

# Quality Engineering Test Report

**SERIES: SP-75 75 WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY**

SAMPLE: A.SP-75-3.3	3.3V / 15A	D.SP-75-12	12V /6.3A	G.SP-75-24	24V /3.2A
B.SP-75-5	5V /15A	E.SP-75-13.5	13.5V /5.6A	H.SP-75-27	27V /2.8A
C.SP-75-7.5	7.5V /10A	F.SP-75-15	15V /5A	I.SP-75-48	48V /1.6A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING O/P:FULL LOAD SPEC:85-264VAC	D:58.73V-267VAC	P
2	LINE REGULATION	I/P:85~264VAC O/P:FULL LOAD SPEC: A: ±0.5% B: ±0.5% C:±0.5% D: ±0.5% E: ±0.5% G:±0.5% H: ±0.5% I: ±0.5%	A: 0% ~ -0.12% B: -0.12% ~ 0% C: -0.08% ~ 0% D: 0% ~ +0.049% E: 0% ~ 0% F: 0% ~ 0% G: -0% ~ +0% H: 0% ~ 0% I: -0.01% ~ -0.025%	P
3	LOAD REGULATION	I/P:230VAC O/P:0% LOAD TO FULL LOAD SPEC: A: ±1% B: ±1% C: ±1% D: ±0.5% E: ±0.5% F: ±0.5% G: ±0.5% H: ±0.5% I: ±0.5%	A: -0.5% ~ 0.23% % B: -0.5% ~ 0.23% C: -0.33% ~ 0.33% D: -0.149% ~ 0.099% E: -0.1% ~ 0.089% F: -0.12% ~ 0.25% G: -0.074% ~ 0.05% H: -0.044% ~ 0.022% I: -0.037% ~ 0.1%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC O/P:0% LOAD TO FULL LOAD SPEC: A: ±2% B: ±2% C: ±2% D: ±2% E: ±2% F: ±2% G: ±1% H: ±1% I: ±1%	A: -0.87% ~ +0.118% B: -0.87% ~ +0.118% C: -0.69% ~ 0% D: -0.049% ~ -0.306% E: -0.23% ~ 0.044% F: -0.419% ~ 0% G: -0.02% ~ -0.182% H: -0.092% ~ 0% I: -0.079% ~ -0.22%	P
5	RIPPLE & NOISE	I/P:230VAC O/P: FULL LOAD SPEC: A:80mV B:80mV C:80mV D:80mV E:80mV F:80mV G:100mV H:100mV I:100mV	A: 17mV B: 17mV C: 12mV D: 9mV E: 4mV F: 6mV G: 4mV H: 5mV I: 3mV	P
6	AC INPUT CURRENT	I/P:230VAC O/P:FULL LOAD SPEC: 0.7A	D:0.419A	P
7	MAX. INRUSH CURRENT	I/P:230VAC O/P:FULL LOAD SPEC: 40A	D:25.75A	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD SPEC:+10%~-5% A:3.135V~3.63V B:4.75V~5.5V C:7.125V~8.25V D:11.4V~13.2V E:12.8V~14.8V F:14.25V~16.5V G:22.8V~26.4V H:25.65V~29.7V I:45.6V~52.8V	A:3.05V~3.8V B:4.46V~5.809V C:6.33V~8.99V D:10.074V~13.731V E:11.28V~16.19V F:12.195V~17.465V G:19.64V~27.365V H:22.12V~33.2V I:40.44V~54.14V	P
9	SET UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:600ms	D:431mS	P
10	HOLD UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:20mS	D:42mS	P
11	EFFICIENCY	I/P:230VAC O/P: FULL LOAD SPEC: A:68% B:72% C:74% D:77% E:78% F:79% G:80% H:80% I:80%	A: 70.269 % B: 77.5 % C: 75.803 % D: 79.7 % E: 80.39 % F: 80.575 % G: 82.66 % H: 82.174 % I: 82.23 %	P
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC:105%~150%	A: 116 % B: 115 % C: 135 % D: 132 % E: 136.25 % F: 135 % G: 120.6 % H: 131.8 % I: 133 %	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P: TESTING SPEC:115%~135% A3.79~4.455 V B:5.75~6.75V C:8.625~10.125V D:13.8~16.2V E:15.52~18.225V F:17.25~20.25V G:27.6~32.4V H:31.05~36.45V I:55.2~64.8V	A: 4.04 V B: 6.02 V C: 9.04 V D: 15.1 V E: 17.09 V F: 19.17 V G: 31.1 V H: 34.66 V I: 62 V	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<2mA N-FG--<2mA	B: L-FG:1mA N-FG:0.5mA	P
15	GROUNDING CONTINUITY	SPEC: FG--CHASSIS<100m Ohms/2min	D: 67mOhms	P
16	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC / 100MOhms MIN. I/P-O/P 500VDC / 100MOhms MIN. I/P-FG 500VDC / 100MOhms MIN.	D: O/P-FG >100MOhms I/P-O/P >100MOhms I/P-FG >100MOhms	P

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17	DIELECTRIC / WITHSTAND VOLTAGE	SPEC : I/P- O/P: 3000VAC/ 60 sec (10mA CUT-OFF) I/P - FG: 1500VAC/ 60 sec (10mA CUT-OFF) O/P - FG: 500VAC/60sec (10mA CUT-OFF)	D: I/P-O/P :6.15mA I/P-FG :4.92mA O/P- FG :9.27mA	P																																																												
18	BURN-IN TEST	I/P: 230VAC O/P:FULL LOAD TA:22.6°C BURN-IN DURATION : 14 hrs	B:AFTER 14hrs NON BREAK	P																																																												
19	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P : 230 VAC O/P FULL LOAD AMBIENT TEMPERATURE : -10.1°C	B : AFTER 4 hrs POWER ON OK	P																																																												
		2.HIGH AMBIENT TEMPERATURE TEST I/P : 230VAC O/P: FULL LOAD TEMPERATURE : 33.8°C	B : AFTER 14hrs NON BREAK																																																													
		3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST I/P : 272VAC O/P : FULL LOAD AMBIENT TEMPERATURE : 25°C AMBIENT HUMIDITY : 95%	B : AFTER 12 hrs POWER ON OK																																																													
20	TEMPERATURE RISE TEST Trise OF PARTS	B: I/P : 230VAC AFTER 14 hrs BURN-IN O/P : FULL LOAD TA : 22.6°C	<table border="1"> <thead> <tr> <th></th> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>Trise</th> </tr> </thead> <tbody> <tr> <td></td> <td>BD1</td> <td>BRIDGE DIODE</td> <td>74.3°C</td> <td>51.7°C</td> </tr> <tr> <td></td> <td>Q2</td> <td>MAIN TRANSISTOR</td> <td>73.6°C</td> <td>51°C</td> </tr> <tr> <td></td> <td>Q1</td> <td>PFC TRANSISTOR</td> <td>64.2°C</td> <td>41.6°C</td> </tr> <tr> <td></td> <td>T1</td> <td>MAIN TRANSFORMER COIL</td> <td>82.2°C</td> <td>59.6°C</td> </tr> <tr> <td></td> <td>T1</td> <td>MAIN TRANSFORMER CORE</td> <td>78.8°C</td> <td>56.2°C</td> </tr> <tr> <td></td> <td>D19</td> <td>O/P DIODE</td> <td>85.3°C</td> <td>62.7°C</td> </tr> <tr> <td></td> <td>C52</td> <td>O/P FILTER CAPACITOR</td> <td>72.6°C</td> <td>50°C</td> </tr> <tr> <td></td> <td>L2</td> <td>O/P CHOCK</td> <td>81.9°C</td> <td>59.3°C</td> </tr> <tr> <td></td> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>65.7°C</td> <td>43.1°C</td> </tr> <tr> <td></td> <td>LF1</td> <td>LINE FILTER COIL</td> <td>61.1°C</td> <td>38.5°C</td> </tr> <tr> <td></td> <td>D2</td> <td>PFC DIODE</td> <td>73.8°C</td> <td>51.2°C</td> </tr> </tbody> </table>		POSITION	P/N	TEMP	Trise		BD1	BRIDGE DIODE	74.3°C	51.7°C		Q2	MAIN TRANSISTOR	73.6°C	51°C		Q1	PFC TRANSISTOR	64.2°C	41.6°C		T1	MAIN TRANSFORMER COIL	82.2°C	59.6°C		T1	MAIN TRANSFORMER CORE	78.8°C	56.2°C		D19	O/P DIODE	85.3°C	62.7°C		C52	O/P FILTER CAPACITOR	72.6°C	50°C		L2	O/P CHOCK	81.9°C	59.3°C		C5	I/P FILTER CAPACITOR	65.7°C	43.1°C		LF1	LINE FILTER COIL	61.1°C	38.5°C		D2	PFC DIODE	73.8°C	51.2°C	P
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21	LIFE CYCLE	SUPPOSE C42 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : FULL LOAD Ta : 25°C Tc52 : 75°C Life:57216hrs I/P : 230VAC O/P : FULL LOAD Ta : 30°C Tc52 : 78.7°C Life:44270hrs		P																																																												
22	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	B : FUSE :2A/250V GFE/GMA BRIDGE DIODE : D3SB60 4A/800V GL LINE FILTER :TF-714 EI-78 TRANSFOMER :TF-716 EER-28 OUTPUT DIODE :32LTQ030 30A/30V OUTPUT CAPACITOR :RUBYCON 2200uF/10V 105°C YXG INPUT CAPACITOR :RUBYCON 100uF/400V,105°C AXW P.C.B :SP-75 CEM-3 20Z SS																																																														

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
20010108	RD SAMPLE 3.3V,5V,7.5V,12V , 13.5V,15V,24V,27V , 48V	PASS	VINCENT	Max Lin
20010116	PRDUCTION SAMPLE A101A15 3.3V,5V,7.5V,12V 13.5V,15V,24V,27V ,48V	PASS	SAM CHEN	Max Lin
20010531	PRDUCTION SAMPLE A105C02 5V,24V,48V	PASS	VINCENT	Max Lin
20011226	PRDUCTION SAMPLE A109B19 12V	PASS	VINCENT	Max Lin
20020222	PRDUCTION SAMPLE A202A17A 12V	PASS	VINCENT	Max Lin