



Test Report: ELG-100-C1050

100W 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

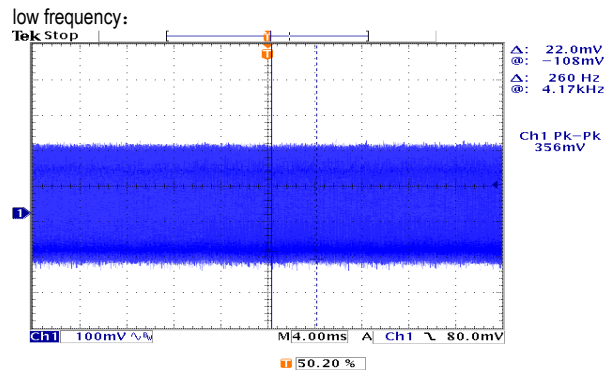
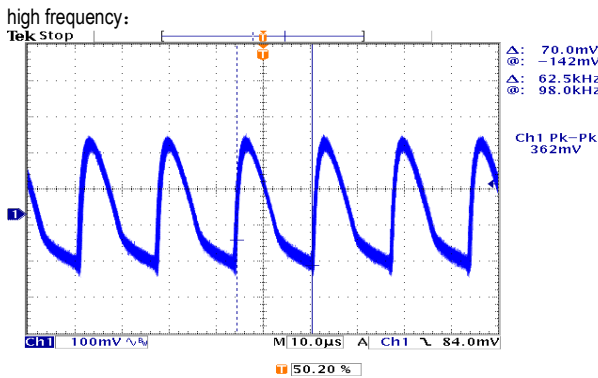
Environment Test



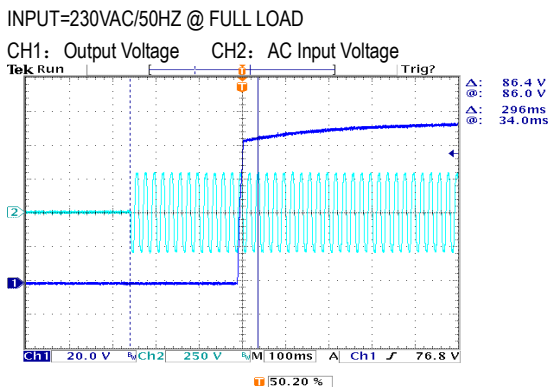
■ DESIGN VERIFY TEST

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	0.491A~1.126A
2	OUTPUT CURRENT TOLERANCE	±5%	I/P: 230VAC O/P: FULL/ MIN LOAD Ta: 25°C	±1.21%
3	CONSTANT CURRENT REGION	48V~95V	I/P: 230VAC O/P: LED MODE Ta: 25°C	20.3V~95.1V
4	NO LOAD OUTPUT VOLTAGE (Max)	105V	I/P: 230VAC O/P: NO LOAD Ta: 25°C	96V
5	OVER/UNDERSHOOT TEST	<±5 %	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	<5 %
6	RIPPLE & NOISE (Max)	1.0Vp-p	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	0.362Vp-p



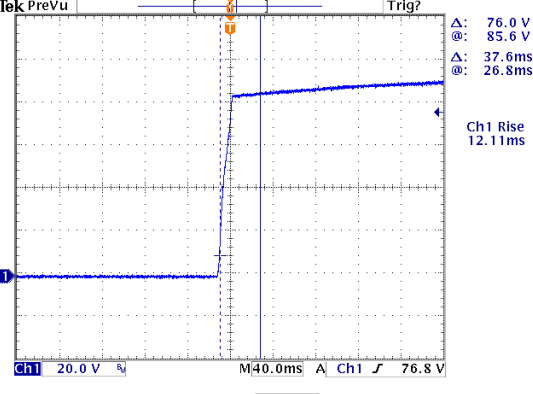
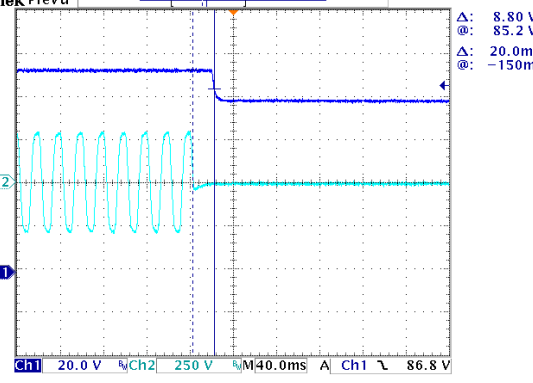
7	SET UP TIME(Max)	230VAC/ 500ms	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	230VAC/ 296ms
---	------------------	---------------	--	---------------





100W Single Output Switching Power Supply

ELG-100-C series

8	RISE TIME (Max)	230VAC/ 100ms	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	230VAC/12.1ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage</p>  <p> Δ: 76.0 V $@$: 85.6 V Δ: 37.6ms $@$: 26.8ms Ch1 Rise 12.11ms </p> <p> Tek PreVu Ch1 20.0 V M 40.0ms A Ch1 76.8 V 50.20% </p>				
9	HOLD UP TIME(Typ)	230VAC/ 10ms	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	230VAC/20.0ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage</p>  <p> Δ: 8.80 V $@$: 85.2 V Δ: 20.0ms $@$: -150ms </p> <p> Tek PreVu Ch1 20.0 V Ch2 250 V M 40.0ms A Ch1 86.8 V </p>				



100W Single Output Switching Power Supply

ELG-100-C series

10	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:															
IP: 230 VAC; Ta: 25°C															
1	Resistance value	Short	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K	OPEN		
		Output Current	0	0.082	0.191	0.300	0.409	0.517	0.622	0.729	0.836	0.942	1.047	1.053	
		Percentage of rated current	0%	7.81%	18.19%	28.57%	38.95%	49.24%	59.24%	69.43%	79.62%	89.71%	99.71%	100.29%	
	2	Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN	
		Output Current	0	0.085	0.194	0.297	0.408	0.514	0.626	0.735	0.838	0.946	1.051	1.054	
		Percentage of rated current	0%	8.10%	18.48%	28.29%	38.86%	48.95%	59.62%	70.00%	79.81%	90.10%	100.10%	100.38%	
	3	Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN	
		Output Current	0	0.091	0.196	0.303	0.409	0.516	0.621	0.726	0.833	0.938	1.033	1.054	
		Percentage of rated current	0%	8.67%	18.67%	28.86%	38.95%	49.14%	59.14%	69.14%	79.33%	89.33%	98.38%	100.38%	

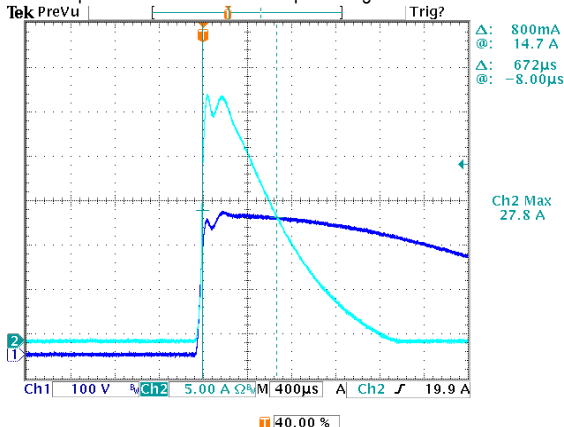


INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	100VAC~305VAC	I/P: TESTING O/P: FULL LOAD Ta: 25°C	97V~305V
			I/P: LOW-LINE-3V=97 V HIGH-LINE+10V=315 V O/P: FULL/MIN LOAD ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST: OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 100 VAC ~305 VAC O/P: FULL~MIN LOAD Ta: 25°C	TEST: OK
3	AC CURRENT	0.5A/277VAC 0.6A/230VAC	I/P: 277 VAC I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	I =0.410A/ 277VAC I =0.480A/ 230VAC
4	LEAKAGE CURRENT	< 0.75mA / 277VAC	I/P: 277 VAC O/P: NO LOAD Ta: 25°C	L-FG: 0.331 mA N-FG: 0.322 mA
5	NO LOAD POWER CONSUMPTION	< 0.5W	I/P: 230VAC O/P: NO LOAD Ta: 25°C	0.195W/ 230VAC
6	TOTAL HARMONIC DISTORTION	Total harmonic distortion will be lower than 20% when output loading is 60% or higher at 230VAC	I/P: 230VAC O/P: 60% LOAD	THD: 12.69 %
		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: 11.63 %
7	INRUSH CURRENT(Typ)	230V/ 40A Twidth =760 us measured at 50% Ipeak COLD START	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	I =27.8A/ 230VAC Twidth =672us

INPUT=230VAC/50HZ @ FULL LOAD

CH2: Input current CH1: AC Input Voltage



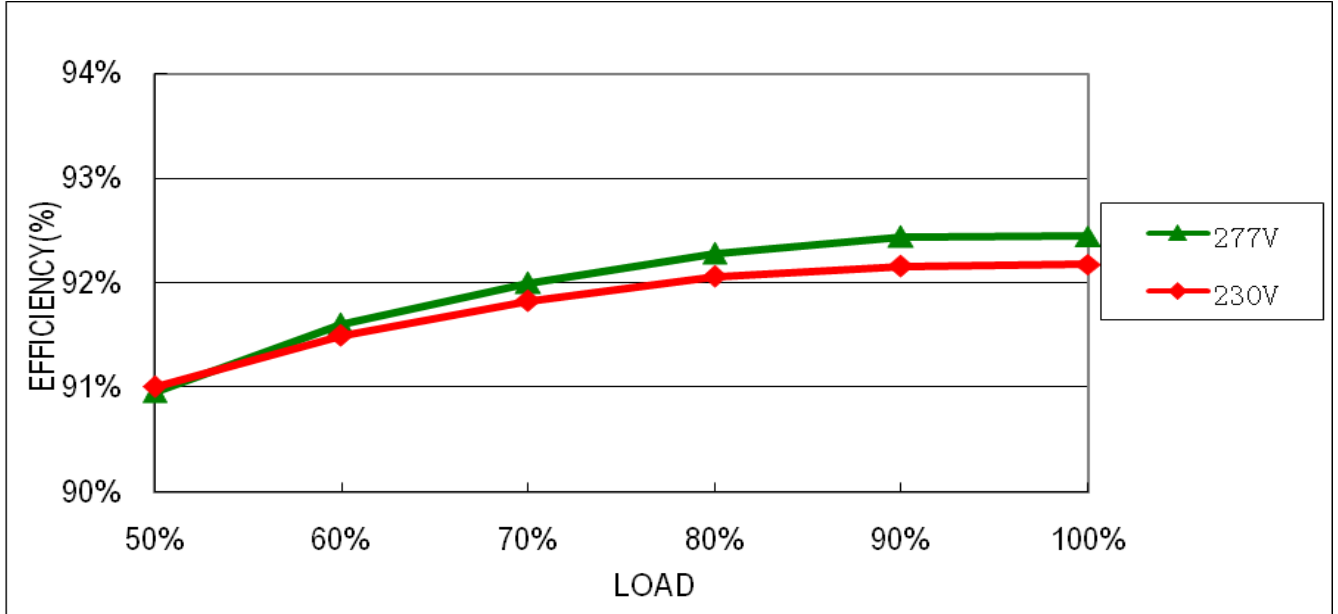


100W Single Output Switching Power Supply

ELG-100-C series

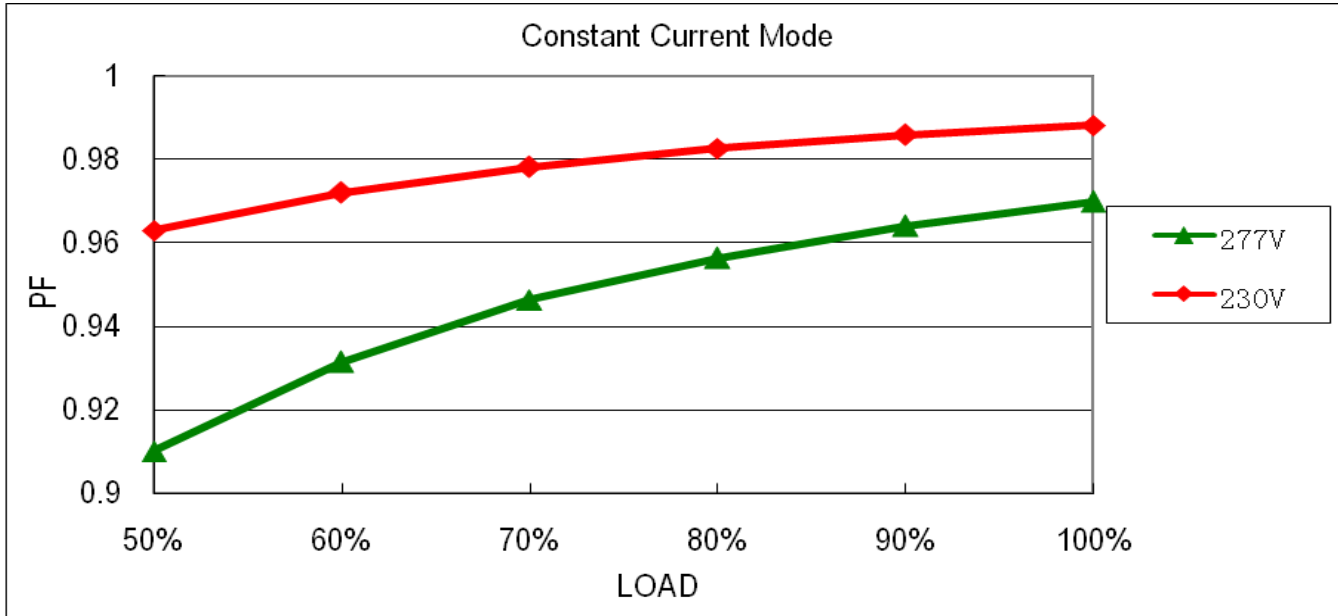
8	EFFICIENCY(Typ)	90%	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	92.18%
---	-----------------	-----	---	--------

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=0.970/ 277VAC PF=0.988/ 230VAC
---	--------------	------------------------------	--	--------------------------------------

P.F vs LOAD



**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER VOLTAGE PROTECTION	110V~130V	I/P: 100VAC I/P: 230VAC I/P: 305VAC O/P: NO LOAD Ta: 25°C	115.9V/ 100VAC 115.9V/ 230VAC 115.9V/ 305VAC Shut down o/p voltage, re-power on to recover
2	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 200 VAC I/P: 230VAC I/P: 305VAC 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: 200VAC I/P: 305VAC 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 Power Transistor	Q 2 Rated 800V/9A	I/P: High-Line +3V =308V O/P: (1) Full Load Turn on (2) Output Short (3) Full load continue Ta: 25°C	(1) 716V (2) 492V (3) 700V
2	O/P Diode (MOSFET)	D100 Rated 400V/10A	I/P: High-Line +3V =308V O/P: (1) Full Load Turn on (2) Output Short (3) Full load continue Ta: 25°C	(1) 298V (2) 188V (3) 290V
3	Input Capacitor	C5 Rated 100u/ 450V	I/P: High-Line +3V =308V O/P: (1) Full Load input on/off (2) Min load input on /Off (3) Full Load /Min load Change Ta: 25°C	(1) 446V (2) 444V (3) 444V
4	Control IC	U1 Rated 28V (MAX.)	I/P: High-Line +3V =308V O/P: (1) FULL LOAD (2) Output Short (3) O.V.P (4) Low Line No Load Vo(min) Ta: 25°C	(1) 17.4V (2) 11.3V (3) 15.3V (4) 15.1V
5	PFC Power Transistor	Q 1 Rated 600V/10A	I/P: High-Line +3V =308V O/P: (1) Full Load Turn on (2) Output Short (3) Full load continue Ta: 25°C	(1) 478V (2) 438V (3) 470V
6	Clamp Diode	D 10 Rated 800V/2A	I/P: High-Line +3V = 308V O/P: (1) Full Load input on/off (2) Output Short Ta: 25°C	(1) 662V (2) 430V

**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: 1.596mA I/P-FG: 2.043mA O/P-FG: 1.612mA 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/60% 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: 4KV 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-100-C1050 1. ROOM AMBIENT BURN-IN: 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 30.5°C 2. HIGH AMBIENT BURN-IN: 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 62.8°C																																																																																						
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 30.5 °C</th> <th>HIGH AMBIENT Ta=62.8 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>C11</td><td>69.1°C</td><td>97.6°C</td></tr> <tr><td>2</td><td>L1</td><td>65.6°C</td><td>92.7°C</td></tr> <tr><td>3</td><td>L2</td><td>63.7°C</td><td>90.2°C</td></tr> <tr><td>4</td><td>Q1</td><td>72.4°C</td><td>101.7°C</td></tr> <tr><td>5</td><td>Q2</td><td>71.8°C</td><td>101.8°C</td></tr> <tr><td>6</td><td>D6</td><td>71.8°C</td><td>100.4°C</td></tr> <tr><td>7</td><td>D10</td><td>78.0°C</td><td>108.1°C</td></tr> <tr><td>8</td><td>R15</td><td>70.4°C</td><td>99.0°C</td></tr> <tr><td>9</td><td>C5</td><td>67.0°C</td><td>94.1°C</td></tr> <tr><td>10</td><td>R7</td><td>77.4°C</td><td>107.6°C</td></tr> <tr><td>11</td><td>C45</td><td>66.9°C</td><td>94.1°C</td></tr> <tr><td>12</td><td>T1</td><td>74.7°C</td><td>103.4°C</td></tr> <tr><td>13</td><td>U1</td><td>66.5°C</td><td>93.4°C</td></tr> <tr><td>14</td><td>D100</td><td>71.1°C</td><td>97.5°C</td></tr> <tr><td>15</td><td>U100</td><td>58.8°C</td><td>85.9°C</td></tr> <tr><td>16</td><td>C205</td><td>64.3°C</td><td>91.2°C</td></tr> <tr><td>17</td><td>C102</td><td>67.9°C</td><td>94.4°C</td></tr> <tr><td>18</td><td>C104</td><td>66.8°C</td><td>93.2°C</td></tr> <tr><td>19</td><td>RTH2</td><td>63.7°C</td><td>90.3°C</td></tr> <tr><td>20</td><td>TC</td><td>57.5°C</td><td>74.3°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 30.5 °C	HIGH AMBIENT Ta=62.8 °C	1	C11	69.1°C	97.6°C	2	L1	65.6°C	92.7°C	3	L2	63.7°C	90.2°C	4	Q1	72.4°C	101.7°C	5	Q2	71.8°C	101.8°C	6	D6	71.8°C	100.4°C	7	D10	78.0°C	108.1°C	8	R15	70.4°C	99.0°C	9	C5	67.0°C	94.1°C	10	R7	77.4°C	107.6°C	11	C45	66.9°C	94.1°C	12	T1	74.7°C	103.4°C	13	U1	66.5°C	93.4°C	14	D100	71.1°C	97.5°C	15	U100	58.8°C	85.9°C	16	C205	64.3°C	91.2°C	17	C102	67.9°C	94.4°C	18	C104	66.8°C	93.2°C	19	RTH2	63.7°C	90.3°C	20	TC	57.5°C	74.3°C
NO	Position	ROOM AMBIENT Ta= 30.5 °C	HIGH AMBIENT Ta=62.8 °C																																																																																					
1	C11	69.1°C	97.6°C																																																																																					
2	L1	65.6°C	92.7°C																																																																																					
3	L2	63.7°C	90.2°C																																																																																					
4	Q1	72.4°C	101.7°C																																																																																					
5	Q2	71.8°C	101.8°C																																																																																					
6	D6	71.8°C	100.4°C																																																																																					
7	D10	78.0°C	108.1°C																																																																																					
8	R15	70.4°C	99.0°C																																																																																					
9	C5	67.0°C	94.1°C																																																																																					
10	R7	77.4°C	107.6°C																																																																																					
11	C45	66.9°C	94.1°C																																																																																					
12	T1	74.7°C	103.4°C																																																																																					
13	U1	66.5°C	93.4°C																																																																																					
14	D100	71.1°C	97.5°C																																																																																					
15	U100	58.8°C	85.9°C																																																																																					
16	C205	64.3°C	91.2°C																																																																																					
17	C102	67.9°C	94.4°C																																																																																					
18	C104	66.8°C	93.2°C																																																																																					
19	RTH2	63.7°C	90.3°C																																																																																					
20	TC	57.5°C	74.3°C																																																																																					
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 305VAC/200VAC O/P: FULL LOAD Ta= -45°C	TEST: OK																																																																																				
3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 °C NO DAMAGE	I/P: 305VAC O/P: FULL LOAD Ta=60 °C HUMIDITY= 95 %R.H	TEST: OK																																																																																				
4	TEMPERATURE COEFFICIENT	±0.03 %/°C (0~50°C)	I/P: 230 VAC O/P: FULL LOAD	±0.008%/°C (0~50°C)																																																																																				
5	STORAGE TEMPERATURE TEST	1. Thermal shock Temperature: -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle: 5 CYCLE 5. Input/Output condition: STATIC		TEST: OK																																																																																				



100W Single Output Switching Power Supply

ELG-100-C series

6	THERMAL SHOCK TEST	1. Thermal shock Temperature: -45°C~+65°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle: 16 CYCLE 5. Input/Output condition: 230VAC/Full Load AC ON/OFF TEST AC on 3 sec/AC off 1 sec TEST	TEST: OK
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-100-C1050: SUPPOSE C102 IS THE MOST CRITICAL COMPONENT (1) I/P: 230VAC O/P: FULL LOAD Tc= 80 °C LIFE TIME (2) I/P: 230VAC O/P: 75% LOAD Tc= 80 °C LIFE TIME (3) I/P: 230VAC O/P: 50% LOAD Tc= 80 °C LIFE TIME	(1) 11997 HRS (2) 25842 HRS (3) 38921 HRS
9	MTBF	Conducted by Parts Stress Analysis Prediction 3070.8K hrs min. Telcordia SR-332 (Bellcore) ; 300.7K hrs min. MIL-HDBK-217F (25°C)	
10	Ongoing Reliability Test	I/P: 230VAC O/P: FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	ZHANGZJ/ZHUOKB	SKY	LIUWY