Quality Engineering Test Report

SERIES: LPP-100 100 WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.LPP-100-3.3 3.3V / 20A D.LPP-100-12 12V /8.5A G.LPP-100-24 24V /4.2A
B.LPP-100-5 5V /20A E.LPP-100-13.5 13.5V /7.5A H.LPP-100-27 27V /3.8A
C.LPP-100-7.5 7.5V/13.5A F.LPP-100-15 15V /6.7A I.LPP-100-48 48V /2.1A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:85-264VAC O/P:FULL LOAD	G: 62V-264VAC	P
2	LINE REGULATION	I/P:85-264VAC SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C:±0.5% D: ±0.5% E: ±0.5% F: ±0.5% G:±0.5% H: ±0.5% I: ±0.5%	A: 0.00% - 0.00% B: 0.00% - 0.00% C: 0.00% - 0.00% D: 0.00% - 0.049% E: 0.00% - 0.00% F: 0.00% - 0.00% G: 0.00% - 0.00% H: 0.00% - 0.00% I: 0.00% - 0.03.%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:0% LOAD TO FULL LOAD 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: 0.18% - 0.00% B: 0.00% - 0.00% C: 0.00% - 0.00% D: -0.099% - 0.107% E: -0.04% - 0.04% F: 0.03% - 0.08% G: +0.00% - +0.00% H: 0.00% - 0.02% I: 0.012% - 0.02%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: O/P:0% LOAD TO FULL LOAD A: ±2% B: ±2% C: ±2% D: ±2% E: ±2% F: ±2% G: ±1% H: ±1% I: ±1%	A: 0.00% ~ 0.36% B: 0.00% ~ 0.10% C: 0.00% ~ 0.08% D: -0.099% ~ 0.107% E: 0.00% ~ 0.13% F: -0.04% ~ 0.20% G: -0.02% ~ +0.00% H: 0.02% ~ 0.05% I: -0.012% ~ 0.012%	P
5	RIPPLE＆NOISE	I/P:230VAC SPEC: O/P: FULL LOAD A:100mV B:100mV C:100mV D:100mV E:100mV F:100mV G:150mV H:150mV I :250mV	A: 33mV B: 29mV C: 18mV D: 12mV E: 15mV F: 15mV G: 21mV H: 19mV I: 24mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC: 0.75A O/P:FULL LOAD (3.3V:0.6A)	G:0.563A	P
7	MAX. INRUSH CURRENT	I/P:230VAC SPEC: 40A O/P:FULL LOAD	A:16.859A	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: +10%~-5% O/P:MIN. LOAD A:3.1V~3.6V B:4.7V~5.5V C:7.12V~8.25V D:11.4V~13.2V E:12.8 V~14.8V F:14.2V~16.5V G:22.8V~26.4V H:25.6V~29.7V I :45.6V~52.8V	A:3.04V~3.8V B:4.46V~5.8V C:6.40V~8.93V D:10.266V~13.9V E:10.73V~14.96V F:12.38V~17.56V G:19.37V~27.67V H:19.9V~30V I:39.7V~54.5V	P
9	SET UP TIME	I/P:230VAC SPEC:600ms O/P:FULL LOAD	G:398mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	G:37.2mS	P
11	EFFICIENCY	I/P:230VAC SPEC: O/P: FULL LOAD A:69% B:75% C:76% D:79% E:79% F:80% G:83% H:83% I :83%	A: 71.05% B: 77.8% C: 79.6% D: 81.3% E: 82.6% F: 82.7% G: 84.24% H: 85.5% I: 84.73%	P
12	OVER LOAD PROTECTION	I/P:230VAC SPEC:105%~150% O/P:TESTING	A: 125% B: 127% C: 123% D: 122.6% E: 118% F: 113% G: 138% H: 123% I: 138%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC SPEC:110%~135% O/P: 0% LOAD A:3.63~4.45 V B:5.5~6.75V C:8.25~10.12V D:13.2~16.2V E:14.8~18.2V F:16.5~20.2V G:26.4~32.4V H:29.7~36.4V I:52.8~64.8V	A: 3.98V B: 6.08V C: 9.08V D: 15.5V E: 16.65V F: 19.14V G: 30.1V H: 33.9V I: 61.2V	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--< 2mA N-FG--< 2mA	G: L-FG:0.86mA N-FG:0.86mA	P
15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC / 100MOhms MIN. I/P-O/P 500VDC / 100MOhms MIN. I/P-FG 500VDC / 100MOhms MIN.	G: O/P-FG >100MOhms I/P-O/P >100MOhms I/P-FG >100MOhms	P

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>16</td><td>DIELECTRIC / WITHSTAND VOLTAGE</td><td>SPEC： I/P- O/P: 3000VAC/ 60 sec
I/P - FG: 1500VAC/60 sec
O/P - FG: 500VAC/60sec</td><td>G: I/P-O/P 6mA
I/P-FG :5.2mA
O/P- FG :8.18mA</td><td>P</td></tr>
<tr><td>17</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P:FULL LOAD
TA:25.8℃ BURN-IN DURATION : 1.5 hrs</td><td>G : NON BREAK</td><td>P</td></tr>
<tr><td rowspan="3">18</td><td rowspan="3">ENVIRONMENT TEST</td><td>1.LOW TEMPERATURE TEST
I/P:230 VAC O/P:100% LOAD
AMBIENT TEMPERATURE:-9.0ºC</td><td>G :
AFTER 3 hrs POWER ON OK</td><td rowspan="3">P</td></tr>
<tr><td>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:47.8ºC</td><td>G :
AFTER 16 hrs NON BREAK</td></tr>
<tr><td>3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST
I/P:272VAC O/P:FULL LOAD
AMBIENT TEMPERATURE：25ºC
AMBIENT HUMIDITY：95%</td><td>G :
AFTER15 hrs POWER ON/OFF NO BREAK</td></tr>
<tr><td>19</td><td>TEMPERATURE RISE TEST Trise OF PARTS</td><td colspan="2">G: I/P :230VAC AFTER 1.5 hrs BURN-IN
O/P :FULL LOAD TA:25.8ºC
<table>
<tr><th>POSITION</th><th>P/N</th><th>TEMP</th><th>Trise</th></tr>
<tr><td>BD1</td><td>BRIDGE DIODE</td><td>74.7ºC</td><td>48.9ºC</td></tr>
<tr><td>Q2</td><td>MAIN TRANSISTOR</td><td>67.3ºC</td><td>41.5ºC</td></tr>
<tr><td>Q1</td><td>PFC TRANSISTOR</td><td>67.3ºC</td><td>41.5ºC</td></tr>
<tr><td>T1</td><td>MAIN TRANSFORMER COIL</td><td>50.9ºC</td><td>25.1ºC</td></tr>
<tr><td>T1</td><td>MAIN TRANSFORMER CORE</td><td>57.2ºC</td><td>31.2ºC</td></tr>
<tr><td>D20</td><td>O/P DIODE</td><td>60.7ºC</td><td>34.9ºC</td></tr>
<tr><td>C52</td><td>O/P FILTER CAPACITOR</td><td>62.3ºC</td><td>36.5ºC</td></tr>
<tr><td>L2</td><td>O/P CHOCK</td><td>53.2ºC</td><td>27.4ºC</td></tr>
<tr><td>C5</td><td>I/P FILTER CAPACITOR</td><td>51.4ºC</td><td>25.6ºC</td></tr>
<tr><td>LF1</td><td>LINE FILTER COIL</td><td>47.8ºC</td><td>22ºC</td></tr>
<tr><td>D7</td><td>PFC DIODE</td><td>74.6ºC</td><td>48.8ºC</td></tr>
</table></td><td>P</td></tr>
<tr><td>20</td><td>LIFE CYCLE</td><td colspan="2">SUPPOSE C52 IS THE MOST CRITICAL COMPONENT
I/P:230VAC O/P:FULL LOAD Ta:25.8ºC Tc52:62.3ºC Life:75055.6hrs
I/P:230VAC O/P:FULL LOAD Ta:47.8ºC Tc52:80.8ºC Life:16895.8hrs</td><td></td></tr>
<tr><td>21</td><td>CRITICAL COMPONENT RECORD
(FOR QC INSPECTION REFERENCE ONLY)</td><td colspan="3">G :
FUSE : 4A/250V
BRIDGE DIODE : D2SB60
LINE FILTER :LF101
TRANSFOMER :TF-682
OUTPUT DIODE :1N5406
OUTPUT CAPACITOR :NIPPON 330uF/35V 105ºC LXJ
INPUT CAPACITOR : 100uF/400V,85ºC USC RUBYCON
P.C.B :LPP-100</td></tr>
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DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
20000624	R.D. SAMPLE A0009A22 LPP-100-3.3,5,7.5 ,12,13.5,15,24,27,48	PASS	VINCENT	Max Lin
20000920	PRDUCTION SAMPLE A0009A22	PASS	VINCENT	Max Lin
20010222	PRDUCTION SAMPLE A102B19 24V	PASS	SAM	Max Lin
20010407	PRDUCTION SAMPLE A104A08A 12V	PASS	VINCENT	Max Lin
20020605	PRDUCTION SAMPLE A205B23 24V	PASS	VINCENT	Max Lin