Test Report：LPC-150-1750

150W Single Output LED Power Supply

■ DESIGN VERIFY TEST

Output Function Test
Input Function Test
Protection Function Test
Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test
E.M.C. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1： 1 Vp-p (Max)	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	V1： 0.106 Vp-p (Max)	PASS
2	RIPPLE CURRENT	＜ ±5%	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	TEST： 4.0 %	PASS
3	CONSTANT CURRENT REGION	V1： 43V ~86V	I/P：230VAC O/P:LED MODE Ta:25℃	OP= 43V / 1.744A OP= 85V / 1.744A	PASS
4	OUTPUT VOLTAGE TOLERANCE	V1： -2.0 %~ 2.0 % (Max)	I/P：180VAC / 305 VAC O/P：FULL/ MIN LOAD Ta：25℃	V1： 0 %~ 0.04 %	PASS
5	LINE REGULATION	V1： -1.0 %~ 1.0% (Max)	I/P：200VAC ~ 305 VAC O/P：FULL LOAD Ta：25℃	V1： 0 %~ 0 %	PASS
6	SET UP TIME	230VAC： 1000 ms (Max)	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 39 ms	PASS
7	RISE TIME	230VAC： 80 ms (Max)	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 26 ms	PASS
8	HOLD UP TIME	230VAC： 16 ms (TYP)	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	230VAC/ 29 ms	PASS
9	OVER/UNDERSHOOT TEST	＜ ±5%	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	TEST： ＜ 5 %	PASS
10	CURRENT ACCURACY	＜ ±5%	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	TEST： 0.4 %	PASS

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	180 VAC~305 VAC	I/P：TESTING O/P：FULL LOAD Ta：25℃	177V~305 V	PASS
			I/P： (1)LOW-LINE-3V=177 V HIGH-LINE+10V=315 V O/P：FULL/MIN LOAD ON： 30 Sec OFF：30 Sec 10MIN (2)230VAC ON：0.5 Sec OFF：0.5 Sec 20MIN (3)230VAC ON：3Sec OFF：3Sec 12HOURS (POWER ON/OFF NO DAMAGE)	TEST： (1) OK (2) OK (3) OK	
2	INPUT FREQUENCY RANGE	47Hz ~63 Hz NO DAMAGE OSC	I/P： 180VAC ~ 305 VAC O/P：FULL ~MIN LOAD Ta：25℃	TEST： OK	PASS
3	EFFICIENCY	90% (TYP)	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	90.50%	PASS
4	INPUT CURRENT	230V/ 1.7 A (TYP) 277V/ 1.5 A (TYP)	I/P： 230 VAC I/P： 277 VAC O/P：FULL LOAD Ta：25℃	I = 1.217 A/ 230VAC I = 1.033 A/ 277 VAC	PASS
5	INRUSH CURRENT	230V/ 40 A (TYP) Twidth =750 us measured at 50% Ipeak COLD START	I/P： 230 VAC O/P：FULL LOAD Ta：25℃	I = 31.1 A Twidth =387us	PASS
6	LEAKAGE CURRENT	< 0.25 mA / 277 VAC	I/P： 305 VAC O/P：NO LOAD Ta：25℃	L-CASE： 0.003 mA N-CASE： 0.003 mA	PASS

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER VOLTAGE PROTECTION	CH1： 96 V ~ 115 V	I/P： 180 VAC I/P： 230 VAC I/P： 305 VAC O/P：TESTING Ta：25℃	108.31V/ 180 VAC 108.29V/ 230 VAC 108.28V/ 305 VAC Shut down and latch off o/p voltage，re-power on to recover	PASS
2	OVER TEMPERATURE PROTECTION	SPEC： O.T.P. NO DAMAGE	I/P： 230 VAC O/P：FULL LOAD	O.T.P. Active Shut down o/p voltage，recovers automatically after temperature goes down	PASS
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P： 305 VAC O/P：FULL LOAD Ta：25℃	NO DAMAGE Constant current limiting，recovers automatically after fault condition is removed	PASS

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 700 V /12A	I/P：High-Line +3V = 308 V O/P： (1)FULL LOAD Turn on (2) Output Short (3) FULL LOAD continue Ta：25℃	(1) 680 V (2) 554 V (3) 674 V	PASS
2	Diode Peak Voltage	D100 Rated 600 V /10A	I/P：High-Line +3V = 308 V O/P： (1) FULL LOAD Turn on (2)Output Short (3) FULL LOAD continue Ta：25℃	(1) 360 V (2) 288 V (3) 342 V	PASS
3	Input Capacitor Voltage	C5 Rated 100uF / 450 V	I/P：High-Line +3V = 308 V O/P： (1) FULL LOAD Turn on /Off (2)MIN LOAD Turn on /Off (3) FULL LOAD /MIN LOAD Change Ta：25℃	(1) 440 V (2) 448 V (3) 442 V	PASS
4	Control IC Voltage Test	U1 Rated 28V	I/P：High-Line +3V = 308 V O/P： (1) FULL LOAD Turn on /Off (2)MIN LOAD Turn on /Off (3) FULL LOAD /MIN LOAD Change Ta：25℃	(1) 16.0 V (2) 16.2 V (3) 16.2 V	PASS

■ SAFETY & E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P： 3KVAC/min	I/P-O/P： 3.6 KVAC/min Ta：25℃	I/P-O/P： 2.040 mA NO DAMAGE	PASS
2	ISOLATION RESISTANCE	I/P-O/P：500VDC>100MΩ	I/P-O/P： 500 VDC Ta：25℃/70% RH	I/P-O/P： >9999 MΩ NO DAMAGE	PASS

E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P：230VAC/50HZ O/P：80% LOAD Ta:25℃	OK	PASS
2	CONDUCTION	EN55022 CLASS B	I/P：230 VAC/50HZ O/P:FULL LOAD Ta:25℃	OK Test by certified Lab	PASS
3	RADIATION	EN55022 CLASS B	I/P：230 VAC/50HZ O/P:FULL LOAD Ta:25℃	OK Test by certified Lab	PASS
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P：230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	PASS
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT：1KV	I/P：230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	PASS
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :1KV	I/P：230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	PASS
7	Test by certified Lab & Test Report Prepare				

■ RELIABILITY TEST

ENVIRONMENT TEST

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECIFICATION</th><th>TEST CONDITION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">MODEL： LPC-150-1750
1. ROOM AMBIENT BURN-IN：2 HRS
I/P： 230VAC O/P： FULL LOAD Ta=34.4 ℃
2. HIGH AMBIENT BURN-IN： 2 HRS
I/P： 230VAC O/P： FULL LOAD Ta=53.2℃
<table>
<tr><th>NO</th><th>Position</th><th>ROOM AMBIENT
Ta= 34.4 ℃</th><th>HIGH AMBIENT
Ta= 53.2 ℃</th></tr>
<tr><td>1</td><td>ZNR1</td><td>68.0℃</td><td>85.6℃</td></tr>
<tr><td>2</td><td>BD1</td><td>78.9℃</td><td>97.9℃</td></tr>
<tr><td>3</td><td>C5</td><td>77.2℃</td><td>97.2℃</td></tr>
<tr><td>4</td><td>Q1</td><td>86.7℃</td><td>107.7℃</td></tr>
<tr><td>5</td><td>C24</td><td>78.6℃</td><td>99.3℃</td></tr>
<tr><td>6</td><td>C25</td><td>76.8℃</td><td>97.6℃</td></tr>
<tr><td>7</td><td>D5</td><td>84.3℃</td><td>106.4℃</td></tr>
<tr><td>8</td><td>TSW1</td><td>78.8℃</td><td>99.3℃</td></tr>
<tr><td>9</td><td>T1</td><td>80.4℃</td><td>102.2℃</td></tr>
<tr><td>10</td><td>D100</td><td>78.2℃</td><td>98.2℃</td></tr>
<tr><td>11</td><td>C102</td><td>67.0℃</td><td>86.3℃</td></tr>
<tr><td>12</td><td>C104</td><td>67.4℃</td><td>86.8℃</td></tr>
<tr><td>13</td><td>U1</td><td>74.8℃</td><td>94.8℃</td></tr>
<tr><td>14</td><td>LF100</td><td>59.0℃</td><td>78.6℃</td></tr>
<tr><td>15</td><td>Tc</td><td>65.2℃</td><td>84.8℃</td></tr>
</table></td><td>PASS</td></tr>
<tr><td>2</td><td>LOW TEMPERATURE
TURN ON TEST</td><td>TURN ON AFTER 2 HOUR</td><td>I/P：305VAC/200VAC
O/P：FULL LOAD
Ta= -30℃</td><td>TEST：OK</td><td>PASS</td></tr>
<tr><td>3</td><td>HIGH HUMIDITY
HIGH TEMPERATURE
HIGH VOLTAGE
TURN ON TEST</td><td>AFTER 12 HOURS
IN CHAMBER ON
CONTROL 50 ℃
NO DAMAGE</td><td>I/P：315VAC
O/P：FULL LOAD
Ta=50℃
HUMIDITY= 95% R.H</td><td>TEST：OK</td><td>PASS</td></tr>
<tr><td>4</td><td>TEMPERATURE
COEFFICIENT</td><td>±0.03 %(0~50℃)</td><td>I/P： 230 VAC
O/P：FULL LOAD</td><td>±0.006 %(0~50℃)</td><td>PASS</td></tr>
<tr><td>5</td><td>STORAGE TEMPERATURE TEST</td><td colspan="2">1. Thermal shock Temperature： -45℃~ +75℃
2. Temperature change rate ：25℃ / MIN
3. Dwell time low and high temperature ： 30 MIN/EACH
4. Total test cycle：5 CYCLE
5. Input/Output condition： STATIC</td><td>OK</td><td>PASS</td></tr>
<tr><td>6</td><td>THERMAL SHOCK TEST</td><td colspan="2">1. Thermal shock Temperature： -30℃~ +55℃
2. Temperature change rate ：25℃ / MIN
3. Dwell time low and high temperature ： 30 MIN/EACH
4. Total test cycle：5CYCLE
5. Input/Output condition： 230VAC/FULL LOAD AC ON/OFF TEST
turn on 58sec；turn off 2sec</td><td>OK</td><td>PASS</td></tr>
<tr><td>7</td><td>VIBRATION TEST</td><td colspan="2">1 Carton & 1 Set
(1) Waveform： Sine Wave
(2) Frequency：10~500Hz
(3) Sweep Time：10min/sweep cycle
(4) Acceleration：3G
(5) Test Time：90min in each axis (X.Y.Z)
(6) Ta：25℃</td><td>TEST：OK</td><td>PASS</td></tr>
</table>

8	CAPACITOR LIFE CYCLE	LPC-150-1750：SUPPOSE C102 IS THE MOST CRITICAL COMPONENT (1) I/P： 230VAC O/P：FULL LOAD Ta=25℃ LIFE TIME (2) I/P： 230VAC O/P：FULL LOAD Ta=50℃ LIFE TIME (3) I/P： 230VAC O/P：75% LOAD Ta=50℃ LIFE TIME (4) I/P： 230VAC O/P：50% LOAD Ta=50℃ LIFE TIME	(1) 296324 HRS (2) 50570 HRS (3) 51346 HRS (4) 60551 HRS	PASS
9	MTBF	Conducted by Parts Stress Analysis Prediction 3528.4K hrs min. Telcordia SR-332 (Bellcore) ; 479.1K hrs min. MIL-HDBK-217F (25℃)		PASS
10	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure(Expected Life) ： 20000hours @ Tcase 90℃		PASS

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	ZHOUB/ ZHUOKB	SKY	LIUWY

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