



Test Report: ELG-150-C1050

150W Single Output Switching 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
1	OUTPUT CURRENT ADJUST RANGE	525mA~1050mA	I/P: 230VAC O/P: LED MODE Ta: 25°C	0.3626A~1.0713A
2	OUTPUT CURRENT TOLERANCE	±5%	I/P: 230VAC O/P: FULL/ MIN LOAD Ta: 25°C	±1.06 %
3	RIPPLE CURRENT	±5%	I/P: 230VAC O/P: LED MODE Ta: 25°C	3.43%
4	CONSTANT CURRENT REGION	72V~143V	I/P: 230VAC O/P: LED MODE Ta: 25°C	30V~143V
5	NO LOAD OUTPUT VOLTAGE (Max)	151V	I/P: 230VAC O/P: NO LOAD Ta: 25°C	146V
6	OVER/UNDERSHOOT TEST	<±5 %	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	<5 %
7	RIPPLE & NOISE (Max)	1Vp-p	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	0.162Vp-p
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>high frequency:</p> <p>Ch1 Pk-Pk 162mV</p> </div> <div style="text-align: center;"> <p>low frequency:</p> <p>Ch1 Pk-Pk 153mV</p> </div> </div>				
8	SET UP TIME(Max)	230VAC/ 500ms	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	230VAC/ 310ms



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ELG-150-C series

	<p>INPUT=230VAC/50HZ @ FULL LOAD CH2: Output Voltage CH1: AC Input Voltage</p> <p>50.20 %</p>			
9	RISE TIME (Max)	230VAC/ 85ms	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	230VAC/66ms
	<p>INPUT=230VAC/50HZ @ FULL LOAD CH2: Output Voltage</p> <p>50.60 %</p>			
10	HOLD UP TIME(Typ)	230VAC/ 10ms	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	230VAC/22.4ms
	<p>INPUT=230VAC/50HZ @ FULL LOAD CH2: Output Voltage CH1: AC Input Voltage</p> <p>70.80 %</p>			



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11	DIMMING TEST (For B-Type only)	SPEC:													
		※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 0 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.													
		※ Please DO NOT connect "DIM-" to "-V".													
		※ Reference resistance value for output current adjustment (Typical)													
		Resistance value	Single driver	Short	10K Ω	20K Ω	30K Ω	40K Ω	50K Ω	60K Ω	70K Ω	80K Ω	90K Ω	100K Ω	OPEN
			Multiple drivers (N=driver quantity for synchronized dimming operation)	Short	10K Ω/N	20K Ω/N	30K Ω/N	40K Ω/N	50K Ω/N	60K Ω/N	70K Ω/N	80K Ω/N	90K Ω/N	100K Ω/N
		Percentage of rated current		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%
		※ 0 ~ 10V dimming function for output current adjustment (Typical)													
		Dimming value		0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
		Percentage of rated current		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%
		※ 10V PWM signal for output current adjustment (Typical): Frequency range: 100Hz~3KHz													
Duty value		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN		
Percentage of rated current		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%		
TEST RESULT:															
I/P: 230 VAC; Ta: 25°C															
1	Resistance value	Short	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K	OPEN		
	Output Current	0	0.119	0.224	0.329	0.433	0.537	0.641	0.744	0.847	0.949	1.05	1.065		
	Percentage of rated current	0%	11.33%	21.33%	31.33%	41.24%	51.14%	61.05%	70.86%	80.67%	90.38%	100.00%	101.43%		
	2	Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN	
		Output Current	0	0.12	0.224	0.325	0.43	0.532	0.639	0.742	0.843	0.947	1.049	1.064	
		Percentage of rated current	0%	11.43%	21.33%	30.95%	40.95%	50.67%	60.86%	70.67%	80.29%	90.19%	99.90%	101.33%	
	3	Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN	
		Output Current	0	0.111	0.213	0.316	0.417	0.519	0.621	0.723	0.826	0.929	1.023	1.064	
		Percentage of rated current	0%	10.57%	20.29%	30.10%	39.71%	49.43%	59.14%	68.86%	78.67%	88.48%	97.43%	101.33%	

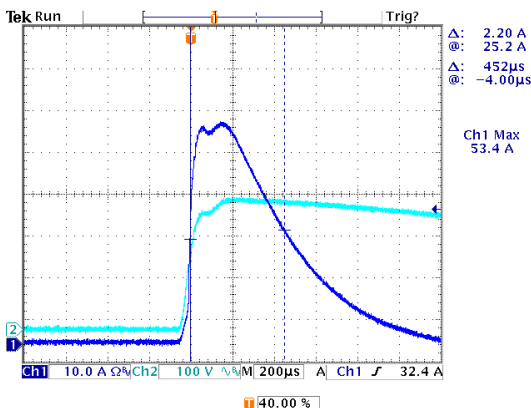


INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	180VAC~295VAC	I/P: TESTING O/P: FULL LOAD Ta: 25°C	177V~305V
			I/P: (1)LOW-LINE-3V=177 V HIGH-LINE+10V=305 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: OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 180 VAC ~295 VAC O/P: FULL~MIN LOAD Ta: 25°C	TEST: OK
3	AC CURRENT	0.7A/277VAC 0.9A/230VAC	I/P: 277 VAC I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	I=0.591A/ 277VAC I=0.708A/ 230VAC
4	LEAKAGE CURRENT	< 0.75mA / 277VAC	I/P: 277 VAC O/P: NO LOAD Ta: 25°C	L-FG: 0.353 mA N-FG: 0.319 mA
5	NO LOAD POWER CONSUMPTION	< 0.5W	I/P: 230VAC O/P: NO LOAD Ta: 25°C	0.232W/ 230VAC
6	TOTAL HARMONIC DISTORTION	Total harmonic distortion will be lower than 20% when output loading is 50% or higher at 230VAC	I/P: 230VAC O/P: 50% LOAD	THD: 8.39 %
		Total harmonic distortion will be lower than 20% when output loading is 75% or higher at 277VAC	I/P: 277VAC O/P: 75% LOAD	THD: 7.55 %
7	INRUSH CURRENT(Typ)	230V/ 65A Twidth =485 us measured at 50% Ipeak COLD START	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	I=53.4A/ 230VAC Twidth =452us

INPUT=230VAC/50HZ @ FULL LOAD

CH1: Input current CH2: AC Input Voltage



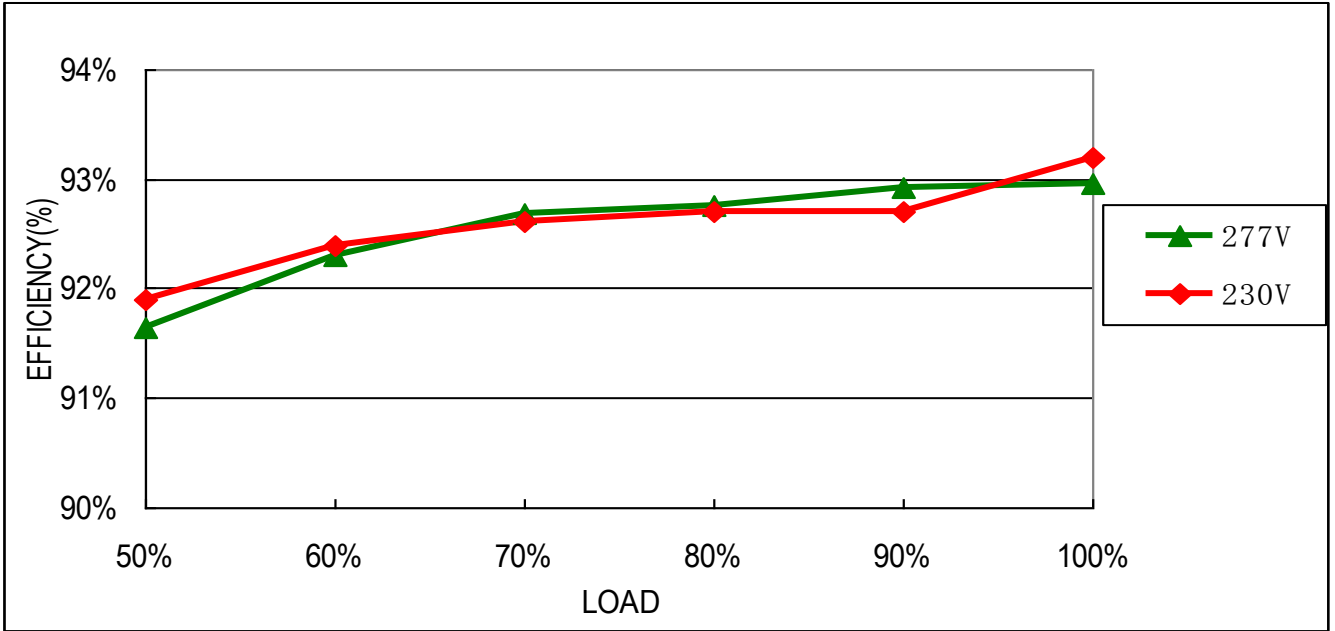


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ELG-150-C series

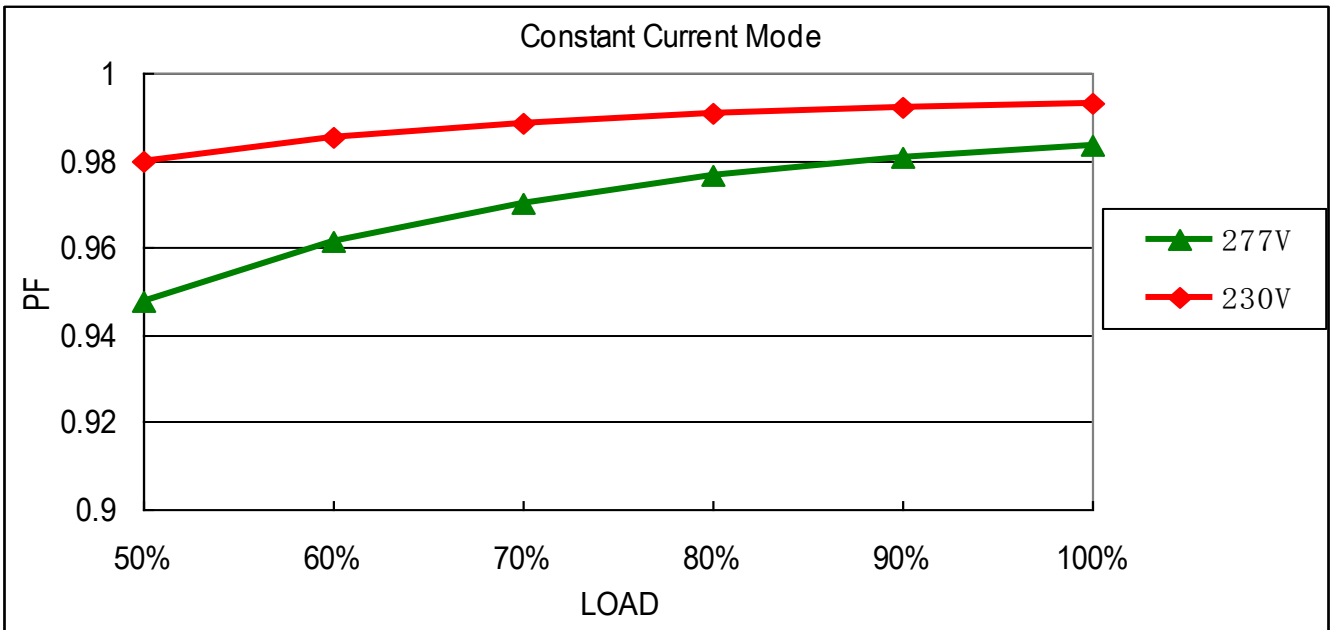
8	EFFICIENCY(Typ)	92%	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	93.20%
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EFFICIENCY vs LOAD



9	POWER FACTOR	0.92/ 277VAC 0.95/ 230VAC	I/P: 277 VAC I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	PF=0.984/ 277VAC PF=0.993/ 230VAC
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P.F vs LOAD



**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER VOLTAGE PROTECTION	155V~180V	I/P: 230VAC O/P: NO LOAD Ta: 25°C	169.39V/ 230VAC Shut down o/p voltage, re-power on to recover
2	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 230 VAC O/P: FULL LOAD	O.T.P. Active Shut down o/p voltage, re-power on to recover
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 295VAC O/P: FULL LOAD Ta: 25°C	NO DAMAGE Hiccup mode, recovers automatically after fault condition is removed

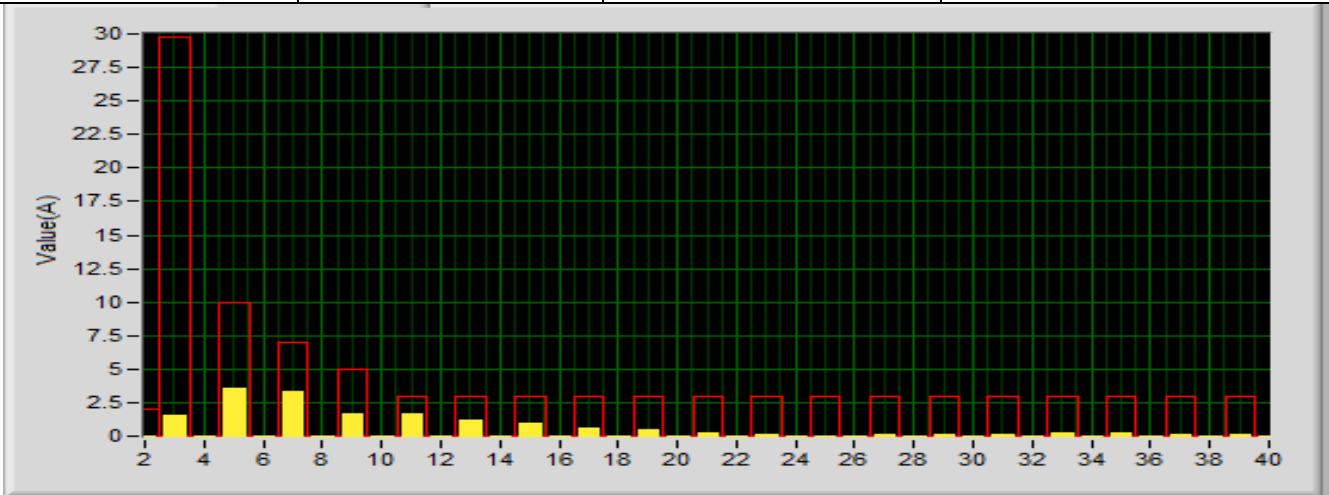
COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q 2 Rated 800V/9A	I/P: High-Line +3V =298V O/P: (1) Full Load Turn on (2) Output Short (3) Full load continue Ta: 25°C	(1) 728V (2) 470V (3) 709V
2	Diode Peak Voltage	D100 Rated 600V/10A	I/P: High-Line +3V =298V O/P: (1) Full Load Turn on (2) Output Short (3) Full load continue Ta: 25°C	(1) 450V (2) 280V (3) 440V
3	Input Capacitor Voltage	C5 Rated 100u/ 450V	I/P: High-Line +3V =298 V O/P: (1) Full Load input on/off (2) Min load input on /Off (3) Full Load /Min load Change Ta: 25°C	(1) 444V (2) 440V (3) 444V
4	Control IC Voltage Test	U1 Rated 28V (MAX.)	I/P: High-Line +3V =298 V O/P: (1) Full Load input on/off (2) Min load input on /Off (3) Full Load /Min load Change Ta: 25°C	(1) 17.7V (2) 14.5V (3) 17.7V
5	PFC Transistor (D to S) or (C to E) Peak Voltage	Q 1 Rated 600V/10A	I/P: High-Line +3V =298V O/P: (1) Full Load Turn on (2) Output Short (3) Full load continue Ta: 25°C	(1) 507V (2) 436V (3) 486V

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3.75KVAC/min I/P-FG : 2.0KVAC/min O/P-FG: 1.5KVAC/min	I/P-O/P: 4.2 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG: 1.8 KVAC/min Ta: 25°C	I/P-O/P: 1.632mA I/P-FG: 2.187mA O/P-FG: 1.766mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P: 500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG: 500VDC>100MΩ	I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta: 25°C	I/P-O/P: >9999MΩ I/P-FG: >9999MΩ O/P-FG: >9999MΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS C	I/P: 230 VAC/50HZ O/P: FULL/50% LOAD Ta: 25°C	PASS
				
2	CONDUCTION	EN55015	I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C	PASS Test by certified Lab
3	RADIATION	EN55015	I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR: 8KV Contact: 4KV	I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C	CRITERIA A
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 230VAC/50HZ O/P: FULL LOAD Ta: 25°C	CRITERIA A
6	SURGE	EN61000-4-5 INDUSTRY L-N: 3KV L,N-PE: 6KV	I/P: 230VAC/50HZ O/P: FULL LOAD L-N: 4KV L,N-PE: 8KV Ta: 25°C	CRITERIA A
7	Test by certified Lab & Test Report Prepare			

■ **RELIABILITY TEST**

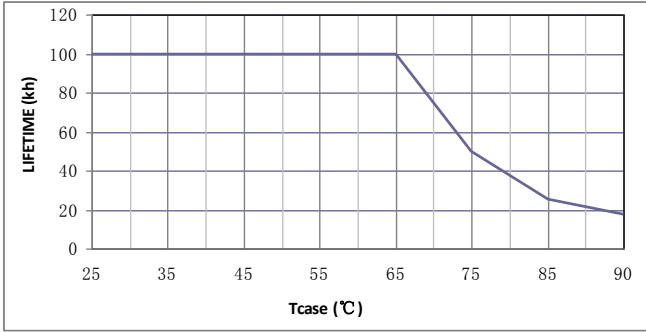
ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																				
1	TEMPERATURE RISE TEST	MODEL: ELG-150-C1050 1. ROOM AMBIENT BURN-IN: 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 31.2℃ 2. HIGH AMBIENT BURN-IN: 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 63.2℃																																																																						
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 31.2 ℃</th> <th>HIGH AMBIENT Ta=63.2 ℃</th> </tr> </thead> <tbody> <tr><td>1</td><td>C11</td><td>62.2℃</td><td>92.6℃</td></tr> <tr><td>2</td><td>L3</td><td>60.5℃</td><td>90.2℃</td></tr> <tr><td>3</td><td>RTH1</td><td>66.8℃</td><td>95.8℃</td></tr> <tr><td>4</td><td>D6</td><td>67.4℃</td><td>99.1℃</td></tr> <tr><td>5</td><td>Q1</td><td>65.6℃</td><td>97.6℃</td></tr> <tr><td>6</td><td>Q2</td><td>68.9℃</td><td>102.7℃</td></tr> <tr><td>7</td><td>D10</td><td>71.6℃</td><td>106.0℃</td></tr> <tr><td>8</td><td>C5</td><td>63.2℃</td><td>93.6℃</td></tr> <tr><td>9</td><td>C45</td><td>61.1℃</td><td>91.0℃</td></tr> <tr><td>10</td><td>U1</td><td>59.4℃</td><td>89.8℃</td></tr> <tr><td>11</td><td>T1</td><td>72.6℃</td><td>103.4℃</td></tr> <tr><td>12</td><td>D100</td><td>71.3℃</td><td>100.7℃</td></tr> <tr><td>13</td><td>C102</td><td>54.6℃</td><td>83.7℃</td></tr> <tr><td>14</td><td>C104</td><td>67.7℃</td><td>96.8℃</td></tr> <tr><td>15</td><td>RTH2</td><td>59.6℃</td><td>89.5℃</td></tr> <tr><td>16</td><td>TC</td><td>53.7℃</td><td>83.3℃</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 31.2 ℃	HIGH AMBIENT Ta=63.2 ℃	1	C11	62.2℃	92.6℃	2	L3	60.5℃	90.2℃	3	RTH1	66.8℃	95.8℃	4	D6	67.4℃	99.1℃	5	Q1	65.6℃	97.6℃	6	Q2	68.9℃	102.7℃	7	D10	71.6℃	106.0℃	8	C5	63.2℃	93.6℃	9	C45	61.1℃	91.0℃	10	U1	59.4℃	89.8℃	11	T1	72.6℃	103.4℃	12	D100	71.3℃	100.7℃	13	C102	54.6℃	83.7℃	14	C104	67.7℃	96.8℃	15	RTH2	59.6℃	89.5℃	16	TC	53.7℃	83.3℃		
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2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 295VAC/200VAC O/P: FULL LOAD Ta= -45℃	TEST: OK																																																																				
3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 ℃ NO DAMAGE	I/P: 305VAC O/P: FULL LOAD Ta=60 ℃ HUMIDITY= 95 %R.H	TEST: OK																																																																				
4	TEMPERATURE COEFFICIENT	±0.03 %/℃ (0~50℃)	I/P: 230 VAC O/P: FULL LOAD	±0.003%/℃ (0~50℃)																																																																				
5	STORAGE TEMPERATURE TEST	1. Thermal shock Temperature: -45℃~+90℃ 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		TEST: OK																																																																				
6	THERMAL SHOCK TEST	1. Thermal shock Temperature: -45℃~+65℃ 2. Temperature change rate : 25℃ / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle: 10 CYCLE 5. Input/Output condition: 230VAC/Full Load AC ON/OFF TEST turn on 58 sec; turn off 2 sec		TEST: OK																																																																				



150W Single Output Switching Power Supply

ELG-150-C series

7	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency: 10~500Hz (3) Sweep Time: 12min/sweep cycle (4) Acceleration: 5G (5) Test Time: 72min in each axis (X.Y.Z) (6) Ta: 25°C	TEST: OK
8	CAPACITOR LIFE CYCLE	ELG-150-C1050: SUPPOSE C102 IS THE MOST CRITICAL COMPONENT (1) I/P: 230VAC O/P: FULL LOAD Ta= 25 °C LIFE TIME (2) I/P: 230VAC O/P: FULL LOAD Ta= 60 °C LIFE TIME (3) I/P: 230VAC O/P: 75% LOAD Ta= 60 °C LIFE TIME (4) I/P: 230VAC O/P: 50% LOAD Ta= 60 °C LIFE TIME	(1) 491401 HRS (2) 49581 HRS (3) 76723 HRS (4) 95139 HRS
9	MTBF	MIL-HDBK-217F TOTAL FAILURE RATE: 308.5K HRS	
10	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure (Expected Life): Above 50000 hours @ Tc 75°C 	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	ZHANGZJ/ZHUOKB	SKY	LIUWY