 | A 713241 |
| 470 | 45 | (1,772) | 30 | (1,181) | 4 | 13 | 300 | 250 | 1.8 | 7.4 | 2.0 | A 713242 |
| 680 | 45 | (1,772) | 35 | (1,378) | 5 | 13 | 240 | 200 | 2.1 | 8.8 | 2.3 | A 713243 |
| 820 | 45 | (1,772) | 40 | (1,575) | 6 | 13 | 160 | 120 | 2.3 | 11 | 3.0 | A 713244 |

SNAPSI^C 105 LP

8 000 h / 105°C

| Capacitance (μF) | Dimensions | | Can size | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz +20°C Typic ($\text{m}\Omega$) | Z 10 kHz +20°C Typic ($\text{m}\Omega$) | II +20°C 5 min. max. (mA) | I \sim 100 Hz | | Code | | |
|--|------------------------------|------------------|----------|--|--|--|---------------------------------------|----------------------|-----------------------|------|-----|----------|
| | \varnothing mm (inches) | H mm (inches) | | | | | | +40°C max. (A) | +105°C max. (A) | | | |
| Rated voltage / Peak voltage: 450/500 V | | | | | | | | | | | | |
| 150 | 45 | (1,772) | 21 | (0,827) | 2 | 10 | 600 | 400 | 1,00 | 4,6 | 1,2 | A 713260 |
| 220 | 45 | (1,772) | 21 | (0,827) | 2 | 13 | 500 | 350 | 1,25 | 5,1 | 1,4 | A 713266 |
| 330 | 45 | (1,772) | 30 | (1,181) | 4 | 13 | 300 | 230 | 1,50 | 7,4 | 2,0 | A 713262 |
| 440 | 45 | (1,772) | 30 | (1,181) | 4 | 13 | 280 | 220 | 1,70 | 7,7 | 2,0 | A 713265 |
| 470 | 45 | (1,772) | 35 | (1,378) | 5 | 13 | 270 | 210 | 1,80 | 8,3 | 2,2 | A 713263 |
| 560 | 45 | (1,772) | 35 | (1,378) | 5 | 13 | 250 | 170 | 2,0 | 8,6 | 2,3 | A 713267 |
| 680 | 45 | (1,772) | 40 | (1,575) | 6 | 13 | 220 | 140 | 2,2 | 9,6 | 2,6 | A 713268 |
| Rated voltage / Peak voltage: 500/550 V | | | | | | | | | | | | |
| 150 | 45 | (1,772) | 21 | (0,827) | 2 | 15 | 1200 | 900 | 1,1 | 3,3 | 0,9 | A 713283 |
| 220 | 45 | (1,772) | 25 | (0,984) | 3 | 15 | 850 | 690 | 1,4 | 4,1 | 1,1 | A 713285 |
| 330 | 45 | (1,772) | 35 | (1,378) | 5 | 15 | 500 | 350 | 1,6 | 6,1 | 1,6 | A 713286 |
| 470 | 45 | (1,772) | 40 | (1,575) | 6 | 17 | 430 | 310 | 1,9 | 6,9 | 1,8 | A 713287 |

CASE BOTTOM CONDUCTION COOLING

with radiator or frame put on the case bottom ripple current I_0 is multiplied by 2 to 3. For more details, contact us.

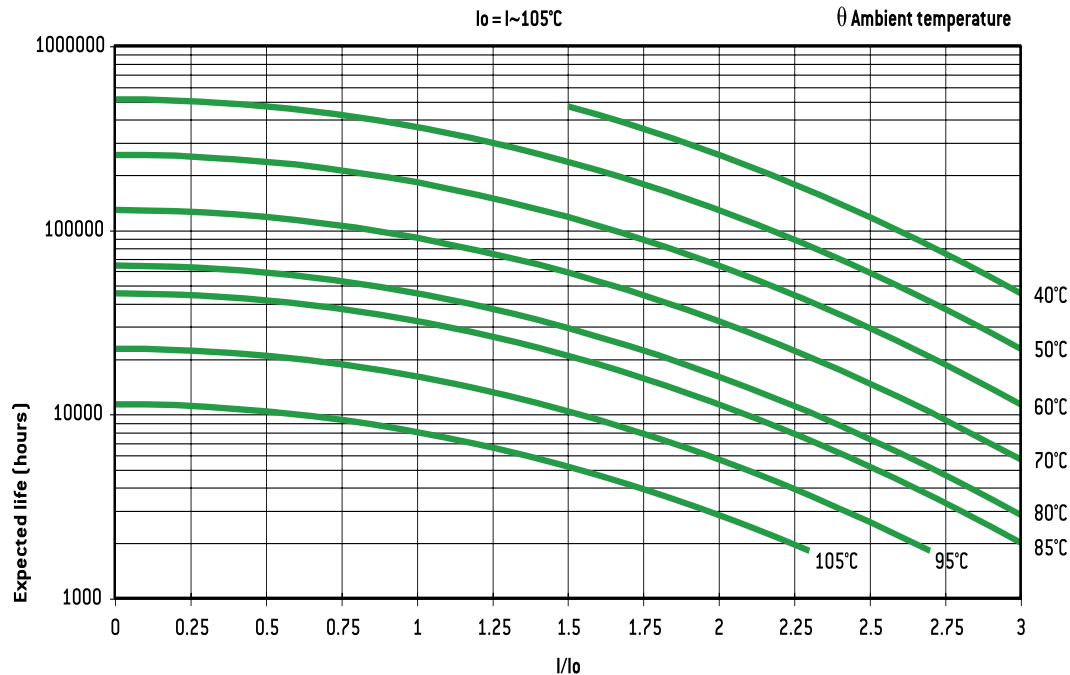
PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f :
 I_{\sim} : permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | $\geq 50 000$ |
|--------|-----------------------|------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|
| I | $0,8 \times I_{\sim}$ | I_{\sim} | $1,2 \times I_{\sim}$ | $1,3 \times I_{\sim}$ | $1,35 \times I_{\sim}$ | $1,5 \times I_{\sim}$ | $1,6 \times I_{\sim}$ |

EXPECTED LIFE

as a function of temperature and ripple current



SNAPSIC 125

8 000 h / 125°C

| | | | | |
|----------------|--------------------------------|---|----------------|----------------|
| 16 V ... 100 V | 470 μ F ... 47 000 μ F | \emptyset 22 [0,866] ... \emptyset 35 [1,378] | - 55°C + 125°C | Long Life Time |
|----------------|--------------------------------|---|----------------|----------------|



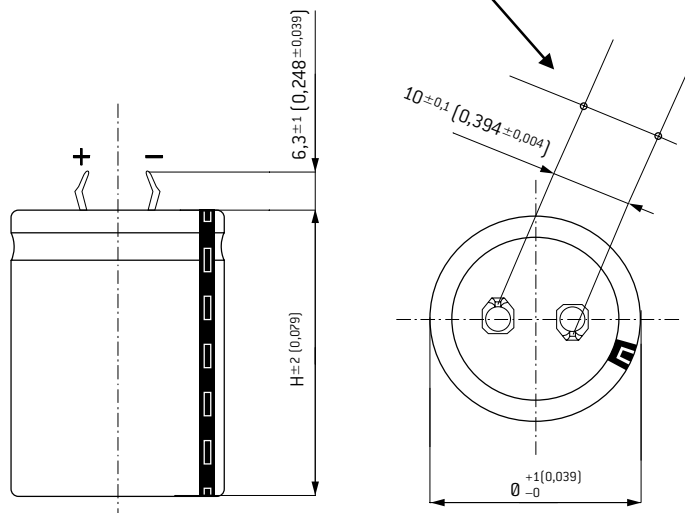
APPLICATIONS

- High frequency switched mode power supplies
- High ripple current
- Low impedance

Insulating aluminum case pure tin coated
Snap-in pins negative
Pole marked

Tolerance on capacitance at 20°C : - 20 + 20 %
Operating temperature : - 55°C + 125°C

\emptyset PC board holes: $2 \pm 0,1$ [0,079 \pm 0,004]



Dimensions in mm [inches]

| Can size | \emptyset mm [inches] | H mm [inches] |
|----------|-------------------------|---------------|
| 1 | 22 [0,866] | 25 [0,984] |
| 2 | 22 [0,866] | 30 [1,181] |
| 3* | 22 [0,866] | 40 [1,575] |
| 4* | 25 [0,984] | 25 [0,984] |
| 5 | 25 [0,984] | 30 [1,181] |
| 6 | 25 [0,984] | 40 [1,575] |
| 7* | 25 [0,984] | 50 [1,969] |
| 8* | 30 [1,181] | 25 [0,984] |
| 9* | 30 [1,181] | 30 [1,181] |
| 10 | 30 [1,181] | 35 [1,378] |
| 11 | 30 [1,181] | 40 [1,575] |
| 12* | 30 [1,181] | 45 [1,772] |
| 13* | 30 [1,181] | 50 [1,969] |
| 14* | 35 [1,378] | 30 [1,181] |
| 15* | 35 [1,378] | 35 [1,378] |
| 16 | 35 [1,378] | 40 [1,575] |
| 17* | 35 [1,378] | 45 [1,772] |
| 18 | 35 [1,378] | 50 [1,969] |

* Out of range

Standard pins can be replaced by 4.5 mm [0,177 inches] max pins on request.

SPECIFICATIONS

NFC 83 110 - Long life
CECC 30 300
IEC 60 384-4 Long life
Climatic category: - 55°C + 125°C / 56 days

RESISTANCE TO VIBRATIONS

Frequency : 10 – 500 Hz
Displacement amplitude or : 0,75 [0,030]
max acceleration : 10 g – 98 m/s²
Duration : 3 x 10 sweep cycles

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulating resistance at 20°C between pins and mounting hardware:
100 M Ω
Test voltage at 50 Hz 1 min. between terminals and mounting hardware: 2000 V
Fire resistance: self extinguish 30 s. (IEC 60 695-2-2) Without PVC

SNAPSIC 125

8 000 h / 125°C

| Capacitance [μ F] | Dimensions | | Can size | Tan δ 100 Hz +20°C max. [%] | ESR 100 Hz +20°C Typic [m Ω] | Z 10 kHz +20°C Typic [m Ω] | II +20°C 5 min. max. [mA] | I \sim +125°C max. | | Code | | |
|--------------------------------|----------------------------|------------------|----------|--|---|---|---------------------------------------|-------------------------|---------------|------|-----|----------|
| | \emptyset mm [inches] | H mm [inches] | | | | | | 100 Hz [A] | 10 kHz [A] | | | |
| Rated voltage 16/18 V | | | | | | | | | | | | |
| 4700 | 22 | [0,866] | 25 | [0,984] | 1 | 20 | 45 | 35 | 0,23 | 2,7 | 4,0 | A 718000 |
| 6800 | 22 | [0,866] | 30 | [1,181] | 2 | 22 | 35 | 28 | 0,33 | 3,2 | 4,9 | A 718001 |
| 10000 | 25 | [0,984] | 30 | [1,181] | 5 | 28 | 30 | 25 | 0,48 | 3,8 | 5,7 | A 718002 |
| 15000 | 25 | [0,984] | 40 | [1,575] | 6 | 38 | 27 | 19 | 0,72 | 4,5 | 6,7 | A 718003 |
| 22000 | 30 | [1,181] | 40 | [1,575] | 11 | 41 | 20 | 17 | 1,1 | 5,8 | 8,7 | A 718006 |
| 33000 | 35 | [1,378] | 40 | [1,575] | 16 | 50 | 16 | 14 | 1,6 | 7,1 | 11 | A 718007 |
| 47000 | 35 | [1,378] | 50 | [1,969] | 18 | 62 | 14 | 12 | 2,2 | 8,3 | 12 | A 718010 |
| Rated voltage 25/29 V | | | | | | | | | | | | |
| 3300 | 22 | [0,866] | 25 | [0,984] | 1 | 16 | 50 | 38 | 0,25 | 2,5 | 3,8 | A 718020 |
| 4700 | 25 | [0,984] | 30 | [1,181] | 5 | 19 | 43 | 31 | 0,35 | 3,2 | 4,7 | A 718022 |
| 6800 | 25 | [0,984] | 40 | [1,575] | 6 | 19 | 30 | 20 | 0,51 | 4,3 | 6,4 | A 718023 |
| 10000 | 30 | [1,181] | 35 | [1,378] | 10 | 28 | 30 | 19 | 0,75 | 4,5 | 6,7 | A 718025 |
| 15000 | 30 | [1,181] | 40 | [1,575] | 11 | 31 | 22 | 17 | 1,1 | 5,5 | 8,3 | A 718026 |
| 22000 | 35 | [1,378] | 50 | [1,969] | 18 | 41 | 20 | 16 | 1,7 | 7,0 | 10 | A 718028 |
| 33000 | 35 | [1,378] | 50 | [1,969] | 18 | 56 | 18 | 14 | 2,4 | 7,3 | 11 | A 718030 |
| Rated voltage 40/46 V | | | | | | | | | | | | |
| 2200 | 22 | [0,866] | 30 | [1,181] | 2 | 12 | 60 | 45 | 0,26 | 2,5 | 3,7 | A 718041 |
| 3300 | 25 | [0,984] | 30 | [1,181] | 5 | 13 | 42 | 32 | 0,40 | 3,2 | 4,8 | A 718042 |
| 4700 | 25 | [0,984] | 40 | [1,575] | 6 | 15 | 33 | 24 | 0,56 | 4,1 | 6,1 | A 718043 |
| 6800 | 30 | [1,181] | 35 | [1,378] | 10 | 19 | 30 | 21 | 0,82 | 4,5 | 6,7 | A 718045 |
| 10000 | 35 | [1,378] | 40 | [1,575] | 16 | 26 | 28 | 19 | 1,2 | 5,4 | 8,0 | A 718047 |
| 15000 | 35 | [1,378] | 50 | [1,969] | 18 | 31 | 22 | 16 | 1,8 | 6,6 | 10 | A 718048 |
| 22000 | 35 | [1,378] | 50 | [1,969] | 18 | 41 | 20 | 14 | 2,6 | 7 | 10 | A 718050 |
| Rated voltage 50/58 V | | | | | | | | | | | | |
| 1500 | 22 | [0,866] | 25 | [0,984] | 1 | 10 | 70 | 60 | 0,23 | 2,1 | 3,2 | A 718060 |
| 2200 | 25 | [0,984] | 30 | [1,181] | 5 | 9 | 45 | 38 | 0,33 | 3,1 | 4,6 | A 718062 |
| 3300 | 25 | [0,984] | 40 | [1,575] | 6 | 10 | 32 | 27 | 0,50 | 4,1 | 6,2 | A 718063 |
| 4700 | 30 | [1,181] | 35 | [1,378] | 10 | 13 | 30 | 22 | 0,71 | 4,5 | 6,7 | A 718065 |
| 6800 | 30 | [1,181] | 40 | [1,575] | 11 | 17 | 27 | 21 | 1,0 | 5,0 | 7,5 | A 718066 |
| 10000 | 35 | [1,378] | 50 | [1,969] | 18 | 21 | 22 | 17 | 1,5 | 6,6 | 10 | A 718068 |
| 15000 | 35 | [1,378] | 50 | [1,969] | 18 | 28 | 20 | 14 | 2,3 | 7 | 10 | A 718070 |
| Rated voltage 63/72 V | | | | | | | | | | | | |
| 1000 | 22 | [0,866] | 30 | [1,181] | 2 | 7 | 60 | 46 | 0,19 | 2,5 | 3,7 | A 718081 |
| 1500 | 25 | [0,984] | 30 | [1,181] | 5 | 8 | 50 | 43 | 0,28 | 2,9 | 4,4 | A 718082 |
| 2200 | 25 | [0,984] | 40 | [1,575] | 6 | 8 | 35 | 30 | 0,42 | 3,9 | 5,9 | A 718083 |
| 2700 | 25 | [0,984] | 40 | [1,575] | 6 | 8 | 30 | 25 | 0,51 | 4,3 | 6,4 | A 718084 |
| 3300 | 30 | [1,181] | 40 | [1,575] | 11 | 9 | 30 | 22 | 0,62 | 5,2 | 7,8 | A 718086 |
| 4700 | 35 | [1,378] | 40 | [1,575] | 16 | 12 | 28 | 20 | 0,89 | 5,4 | 8,0 | A 718087 |
| 6800 | 35 | [1,378] | 50 | [1,969] | 18 | 16 | 25 | 19 | 1,3 | 6,2 | 9,3 | A 718088 |
| 10000 | 35 | [1,378] | 50 | [1,969] | 18 | 22 | 23 | 18 | 1,9 | 6,5 | 9,7 | A 718090 |
| Rated voltage 100/115 V | | | | | | | | | | | | |
| 470 | 22 | [0,866] | 30 | [1,181] | 2 | 8 | 190 | 130 | 0,14 | 1,4 | 2,1 | A 718101 |
| 680 | 25 | [0,984] | 30 | [1,181] | 5 | 10 | 150 | 100 | 0,20 | 1,7 | 2,5 | A 718102 |
| 1000 | 25 | [0,984] | 40 | [1,575] | 6 | 10 | 100 | 70 | 0,30 | 2,3 | 3,5 | A 718103 |
| 1500 | 30 | [1,181] | 35 | [1,378] | 10 | 10 | 70 | 54 | 0,45 | 2,9 | 4,4 | A 718105 |
| 2200 | 35 | [1,378] | 40 | [1,575] | 16 | 12 | 60 | 46 | 0,66 | 3,7 | 5,5 | A 718107 |
| 3300 | 35 | [1,378] | 50 | [1,969] | 18 | 17 | 55 | 42 | 1,0 | 4,2 | 6,3 | A 718108 |
| 4700 | 35 | [1,378] | 50 | [1,969] | 18 | 22 | 50 | 38 | 1,4 | 4,4 | 6,6 | A 718110 |

SNAPSIC 125

8 000 h / 125°C

EXPECTED LIFE

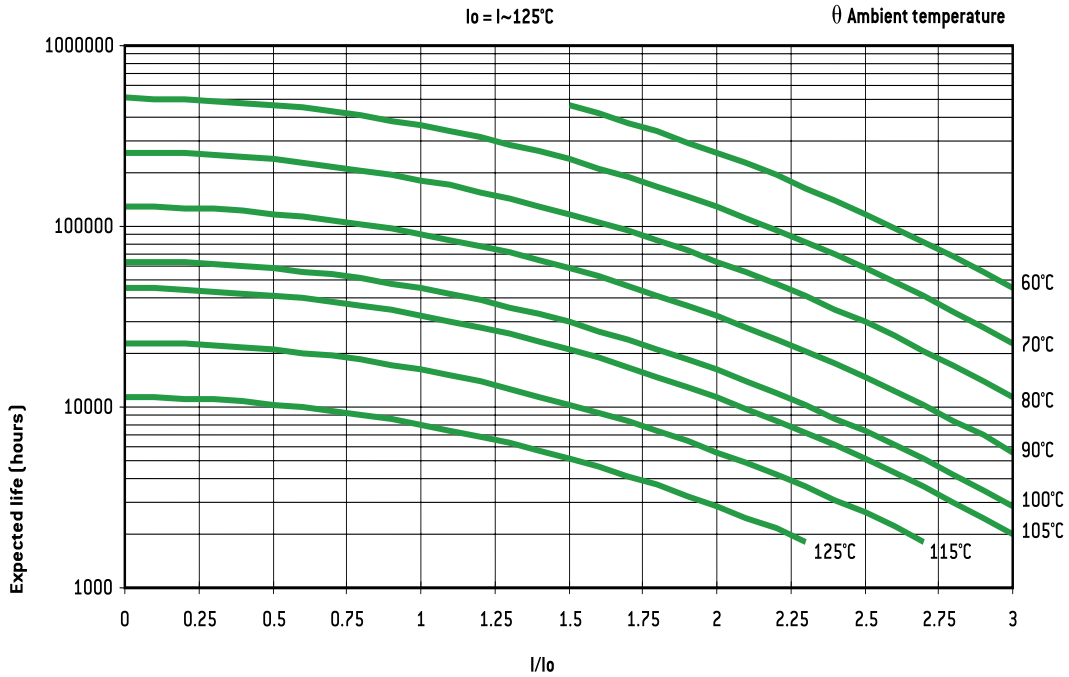
as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I ~: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | ≥ 50 000 |
|--------|----------|-----|----------|----------|-----------|----------|----------|
| I | 0,8 x I~ | I~ | 1,2 x I~ | 1,3 x I~ | 1,35 x I~ | 1,5 x I~ | 1,6 x I~ |



AXIAL LEADED

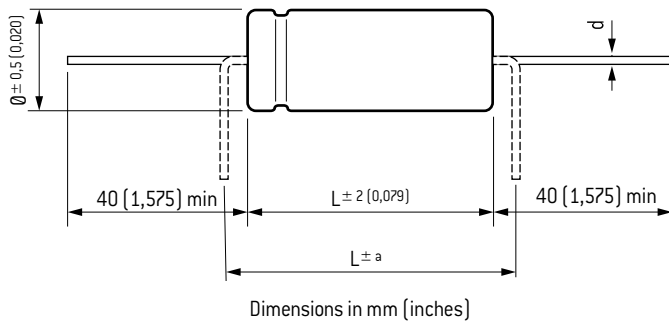
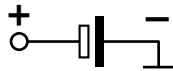


SICAL CO42 - SICAL

CO 42

10 000 h / 85°C

| | | | | |
|----------------|--------------------------------|--|----------------|----------------|
| 10 V ... 630 V | 2,2 μ F ... 47 000 μ F | \emptyset 6,5 (0,256) ... \emptyset 25 (0,984) | - 55°C + 105°C | Long Life Time |
|----------------|--------------------------------|--|----------------|----------------|



DIMENSIONS in mm (inches)

| \emptyset | | d | | a | |
|-------------|-----------------|-----|---------|---|---------|
| 6,5 - 21 | (0,256 - 0,827) | 0,8 | (0,031) | 4 | (0,157) |
| 25 | (0,984) | 1 | (0,039) | 8 | (0,315) |

SPECIFICATIONS

NFC 83 110 - Long life
 DIN 41 240 - Climatic category GPF - 55°C + 85°C / 56 days
 CECC 30 301-019 (SICAL CO 42)
 CECC 30 300 (SICAL)
 IEC 60 384.4 - Long life
 Standard endurance test U_R : 5000 h / 85°C

APPLICATIONS

- Coupling/decoupling
- Filtering
- Circuits with time constant
- Switch mode power supplies

Insulating aluminum case
 Axial tin-coated copper leads
 Welded chain providing perfect continuity of the circuit.

Tolerance on capacitance at 20°C:

- 10 + 50 % (SICAL CO 42)
- 20 + 20 % (SICAL)

Operating temperature : - 55°C + 85°C

RESISTANCE TO VIBRATIONS

| | Standard | On request |
|--------------|----------------------------|-----------------------------|
| f (Hz) | 10 - 55 Hz | 10 - 2000 Hz |
| Amplitude | 0,75 (0,030) | 1,5 (0,059) |
| Acceleration | 10 g - 98 m/s ² | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulating resistance at 20°C between leads and mounting hardware:
 100 M Ω

Test voltage at 50 Hz 1 min. between leads and mounting hardware:
 1000 V

Fire resistance: self extinguish 30 s (IEC 60 695-2-2) without PVC

SICAL C042 - SICAL

C042

10 000 h / 85°C

| Capacitance (μF) | Dimensions | | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz Typic (Ω) | Z F(1) +20°C max. (Ω) | II +20°C 5 min. max. (μA) | I ~ 100 Hz +85°C max. (A) | Code | | |
|--|----------------------------|------------------|--|--|--|--|---------------------------------------|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | | | | | | | | |
| Rated voltage / Peak voltage: 10/12 V | | | | | | | | | | |
| 100 | 6,5 | [0,256] | 19 | [0,748] | 13 | 1,5 | 1,1 | 10 | 0,2 | A 748201 |
| 220 | 8,5 | [0,335] | 19 | [0,748] | 15 | 0,75 | 0,5 | 17 | 0,33 | A 748203 |
| 270 | 6,5 | [0,256] | 19 | [0,748] | 13 | 0,60 | 0,5 | 18 | 0,26 | A 748208 |
| 330 | 10 | [0,394] | 19 | [0,748] | 17 | 0,45 | 0,4 | 24 | 0,48 | A 748204 |
| 470 | 10 | [0,394] | 19 | [0,748] | 17 | 0,35 | 0,3 | 32 | 0,54 | A 748205 |
| 510 | 8,5 | [0,335] | 19 | [0,748] | 15 | 0,36 | 0,4 | 31 | 0,39 | A 748209 |
| 730 | 10 | [0,394] | 19 | [0,748] | 17 | 0,30 | 0,3 | 44 | 0,47 | A 748210 |
| 1000 | 10 | [0,394] | 25 | [0,984] | 17 | 0,18 | 0,2 | 60 | 0,85 | A 748207 |
| 2200 | 16 | [0,630] | 30 | [1,181] | 17 | 0,07 | 0,09 | 135 | 1,9 | A 749000 |
| 3300 | 18 | [0,709] | 30 | [1,181] | 17 | 0,05 | 0,07 | 200 | 2,4 | A 749001 |
| 4700 | 16 | [0,630] | 30 | [1,181] | 17 | 0,07 | 0,09 | 285 | 1,9 | A 749003 |
| 4700 | 18 | [0,709] | 40 | [1,575] | 17 | 0,04 | 0,05 | 285 | 3,1 | A 749002 |
| 6300 | 18 | [0,709] | 30 | [1,181] | 17 | 0,05 | 0,07 | 370 | 2,4 | A 749004 |
| 9400 | 18 | [0,709] | 40 | [1,575] | 17 | 0,04 | 0,05 | 560 | 3,1 | A 749005 |
| 4700 | 14 | [0,551] | 30 | [1,181] | 23 | 0,05 | 0,06 | 285 | 2,1 | A 749500 |
| 6800 | 16 | [0,630] | 30 | [1,181] | 24 | 0,04 | 0,05 | 410 | 2,5 | A 749502 |
| 10000 | 18 | [0,709] | 40 | [1,575] | 26 | 0,03 | 0,04 | 600 | 3,5 | A 749501 |
| Rated voltage / Peak voltage: 16/18 V | | | | | | | | | | |
| 47 | 6,5 | [0,256] | 19 | [0,748] | 9 | 1,5 | 1,1 | 8 | 0,2 | A 748219 |
| 68 | 6,5 | [0,256] | 19 | [0,748] | 12 | 1,3 | 0,8 | 10 | 0,22 | A 748222 |
| 100 | 6,5 | [0,256] | 19 | [0,748] | 12 | 1 | 0,75 | 14 | 0,25 | A 748220 |
| 150 | 6,5 | [0,256] | 19 | [0,748] | 12 | 1,3 | 0,8 | 18 | 0,22 | A 748229 |
| 150 | 8,5 | [0,335] | 19 | [0,748] | 12 | 0,8 | 0,7 | 18 | 0,32 | A 748223 |
| 220 | 6,5 | [0,256] | 19 | [0,748] | 12 | 1 | 0,75 | 25 | 0,25 | A 748230 |
| 220 | 8,5 | [0,335] | 19 | [0,748] | 14 | 0,55 | 0,6 | 25 | 0,39 | A 748224 |
| 280 | 8,5 | [0,335] | 19 | [0,748] | 12 | 0,8 | 0,7 | 27 | 0,32 | A 748231 |
| 330 | 10 | [0,394] | 19 | [0,748] | 15 | 0,5 | 0,5 | 35 | 0,45 | A 748225 |
| 420 | 8,5 | [0,335] | 19 | [0,748] | 14 | 0,55 | 0,6 | 40 | 0,39 | A 748232 |
| 470 | 10 | [0,394] | 19 | [0,748] | 15 | 0,4 | 0,45 | 49 | 0,5 | A 748226 |
| 590 | 10 | [0,394] | 19 | [0,748] | 15 | 0,4 | 0,45 | 57 | 0,5 | A 748233 |
| 680 | 10 | [0,394] | 25 | [0,984] | 15 | 0,17 | 0,22 | 65 | 0,87 | A 748227 |
| 840 | 10 | [0,394] | 25 | [0,984] | 15 | 0,17 | 0,22 | 81 | 0,87 | A 748234 |
| 1000 | 12 | [0,472] | 30 | [1,181] | 15 | 0,13 | 0,13 | 100 | 1,2 | A 748228 |
| 1500 | 16 | [0,630] | 30 | [1,181] | 15 | 0,11 | 0,11 | 145 | 1,5 | A 749021 |
| 1700 | 12 | [0,472] | 30 | [1,181] | 15 | 0,13 | 0,13 | 160 | 1,2 | A 748235 |
| 2200 | 18 | [0,709] | 30 | [1,181] | 15 | 0,05 | 0,05 | 215 | 2,4 | A 749022 |
| 3800 | 16 | [0,630] | 30 | [1,181] | 15 | 0,11 | 0,11 | 365 | 1,5 | A 749024 |
| 4700 | 21 | [0,827] | 40 | [1,575] | 15 | 0,03 | 0,04 | 455 | 3,9 | A 749023 |
| 5100 | 18 | [0,709] | 30 | [1,181] | 15 | 0,05 | 0,05 | 490 | 2,4 | A 749025 |
| 7900 | 21 | [0,827] | 40 | [1,575] | 15 | 0,03 | 0,04 | 760 | 3,9 | A 749026 |
| 2200 | 14 | [0,551] | 30 | [1,181] | 16 | 0,08 | 0,11 | 215 | 1,7 | A 749508 |
| 3300 | 16 | [0,630] | 30 | [1,181] | 16 | 0,06 | 0,08 | 320 | 2,1 | A 749509 |
| 4700 | 18 | [0,709] | 30 | [1,181] | 16 | 0,04 | 0,05 | 455 | 2,7 | A 749510 |
| 10000 | 21 | [0,827] | 40 | [1,575] | 29 | 0,03 | 0,03 | 960 | 3,9 | A 749511 |
| 22000 | 25 | [0,984] | 40 | [1,575] | 36 | 0,02 | 0,02 | 2100 | 5,2 | A 749513 |
| 47000 | 25 | [0,984] | 75 | [2,953] | 50 | 0,013 | 0,015 | 4500 | 8,6 | A 749514 |

SICAL C042 - SICAL

CO 42

10 000 h / 85°C

| Capacitance [μF] | Dimensions | | Tanδ 100 Hz +20°C max. [%] | ESR 100 Hz Typic [Ω] | Z F(1) +20°C max. [Ω] | II +20°C 5 min. max. [μA] | I~ 100 Hz +85°C max. [A] | Code | | |
|--|------------------|------------------|--|-------------------------------|-----------------------------------|---------------------------------------|--------------------------------------|------|------|----------|
| | Ø mm [inches] | L mm [inches] | | | | | | | | |
| Rated voltage / Peak voltage: 25/30 V | | | | | | | | | | |
| 22 | 6,5 | [0,256] | 19 | [0,748] | 8 | 2,2 | 1,6 | 6 | 0,15 | A 748239 |
| 47 | 6,5 | [0,256] | 19 | [0,748] | 12 | 1,9 | 1,5 | 11 | 0,16 | A 748242 |
| 100 | 8,5 | [0,335] | 19 | [0,748] | 12 | 1 | 0,9 | 19 | 0,29 | A 748243 |
| 140 | 6,5 | [0,256] | 19 | [0,748] | 12 | 1,9 | 1,5 | 21 | 0,16 | A 748249 |
| 150 | 8,5 | [0,335] | 19 | [0,748] | 12 | 0,8 | 0,7 | 27 | 0,32 | A 748246 |
| 220 | 10 | [0,394] | 19 | [0,748] | 11 | 0,6 | 0,6 | 37 | 0,41 | A 748244 |
| 270 | 8,5 | [0,335] | 19 | [0,748] | 12 | 0,8 | 0,7 | 41 | 0,32 | A 748250 |
| 330 | 10 | [0,394] | 19 | [0,748] | 11 | 0,4 | 0,4 | 54 | 0,5 | A 748247 |
| 380 | 10 | [0,394] | 19 | [0,748] | 11 | 0,4 | 0,4 | 57 | 0,5 | A 748251 |
| 470 | 10 | [0,394] | 25 | [0,984] | 10 | 0,2 | 0,25 | 75 | 0,8 | A 748245 |
| 540 | 10 | [0,394] | 25 | [0,984] | 10 | 0,2 | 0,25 | 81 | 0,8 | A 748252 |
| 680 | 12 | [0,472] | 30 | [1,181] | 10 | 0,13 | 0,15 | 105 | 1,2 | A 748248 |
| 1000 | 16 | [0,630] | 30 | [1,181] | 10 | 0,09 | 0,08 | 150 | 1,7 | A 749041 |
| 1100 | 12 | [0,472] | 30 | [1,181] | 10 | 0,13 | 0,15 | 165 | 1,2 | A 748253 |
| 1500 | 18 | [0,709] | 30 | [1,181] | 10 | 0,06 | 0,06 | 225 | 2,2 | A 749042 |
| 2200 | 18 | [0,709] | 40 | [1,575] | 10 | 0,04 | 0,04 | 330 | 3,1 | A 749043 |
| 2500 | 16 | [0,630] | 30 | [1,181] | 10 | 0,09 | 0,08 | 375 | 1,7 | A 749044 |
| 3300 | 18 | [0,709] | 30 | [1,181] | 10 | 0,06 | 0,06 | 495 | 2,2 | A 749045 |
| 4700 | 25 | [0,984] | 40 | [1,575] | 10 | 0,02 | 0,03 | 700 | 5,2 | A 749047 |
| 5000 | 18 | [0,709] | 40 | [1,575] | 10 | 0,04 | 0,04 | 750 | 3,1 | A 749046 |
| 5100 | 25 | [0,984] | 40 | [1,575] | 10 | 0,02 | 0,03 | 765 | 5,2 | A 749048 |
| 1500 | 14 | [0,551] | 30 | [1,181] | 12 | 0,09 | 0,09 | 225 | 1,6 | A 749520 |
| 2200 | 16 | [0,630] | 30 | [1,181] | 12 | 0,06 | 0,06 | 330 | 2,1 | A 749521 |
| 3300 | 18 | [0,709] | 30 | [1,181] | 12 | 0,05 | 0,05 | 495 | 2,4 | A 749522 |
| 4700 | 18 | [0,709] | 40 | [1,575] | 12 | 0,04 | 0,04 | 700 | 3,1 | A 749523 |
| 6800 | 21 | [0,827] | 40 | [1,575] | 18 | 0,03 | 0,04 | 1020 | 3,9 | A 749524 |
| 10000 | 25 | [0,984] | 40 | [1,575] | 21 | 0,02 | 0,03 | 1500 | 5,2 | A 749515 |
| 15000 | 25 | [0,984] | 75 | [2,953] | 24 | 0,02 | 0,02 | 2250 | 6,9 | A 749516 |
| 22000 | 25 | [0,984] | 75 | [2,953] | 36 | 0,02 | 0,02 | 3300 | 6,9 | A 749517 |
| Rated voltage / Peak voltage: 40/48 V | | | | | | | | | | |
| 33 | 6,5 | [0,256] | 19 | [0,748] | 10 | 2,2 | 2 | 11 | 0,17 | A 748262 |
| 47 | 8,5 | [0,335] | 19 | [0,748] | 9 | 2 | 1,6 | 15 | 0,2 | A 748263 |
| 63 | 6,5 | [0,256] | 19 | [0,748] | 10 | 2,2 | 2 | 15 | 0,17 | A 748269 |
| 68 | 8,5 | [0,335] | 19 | [0,748] | 10 | 1,5 | 1,2 | 20 | 0,24 | A 748261 |
| 100 | 10 | [0,394] | 19 | [0,748] | 10 | 0,85 | 0,8 | 28 | 0,35 | A 748264 |
| 120 | 8,5 | [0,335] | 19 | [0,748] | 10 | 1,5 | 1,2 | 29 | 0,24 | A 748270 |
| 170 | 10 | [0,394] | 19 | [0,748] | 10 | 0,85 | 0,8 | 41 | 0,35 | A 748271 |
| 220 | 10 | [0,394] | 25 | [0,984] | 9 | 0,35 | 0,3 | 55 | 0,61 | A 748266 |
| 330 | 10 | [0,394] | 25 | [0,984] | 10 | 0,27 | 0,25 | 83 | 0,69 | A 748267 |
| 470 | 12 | [0,472] | 30 | [1,181] | 10 | 0,2 | 0,15 | 115 | 0,96 | A 748268 |
| 680 | 16 | [0,630] | 30 | [1,181] | 8 | 0,08 | 0,07 | 165 | 1,8 | A 749061 |
| 1000 | 18 | [0,709] | 30 | [1,181] | 9 | 0,07 | 0,07 | 240 | 2 | A 749062 |
| 1100 | 16 | [0,630] | 30 | [1,181] | 8 | 0,08 | 0,07 | 264 | 1,8 | A 749064 |
| 1500 | 18 | [0,709] | 30 | [1,181] | 9 | 0,07 | 0,07 | 360 | 2 | A 749065 |
| 2200 | 21 | [0,827] | 40 | [1,575] | 10 | 0,04 | 0,04 | 530 | 3,4 | A 749063 |
| 2900 | 21 | [0,827] | 40 | [1,575] | 10 | 0,04 | 0,04 | 700 | 3,4 | A 749066 |
| 1000 | 14 | [0,551] | 30 | [1,181] | 10 | 0,08 | 0,08 | 240 | 1,7 | A 749530 |
| 1500 | 16 | [0,630] | 30 | [1,181] | 10 | 0,08 | 0,08 | 360 | 1,8 | A 749533 |
| 2200 | 18 | [0,709] | 40 | [1,575] | 10 | 0,04 | 0,04 | 530 | 3,1 | A 749531 |
| 3300 | 18 | [0,709] | 40 | [1,575] | 12 | 0,03 | 0,03 | 800 | 3,5 | A 749534 |
| 4700 | 21 | [0,827] | 40 | [1,575] | 13 | 0,025 | 0,03 | 1130 | 4,2 | A 749532 |
| 10000 | 25 | [0,984] | 50 | [1,969] | 16 | 0,02 | 0,02 | 2400 | 5,8 | A 749535 |
| 15000 | 25 | [0,984] | 75 | [2,953] | 23 | 0,02 | 0,02 | 3600 | 6,9 | A 749537 |

SICAL C042 - SICAL

C042

10 000 h / 85°C

| Capacitance (μF) | Dimensions | | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz Typic (Ω) | Z F(1) +20°C max. (Ω) | I +20°C 5 min. max. (μA) | I ~ 100 Hz +85°C max. (A) | Code | | |
|--|----------------------------|------------------|--|--|--|---|---------------------------------------|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | | | | | | | | |
| Rated voltage / Peak voltage: 63/75 V | | | | | | | | | | |
| 10 | 6,5 | (0,256) | 19 | (0,748) | 8 | 4,1 | 4 | 6 | 0,12 | A 748279 |
| 15 | 6,5 | (0,256) | 19 | (0,748) | 8 | 3,8 | 3,2 | 10 | 0,13 | A 748286 |
| 22 | 8,5 | (0,335) | 19 | (0,748) | 7 | 2,8 | 2 | 12 | 0,17 | A 748287 |
| 26 | 6,5 | (0,256) | 19 | (0,748) | 8 | 4,1 | 4 | 6 | 0,12 | A 748280 |
| 33 | 8,5 | (0,335) | 19 | (0,748) | 8 | 2 | 1,3 | 16 | 0,2 | A 748288 |
| 39 | 6,5 | (0,256) | 19 | (0,748) | 8 | 3,8 | 3,2 | 10 | 0,13 | A 748281 |
| 47 | 8,5 | (0,335) | 19 | (0,748) | 7 | 2,8 | 2 | 22 | 0,17 | A 748282 |
| 47 | 10 | (0,394) | 19 | (0,748) | 8 | 1,4 | 1,1 | 22 | 0,27 | A 748289 |
| 68 | 10 | (0,394) | 19 | (0,748) | 8 | 1,2 | 0,9 | 30 | 0,29 | A 748290 |
| 73 | 8,5 | (0,335) | 19 | (0,748) | 8 | 2 | 1,3 | 16 | 0,2 | A 748283 |
| 100 | 10 | (0,394) | 19 | (0,748) | 8 | 1,2 | 0,9 | 40 | 0,29 | A 748284 |
| 100 | 10 | (0,394) | 25 | (0,984) | 8 | 0,8 | 0,6 | 40 | 0,4 | A 748291 |
| 150 | 10 | (0,394) | 25 | (0,984) | 8 | 0,8 | 0,6 | 50 | 0,4 | A 748285 |
| 150 | 12 | (0,472) | 30 | (1,181) | 8 | 0,4 | 0,35 | 50 | 0,68 | A 748292 |
| 220 | 12 | (0,472) | 30 | (1,181) | 10 | 0,4 | 0,35 | 85 | 0,68 | A 748293 |
| 290 | 12 | (0,472) | 30 | (1,181) | 10 | 0,4 | 0,35 | 85 | 0,68 | A 748294 |
| 330 | 16 | (0,630) | 30 | (1,181) | 8 | 0,17 | 0,15 | 125 | 1,2 | A 749081 |
| 470 | 18 | (0,709) | 30 | (1,181) | 8 | 0,11 | 0,1 | 180 | 1,6 | A 749082 |
| 660 | 16 | (0,630) | 30 | (1,181) | 8 | 0,17 | 0,15 | 125 | 1,2 | A 748290 |
| 1000 | 21 | (0,827) | 40 | (1,575) | 6 | 0,06 | 0,07 | 380 | 2,7 | A 749083 |
| 2100 | 21 | (0,827) | 40 | (1,575) | 6 | 0,06 | 0,07 | 380 | 2,7 | A 748292 |
| 2200 | 25 | (0,984) | 50 | (1,969) | 8 | 0,04 | 0,04 | 835 | 4,1 | A 749086 |
| 4100 | 25 | (0,984) | 50 | (1,969) | 8 | 0,04 | 0,04 | 835 | 4,1 | A 748293 |
| 4700 | 25 | (0,984) | 75 | (2,953) | 12 | 0,025 | 0,03 | 1780 | 5,6 | A 749087 |
| 6700 | 25 | (0,984) | 75 | (2,953) | 12 | 0,025 | 0,03 | 1780 | 5,6 | A 748294 |
| 680 | 14 | (0,551) | 30 | (1,181) | 8 | 0,14 | 0,12 | 260 | 1,3 | A 749544 |
| 1000 | 16 | (0,630) | 30 | (1,181) | 9 | 0,12 | 0,11 | 380 | 1,5 | A 749540 |
| 1500 | 18 | (0,709) | 40 | (1,575) | 9 | 0,09 | 0,08 | 570 | 2 | A 749541 |
| 2200 | 21 | (0,827) | 40 | (1,575) | 9 | 0,05 | 0,04 | 835 | 3 | A 749545 |
| 3300 | 25 | (0,984) | 40 | (1,575) | 11 | 0,04 | 0,03 | 1250 | 3,7 | A 749546 |
| 4700 | 25 | (0,984) | 50 | (1,969) | 12 | 0,03 | 0,03 | 1780 | 4,7 | A 749543 |
| 6800 | 25 | (0,984) | 75 | (2,953) | 12 | 0,02 | 0,02 | 2570 | 6,9 | A 749547 |
| Rated voltage / Peak voltage: 100/115 V | | | | | | | | | | |
| 4,7 | 6,5 | (0,256) | 19 | (0,748) | 7 | 9,4 | 5 | 5 | 0,08 | A 748299 |
| 6,8 | 6,5 | (0,256) | 19 | (0,748) | 7 | 7,8 | 4,3 | 8 | 0,09 | A 748301 |
| 10 | 6,5 | (0,256) | 19 | (0,748) | 7 | 6 | 3,8 | 10 | 0,1 | A 748302 |
| 15 | 6,5 | (0,256) | 19 | (0,748) | 7 | 4,2 | 3,1 | 13 | 0,12 | A 748303 |
| 22 | 8,5 | (0,335) | 19 | (0,748) | 7 | 2,6 | 2 | 17 | 0,18 | A 748304 |
| 33 | 10 | (0,394) | 19 | (0,748) | 7 | 1,8 | 1,3 | 24 | 0,24 | A 748307 |
| 47 | 10 | (0,394) | 25 | (0,984) | 7 | 1,2 | 0,7 | 32 | 0,33 | A 748306 |
| 68 | 12 | (0,472) | 30 | (1,181) | 7 | 0,8 | 0,6 | 45 | 0,48 | A 748309 |
| 100 | 14 | (0,551) | 30 | (1,181) | 5 | 0,35 | 0,3 | 60 | 0,74 | A 749100 |
| 150 | 14 | (0,551) | 30 | (1,181) | 7 | 0,3 | 0,25 | 94 | 0,86 | A 749105 |
| 220 | 18 | (0,709) | 30 | (1,181) | 5 | 0,18 | 0,16 | 135 | 1,3 | A 749101 |
| 470 | 21 | (0,827) | 40 | (1,575) | 7 | 0,1 | 0,1 | 285 | 2,1 | A 749102 |
| 1000 | 25 | (0,984) | 50 | (1,969) | 7 | 0,05 | 0,04 | 600 | 3,6 | A 749104 |
| 220 | 14 | (0,551) | 30 | (1,181) | 6 | 0,3 | 0,25 | 135 | 0,86 | A 749550 |
| 330 | 16 | (0,630) | 30 | (1,181) | 7 | 0,25 | 0,2 | 200 | 1 | A 749554 |
| 470 | 18 | (0,709) | 30 | (1,181) | 7 | 0,12 | 0,11 | 285 | 1,6 | A 749551 |
| 680 | 21 | (0,827) | 40 | (1,575) | 8 | 0,1 | 0,1 | 400 | 2,1 | A 749555 |
| 1000 | 21 | (0,827) | 40 | (1,575) | 8 | 0,07 | 0,07 | 600 | 2,5 | A 749552 |
| 1500 | 25 | (0,984) | 50 | (1,969) | 8 | 0,06 | 0,06 | 900 | 3,3 | A 749557 |
| 1800 | 25 | (0,984) | 50 | (1,969) | 8 | 0,05 | 0,05 | 1080 | 3,6 | A 749558 |
| 2200 | 25 | (0,984) | 75 | (2,953) | 8 | 0,035 | 0,035 | 1320 | 5,2 | A 749559 |
| 3300 | 25 | (0,984) | 75 | (2,953) | 8 | 0,03 | 0,03 | 1980 | 5,6 | A 749556 |

SICAL C042 - SICAL

C0 42

10 000 h / 85°C

| Capacitance [μ F] | Dimensions | | Tan δ 100 Hz +20°C max. [%] | ESR 100 Hz Typic [Ω] | Z F(1) +20°C max. [Ω] | II +20°C 5 min. max. [μ A] | I \sim 100 Hz +85°C max. [A] | Code | | |
|--|----------------------------|------------------|--|--|--|---|--|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | | | | | | | | |
| Rated voltage / Peak voltage: 160/180 V | | | | | | | | | | |
| 2,2 | 6,5 | [0,256] | 19 | [0,748] | 7 | 26 | 27 | 5 | 0,05 | A 748320 |
| 4,1 | 6,5 | [0,256] | 19 | [0,748] | 7 | 26 | 27 | 8 | 0,05 | A 748325 |
| 4,7 | 8,5 | [0,335] | 19 | [0,748] | 7 | 12 | 13 | 8 | 0,08 | A 748321 |
| 8,1 | 8,5 | [0,335] | 19 | [0,748] | 7 | 12 | 13 | 8 | 0,08 | A 748326 |
| 10 | 10 | [0,394] | 19 | [0,748] | 8 | 9 | 8 | 14 | 0,11 | A 748322 |
| 22 | 12 | [0,472] | 25 | [0,984] | 7 | 2,1 | 2,1 | 25 | 0,28 | A 748323 |
| 33 | 12 | [0,472] | 30 | [1,181] | 7 | 1,8 | 1,8 | 35 | 0,32 | A 748324 |
| 47 | 16 | [0,630] | 30 | [1,181] | 7 | 1,4 | 1,3 | 49 | 0,43 | A 749121 |
| 75 | 16 | [0,630] | 30 | [1,181] | 7 | 1,4 | 1,3 | 72 | 0,43 | A 749125 |
| 100 | 18 | [0,709] | 40 | [1,575] | 7 | 0,45 | 0,6 | 100 | 0,92 | A 749122 |
| 150 | 18 | [0,709] | 40 | [1,575] | 7 | 0,45 | 0,6 | 140 | 0,92 | A 749126 |
| 220 | 25 | [0,984] | 40 | [1,575] | 7 | 0,25 | 0,3 | 215 | 1,5 | A 749124 |
| 350 | 25 | [0,984] | 40 | [1,575] | 7 | 0,25 | 0,3 | 340 | 1,5 | A 749127 |
| 47 | 14 | [0,551] | 30 | [1,181] | 10 | 1,3 | 1,2 | 49 | 0,41 | A 749563 |
| 100 | 18 | [0,709] | 40 | [1,575] | 10 | 0,7 | 0,7 | 100 | 0,61 | A 749560 |
| 150 | 18 | [0,709] | 30 | [1,181] | 10 | 0,6 | 0,6 | 148 | 0,7 | A 749568 |
| 220 | 18 | [0,709] | 40 | [1,575] | 10 | 0,5 | 0,5 | 215 | 0,87 | A 749561 |
| 330 | 21 | [0,827] | 40 | [1,575] | 10 | 0,3 | 0,3 | 321 | 1,2 | A 749564 |
| 470 | 25 | [0,984] | 40 | [1,575] | 8 | 0,2 | 0,2 | 450 | 1,7 | A 749565 |
| 1000 | 25 | [0,984] | 75 | [2,953] | 8 | 0,1 | 0,1 | 960 | 3,1 | A 749567 |
| Rated voltage / Peak voltage: 250/275 V | | | | | | | | | | |
| 10 | 10 | [0,394] | 19 | [0,748] | 8 | 11 | 10 | 19 | 0,1 | A 748342 |
| 15 | 10 | [0,394] | 25 | [0,984] | 10 | 8,5 | 8,5 | 27 | 0,12 | A 748343 |
| 22 | 14 | [0,551] | 30 | [1,181] | 6 | 2,5 | 2,3 | 37 | 0,3 | A 749140 |
| 33 | 16 | [0,630] | 30 | [1,181] | 6 | 1,7 | 1,6 | 54 | 0,39 | A 749141 |
| 47 | 18 | [0,709] | 30 | [1,181] | 6 | 1,1 | 1,1 | 74 | 0,52 | A 749142 |
| 100 | 21 | [0,827] | 40 | [1,575] | 6 | 0,5 | 0,5 | 154 | 0,95 | A 749143 |
| 22 | 12 | [0,472] | 25 | [0,984] | 7 | 3,4 | 3,8 | 37 | 0,22 | A 748344 |
| 33 | 12 | [0,472] | 30 | [1,181] | 7 | 2 | 2,2 | 54 | 0,3 | A 748345 |
| 47 | 14 | [0,551] | 30 | [1,181] | 7 | 1,5 | 1,5 | 74 | 0,38 | A 749570 |
| 68 | 16 | [0,630] | 30 | [1,181] | 7 | 1,1 | 1,1 | 106 | 0,48 | A 749573 |
| 100 | 18 | [0,709] | 30 | [1,181] | 7 | 0,7 | 0,7 | 154 | 0,64 | A 749571 |
| 150 | 18 | [0,709] | 40 | [1,575] | 7 | 0,7 | 0,7 | 229 | 0,73 | A 749574 |
| 220 | 21 | [0,827] | 40 | [1,575] | 7 | 0,5 | 0,50 | 334 | 0,95 | A 749572 |
| 330 | 25 | [0,984] | 40 | [1,575] | 7 | 0,5 | 0,5 | 499 | 1 | A 749575 |
| 470 | 25 | [0,984] | 75 | [2,953] | 7 | 0,1 | 0,1 | 709 | 3,1 | A 749576 |
| 680 | 25 | [0,984] | 75 | [2,953] | 7 | 0,08 | 0,08 | 1020 | 3,50 | A 749577 |
| 1000 | 25 | [0,984] | 75 | [2,953] | 7 | 0,07 | 0,07 | 1500 | 3,7 | A 749578 |
| Rated voltage / Peak voltage: 350/385 V | | | | | | | | | | |
| 6,8 | 10 | [0,394] | 19 | [0,748] | 7 | 10 | 10 | 18 | 0,1 | A 748362 |
| 10 | 10 | [0,394] | 25 | [0,984] | 7 | 6 | 6 | 25 | 0,15 | A 748363 |
| 15 | 14 | [0,551] | 30 | [1,181] | 6 | 3,2 | 3,2 | 36 | 0,26 | A 749160 |
| 22 | 16 | [0,630] | 30 | [1,181] | 6 | 2,3 | 2,3 | 50 | 0,33 | A 749161 |
| 33 | 18 | [0,709] | 30 | [1,181] | 6 | 1,2 | 1,2 | 73 | 0,49 | A 749162 |
| 47 | 18 | [0,709] | 40 | [1,575] | 6 | 0,9 | 0,8 | 103 | 0,64 | A 749163 |
| 15 | 12 | [0,472] | 25 | [0,984] | 6 | 3,8 | 3,8 | 36 | 0,2 | A 748364 |
| 22 | 12 | [0,472] | 30 | [1,181] | 6 | 2,7 | 2,8 | 50 | 0,26 | A 748365 |
| 33 | 14 | [0,551] | 30 | [1,181] | 6 | 2 | 2 | 73 | 0,33 | A 749580 |
| 47 | 16 | [0,630] | 30 | [1,181] | 6 | 1,2 | 1,2 | 103 | 0,46 | A 749581 |
| 100 | 21 | [0,827] | 40 | [1,575] | 6 | 0,5 | 0,5 | 214 | 0,94 | A 749582 |
| 220 | 25 | [0,984] | 40 | [1,575] | 9 | 0,4 | 0,4 | 466 | 1,2 | A 749585 |
| 470 | 25 | [0,984] | 75 | [2,953] | 9 | 0,3 | 0,3 | 991 | 1,8 | A 749586 |

SICAL C042 - SICAL

C0 42

10 000 h / 85°C

| Capacitance (μF) | Dimensions | | Tan δ 100 Hz +20°C max. (%) | ESR 100 Hz Typic (Ω) | Z F(1) +20°C max. (Ω) | II +20°C 5 min. max. (μA) | I ~ 100 Hz +85°C max. (A) | Code | | |
|---|----------------------------|------------------|--|--|--|--|---------------------------------------|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | | | | | | | | |
| Rated voltage / Peak voltage: 385/420 V | | | | | | | | | | |
| 6,8 | 10 | (0,394) | 19 | (0,748) | 10 | 20 | 22 | 20 | 0,07 | A 748382 |
| 10 | 10 | (0,394) | 25 | (0,984) | 10 | 10,5 | 13 | 27 | 0,11 | A 748383 |
| 15 | 12 | (0,472) | 25 | (0,984) | 10 | 4,5 | 5,5 | 39 | 0,19 | A 748384 |
| 22 | 14 | (0,551) | 30 | (1,181) | 10 | 3,5 | 3,5 | 55 | 0,25 | A 749590 |
| 33 | 16 | (0,630) | 30 | (1,181) | 10 | 1,9 | 1,9 | 80 | 0,37 | A 749591 |
| 47 | 18 | (0,709) | 30 | (1,181) | 10 | 1,7 | 2 | 113 | 0,42 | A 749592 |
| 100 | 21 | (0,827) | 40 | (1,575) | 10 | 0,8 | 1,1 | 235 | 0,75 | A 749593 |
| 150 | 25 | (0,984) | 40 | (1,575) | 10 | 0,7 | 0,9 | 351 | 0,88 | A 749597 |
| 220 | 25 | (0,984) | 50 | (1,969) | 10 | 0,5 | 0,9 | 512 | 1,2 | A 749598 |
| 330 | 25 | (0,984) | 75 | (2,953) | 10 | 0,4 | 0,8 | 766 | 1,5 | A 749599 |
| Rated voltage / Peak voltage: 450/500 V | | | | | | | | | | |
| 6,8 | 10 | (0,394) | 19 | (0,748) | 13 | 24 | 26 | 330 | 0,07 | A 748402 |
| 10 | 12 | (0,472) | 25 | (0,984) | 8 | 4,7 | 5,7 | 400 | 0,18 | A 748403 |
| 10 | 14 | (0,551) | 30 | (1,181) | 8 | 5,5 | 4,5 | 400 | 0,2 | A 749606 |
| 15 | 12 | (0,472) | 30 | (1,181) | 8 | 4 | 5 | 490 | 0,22 | A 748405 |
| 15 | 14 | (0,551) | 30 | (1,181) | 8 | 4 | 3,5 | 490 | 0,24 | A 749607 |
| 22 | 14 | (0,551) | 30 | (1,181) | 8 | 3,5 | 3,5 | 600 | 0,25 | A 749600 |
| 33 | 16 | (0,630) | 30 | (1,181) | 9 | 3 | 3 | 730 | 0,29 | A 749601 |
| 47 | 18 | (0,709) | 30 | (1,181) | 8 | 1,8 | 1,8 | 870 | 0,4 | A 749602 |
| 100 | 21 | (0,827) | 40 | (1,575) | 9 | 0,9 | 0,9 | 1300 | 0,71 | A 749603 |
| 150 | 25 | (0,984) | 40 | (1,575) | 10 | 0,7 | 0,7 | 1600 | 0,88 | A 749608 |
| 220 | 25 | (0,984) | 50 | (1,969) | 10 | 0,5 | 0,5 | 1900 | 1,2 | A 749609 |
| 330 | 25 | (0,984) | 75 | (2,953) | 10 | 0,4 | 0,4 | 2350 | 1,5 | A 749610 |
| Rated voltage / Peak voltage: 550/605 V | | | | | | | | | | |
| 15 | 18 | (0,709) | 40 | (1,575) | 7 | 3,5 | 3,5 | 540 | 0,33 | A 749620 |
| 22 | 21 | (0,827) | 40 | (1,575) | 7 | 2,3 | 2,3 | 660 | 0,44 | A 749621 |
| 33 | 25 | (0,984) | 40 | (1,575) | 7 | 1,5 | 1,5 | 810 | 0,6 | A 749623 |
| Rated voltage / Peak voltage: 630/695 V | | | | | | | | | | |
| 15 | 18 | (0,591) | 40 | (1,575) | 20 | 11 | 9 | 780 | 0,19 | A 749640 |
| 22 | 21 | (0,866) | 40 | (1,575) | 20 | 7,5 | 5,8 | 940 | 0,24 | A 749641 |
| 33 | 25 | (1,299) | 40 | (1,575) | 20 | 5,1 | 5,3 | 1150 | 0,33 | A 749643 |

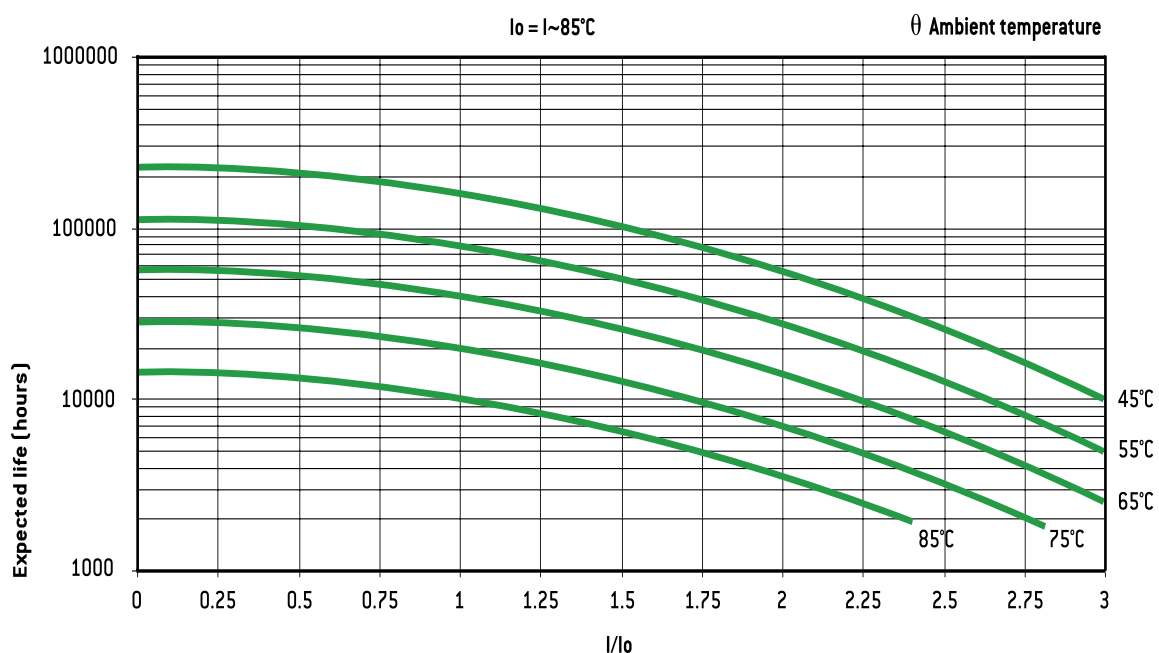
EXPECTED LIFE

As a function of temperature and ripple current
For $\emptyset = 6,5$ mm half life time values are applicable.

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:
I ~: permissible r.m.s. current at 100 Hz

| f [Hz] | 50 | 100 | 300 | 600 | 1 000 | 10 000 | $\geq 50 000$ |
|--------|----------|-----|----------|----------|-----------|----------|---------------|
| I | 0,8 x I~ | I~ | 1,2 x I~ | 1,3 x I~ | 1,35 x I~ | 1,5 x I~ | 1,6 x I~ |



PRORELSIC 125

CO 52

5 000 h / 125°C

| | | | | |
|----------------|------------------------------|--|----------------|----------------|
| 10 V ... 450 V | 1 μ F ... 25 000 μ F | \emptyset 6,5 (0,256) ... \emptyset 25 (0,984) | - 55°C + 125°C | Long Life Time |
|----------------|------------------------------|--|----------------|----------------|



APPLICATIONS

- Coupling / decoupling
- Smoothing
- Energy storage
- High frequency power supply system
- Telecommunication - military applications
- Mobile and aircraft installations

Insulating aluminum case

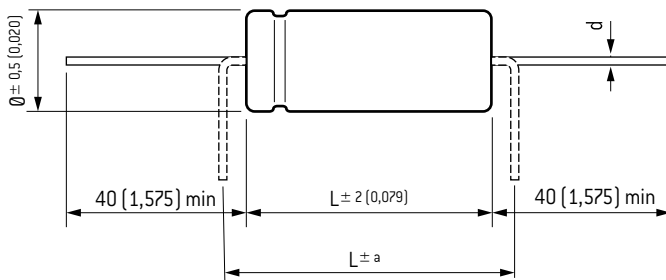
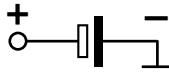
Axial tin coated copper leads

Welded chain, providing perfect continuity of the circuit.

Tolerance on capacitance at 20°C : - 10 + 50 %

(on request) : - 10 + 30 %

Operating temperature : - 55°C + 125°C



Dimensions in mm (inches)

DIMENSIONS in mm (inches)

| \emptyset | | d | | a | |
|-------------|-----------------|-----|---------|---|---------|
| 6,5 - 18 | (0,256 - 0,709) | 0,8 | (0,031) | 4 | (0,157) |
| 21 | (0,827) | 1 | (0,039) | 4 | (0,157) |
| 25 | (0,984) | 1 | (0,039) | 8 | (0,315) |

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|-----------------------------|
| f (Hz) | 10 - 2000 Hz |
| Amplitude | 1,5 (0,059) |
| Acceleration | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h |

SPECIFICATIONS

NFC 83 110 - Model CO 52 - Long life

DIN 40040 FKD

DIN 41 257 - DIN 41 240

CECC 30 301-802 Issue 2

IEC 60 384.4 long life

Climatic category GPF: -55°C + 125°C / 56 days

Standard endurance test at $U_R = 2000$ h / 125°C

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulating resistance at 20°C between leads and mounting hardware:
100 M Ω

Test voltage at 50 Hz 1 min. between leads and mounting hardware:
1000 V

Fire resistance: self extinguish 30 s (IEC 60 695-2-2) without PVC.

PRORELSIC 125

CO 52

5 000 h / 125°C

| Capacitance [μ F] | Dimensions | | ESR | | Z F(1) +20°C max. [Ω] | II +20°C 5 min. max. [μ A] | I ~ 100 Hz | | Code | | |
|---------------------------|----------------------------|------------------|-----------------------|----------------------|--|---|----------------------|-----------------------|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | Typic [Ω] | Max. [Ω] | | | +85°C max. [A] | +125°C max. [A] | | | |
| Rated voltage 10 V | | | | | | | | | | | |
| 47 | 6,5 | [0,256] | 15 | [0,591] | 3,6 | 5,42 | 4 | 5 | 0,22 | 0,1 | A 701020 |
| 68 | 6,5 | [0,256] | 19 | [0,748] | 2,5 | 3,74 | 2,8 | 7 | 0,29 | 0,13 | A 701021 |
| 100 | 6,5 | [0,256] | 15 | [0,591] | 3,6 | 5,42 | 4 | 8 | 0,22 | 0,1 | A 701029 |
| 100 | 8,5 | [0,335] | 19 | [0,748] | 1,5 | 2,25 | 1,6 | 8 | 0,43 | 0,19 | A 701028 |
| 150 | 6,5 | [0,256] | 19 | [0,748] | 2,5 | 3,74 | 2,8 | 9 | 0,29 | 0,13 | A 701030 |
| 150 | 8,5 | [0,335] | 19 | [0,748] | 1,35 | 2,03 | 1,1 | 9 | 0,46 | 0,2 | A 701022 |
| 220 | 10 | [0,394] | 19 | [0,748] | 0,77 | 1,15 | 0,8 | 11 | 0,66 | 0,3 | A 701023 |
| 300 | 8,5 | [0,335] | 19 | [0,748] | 1,35 | 2,03 | 1,1 | 13,5 | 0,46 | 0,2 | A 701031 |
| 330 | 10 | [0,394] | 25 | [0,984] | 0,51 | 0,77 | 0,5 | 14 | 0,92 | 0,41 | A 701024 |
| 420 | 10 | [0,394] | 19 | [0,748] | 0,77 | 1,15 | 0,8 | 16 | 0,66 | 0,3 | A 701032 |
| 470 | 12 | [0,472] | 25 | [0,984] | 0,36 | 0,54 | 0,4 | 18 | 1,21 | 0,54 | A 701025 |
| 600 | 10 | [0,394] | 25 | [0,984] | 0,51 | 0,77 | 0,5 | 19 | 0,92 | 0,41 | A 701033 |
| 680 | 12 | [0,472] | 30 | [1,181] | 0,25 | 0,37 | 0,3 | 24 | 1,57 | 0,7 | A 701026 |
| 800 | 12 | [0,472] | 25 | [0,984] | 0,36 | 0,54 | 0,4 | 24 | 1,21 | 0,54 | A 701034 |
| 1000 | 14 | [0,551] | 30 | [1,181] | 0,21 | 0,31 | 0,21 | 34 | 1,87 | 0,84 | A 701027 |
| 1200 | 12 | [0,472] | 30 | [1,181] | 0,25 | 0,37 | 0,3 | 36 | 1,57 | 0,7 | A 701035 |
| 1500 | 16 | [0,630] | 30 | [1,181] | 0,14 | 0,21 | 0,19 | 50 | 2,02 | 0,9 | A 703020 |
| 1700 | 14 | [0,551] | 30 | [1,181] | 0,21 | 0,31 | 0,21 | 51 | 1,87 | 0,84 | A 703036 |
| 2200 | 18 | [0,709] | 30 | [1,181] | 0,11 | 0,17 | 0,14 | 70 | 3 | 1,33 | A 703021 |
| 2400 | 16 | [0,630] | 30 | [1,181] | 0,14 | 0,21 | 0,19 | 72 | 2,02 | 0,9 | A 703024 |
| 3100 | 18 | [0,709] | 30 | [1,181] | 0,11 | 0,17 | 0,14 | 93 | 3 | 1,33 | A 703025 |
| 3300 | 18 | [0,709] | 40 | [1,575] | 0,09 | 0,13 | 0,1 | 100 | 3,7 | 1,7 | A 703022 |
| 4700 | 21 | [0,827] | 40 | [1,575] | 0,06 | 0,09 | 0,08 | 150 | 5 | 2,2 | A 703023 |
| 4800 | 18 | [0,709] | 40 | [1,575] | 0,09 | 0,13 | 0,1 | 150 | 3,7 | 1,7 | A 703026 |
| 6800 | 25 | [0,984] | 40 | [1,575] | 0,05 | 0,07 | 0,06 | 200 | 6 | 2,7 | A 703500 |
| 7000 | 21 | [0,827] | 40 | [1,575] | 0,06 | 0,09 | 0,08 | 210 | 5 | 2,2 | A 703027 |
| 10000 | 25 | [0,984] | 40 | [1,575] | 0,05 | 0,07 | 0,06 | 300 | 6 | 2,7 | A 703028 |
| 10000 | 25 | [0,984] | 50 | [1,969] | 0,033 | 0,05 | 0,05 | 300 | 8,2 | 3,7 | A 703501 |
| 14000 | 25 | [0,984] | 50 | [1,969] | 0,033 | 0,05 | 0,05 | 420 | 8,2 | 3,7 | A 703029 |
| 15000 | 25 | [0,984] | 75 | [2,953] | 0,027 | 0,04 | 0,04 | 450 | 10 | 4,9 | A 703502 |
| 25000 | 25 | [0,984] | 75 | [2,953] | 0,027 | 0,04 | 0,04 | 660 | 10 | 4,9 | A 703030 |
| Rated voltage 16 V | | | | | | | | | | | |
| 33 | 6,5 | [0,256] | 15 | [0,591] | 4,2 | 6,27 | 4 | 5 | 0,2 | 0,09 | A 701040 |
| 47 | 6,5 | [0,256] | 19 | [0,748] | 2,9 | 4,4 | 3 | 8 | 0,27 | 0,12 | A 701041 |
| 68 | 8,5 | [0,335] | 19 | [0,748] | 2 | 3,04 | 1,9 | 8 | 0,37 | 0,17 | A 701042 |
| 100 | 6,5 | [0,256] | 15 | [0,591] | 4,2 | 6,27 | 4 | 9 | 0,2 | 0,09 | A 701049 |
| 100 | 8,5 | [0,335] | 19 | [0,748] | 1,4 | 2,07 | 1,1 | 9 | 0,45 | 0,2 | A 701043 |
| 150 | 6,5 | [0,256] | 19 | [0,748] | 2,9 | 4,4 | 3 | 11 | 0,27 | 0,12 | A 701050 |
| 150 | 10 | [0,394] | 19 | [0,748] | 0,92 | 1,38 | 0,8 | 11 | 0,61 | 0,27 | A 701044 |
| 220 | 10 | [0,394] | 25 | [0,984] | 0,63 | 0,94 | 0,6 | 15 | 0,83 | 0,37 | A 701045 |
| 300 | 8,5 | [0,335] | 19 | [0,748] | 1,4 | 2,07 | 1,1 | 17 | 0,45 | 0,2 | A 701052 |
| 330 | 12 | [0,472] | 25 | [0,984] | 0,41 | 0,62 | 0,4 | 20 | 1,14 | 0,51 | A 701046 |
| 420 | 10 | [0,394] | 19 | [0,748] | 0,92 | 1,38 | 0,8 | 23 | 0,61 | 0,27 | A 701053 |
| 470 | 12 | [0,472] | 30 | [1,181] | 0,33 | 0,5 | 0,3 | 27 | 1,37 | 0,61 | A 701047 |
| 600 | 10 | [0,394] | 25 | [0,984] | 0,63 | 0,94 | 0,6 | 28 | 1,83 | 0,37 | A 701054 |
| 680 | 14 | [0,551] | 30 | [1,181] | 0,25 | 0,37 | 0,23 | 37 | 1,71 | 0,77 | A 701048 |
| 800 | 12 | [0,472] | 25 | [0,984] | 0,41 | 0,62 | 0,4 | 38 | 1,14 | 0,51 | A 701055 |
| 1000 | 16 | [0,630] | 30 | [1,181] | 0,17 | 0,26 | 0,16 | 52 | 2,24 | 1 | A 703040 |
| 1200 | 12 | [0,472] | 30 | [1,181] | 0,33 | 0,5 | 0,3 | 57 | 1,37 | 0,61 | A 701056 |
| 1500 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,23 | 0,16 | 75 | 2,5 | 1,14 | A 703041 |
| 1700 | 14 | [0,551] | 30 | [1,181] | 0,25 | 0,37 | 0,23 | 81 | 1,71 | 0,77 | A 701057 |
| 2200 | 18 | [0,709] | 40 | [1,575] | 0,1 | 0,15 | 0,12 | 110 | 3,5 | 1,6 | A 703042 |
| 2400 | 16 | [0,630] | 30 | [1,181] | 0,17 | 0,26 | 0,16 | 115 | 2,24 | 1 | A 703044 |
| 3300 | 21 | [0,827] | 40 | [1,575] | 0,066 | 0,1 | 0,08 | 160 | 4,8 | 2,1 | A 703043 |
| 4700 | 25 | [0,984] | 40 | [1,575] | 0,045 | 0,07 | 0,07 | 230 | 6,4 | 2,8 | A 703510 |
| 6800 | 25 | [0,984] | 50 | [1,969] | 0,04 | 0,06 | 0,05 | 330 | 7,4 | 3,3 | A 703511 |
| 10000 | 25 | [0,984] | 75 | [2,953] | 0,033 | 0,05 | 0,04 | 480 | 9,8 | 4,4 | A 703512 |

(1) F = 10 kHz [C > 1000 μ F], F = 100 kHz [C \leq 1000 μ F]

Z typ = Z max / 2

PRORELSIC 125

CO 52

5 000 h / 125°C

| Capacitance (μF) | Dimensions | | ESR | | Z F(1) +20°C max. (Ω) | II +20°C 5 min. max. (μA) | I \sim 100 Hz | | Code | | |
|----------------------------------|----------------------------|------------------|-----------------------|----------------------|--|--|----------------------|-----------------------|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | Typic (Ω) | Max. (Ω) | | | +85°C max. (A) | +125°C max. (A) | | | |
| Rated voltage 25 V | | | | | | | | | | | |
| 15 | 6,5 | [0,256] | 15 | [0,591] | 6,4 | 10,61 | 4 | 4 | 0,16 | 0,07 | A 701060 |
| 22 | 6,5 | [0,256] | 19 | [0,748] | 4,3 | 7,23 | 3 | 6 | 0,22 | 0,1 | A 701061 |
| 47 | 8,5 | [0,335] | 19 | [0,748] | 1,7 | 2,85 | 1,6 | 8 | 0,26 | 0,11 | A 701068 |
| 63 | 6,5 | [0,256] | 15 | [0,591] | 6,4 | 10,61 | 4 | 19 | 0,16 | 0,07 | A 701069 |
| 68 | 10 | [0,394] | 19 | [0,748] | 1,4 | 2,34 | 1,2 | 9 | 0,44 | 0,2 | A 701062 |
| 90 | 6,5 | [0,256] | 19 | [0,748] | 4,3 | 7,23 | 3 | 11 | 0,22 | 0,1 | A 701070 |
| 100 | 10 | [0,394] | 19 | [0,748] | 0,95 | 1,59 | 0,8 | 12 | 0,6 | 0,27 | A 701063 |
| 120 | 10 | [0,394] | 19 | [0,748] | 1,4 | 2,34 | 1,2 | 13 | 0,44 | 0,2 | A 701072 |
| 150 | 10 | [0,394] | 25 | [0,984] | 0,63 | 1,06 | 0,6 | 15 | 0,83 | 0,37 | A 701064 |
| 170 | 8,5 | [0,335] | 19 | [0,748] | 1,7 | 2,85 | 1,6 | 16 | 0,26 | 0,11 | A 701071 |
| 220 | 12 | [0,472] | 25 | [0,984] | 0,48 | 0,72 | 0,48 | 21 | 1,05 | 0,47 | A 701065 |
| 240 | 10 | [0,394] | 19 | [0,748] | 0,95 | 1,59 | 0,8 | 21 | 0,6 | 0,27 | A 701073 |
| 330 | 12 | [0,472] | 30 | [1,181] | 0,32 | 0,48 | 0,36 | 29 | 1,39 | 0,62 | A 701066 |
| 350 | 10 | [0,394] | 25 | [0,984] | 0,63 | 1,06 | 0,6 | 29 | 0,83 | 0,37 | A 701074 |
| 460 | 12 | [0,472] | 25 | [0,984] | 0,48 | 1,72 | 0,48 | 39 | 1,05 | 0,47 | A 701075 |
| 470 | 14 | [0,551] | 30 | [1,181] | 0,29 | 0,44 | 0,26 | 39 | 1,59 | 0,71 | A 701067 |
| 680 | 16 | [0,630] | 30 | [1,181] | 0,2 | 0,3 | 0,23 | 55 | 2,1 | 0,92 | A 703060 |
| 700 | 12 | [0,472] | 30 | [1,181] | 0,32 | 0,48 | 0,36 | 55 | 1,39 | 0,62 | A 701076 |
| 1000 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,24 | 0,14 | 80 | 2,5 | 1,14 | A 703061 |
| 1500 | 18 | [0,709] | 40 | [1,575] | 0,1 | 0,15 | 0,1 | 120 | 3,5 | 1,59 | A 703062 |
| 2200 | 21 | [0,827] | 40 | [1,575] | 0,066 | 0,1 | 0,08 | 170 | 4,8 | 2,1 | A 703063 |
| 3300 | 25 | [0,984] | 40 | [1,575] | 0,045 | 0,07 | 0,06 | 250 | 6,4 | 2,8 | A 703520 |
| 3600 | 21 | [0,827] | 40 | [1,575] | 0,066 | 0,1 | 0,08 | 250 | 4,8 | 2,1 | A 703064 |
| 4700 | 25 | [0,984] | 50 | [1,969] | 0,04 | 0,06 | 0,05 | 360 | 7,4 | 3,3 | A 703521 |
| 6800 | 25 | [0,984] | 75 | [2,953] | 0,033 | 0,05 | 0,04 | 510 | 9,8 | 4,4 | A 703522 |
| Rated voltage 40 V | | | | | | | | | | | |
| 10 | 6,5 | [0,256] | 15 | [0,591] | 8 | 12,7 | 5,2 | 4 | 0,15 | 0,07 | A 701080 |
| 15 | 6,5 | [0,256] | 19 | [0,748] | 5,3 | 8,49 | 3,9 | 6 | 0,2 | 0,09 | A 701081 |
| 32 | 6,5 | [0,256] | 15 | [0,591] | 8 | 12,7 | 5,2 | 8 | 0,15 | 0,07 | A 701089 |
| 33 | 8,5 | [0,335] | 19 | [0,748] | 2,4 | 3,86 | 2 | 8 | 0,34 | 0,15 | A 701082 |
| 44 | 6,5 | [0,256] | 19 | [0,748] | 5,3 | 8,49 | 3,9 | 10 | 0,2 | 0,09 | A 701090 |
| 44 | 8,5 | [0,335] | 19 | [0,748] | 2,4 | 3,86 | 2 | 10 | 0,34 | 0,15 | A 701091 |
| 47 | 8,5 | [0,335] | 19 | [0,748] | 1,7 | 2,71 | 1,4 | 10 | 0,41 | 0,18 | A 701083 |
| 68 | 10 | [0,394] | 19 | [0,748] | 1,2 | 1,87 | 1 | 12 | 0,53 | 0,24 | A 701084 |
| 85 | 8,5 | [0,335] | 19 | [0,748] | 1,7 | 2,71 | 1,4 | 14 | 0,41 | 0,18 | A 701092 |
| 100 | 10 | [0,394] | 25 | [0,984] | 0,8 | 1,27 | 0,78 | 16 | 0,73 | 0,33 | A 701085 |
| 120 | 10 | [0,394] | 19 | [0,748] | 1,2 | 1,87 | 1 | 17 | 0,53 | 0,24 | A 701093 |
| 150 | 12 | [0,472] | 25 | [0,984] | 0,53 | 0,84 | 0,52 | 22 | 1 | 0,44 | A 701086 |
| 170 | 10 | [0,394] | 25 | [0,984] | 0,8 | 1,27 | 0,78 | 22 | 0,73 | 0,33 | A 701094 |
| 220 | 12 | [0,472] | 30 | [1,181] | 0,36 | 0,57 | 0,38 | 30 | 1,31 | 0,59 | A 701087 |
| 230 | 12 | [0,472] | 25 | [0,984] | 0,53 | 0,84 | 0,52 | 30 | 1 | 0,44 | A 701095 |
| 330 | 14 | [0,551] | 30 | [1,181] | 0,32 | 0,48 | 0,3 | 44 | 1,51 | 0,68 | A 701088 |
| 340 | 12 | [0,472] | 30 | [1,181] | 0,36 | 0,57 | 0,38 | 44 | 1,31 | 0,59 | A 701096 |
| 470 | 16 | [0,630] | 30 | [1,181] | 0,23 | 0,34 | 0,25 | 60 | 1,9 | 0,86 | A 703080 |
| 680 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,23 | 0,16 | 86 | 2,5 | 1,14 | A 703081 |
| 1000 | 18 | [0,709] | 40 | [1,575] | 0,11 | 0,17 | 0,12 | 120 | 3,4 | 1,51 | A 703082 |
| 1500 | 21 | [0,827] | 40 | [1,575] | 0,073 | 0,11 | 0,1 | 180 | 4,5 | 2 | A 703083 |
| 2200 | 25 | [0,984] | 40 | [1,575] | 0,053 | 0,08 | 0,06 | 270 | 5,9 | 2,6 | A 703530 |
| 3300 | 25 | [0,984] | 50 | [1,969] | 0,04 | 0,06 | 0,05 | 400 | 7,4 | 3,3 | A 703531 |
| 4700 | 25 | [0,984] | 75 | [2,953] | 0,033 | 0,05 | 0,04 | 570 | 9,8 | 4,4 | A 703532 |

(1) F = 10 kHz (C > 1000 μF), F = 100 kHz (C \leq 1000 μF)

Z typ = Z max / 2

5 000 h / 125°C

| Capacitance [μF] | Dimensions | | ESR | | Z F(1) +20°C max. [Ω] | II +20°C 5 min. max. [μA] | I~ 100 Hz | | Code | | |
|----------------------------|------------------|------------------|--------------|-------------|-----------------------------------|---------------------------------------|----------------------|-----------------------|------|------|----------|
| | Ø mm (inches) | L mm (inches) | Typic [Ω] | Max. [Ω] | | | +85°C max. [A] | +125°C max. [A] | | | |
| Rated voltage 63 V | | | | | | | | | | | |
| 4,7 | 6,5 | [0,256] | 15 | [0,591] | 9 | 18 | 4 | 3 | 0,12 | 0,06 | A 701100 |
| 10 | 6,5 | [0,256] | 19 | [0,748] | 6,4 | 11,1 | 3 | 6 | 0,18 | 0,08 | A 701101 |
| 15 | 8,5 | [0,335] | 19 | [0,748] | 2,9 | 5,24 | 1,6 | 9 | 0,31 | 0,14 | A 701102 |
| 21 | 6,5 | [0,256] | 15 | [0,591] | 9 | 18 | 4 | 9 | 0,12 | 0,06 | A 701108 |
| 22 | 8,5 | [0,335] | 19 | [0,748] | 2,1 | 4,2 | 1,2 | 9 | 0,36 | 0,16 | A 701103 |
| 28 | 6,5 | [0,256] | 19 | [0,748] | 6,4 | 11,1 | 3 | 9 | 0,18 | 0,08 | A 701109 |
| 28 | 8,5 | [0,335] | 19 | [0,748] | 2,9 | 5,24 | 1,6 | 9 | 0,31 | 0,14 | A 701110 |
| 33 | 10 | [0,394] | 19 | [0,748] | 1,1 | 2,2 | 0,8 | 10 | 0,56 | 0,24 | A 701104 |
| 47 | 10 | [0,394] | 25 | [0,984] | 0,9 | 1,8 | 0,6 | 13 | 0,69 | 0,31 | A 701105 |
| 56 | 8,5 | [0,335] | 19 | [0,748] | 2,1 | 4,2 | 1,2 | 14 | 0,36 | 0,16 | A 701111 |
| 68 | 10 | [0,394] | 25 | [0,984] | 0,7 | 1,4 | 0,5 | 17 | 0,78 | 0,35 | A 701106 |
| 78 | 10 | [0,394] | 19 | [0,748] | 1,1 | 2,2 | 0,8 | 18 | 0,56 | 0,24 | A 701112 |
| 100 | 12 | [0,472] | 30 | [1,181] | 0,4 | 0,8 | 0,3 | 23 | 1,24 | 0,56 | A 701107 |
| 110 | 10 | [0,394] | 25 | [0,984] | 0,7 | 1,4 | 0,5 | 24 | 0,78 | 0,35 | A 701113 |
| 220 | 16 | [0,630] | 30 | [1,181] | 0,27 | 0,41 | 0,3 | 46 | 1,78 | 0,8 | A 703100 |
| 220 | 12 | [0,472] | 30 | [1,181] | 0,4 | 0,8 | 0,3 | 46 | 1,24 | 0,56 | A 701114 |
| 330 | 18 | [0,709] | 30 | [1,181] | 0,2 | 0,3 | 0,2 | 66 | 2,2 | 0,99 | A 703101 |
| 470 | 18 | [0,709] | 40 | [1,575] | 0,13 | 0,2 | 0,13 | 93 | 3,1 | 1,4 | A 703102 |
| 550 | 16 | [0,630] | 30 | [1,181] | 0,27 | 0,41 | 0,3 | 100 | 1,78 | 0,8 | A 703104 |
| 680 | 21 | [0,827] | 40 | [1,575] | 0,1 | 0,15 | 0,1 | 130 | 3,9 | 1,73 | A 703103 |
| 1000 | 25 | [0,984] | 40 | [1,575] | 0,07 | 0,11 | 0,08 | 190 | 5,1 | 2,3 | A 703540 |
| 1500 | 25 | [0,984] | 50 | [1,969] | 0,05 | 0,08 | 0,06 | 290 | 6,6 | 3 | A 703541 |
| 2200 | 25 | [0,984] | 75 | [2,953] | 0,045 | 0,07 | 0,05 | 420 | 8,4 | 3,8 | A 703542 |
| Rated voltage 100 V | | | | | | | | | | | |
| 2,2 | 6,5 | [0,256] | 15 | [0,591] | 15 | 30 | 8 | 2 | 0,11 | 0,05 | A 701120 |
| 4,7 | 6,5 | [0,256] | 19 | [0,748] | 9 | 15 | 4,5 | 5 | 0,15 | 0,07 | A 701121 |
| 6,8 | 8,5 | [0,335] | 19 | [0,748] | 6 | 10 | 3 | 7 | 0,22 | 0,1 | A 701122 |
| 8 | 6,5 | [0,256] | 15 | [0,591] | 15 | 30 | 8 | 8 | 0,11 | 0,05 | A 701129 |
| 10 | 8,5 | [0,335] | 19 | [0,748] | 5,1 | 8,8 | 2,3 | 10 | 0,23 | 0,1 | A 701123 |
| 12 | 6,5 | [0,256] | 19 | [0,748] | 9 | 15 | 4,5 | 10 | 0,15 | 0,07 | A 701130 |
| 15 | 10 | [0,394] | 19 | [0,748] | 3,6 | 6,5 | 2 | 10 | 0,31 | 0,14 | A 701124 |
| 22 | 10 | [0,394] | 19 | [0,748] | 2,5 | 4,4 | 1,4 | 11 | 0,37 | 0,16 | A 701125 |
| 22 | 8,5 | [0,335] | 19 | [0,748] | 5,1 | 8,8 | 2,3 | 11 | 0,23 | 0,1 | A 701131 |
| 33 | 10 | [0,394] | 19 | [0,748] | 2,5 | 4,4 | 1,4 | 14 | 0,37 | 0,16 | A 701132 |
| 33 | 12 | [0,472] | 25 | [0,984] | 1,6 | 2,8 | 1,2 | 14 | 0,58 | 0,26 | A 701126 |
| 47 | 12 | [0,472] | 30 | [1,181] | 1,2 | 1,8 | 1 | 18 | 0,72 | 0,32 | A 701127 |
| 61 | 12 | [0,472] | 25 | [0,984] | 1,6 | 2,8 | 1,2 | 19 | 0,58 | 0,26 | A 701133 |
| 68 | 14 | [0,551] | 30 | [1,181] | 0,9 | 1,4 | 0,7 | 24 | 0,9 | 0,4 | A 701128 |
| 92 | 12 | [0,472] | 30 | [1,181] | 1,2 | 1,8 | 1 | 27 | 0,72 | 0,32 | A 701134 |
| 100 | 16 | [0,630] | 30 | [1,181] | 0,5 | 0,75 | 0,5 | 34 | 1,31 | 0,58 | A 703120 |
| 140 | 14 | [0,551] | 30 | [1,181] | 0,9 | 1,4 | 0,7 | 42 | 0,9 | 0,4 | A 701135 |
| 150 | 16 | [0,630] | 30 | [1,181] | 0,4 | 0,6 | 0,4 | 49 | 1,46 | 0,65 | A 703123 |
| 220 | 18 | [0,709] | 40 | [1,575] | 0,2 | 0,3 | 0,2 | 70 | 2,5 | 1,12 | A 703121 |
| 220 | 16 | [0,630] | 30 | [1,181] | 0,4 | 0,6 | 0,4 | 70 | 1,46 | 0,65 | A 703124 |
| 310 | 18 | [0,709] | 40 | [1,575] | 0,2 | 0,3 | 0,2 | 100 | 2,5 | 1,12 | A 703125 |
| 330 | 21 | [0,827] | 40 | [1,575] | 0,15 | 0,22 | 0,15 | 100 | 3,2 | 1,41 | A 703122 |
| 370 | 21 | [0,827] | 40 | [1,575] | 0,15 | 0,22 | 0,15 | 111 | 3,2 | 1,41 | A 703126 |
| 470 | 25 | [0,984] | 40 | [1,575] | 0,12 | 0,18 | 0,12 | 150 | 3,9 | 1,74 | A 703550 |
| 670 | 25 | [0,984] | 40 | [1,575] | 0,12 | 0,18 | 0,12 | 200 | 3,9 | 1,74 | A 703127 |
| 680 | 25 | [0,984] | 50 | [1,969] | 0,1 | 0,15 | 0,1 | 200 | 4,7 | 2,1 | A 703128 |
| 900 | 25 | [0,984] | 50 | [1,969] | 0,1 | 0,15 | 0,1 | 270 | 4,7 | 2,1 | A 703130 |
| 1000 | 25 | [0,984] | 75 | [2,953] | 0,07 | 0,1 | 0,06 | 300 | 6,8 | 3 | A 703552 |
| 1100 | 25 | [0,984] | 75 | [2,953] | 0,07 | 0,1 | 0,06 | 330 | 6,8 | 3 | A 703131 |
| 2200 | 25 | [0,984] | 75 | [2,953] | 0,04 | 0,06 | 0,04 | 660 | 8,9 | 4 | A 703553 |

(1) F = 10 kHz (C > 1000 μF), F = 100 kHz (C ≤ 1000 μF)
Z typ = Z max / 2

PRORELSIC 125

CO 52

5 000 h / 125°C

| Capacitance (μF) | Dimensions | | ESR | | Z F(1) +20°C max. (Ω) | II +20°C 5 min. max. (μA) | I \sim 100 Hz | | Code | | |
|----------------------------------|----------------------------|------------------|-----------------------|----------------------|--|--|----------------------|-----------------------|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | Typic (Ω) | Max. (Ω) | | | +85°C max. (A) | +125°C max. (A) | | | |
| Rated voltage 160 V | | | | | | | | | | | |
| 1 | 6,5 | [0,256] | 15 | [0,591] | 53 | 105 | 18 | 2 | 0,06 | 0,03 | A 701140 |
| 2 | 6,5 | [0,256] | 15 | [0,591] | 53 | 105 | 18 | 4 | 0,06 | 0,03 | A 701149 |
| 2,2 | 6,5 | [0,256] | 19 | [0,748] | 24 | 48 | 12 | 4 | 0,09 | 0,04 | A 701141 |
| 3 | 6,5 | [0,256] | 19 | [0,748] | 24 | 48 | 12 | 5 | 0,09 | 0,04 | A 701150 |
| 3,3 | 8,5 | [0,335] | 19 | [0,748] | 15 | 30 | 6,6 | 5 | 0,14 | 0,06 | A 701142 |
| 4,7 | 10 | [0,394] | 19 | [0,748] | 8 | 16 | 4,6 | 8 | 0,2 | 0,09 | A 701143 |
| 6 | 8,5 | [0,335] | 19 | [0,748] | 15 | 30 | 6,6 | 10 | 0,14 | 0,06 | A 701151 |
| 6,8 | 10 | [0,394] | 25 | [0,984] | 6 | 12 | 3,2 | 11 | 0,27 | 0,12 | A 701144 |
| 8 | 10 | [0,394] | 19 | [0,748] | 8 | 16 | 4,6 | 12 | 0,2 | 0,09 | A 701152 |
| 10 | 12 | [0,472] | 25 | [0,984] | 5 | 10 | 2,4 | 14 | 0,33 | 0,15 | A 701145 |
| 11 | 10 | [0,394] | 25 | [0,984] | 6 | 12 | 3,2 | 14 | 0,27 | 0,12 | A 701153 |
| 15 | 12 | [0,472] | 25 | [0,984] | 5 | 10 | 2,4 | 18 | 0,33 | 0,15 | A 701154 |
| 15 | 12 | [0,472] | 30 | [1,181] | 3,5 | 7 | 1,8 | 18 | 0,42 | 0,19 | A 701146 |
| 22 | 12 | [0,472] | 30 | [1,181] | 3,5 | 7 | 1,8 | 25 | 0,42 | 0,19 | A 701155 |
| 22 | 14 | [0,551] | 30 | [1,181] | 2,8 | 5,6 | 1,1 | 25 | 0,51 | 0,23 | A 701147 |
| 33 | 14 | [0,551] | 30 | [1,181] | 1,8 | 2,7 | 1 | 36 | 0,64 | 0,29 | A 701148 |
| 47 | 18 | [0,709] | 40 | [1,575] | 1,1 | 1,7 | 0,65 | 45 | 1,07 | 0,48 | A 703140 |
| 68 | 21 | [0,827] | 40 | [1,575] | 0,8 | 1,2 | 0,44 | 65 | 1,38 | 0,61 | A 703141 |
| 100 | 25 | [0,984] | 40 | [1,575] | 0,4 | 0,6 | 0,3 | 100 | 2,1 | 0,95 | A 703560 |
| 150 | 25 | [0,984] | 50 | [1,969] | 0,3 | 0,5 | 0,25 | 140 | 2,7 | 1,21 | A 703561 |
| 220 | 25 | [0,984] | 75 | [2,953] | 0,2 | 0,3 | 0,2 | 210 | 4 | 1,79 | A 703562 |
| 470 | 25 | [0,984] | 75 | [2,953] | 0,12 | 0,2 | 0,13 | 450 | 5,2 | 2,3 | A 703563 |
| Rated voltage 250 V | | | | | | | | | | | |
| 15 | 18 | [0,709] | 30 | [1,181] | 3,3 | 5 | 2 | 25 | 0,54 | 0,24 | A 703160 |
| 22 | 18 | [0,709] | 30 | [1,181] | 2,5 | 3,8 | 1,5 | 37 | 0,62 | 0,28 | A 703165 |
| 33 | 18 | [0,709] | 40 | [1,575] | 1,5 | 2,3 | 1 | 50 | 0,92 | 0,41 | A 703161 |
| 47 | 25 | [0,984] | 40 | [1,575] | 0,9 | 1,4 | 0,8 | 70 | 1,42 | 0,64 | A 703570 |
| 68 | 25 | [0,984] | 50 | [1,969] | 0,73 | 1,1 | 0,6 | 100 | 1,75 | 0,78 | A 703571 |
| 100 | 25 | [0,984] | 75 | [2,953] | 0,45 | 0,7 | 0,3 | 150 | 2,7 | 1,2 | A 703572 |
| Rated voltage 350 V | | | | | | | | | | | |
| 10 | 18 | [0,709] | 30 | [1,181] | 4,2 | 6,3 | 3,9 | 120 | 0,48 | 0,22 | A 703181 |
| 15 | 18 | [0,709] | 30 | [1,181] | 3 | 4,5 | 2,7 | 140 | 0,57 | 0,25 | A 703184 |
| 22 | 18 | [0,709] | 40 | [1,575] | 2 | 2,9 | 1,8 | 180 | 0,79 | 0,35 | A 703182 |
| 30 | 18 | [0,709] | 30 | [1,181] | 3 | 4,5 | 2,7 | 200 | 0,57 | 0,25 | A 703185 |
| 33 | 21 | [0,827] | 40 | [1,575] | 1,3 | 1,9 | 1 | 210 | 1,07 | 0,48 | A 703183 |
| 41 | 18 | [0,709] | 40 | [1,575] | 2 | 2,9 | 1,8 | 230 | 0,79 | 0,35 | A 703186 |
| 47 | 25 | [0,984] | 40 | [1,575] | 1,1 | 1,7 | 0,8 | 250 | 1,3 | 0,57 | A 703580 |
| 100 | 25 | [0,984] | 40 | [1,575] | 1,1 | 1,7 | 0,8 | 450 | 1,3 | 0,57 | A 703187 |
| Rated voltage 450 V | | | | | | | | | | | |
| 6,8 | 16 | [0,630] | 30 | [1,181] | 15 | 23 | 5 | 110 | 0,24 | 0,11 | A 703210 |
| 6,8 | 18 | [0,709] | 30 | [1,181] | 8 | 12 | 5 | 110 | 0,34 | 0,16 | A 703201 |
| 10 | 16 | [0,630] | 30 | [1,181] | 5,5 | 8,5 | 4 | 130 | 0,39 | 0,18 | A 703211 |
| 10 | 18 | [0,709] | 30 | [1,181] | 5,5 | 8,5 | 4 | 130 | 0,42 | 0,19 | A 703203 |
| 15 | 16 | [0,630] | 30 | [1,181] | 15 | 23 | 5 | 160 | 0,24 | 0,11 | A 703212 |
| 15 | 18 | [0,709] | 40 | [1,575] | 4 | 6 | 2,7 | 160 | 0,56 | 0,25 | A 703204 |
| 22 | 18 | [0,709] | 30 | [1,181] | 5,5 | 8,5 | 4 | 200 | 0,42 | 0,19 | A 703213 |
| 22 | 18 | [0,709] | 40 | [1,575] | 3,3 | 5 | 2 | 200 | 0,62 | 0,28 | A 703208 |
| 22 | 21 | [0,827] | 40 | [1,575] | 2,7 | 4,1 | 2 | 200 | 0,74 | 0,33 | A 703205 |
| 33 | 18 | [0,709] | 40 | [1,575] | 4 | 6 | 2,7 | 250 | 0,56 | 0,25 | A 703214 |
| 33 | 25 | [0,984] | 40 | [1,575] | 1,7 | 2,5 | 1,5 | 250 | 1,03 | 0,46 | A 703590 |
| 47 | 25 | [0,984] | 40 | [1,575] | 1,1 | 1,7 | 1 | 300 | 1,3 | 0,57 | A 703591 |
| 50 | 21 | [0,827] | 40 | [1,575] | 2,7 | 4,1 | 2 | 330 | 0,74 | 0,33 | A 703215 |

(1) F = 10 kHz (C > 1000 μF), F = 100 kHz (C \leq 1000 μF)

Z typ = Z max / 2

PRORELSIC 125

C0 52

5 000 h / 125°C

PEAK VOLTAGE (V)

 U_R : rated voltage U_p : Repetitive standard peak voltage (30 s) U_s : Repetitive surge voltage (0,1 s)

Do not overstep this value without damage.

| U_R | 10 V | 16 V | 25 V | 40 V | 63 V | 100 V | 160 V | 250 V | 350 V | 450 V |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|
| U_p | 12 | 18 | 29 | 46 | 72 | 115 | 184 | 288 | 385 | 495 |
| U_s | | | | | | | 235 | 340 | 540 | 620* |

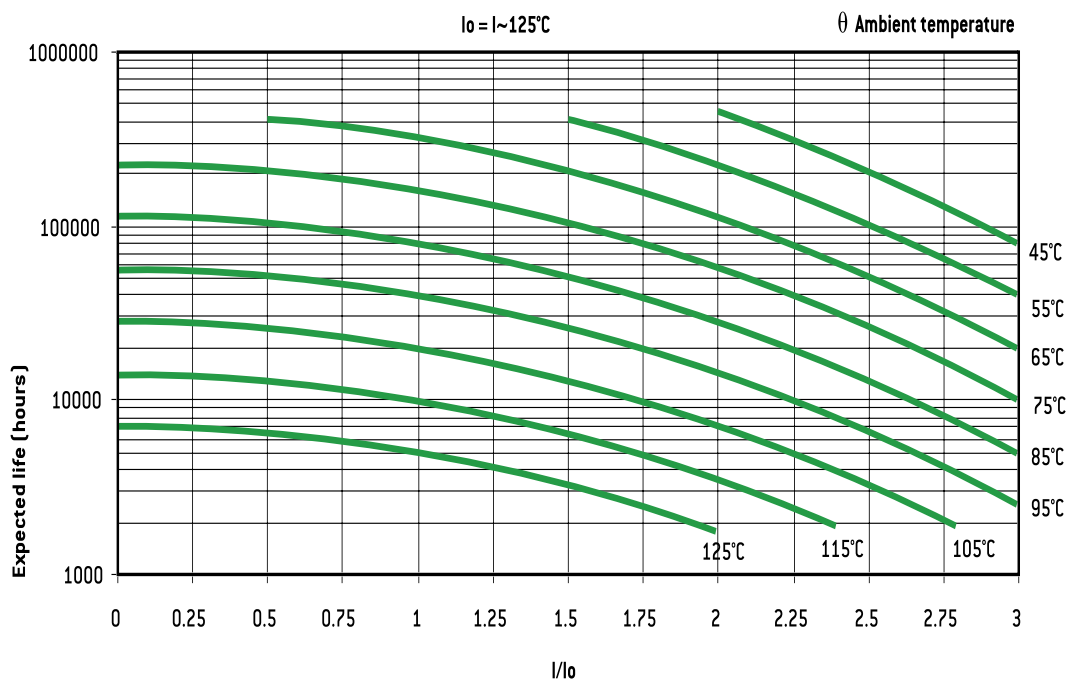
PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f : I_{\sim} : permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | $\geq 50\ 000$ |
|------------|-----------------------|------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|
| I_{\sim} | $0,8 \times I_{\sim}$ | I_{\sim} | $1,2 \times I_{\sim}$ | $1,3 \times I_{\sim}$ | $1,35 \times I_{\sim}$ | $1,5 \times I_{\sim}$ | $1,6 \times I_{\sim}$ |

EXPECTED LIFE

As a function of temperature and ripple current

For $\varnothing = 6,5$ mm half life time values are applicable.

PRORELSIC 145

2 000 h / 145°C

| | | | | |
|----------------|--------------------------------|---|----------------|----------------|
| 16 V ... 450 V | 6,8 μ F ... 25 000 μ F | \emptyset 14 (0,551) ... \emptyset 25 (0,984) | - 55°C + 145°C | Long Life Time |
|----------------|--------------------------------|---|----------------|----------------|



APPLICATIONS

- Coupling / decoupling
- Smoothing
- Energy storage
- High frequency power supply system
- Telecommunication - Military applications
- Mobile and aircraft installations
- Rated voltage 450 V is specially fit to lamp electronic ballast circuits.

Insulating aluminum case

Axial tin coated copper leads

Welded chain providing perfect continuity of the circuit.

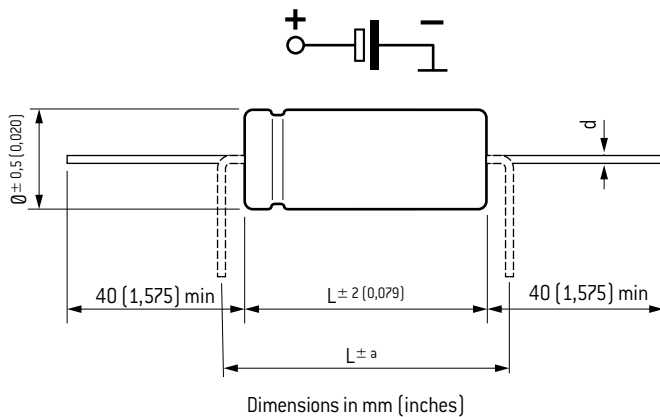
Tolerance on capacitance at 20°C : - 10 + 50%

(on request)

: - 10 + 30 %

Operating temperature

: - 55°C + 145°C (up to 150°C)



DIMENSIONS in mm (inches)

| | \emptyset | d | a |
|----------|--------------------|-------------|-----------|
| 14 to 18 | (0,551) to (0,709) | 0,8 (0,031) | 4 (0,157) |
| 21 | (0,827) | 1 (0,039) | 4 (0,157) |
| 25 | (0,984) | 1 (0,039) | 8 (0,315) |

RESISTANCE TO VIBRATIONS

| Hb mm (inches) | |
|----------------|-----------------------------|
| f [Hz] | 10 - 2000 Hz |
| Amplitude | 1,5 (0,059) |
| Acceleration | 20 g - 196 m/s ² |
| t (h) | 3 x 2 h |

SPECIFICATIONS

NFC 83 110 - Long life

CECC 30 301-802 Issue 2

IEC 60 384.4 long life

Climatic category GPF: -55°C + 145°C / 56 days

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulating resistance at 20°C between leads and mounting hardware: 100 M Ω

Test voltage at 50 Hz 1 min. between leads and mounting hardware: 1000 V

Fire resistance: self extinguish 30 s (IEC 60 695-2-2) without PVC.

PRORELSIC 145

2 000 h / 145°C

| Capacitance [μ F] | Dimensions | | ESR | | Z F(1) +20°C max. [Ω] | I +20°C 5 min. max. [μ A] | I ~ 100 Hz +145°C max. [A] | Code | | |
|---------------------------|----------------------------|------------------|-----------------------|----------------------|--|--|--|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | Typic [Ω] | Max. [Ω] | | | | | | |
| Rated voltage 16 V | | | | | | | | | | |
| 680 | 14 | [0,551] | 30 | [1,181] | 0,25 | 0,37 | 0,23 | 37 | 0,77 | A 708000 |
| 1000 | 16 | [0,630] | 30 | [1,181] | 0,17 | 0,26 | 0,16 | 52 | 1 | A 708001 |
| 1500 | 14 | [0,551] | 30 | [1,181] | 0,25 | 0,23 | 0,23 | 75 | 0,77 | A 708008 |
| 1500 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,23 | 0,16 | 75 | 1,14 | A 708002 |
| 2200 | 16 | [0,630] | 30 | [1,181] | 0,17 | 0,26 | 0,16 | 110 | 1 | A 708009 |
| 2200 | 18 | [0,709] | 40 | [1,575] | 0,1 | 0,15 | 0,12 | 110 | 1,6 | A 708003 |
| 3300 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,23 | 0,16 | 160 | 1,14 | A 708010 |
| 3300 | 21 | [0,827] | 40 | [1,575] | 0,066 | 0,1 | 0,08 | 160 | 2,1 | A 708004 |
| 4700 | 18 | [0,709] | 40 | [1,575] | 0,1 | 0,15 | 0,12 | 230 | 1,6 | A 708011 |
| 4700 | 25 | [0,984] | 40 | [1,575] | 0,045 | 0,07 | 0,07 | 230 | 2,8 | A 708005 |
| 6800 | 25 | [0,984] | 50 | [1,969] | 0,04 | 0,06 | 0,05 | 330 | 3,3 | A 708006 |
| 6800 | 21 | [0,827] | 40 | [1,575] | 0,066 | 0,1 | 0,08 | 330 | 2,1 | A 708012 |
| 10000 | 25 | [0,984] | 40 | [1,575] | 0,045 | 0,07 | 0,07 | 480 | 2,8 | A 708013 |
| 10000 | 25 | [0,984] | 75 | [2,953] | 0,033 | 0,05 | 0,04 | 480 | 4,4 | A 708007 |
| 15000 | 25 | [0,984] | 50 | [1,969] | 0,04 | 0,06 | 0,05 | 720 | 3,3 | A 708014 |
| 25000 | 25 | [0,984] | 75 | [2,953] | 0,033 | 0,05 | 0,04 | 1200 | 4,4 | A 708015 |
| Rated voltage 25 V | | | | | | | | | | |
| 470 | 14 | [0,551] | 30 | [1,181] | 0,29 | 0,44 | 0,26 | 39 | 0,71 | A 708020 |
| 680 | 16 | [0,630] | 30 | [1,181] | 0,2 | 0,3 | 0,23 | 55 | 0,92 | A 708021 |
| 1000 | 14 | [0,551] | 30 | [1,181] | 0,29 | 0,44 | 0,26 | 80 | 0,71 | A 708028 |
| 1000 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,24 | 0,14 | 80 | 1,14 | A 708022 |
| 1500 | 18 | [0,709] | 40 | [1,575] | 0,1 | 0,15 | 0,1 | 120 | 1,59 | A 708023 |
| 1500 | 16 | [0,630] | 30 | [1,181] | 0,2 | 0,3 | 0,23 | 120 | 0,92 | A 708029 |
| 2000 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,24 | 0,14 | 150 | 1,14 | A 708030 |
| 2200 | 21 | [0,827] | 40 | [1,575] | 0,08 | 0,12 | 0,08 | 170 | 1,93 | A 708024 |
| 3000 | 18 | [0,709] | 40 | [1,575] | 0,1 | 0,15 | 0,1 | 225 | 1,59 | A 708031 |
| 3300 | 25 | [0,984] | 40 | [1,575] | 0,065 | 0,1 | 0,06 | 250 | 2,4 | A 708025 |
| 4500 | 21 | [0,827] | 40 | [1,575] | 0,08 | 0,12 | 0,08 | 330 | 1,93 | A 708032 |
| 4700 | 25 | [0,984] | 50 | [1,969] | 0,045 | 0,07 | 0,05 | 360 | 3,1 | A 708026 |
| 6800 | 25 | [0,984] | 40 | [1,575] | 0,065 | 0,1 | 0,06 | 510 | 2,4 | A 708033 |
| 6800 | 25 | [0,984] | 75 | [2,953] | 0,04 | 0,06 | 0,04 | 510 | 4 | A 708027 |
| 9000 | 25 | [0,984] | 50 | [1,969] | 0,045 | 0,07 | 0,05 | 670 | 3,1 | A 708034 |
| 14000 | 25 | [0,984] | 75 | [2,953] | 0,04 | 0,06 | 0,04 | 1050 | 4 | A 708035 |
| Rated voltage 40 V | | | | | | | | | | |
| 330 | 14 | [0,551] | 30 | [1,181] | 0,32 | 0,48 | 0,3 | 44 | 0,68 | A 708040 |
| 470 | 16 | [0,630] | 30 | [1,181] | 0,23 | 0,34 | 0,25 | 60 | 0,86 | A 708041 |
| 680 | 14 | [0,551] | 30 | [1,181] | 0,32 | 0,48 | 0,3 | 86 | 0,68 | A 708048 |
| 680 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,23 | 0,16 | 86 | 1,14 | A 708042 |
| 1000 | 16 | [0,630] | 30 | [1,181] | 0,23 | 0,34 | 0,25 | 120 | 0,86 | A 708049 |
| 1000 | 16 | [0,630] | 40 | [1,575] | 0,11 | 0,17 | 0,12 | 120 | 1,51 | A 708043 |
| 1200 | 18 | [0,709] | 30 | [1,181] | 0,15 | 0,23 | 0,16 | 140 | 1,14 | A 708050 |
| 1500 | 21 | [0,827] | 40 | [1,575] | 0,073 | 0,11 | 0,1 | 180 | 2 | A 708044 |
| 2100 | 18 | [0,709] | 40 | [1,575] | 0,11 | 0,17 | 0,12 | 250 | 1,51 | A 708051 |
| 2200 | 25 | [0,984] | 40 | [1,575] | 0,053 | 0,08 | 0,09 | 270 | 2,6 | A 708045 |
| 3000 | 21 | [0,827] | 40 | [1,575] | 0,073 | 0,11 | 0,1 | 360 | 2 | A 708052 |
| 3300 | 25 | [0,984] | 50 | [1,969] | 0,04 | 0,06 | 0,05 | 400 | 3,3 | A 708046 |
| 4500 | 25 | [0,984] | 40 | [1,575] | 0,053 | 0,08 | 0,09 | 540 | 2,6 | A 708053 |
| 4700 | 25 | [0,984] | 75 | [2,953] | 0,033 | 0,05 | 0,05 | 570 | 4,4 | A 708047 |
| 6300 | 25 | [0,984] | 50 | [1,969] | 0,04 | 0,06 | 0,05 | 750 | 3,3 | A 708054 |
| 10000 | 25 | [0,984] | 75 | [2,953] | 0,033 | 0,05 | 0,05 | 1200 | 4,4 | A 708055 |

(1) F = 10 kHz (C > 1000 μ F), F = 100 kHz (C \leq 1000 μ F)

Z typ = Z max / 2

PRORELSIC 145

2 000 h / 145°C

| Capacitance (μF) | Dimensions | | ESR | | Z F(1) +20°C max. (Ω) | II +20°C 5 min. max. (μA) | I ~ 100 Hz +145°C max. (A) | Code | | |
|----------------------------------|----------------------------|------------------|-----------------------|----------------------|--|--|--|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | Typic (Ω) | Max. (Ω) | | | | | | |
| Rated voltage 63 V | | | | | | | | | | |
| 220 | 16 | [0,630] | 30 | [1,181] | 0,27 | 0,41 | 0,3 | 46 | 0,8 | A 708061 |
| 330 | 18 | [0,709] | 30 | [1,181] | 0,2 | 0,3 | 0,2 | 66 | 0,99 | A 708062 |
| 470 | 18 | [0,709] | 40 | [1,575] | 0,13 | 0,2 | 0,13 | 93 | 1,4 | A 708063 |
| 500 | 16 | [0,630] | 30 | [1,181] | 0,27 | 0,41 | 0,3 | 95 | 0,8 | A 708068 |
| 680 | 21 | [0,827] | 40 | [1,575] | 0,1 | 0,15 | 0,1 | 130 | 1,73 | A 708064 |
| 700 | 18 | [0,709] | 30 | [1,181] | 0,2 | 0,3 | 0,2 | 130 | 0,99 | A 708069 |
| 1000 | 18 | [0,709] | 40 | [1,575] | 0,13 | 0,2 | 0,13 | 190 | 1,4 | A 708070 |
| 1000 | 25 | [0,984] | 40 | [1,575] | 0,07 | 0,11 | 0,08 | 190 | 2,3 | A 708065 |
| 1500 | 21 | [0,827] | 40 | [1,575] | 0,1 | 0,15 | 0,1 | 290 | 1,73 | A 708071 |
| 1500 | 25 | [0,984] | 50 | [1,969] | 0,065 | 0,1 | 0,06 | 290 | 3 | A 708066 |
| 2200 | 25 | [0,984] | 75 | [2,953] | 0,06 | 0,09 | 0,05 | 420 | 3,8 | A 708067 |
| 2400 | 25 | [0,984] | 40 | [1,575] | 0,07 | 0,11 | 0,08 | 450 | 2,3 | A 708072 |
| 3200 | 25 | [0,984] | 50 | [1,969] | 0,065 | 0,1 | 0,06 | 600 | 3 | A 708073 |
| 5200 | 25 | [0,984] | 75 | [2,953] | 0,06 | 0,09 | 0,05 | 490 | 3,8 | A 708074 |
| Rated voltage 100 V | | | | | | | | | | |
| 100 | 16 | [0,630] | 30 | [1,181] | 1 | 1,5 | 0,77 | 34 | 0,41 | A 708081 |
| 180 | 16 | [0,630] | 30 | [1,181] | 1 | 1,5 | 0,77 | 54 | 0,41 | A 708090 |
| 220 | 18 | [0,709] | 40 | [1,575] | 0,4 | 0,6 | 0,4 | 70 | 0,8 | A 708083 |
| 310 | 18 | [0,709] | 40 | [1,575] | 0,4 | 0,6 | 0,4 | 90 | 0,8 | A 708091 |
| 330 | 21 | [0,827] | 40 | [1,575] | 0,3 | 0,45 | 0,3 | 100 | 1 | A 708084 |
| 450 | 21 | [0,827] | 40 | [1,575] | 0,3 | 0,45 | 0,3 | 135 | 1 | A 708092 |
| 470 | 25 | [0,984] | 40 | [1,575] | 0,2 | 0,3 | 0,25 | 150 | 1,35 | A 708085 |
| 680 | 25 | [0,984] | 40 | [1,575] | 0,2 | 0,3 | 0,25 | 210 | 1,35 | A 708093 |
| 680 | 25 | [0,984] | 50 | [1,969] | 0,18 | 0,27 | 0,2 | 210 | 1,6 | A 708086 |
| 900 | 25 | [0,984] | 50 | [1,969] | 0,18 | 0,27 | 0,2 | 270 | 1,6 | A 708094 |
| 1000 | 25 | [0,984] | 75 | [2,953] | 0,13 | 0,2 | 0,12 | 300 | 2,2 | A 708087 |
| 2200 | 25 | [0,984] | 75 | [2,953] | 0,07 | 0,11 | 0,08 | 660 | 3 | A 708089 |
| 2600 | 25 | [0,984] | 75 | [2,953] | 0,07 | 0,11 | 0,08 | 780 | 3 | A 708095 |
| Rated voltage 160 V | | | | | | | | | | |
| 22 | 14 | [0,551] | 30 | [1,181] | 2,8 | 5,6 | 1,1 | 25 | 0,23 | A 708100 |
| 38 | 14 | [0,551] | 30 | [1,181] | 2,8 | 5,6 | 1,1 | 36 | 0,23 | A 708110 |
| 47 | 18 | [0,709] | 40 | [1,575] | 1,1 | 1,7 | 0,65 | 45 | 0,48 | A 708103 |
| 68 | 21 | [0,827] | 40 | [1,575] | 0,8 | 1,2 | 0,44 | 65 | 0,61 | A 708104 |
| 100 | 18 | [0,709] | 40 | [1,575] | 1,1 | 1,7 | 0,65 | 100 | 0,48 | A 708111 |
| 100 | 25 | [0,984] | 40 | [1,575] | 0,4 | 0,6 | 0,3 | 100 | 0,95 | A 708105 |
| 150 | 25 | [0,984] | 50 | [1,969] | 0,3 | 0,5 | 0,25 | 140 | 1,21 | A 708106 |
| 160 | 21 | [0,827] | 40 | [1,575] | 0,8 | 1,2 | 0,44 | 150 | 0,61 | A 708112 |
| 220 | 25 | [0,984] | 75 | [2,953] | 0,2 | 0,3 | 0,2 | 210 | 1,79 | A 708107 |
| 250 | 25 | [0,984] | 40 | [1,575] | 0,4 | 0,6 | 0,3 | 240 | 0,95 | A 708113 |
| 330 | 25 | [0,984] | 50 | [1,969] | 0,3 | 0,5 | 0,25 | 310 | 1,21 | A 708114 |
| 470 | 25 | [0,984] | 75 | [2,953] | 0,12 | 0,2 | 0,13 | 450 | 2,3 | A 708109 |
| 530 | 25 | [0,984] | 75 | [2,953] | 0,12 | 0,2 | 0,13 | 500 | 2,3 | A 708115 |
| Rated voltage 250 V | | | | | | | | | | |
| 15 | 18 | [0,709] | 30 | [1,181] | 3,3 | 5 | 2 | 25 | 0,24 | A 708122 |
| 33 | 18 | [0,709] | 40 | [1,575] | 1,5 | 2,3 | 1 | 50 | 0,41 | A 708123 |
| 40 | 18 | [0,709] | 30 | [1,181] | 3,3 | 5 | 2 | 60 | 0,24 | A 708130 |
| 47 | 25 | [0,984] | 40 | [1,575] | 0,9 | 1,4 | 0,8 | 70 | 0,64 | A 708125 |
| 62 | 18 | [0,709] | 40 | [1,575] | 1,5 | 2,3 | 1 | 93 | 0,41 | A 708131 |
| 68 | 25 | [0,984] | 50 | [1,969] | 0,73 | 1,1 | 0,6 | 100 | 0,78 | A 708126 |
| 100 | 25 | [0,984] | 75 | [2,953] | 0,45 | 0,7 | 0,3 | 150 | 1,2 | A 708127 |
| 135 | 25 | [0,984] | 40 | [1,575] | 0,9 | 1,4 | 0,8 | 200 | 0,64 | A 708132 |
| 180 | 25 | [0,984] | 50 | [1,969] | 0,73 | 1,1 | 0,6 | 270 | 0,78 | A 708133 |
| 220 | 25 | [0,984] | 75 | [2,953] | 0,3 | 0,45 | 0,25 | 330 | 1,45 | A 708129 |
| 280 | 25 | [0,984] | 75 | [2,953] | 0,3 | 0,45 | 0,25 | 330 | 1,45 | A 708134 |

(1) F = 10 kHz (C > 1000 μF), F = 100 kHz (C \leq 1000 μF)
Z typ = Z max / 2

PRORELSIC 145

2 000 h / 145°C

| Capacitance [μF] | Dimensions | | ESR | | Z F(1) +20°C max. [Ω] | II +20°C 5 min. max. [μA] | I~ 100 Hz +145°C max. [A] | Code | | |
|----------------------------------|----------------------------|------------------|-----------------------|----------------------|--|--|---------------------------------------|------|------|----------|
| | \emptyset mm (inches) | L mm (inches) | Typic [Ω] | Max. [Ω] | | | | | | |
| Rated voltage 450 V | | | | | | | | | | |
| 6,8 | 14 | (0,551) | 30 | (1,181) | 11 | 17 | 7 | 110 | 0,12 | A 708140 |
| 10 | 14 | (0,551) | 30 | (1,181) | 7,2 | 11 | 5,1 | 130 | 0,14 | A 708141 |
| 15 | 14 | (0,551) | 30 | (1,181) | 7,2 | 11 | 5,1 | 160 | 0,14 | A 708150 |
| 15 | 16 | (0,630) | 30 | (1,181) | 4,8 | 7,2 | 4 | 160 | 0,19 | A 708142 |
| 22 | 18 | (0,709) | 30 | (1,181) | 3 | 4,5 | 2,5 | 200 | 0,25 | A 708143 |
| 33 | 18 | (0,709) | 40 | (1,575) | 1,7 | 2,5 | 1,5 | 250 | 0,39 | A 708144 |
| 47 | 21 | (0,827) | 40 | (1,575) | 1,4 | 2,1 | 1,3 | 300 | 0,46 | A 708145 |
| 68 | 25 | (0,984) | 40 | (1,575) | 1,3 | 1,9 | 1,3 | 350 | 0,53 | A 708146 |
| 75 | 25 | (0,984) | 40 | (1,575) | 1,3 | 1,9 | 1,3 | 370 | 0,53 | A 708151 |
| 100 | 25 | (0,984) | 50 | (1,969) | 0,9 | 1,4 | 1 | 430 | 0,7 | A 708147 |
| 220 | 25 | (0,984) | 75 | (2,953) | 0,6 | 0,9 | 0,7 | 630 | 1 | A 708149 |

(1) F = 10 kHz (C > 1000 μF), F = 100 kHz (C \leq 1000 μF)
Z typ = Z max / 2

PEAK VOLTAGE (V)

U_R : rated voltage

U_p : Repetitive standard peak voltage (30 s)

U_s : Repetitive surge voltage (0,1 s)

Do not overstep this value without damage.

| U_R | 16 V | 25 V | 40 V | 63 V | 100 V | 160 V | 250 V | 450 V |
|-------|------|------|------|------|-------|-------|-------|-------|
| U_p | 18 | 29 | 46 | 72 | 115 | 184 | 288 | 495 |
| U_s | | | | | | 235 | 340 | 620 |

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

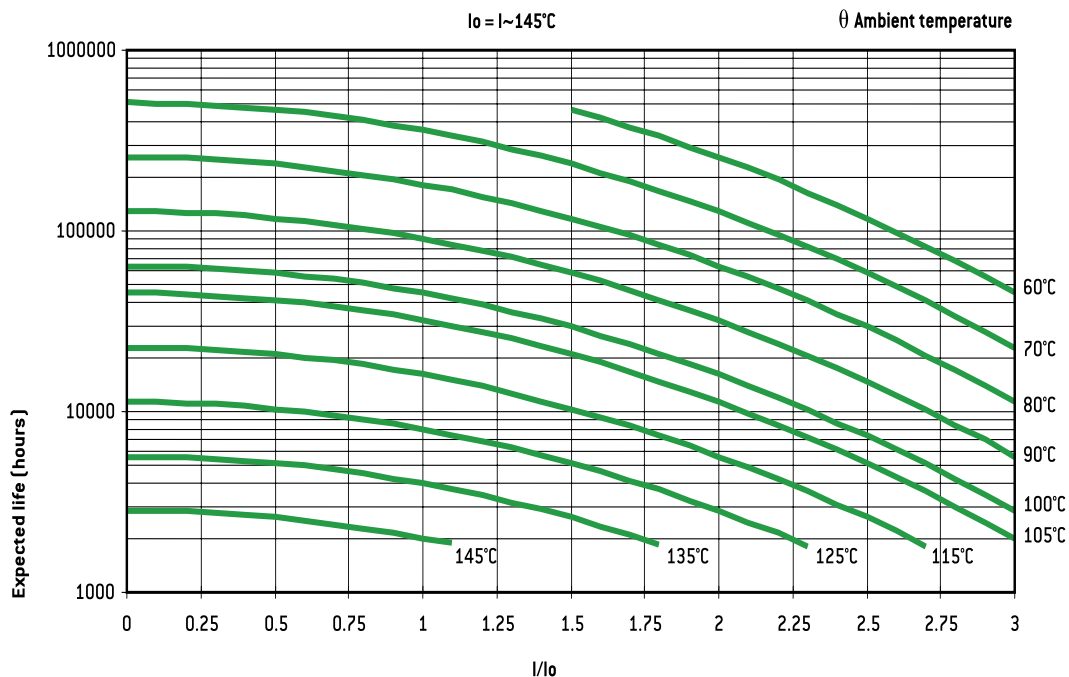
versus frequency f:

I~: permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | \geq 50 000 |
|--------|----------|-----|----------|----------|-----------|----------|---------------|
| I | 0,8 x I~ | I~ | 1,2 x I~ | 1,3 x I~ | 1,35 x I~ | 1,5 x I~ | 1,6 x I~ |

EXPECTED LIFE

as a function of temperature and ripple current



VACSIC 105

2 500 h / 105°C

| | | | | |
|----------------|------------------------------|---|----------------|----------------|
| 10 V ... 350 V | 15 μ F ... 4 700 μ F | \emptyset 12 (0,472) ... \emptyset 16 (0,630) | - 55°C + 105°C | Long life time |
|----------------|------------------------------|---|----------------|----------------|



APPLICATIONS

- Coupling / decoupling
- Filtering
- Switch mode power supplies
- Circuits with time constant
- Circuits with impulse current

Insulating aluminum case

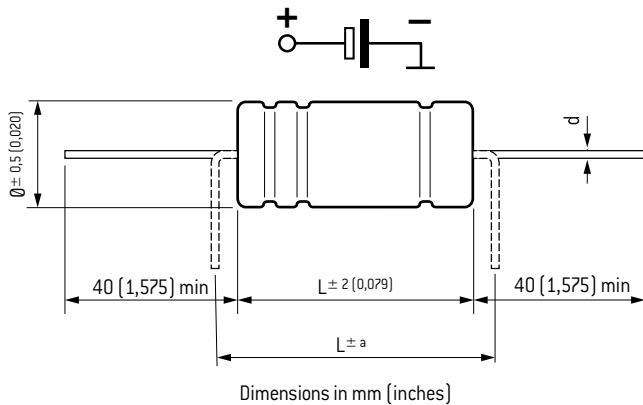
Axial tin coated copper leads

Welded chain providing perfect continuity of the circuit

Tolerance on capacitance at 20°C: $\pm 20\%$

(on request) : -10/+50% or -10/30%

Operating temperature : - 55°C + 105°C



DIMENSIONS in mm (inches)

| \emptyset mm (inches) | d | a |
|-------------------------|-------------|-----------|
| 12 - 16 (0,472 - 0,630) | 0,8 (0,031) | 4 (0,157) |

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|--------------|
| f (Hz) | 10 - 2000 Hz |
| Amplitude | 1,5 (0,059) |
| Acceleration | 45 g |
| t (h) | 3 x 2 h |

SPECIFICATIONS

NFC 83 110 - Long life

DIN 41 240 - Climatic category GPF: -55°C + 105°C / 56 days

IEC 60 384.4 - Long life

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulation resistance at 20°C between

leads and mounting hardware : 100 M Ω

Test voltage at 50 Hz 1 min. between

terminals and mounting hardware : 1 000 V

Fire resistance

: self extinguish 30 s

(IEC 60 695-2-2) without PVC

VACCSIC 105

2 500 h / 105°C

| Capacitance (μF) | Dimensions | | $T_g \delta$ 100 Hz +20°C max (%) | ESR 100 Hz +20°C Typic (Ω) | Z +20°C max. (Ω) | I. leak +20°C 5 min. max. (mA) | I~ 100 Hz +105°C (A) | Code | | |
|----------------------------------|----------------------------|------------------|--|--|------------------------------------|---|-------------------------------|------|------|---------|
| | \emptyset mm (inches) | L mm (inches) | | | | | | | | |
| Rated voltage: 10 V | | | | | | | | | | |
| 2200 | 12 | (0,472) | 30 | (1,181) | 17 | 0.061 | 0.062 | 135 | 1.42 | A775000 |
| 3300 | 14 | (0,551) | 30 | (1,181) | 17 | 0.041 | 0.041 | 200 | 1.9 | A775001 |
| 4700 | 16 | (0,630) | 30 | (1,181) | 17 | 0.029 | 0.029 | 280 | 2.4 | A775002 |
| Rated voltage: 16 V | | | | | | | | | | |
| 2200 | 12 | (0,472) | 30 | (1,181) | 15 | 0.054 | 0.055 | 210 | 1.52 | A775020 |
| 3300 | 14 | (0,551) | 30 | (1,181) | 15 | 0.036 | 0.036 | 310 | 2.02 | A775021 |
| 4700 | 16 | (0,630) | 30 | (1,181) | 15 | 0.025 | 0.025 | 450 | 2.6 | A775022 |
| Rated voltage: 25 V | | | | | | | | | | |
| 1000 | 12 | (0,472) | 30 | (1,181) | 10 | 0.080 | 0.081 | 150 | 1.25 | A775040 |
| 2200 | 14 | (0,551) | 30 | (1,181) | 10 | 0.036 | 0.037 | 330 | 2 | A775041 |
| 2700 | 16 | (0,630) | 30 | (1,181) | 10 | 0.029 | 0.030 | 405 | 2.4 | A775042 |
| Rated voltage: 40 V | | | | | | | | | | |
| 470 | 12 | (0,472) | 30 | (1,181) | 10 | 0.169 | 0.172 | 110 | 0.86 | A775060 |
| 1000 | 14 | (0,551) | 30 | (1,181) | 10 | 0.080 | 0.081 | 240 | 1.35 | A775061 |
| 1200 | 16 | (0,630) | 30 | (1,181) | 10 | 0.066 | 0.067 | 280 | 1.6 | A775062 |
| Rated voltage: 63 V | | | | | | | | | | |
| 330 | 12 | (0,472) | 30 | (1,181) | 8 | 0.193 | 0.199 | 120 | 0.8 | A775080 |
| 600 | 14 | (0,551) | 30 | (1,181) | 8 | 0.106 | 0.109 | 220 | 1.18 | A775081 |
| 800 | 16 | (0,630) | 30 | (1,181) | 8 | 0.080 | 0.082 | 300 | 1.5 | A775082 |
| Rated voltage: 100 V | | | | | | | | | | |
| 150 | 12 | (0,472) | 30 | (1,181) | 7 | 0.37 | 0.386 | 90 | 0.58 | A775100 |
| 220 | 14 | (0,551) | 30 | (1,181) | 7 | 0.25 | 0.263 | 130 | 0.77 | A775101 |
| 330 | 16 | (0,630) | 30 | (1,181) | 7 | 0.17 | 0.175 | 200 | 1 | A775102 |
| Rated voltage: 160 V | | | | | | | | | | |
| 33 | 12 | (0,472) | 30 | (1,181) | 7 | 1.69 | 1.755 | 30 | 0.27 | A775120 |
| 68 | 14 | (0,551) | 30 | (1,181) | 7 | 0.82 | 0.852 | 65 | 0.42 | A775121 |
| 75 | 16 | (0,630) | 30 | (1,181) | 7 | 0.74 | 0.772 | 72 | 0.5 | A775122 |
| Rated voltage: 250 V | | | | | | | | | | |
| 22 | 12 | (0,472) | 30 | (1,181) | 6 | 2.17 | 2.287 | 33 | 0.24 | A775140 |
| 47 | 14 | (0,551) | 30 | (1,181) | 6 | 1.02 | 1.070 | 70 | 0.38 | A775141 |
| 60 | 16 | (0,630) | 30 | (1,181) | 6 | 0.80 | 0.838 | 90 | 0.5 | A775142 |
| Rated voltage: 350 V | | | | | | | | | | |
| 15 | 12 | (0,472) | 30 | (1,181) | 6 | 3.18 | 3.355 | 30 | 0.2 | A775160 |
| 22 | 14 | (0,551) | 30 | (1,181) | 6 | 2.17 | 2.287 | 46 | 0.26 | A775161 |
| 33 | 16 | (0,630) | 30 | (1,181) | 6 | 1.45 | 1.525 | 69 | 0.3 | A775162 |

VACSIC 105

2 500 h / 105°C

EXPECTED LIFE

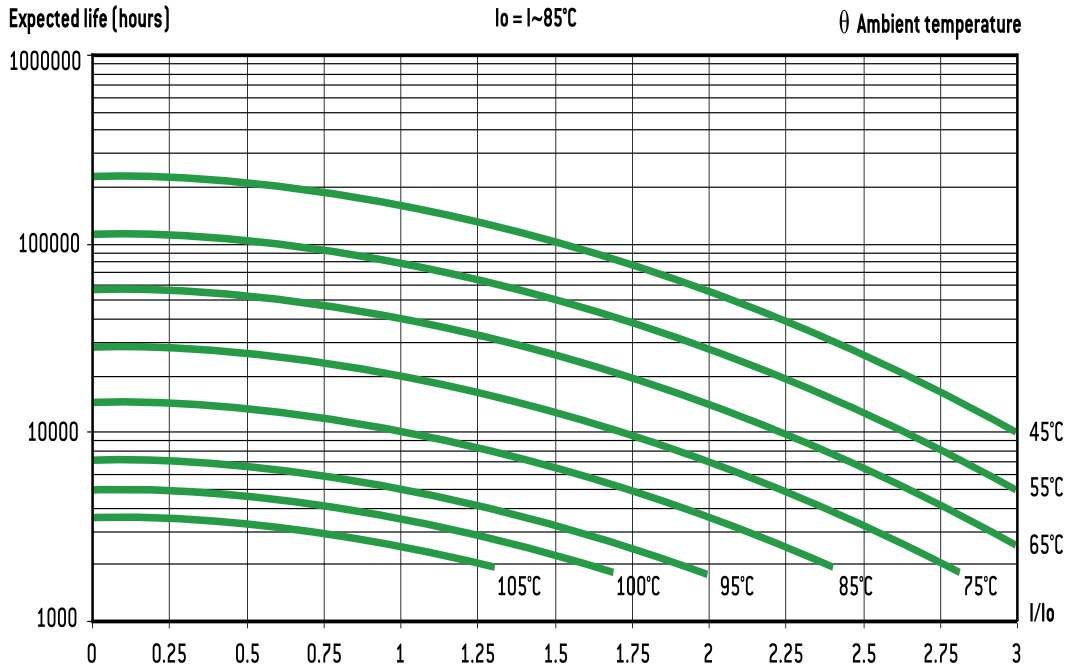
as a function of temperature and ripple current

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f:

I ~: permissible r.m.s. current at 100 Hz

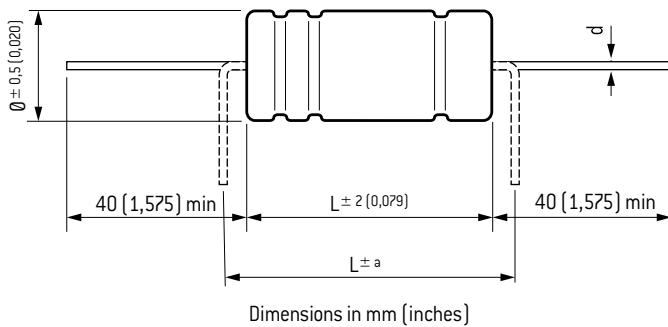
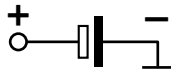
| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | ≥ 50 000 |
|--------|----------|-----|----------|----------|-----------|----------|----------|
| I | 0,8 x I~ | I~ | 1,2 x I~ | 1,3 x I~ | 1,35 x I~ | 1,5 x I~ | 1,6 x I~ |



VACSIC 150

1 500 h / 150°C

| | | | | |
|----------------|-------------------------------|---|----------------|----------------|
| 16 V ... 450 V | 6.8 μ F ... 3 300 μ F | \emptyset 12 [0,472] ... \emptyset 16 [0,630] | - 55°C + 150°C | Long life time |
|----------------|-------------------------------|---|----------------|----------------|



DIMENSIONS in mm (inches)

| \emptyset | d | a |
|-------------------------|-------------|-----------|
| 12 - 16 [0,472 - 0,630] | 0.8 [0,031] | 4 [0,157] |

SPECIFICATIONS

NFC 83 110 - Long life
 CECC 30 301-802 Issue 2
 IEC 60 384.4 long life
 Climatic category GPF: -55°C + 150°C / 56 days
 Standard endurance test at U_R : 2000 h 145°C

APPLICATIONS

- Coupling / decoupling
- Smoothing
- Energy storage
- High frequency power supply system
- Telecommunication - Military applications
- Mobile and aircraft installations
- Rated voltage 450 V is specially fit to lamp electronic ballast circuits.

Insulating aluminum case

Axial tin coated copper leads

Welded chain providing perfect continuity of the circuit.

Tolerance on capacitance at 20°C: $\pm 20\%$

(on request)

: -10/+50% or -10/30%

Operating temperature

: - 55°C + 150°C

RESISTANCE TO VIBRATIONS

| | Standard |
|--------------|--------------|
| f (Hz) | 10 - 2000 Hz |
| Amplitude | 1,5 [0,059] |
| Acceleration | 45 g |
| t (h) | 3 x 2 h |

WITHSTAND STRENGTH OF INSULATING SLEEVE

Insulating resistance at 20°C between

leads and mounting hardware : 100 M Ω

Test voltage at 50 Hz 1 min. between

leads and mounting hardware : 1000 V

Fire resistance

: self extinguish 30 s

(IEC 60 695-2-2) without PVC.

VACSIC 150

1 500 h / 150°C

| Capacitance (μF) | Dimensions | | $T_g \delta$ max. (%) | ESR 100 Hz Typic (Ω) | Z 10 kHz +20°C max. (Ω) | I. leak +20°C 5 min. max. (μA) | I \sim 100 Hz +150°C (A) | Code | | |
|----------------------------------|----------------------------|------------------|-----------------------------|--|---|--|-------------------------------------|------|------|---------|
| | \emptyset mm (inches) | L mm (inches) | | | | | | | | |
| Rated voltage: 16 V | | | | | | | | | | |
| 1500 | 12 | (0,472) | 30 | (1,181) | 18 | 0.160 | 0.15 | 72 | 1 | A774000 |
| 2200 | 14 | (0,551) | 30 | (1,181) | 18 | 0.109 | 0.10 | 106 | 1.33 | A774001 |
| 3300 | 16 | (0,630) | 30 | (1,181) | 18 | 0.087 | 0.07 | 158 | 1.7 | A774002 |
| Rated voltage: 25 V | | | | | | | | | | |
| 800 | 12 | (0,472) | 30 | (1,181) | 13 | 0.199 | 0.25 | 60 | 0.79 | A774020 |
| 1200 | 14 | (0,551) | 30 | (1,181) | 13 | 0.133 | 0.17 | 90 | 1.05 | A774021 |
| 1800 | 16 | (0,630) | 30 | (1,181) | 13 | 0.088 | 0.11 | 135 | 1.4 | A774022 |
| Rated voltage: 40 V | | | | | | | | | | |
| 470 | 12 | (0,472) | 30 | (1,181) | 15 | 0.406 | 0.33 | 56 | 0.69 | A774040 |
| 800 | 14 | (0,551) | 30 | (1,181) | 15 | 0.239 | 0.19 | 96 | 0.98 | A774041 |
| 1200 | 16 | (0,630) | 30 | (1,181) | 15 | 0.159 | 0.13 | 144 | 1.3 | A774042 |
| Rated voltage: 63 V | | | | | | | | | | |
| 220 | 12 | (0,472) | 30 | (1,181) | 8 | 0.445 | 0.57 | 42 | 0.53 | A774060 |
| 470 | 14 | (0,551) | 30 | (1,181) | 8 | 0.208 | 0.27 | 89 | 0.84 | A774061 |
| 680 | 16 | (0,630) | 30 | (1,181) | 8 | 0.144 | 0.18 | 129 | 1.1 | A774062 |
| Rated voltage: 100 V | | | | | | | | | | |
| 100 | 12 | (0,472) | 30 | (1,181) | 10 | 1.22 | 1.59 | 30 | 0.32 | A774080 |
| 150 | 14 | (0,551) | 30 | (1,181) | 10 | 0.82 | 1.06 | 45 | 0.42 | A774081 |
| 220 | 16 | (0,630) | 30 | (1,181) | 10 | 0.56 | 0.72 | 66 | 0.6 | A774082 |
| Rated voltage: 160 V | | | | | | | | | | |
| 33 | 12 | (0,472) | 30 | (1,181) | 8 | 2.97 | 3.85 | 32 | 0.2 | A774100 |
| 47 | 14 | (0,551) | 30 | (1,181) | 8 | 2.08 | 2.70 | 45 | 0.26 | A774101 |
| 68 | 16 | (0,630) | 30 | (1,181) | 8 | 1.44 | 1.87 | 65 | 0.3 | A774102 |
| Rated voltage: 250 V | | | | | | | | | | |
| 15 | 12 | (0,472) | 30 | (1,181) | 8 | 6.53 | 8.48 | 23 | 0.13 | A774120 |
| 22 | 14 | (0,551) | 30 | (1,181) | 8 | 4.45 | 5.78 | 33 | 0.26 | A774121 |
| 33 | 16 | (0,630) | 30 | (1,181) | 8 | 2.97 | 3.85 | 50 | 0.3 | A774122 |
| Rated voltage: 450 V | | | | | | | | | | |
| 6.8 | 12 | (0,472) | 30 | (1,181) | 8 | 14.40 | 18.72 | 18 | 0.09 | A774140 |
| 15 | 14 | (0,551) | 30 | (1,181) | 8 | 6.53 | 8.48 | 41 | 0.15 | A774141 |
| 20 | 16 | (0,630) | 30 | (1,181) | 8 | 4.90 | 6.36 | 54 | 0.2 | A774142 |

Rs/ESR 100Hz 20°C Typ value is given for information purpose only.

VACSIC 150

1 500 h / 150°C

PEAK VOLTAGE (V)

U_R : rated voltage

U_p : Repetitive standard peak voltage (30 s)

U_s : Repetitive surge voltage (0,1 s)

Do not overstep this value without damage.

EXPECTED LIFE

As a function of temperature and ripple current

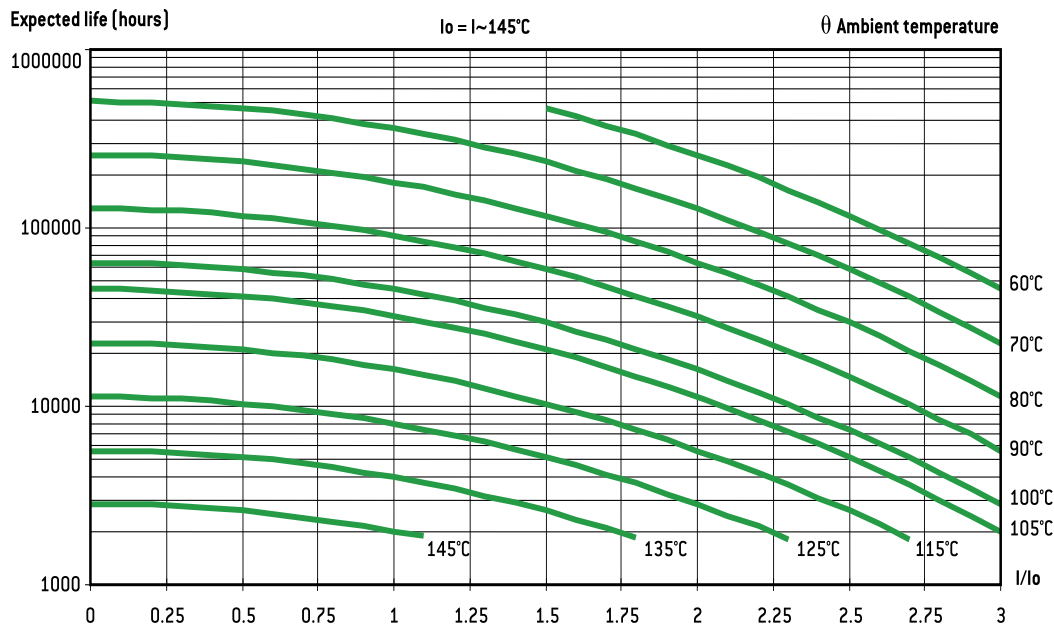
| U_R | 16 V | 25 V | 40 V | 63 V | 100 V | 160 V | 250 V | 450 V |
|-------|------|------|------|------|-------|-------|-------|-------|
| U_p | 18 | 29 | 46 | 72 | 115 | 184 | 288 | 495 |
| U_s | | | | | | 235 | 340 | 620 |

PERMISSIBLE RIPPLE CURRENT I (R.M.S. VALUE)

versus frequency f :

I_{\sim} : permissible r.m.s. current at 100 Hz

| f (Hz) | 50 | 100 | 300 | 600 | 1 000 | 10 000 | $\geq 50 000$ |
|------------|-----------------------|------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|
| I_{\sim} | $0,8 \times I_{\sim}$ | I_{\sim} | $1,2 \times I_{\sim}$ | $1,3 \times I_{\sim}$ | $1,35 \times I_{\sim}$ | $1,5 \times I_{\sim}$ | $1,6 \times I_{\sim}$ |



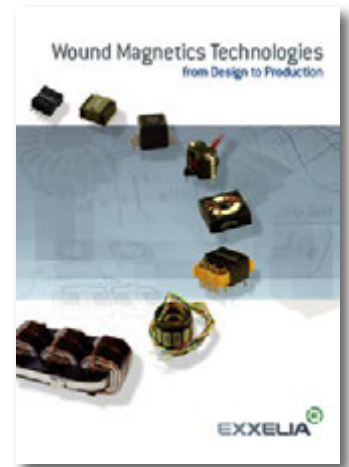
OTHER KIND OF CUSTOM DESIGNS

| Company informations | | |
|----------------------|----------|--------------|
| | Examples | Informations |
| Company name | | |
| Contact name | | |
| Tel. | | |
| E-mail | | |

| Characteristics | | |
|-------------------------|---------------------------|--------------|
| | Examples | Informations |
| Set | UPS, Car, etc. | |
| Application | Storage, smoothing, etc. | |
| Style | Snap in, Screw type, etc. | |
| Rated Voltage | 250V | |
| Rated Capacitance | 5000 μ F | |
| Operating voltage range | 100-200V | |
| Dimensions | \emptyset X L | |
| Temperature Range | from -55°C to 105°C | |
| ESR | 20 m Ω | |
| Lifetime | 8000 hours | |
| Other conditions | weight, etc. | |

| Production informations | | |
|-------------------------|-----------------------|--------------|
| | Examples | Informations |
| Planning | Prototype, Production | |
| Target Price | Prototype, Production | |

EXXELIA Components Portfolio





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