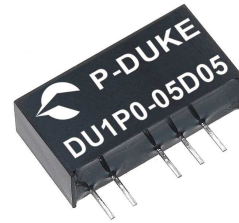


# DU1P0 SERIES

UNREGULATED DC-DC CONVERTER



1Watts Output Power



## FEATURES

- UNREGULATED OUTPUT VOLTAGE
- 1000VDC & 3000VDC INPUT TO OUTPUT ISOLATION
- STANDARD 0.77 X 0.24 X 0.40 INCH
- UL60950-1, EN60950-1, & IEC60950-1 SAFETY APPROVALS
- CE MARKED
- COMPLIANT TO RoHS II & REACH

## APPLICATIONS

- WIRELESS NETWORK
- TELECOM/DATACOM
- INDUSTRY CONTROL SYSTEM
- DISTRIBUTED POWER ARCHITECTURES
- SEMICONDUCTOR EQUIPMENT

## TECHNICAL SPECIFICATION

All specifications are typical at nominal input, full load and 25°C otherwise noted

Model Number	Input Range VDC	Output Voltage VDC	Output Current		Input Current @ No Load mA	Efficiency %	Maximum Capacitor Load µF
			@Min. Load mA	@Full Load mA			
DU1P0-05S05	4.5 ~ 5.5	5	20	200	42	77	330
DU1P0-05S12	4.5 ~ 5.5	12	8.3	83	32	82	330
DU1P0-05S15	4.5 ~ 5.5	15	6.7	67	35	81	330
DU1P0-05D05	4.5 ~ 5.5	± 5	± 10	± 100	40	78	±150
DU1P0-05D12	4.5 ~ 5.5	± 12	± 4.2	± 42	35	82	±150
DU1P0-05D15	4.5 ~ 5.5	± 15	± 3.3	± 33	40	81	±150
DU1P0-12S05	10.8 ~ 13.2	5	20	200	17	77	330
DU1P0-12S12	10.8 ~ 13.2	12	8.3	83	17	82	330
DU1P0-12S15	10.8 ~ 13.2	15	6.7	67	18	79	330
DU1P0-12D05	10.8 ~ 13.2	± 5	± 10	± 100	18	77	±150
DU1P0-12D12	10.8 ~ 13.2	± 12	± 4.2	± 42	18	81	±150
DU1P0-12D15	10.8 ~ 13.2	± 15	± 3.3	± 33	18	82	±150
DU1P0-15S05	13.5 ~ 16.5	5	20	200	20	73	330
DU1P0-15S12	13.5 ~ 16.5	12	8.3	83	18	79	330
DU1P0-15S15	13.5 ~ 16.5	15	6.7	67	18	80	330
DU1P0-15D05	13.5 ~ 16.5	± 5	± 10	± 100	18	75	±150
DU1P0-15D12	13.5 ~ 16.5	± 12	± 4.2	± 42	16	80	±150
DU1P0-15D15	13.5 ~ 16.5	± 15	± 3.3	± 33	16	80	±150
DU1P0-24S05	21.6 ~ 26.4	5	20	200	12	72	330
DU1P0-24S12	21.6 ~ 26.4	12	8.3	83	12	78	330
DU1P0-24S15	21.6 ~ 26.4	15	6.7	67	10	78	330
DU1P0-24D05	21.6 ~ 26.4	± 5	± 10	± 100	12	75	±150
DU1P0-24D12	21.6 ~ 26.4	± 12	± 4.2	± 42	10	78	±150
DU1P0-24D15	21.6 ~ 26.4	± 15	± 3.3	± 33	10	79	±150

## PART NUMBER STRUCTURE

Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Isolation Option
DU1P0 -	<b>05</b>	<b>S</b>	<b>05</b>	<b>N</b>
	05:4.5~5.5 12:10.8~13.2 15:13.5~16.5 24:21.6~26.4	S:Single  D: Dual	05:5 12:12 15:15  05:±5 12:±12 15:±15	□: Standard type 1600VDC isolation N: 3000VDC isolation

## INPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating input voltage range	5Vin(nom)	4.5	5	5.5	VDC
	12Vin(nom)	10.8	12	13.2	
	15Vin(nom)	13.5	15	16.5	
	24Vin(nom)	21.6	24	26.4	
Input filter		C type			

## OUTPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Voltage accuracy		-5.0		+5.0	%
Line regulation	Low Line to High Line at Full Load	1.3%,max / 1% of Vin			
Load regulation	20% to 100% Load	5Vout		+10	%
		Others		+8	
Ripple and noise	Measured by 20MHz bandwidth		100		mVp-p
Temperature coefficient		-0.1		+0.1	%/°C
Short circuit protection		1 Second, max.			

## GENERAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Isolation voltage	1 minute Input to Output Standard type Suffix "N"	1000 3000			VDC
Isolation resistance	500VDC	1			GΩ
Isolation capacitance				30	pF
Switching frequency		60			kHz
Safety approvals					IEC60950-1 UL60950-1 EN60950-1
Case material		Non-conductive black plastic			
Base material		None			
Potting material		Epoxy (UL94 V-0)			
Weight		2.0g (0.071oz)			
MTBF	MIL-HDBK-217F, Full load	2.019 x 10 <sup>7</sup> hrs			

## ENVIRONMENTAL SPECIFICATIONS

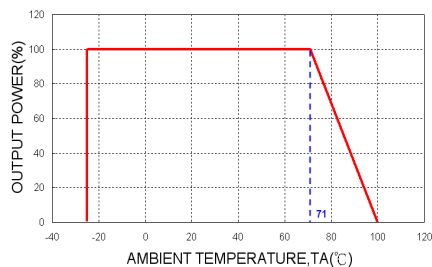
Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	With derating	-25		+85	°C
Storage temperature range		-55		+125	°C
Thermal shock		MIL-STD-810F			
Vibration		MIL-STD-810F			
Relative humidity		5% to 95% RH			

### Note:

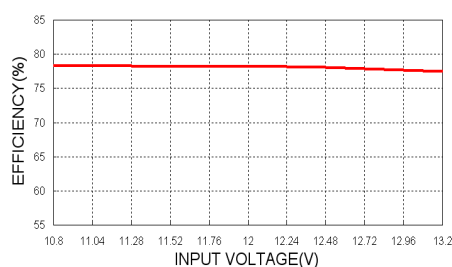
- The output requires a minimum loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices; however they may not meet all listed specification.

**CAUTION:** This power module is not internally fused. An input line fuse must always be used.

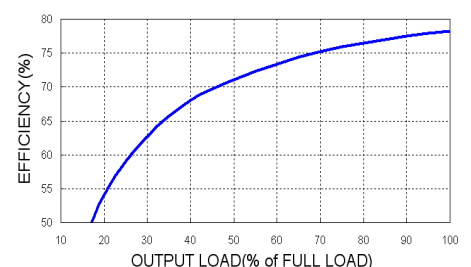
## CHARACTERISTIC CURVE



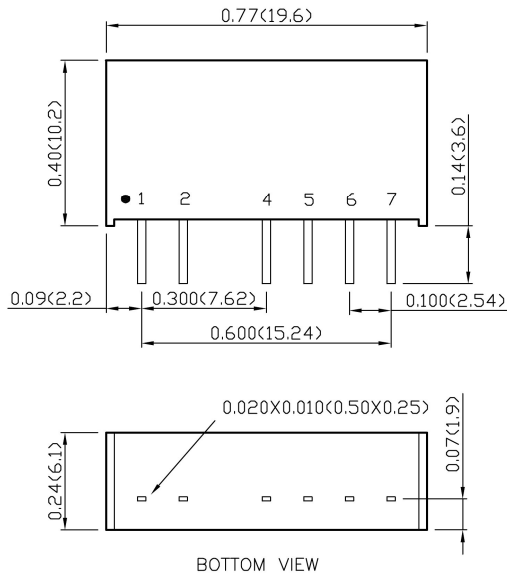
DU1P0-12S05 Derating Curve



DU1P0-12S05 Efficiency vs. Input Voltage



DU1P0-12S05 Efficiency vs. Output Load

**MECHANICAL DRAWING**

**PIN CONNECTION STANDARD**

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
4	-Vout	-Vout
5	NC	Common
6	+Vout	+Vout
7	No Pin	No Pin

**SUFFIX "N"**

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
4	No Pin	No Pin
5	-Vout	-Vout
6	NC	Common
7	+Vout	+Vout

1. All dimensions in inch (mm)
2. Tolerance :x.xx±0.02 (x.x±0.5)  
x.xxx±0.01 (x.xx±0.25)
3. Pin pitch tolerance ±0.01 (0.25)
4. Pin dimension tolerance ±0.004(0.1)