



Test Report: RSP-750-27

750W Single Output Power Supply

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

ESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1 : 150 mVp-p (Max)	I/P : 230VAC O/P : FULL LOAD Ta : 25°C	V1 : 67 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 24V ~ 30V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	22.448 V ~ 31.469 V/ 230 VAC 22.451 V ~ 31.469 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1 : 1 % ~ -1 % (Max)	I/P : 100VAC / 264 VAC O/P : FULL/ MIN LOAD Ta : 25°C	V1 : 0.05 % ~ -0.05 %	P
4	LINE REGULATION	V1 : 0.5 % ~ -0.5 % (Max)	I/P : 100VAC ~ 264 VAC O/P : FULL LOAD Ta : 25°C	V1 : 0.03 % ~ -0.03 %	P
5	LOAD REGULATION	V1 : 0.5 % ~ -0.5 % (Max)	I/P : 230 VAC O/P : FULL ~ MIN LOAD Ta : 25°C	V1 : 0.05 % ~ -0.05 %	P
6	SET UP TIME	230VAC : 1000 ms (Max) 115VAC : 1000 ms (Max)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 171 ms 115VAC/ 340 ms	P
7	RISE TIME	230VAC : 50 ms (Max) 115VAC : 50 ms (Max)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 36 ms 115VAC/ 35 ms	P
8	HOLD UP TIME	230VAC : 16 ms (TYP) 115VAC : 16 ms (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 26 ms 115VAC/ 27 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	TEST : <5 %	P
10	DYNAMIC LOAD	V1 : 2700 mVp-p	I/P : 230 VAC (1).O/P : FULL /Min LOAD 90%DUTY/ 1KHZ (2).O/P : FULL /Min LOAD 90%DUTY/ 3KHZ (3).O/P : FULL /Min LOAD 90%DUTY/ 5KHZ (4).O/P : FULL /Min LOAD 50%DUTY/ 120HZ Ta : 25°C	(1)700 mVp-p (2)659 mVp-p (3)603 mVp-p (4)1.09 Vp-p	P

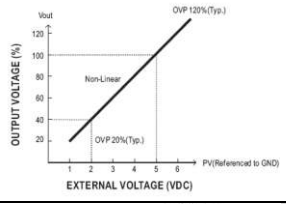
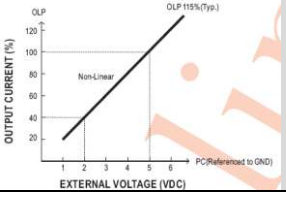
INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~264 VAC	I/P : TESTING O/P : FULL LOAD Ta : 25°C	73 V~264V	P
			I/P : LOW-LINE-3V=87 V HIGH-LINE+15%=300 V O/P : FULL/MIN LOAD ON : 30 Sec . OFF : 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST : OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P : 100VAC ~ 264 VAC O/P : FULL~MIN LOAD Ta : 25°C	TEST : OK	P
3	POWER FACTOR	0.97 / 230 VAC(TYP) 0.98 / 115 VAC(TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF= 0.988 / 230 VAC PF= 0.998 / 115 VAC	P
4	EFFICIENCY	90.5% (TYP)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	90.876 %	P
5	INPUT CURRENT	230V/ 3.9 A (TYP) 115V/ 8.9 A (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 3.659 A/ 230 VAC I = 7.546 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 40 A (TYP) 115V/ 25 A(TYP) COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 38 A/ 230 VAC I = 18 A/ 115 VAC	P
7	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.8 mA N-FG : 0.68 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 ~ 125 %	I/P : 230 VAC I/P : 115 VAC O/P : TESTING Ta : 25°C	115.258%/ 230 VAC 115.258%/ 115 VAC Constant Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1 : 31V ~ 36.5 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	33.457V/ 230 VAC 33.504V/ 115 VAC Shut down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC : TSW1 : 80 ± 5°C O.T.P. TSW2 : 85 ± 5°C 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	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P : 264 VAC O/P : FULL LOAD Ta : 25°C	NO DAMAGE CONSTANT CURRENT LIMITING	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																		
1	REMOTE ON/OFF CONTROL	Power on : short between on/off (pin13) & 12V-AUX(pin14) on CN50 Power off : open between on/off (pin13) & 12-AUX(pin14) on CN50	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	TEST : OK	P																		
2	DC OK SIGNAL	The TTL signal out, PSU turn on = 0 ~ 1V PSU turn off = 3.3 ~ 5.6V	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	0 V 4.915 V	P																		
3	OUTPUT VOLTAGE PROGRAMMABLE(PV)		I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	<table border="1"> <tr> <th>ADJ V</th><th>2V</th><th>3V</th><th>4V</th><th>5V</th><th>5.5V</th></tr> <tr> <td>SPEC</td><td>40%</td><td>60%</td><td>80%</td><td>100%</td><td>110%</td></tr> <tr> <td>TEST</td><td>41.5%</td><td>61.4%</td><td>81.8%</td><td>102%</td><td>111.9%</td></tr> </table>	ADJ V	2V	3V	4V	5V	5.5V	SPEC	40%	60%	80%	100%	110%	TEST	41.5%	61.4%	81.8%	102%	111.9%	P
ADJ V	2V	3V	4V	5V	5.5V																		
SPEC	40%	60%	80%	100%	110%																		
TEST	41.5%	61.4%	81.8%	102%	111.9%																		
4	OUTPUT CURRENT PROGRAMMABLE(PC)		I/P : 230 VAC O/P : 0%~110 LOAD Ta : 25°C	<table border="1"> <tr> <th>ADJ V</th><th>2V</th><th>3V</th><th>4V</th><th>5V</th><th>5.5V</th></tr> <tr> <td>SPEC</td><td>40%</td><td>60%</td><td>80%</td><td>100%</td><td>110%</td></tr> <tr> <td>TEST</td><td>38.3%</td><td>58.3%</td><td>80.4%</td><td>101.59%</td><td>112.39%</td></tr> </table>	ADJ V	2V	3V	4V	5V	5.5V	SPEC	40%	60%	80%	100%	110%	TEST	38.3%	58.3%	80.4%	101.59%	112.39%	P
ADJ V	2V	3V	4V	5V	5.5V																		
SPEC	40%	60%	80%	100%	110%																		
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5	REMOTE SENSE	>0.5V	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	>0.54	P																		
6	FAN SPEED	FAN Voltage : 0% LOAD 7~9V 100%LOAD 11.5~12.5V	I/P : 230 VAC O/P : 0%~100%LOAD Ta : 25°C	O/P : 0% LOAD FAN Voltage : 7.968V O/P : 100%LOAD FAN Voltage : 12.078V	P																		
7	AUXILIARY POWER	12V@ 0.1 A(±10%)	I/P : 230 VAC O/P : 0%~100%LOAD Ta : 25°C	O/P : 0% LOAD 12.528 V O/P : 100%LOAD 12.295 V	P																		

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q905 Rated : STP7N95K3 7A/950V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2) Output Short (3)Full load continue Ta : 25°C	(1) 824 V (2) 816 V (3) 820 V	P
2	Diode Peak Voltage	D101 Rated : V30100S 30A/100V Q201 Rated : YA868C15RSC 30A/150V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2)Output Short (3)Full load continue O/P : (1)Full Load Turn on (2)Output Short (3)Full load continue Ta : 25°C	(1) 53.6 V (2) 55.6 V (3) 51.2 V (1) 99.6 V (2) 98.4 V (3) 98 V	P
3	Input Capacitor Voltage	C5 Rated : 330u/400V 105°C 30*30 HU	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta : 25°C	(1) 384 V (2) 382 V (3) 396 V	P
4	Control IC Voltage Test	U901 Rated : UCC28220D 8V~14V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta : 25°C	(1) 12.3 V (2) 12.1 V (3) 12 V	P
5	Power Transistor (D to S) or (C to E) Peak Voltage	Q 2 Rated : FCP22N60N 22A/600V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2) Output Short (3)Full load continue Ta : 25°C	(1) 428 V (2) 400 V (3) 418 V	P

■ SAFETY & E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P : 3 KVAC/min I/P-FG : 2KVAC/min O/P-FG : 0.5 KVAC/min	I/P-O/P : 3.6 KVAC/min I/P-FG : 2.4 KVAC/min O/P-FG : 0.6 KVAC/min Ta : 25°C	I/P-O/P : 9. mA I/P-FG : 8.3 mA O/P-FG : 6.7 mA NO DAMAGE	P
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 /70%RH	I/P-O/P : 15.5 GΩ I/P-FG : 12.2 GΩ O/P-FG : 13.2 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta : 25°C / 70%RH	10 mΩ	P

E.M.C TEST

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

RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT		
1	TEMPERATURE RISE TEST	MODEL : RSP-750-24			P		
		1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P : 230VAC O/P : FULL LOAD Ta=33.6 °C					
		2. HIGH AMBIENT BURN-IN : 6 HRS I/P : 230VAC O/P : FULL LOAD Ta=48.2 °C					
		NO	Position	PART NUMBER		ROOM AMBIENT Ta=33.6 °C	HIGH AMBIENT Ta=48.2 °C
		1	LF1	TR690-R1		42.1°C	58.2°C
		2	C2	105/275VAC 20% P=22.5 R46		41.7°C	57.5°C
		3	BD1	30A/800V SILICON US30KB80R		54.0°C	69.4°C
		4	L2	TF2432		48.4°C	64.1°C
		5	Q2	FCP22N60N 22A/600V		48.0°C	64.3°C
		6	C11	225/450V 10% P=22 MMX		40.0°C	56.9°C
		7	C5	330u/400V 105°C 30*30 HU		37.2°C	52.8°C
		8	T1	TF2419		44.6°C	58.9°C
		9	T2	TF2420		51.9°C	67.0°C
		10	Q901	STP7N95K3 7A/950V		47.4°C	62.2°C
		11	Q906	STP7N95K3 7A/950V		54.7°C	68.6°C
		12	Q100	V30100S 30A/100V		49.6°C	63.1°C
		13	Q200	V30100S 30A/100V		57.7°C	71.5°C
		14	D101	M6060C 60A/60V		58.2°C	72.3°C
		15	D900	BYV26EGP 1A/1KV DO-204AC		44.1°C	58.3°C
		16	D70	ST02D-170 AX078 T-52mm		46.3°C	61.5°C
		17	C75	220u/25V UL7Kh 8*11.5 KY		41.5°C	56.8°C
		18	T3	TF2431		43.1°C	58.0°C
		19	C320	100u/25V L5Kh 6.3*11 KY		43.3°C	58.2°C
		20	C301	1500u/16V UL10Kh 10*20 ZLH		42.1°C	57.0°C
		21	C161	470u/25V UL7Kh 8*20 KY		42.1°C	56.8°C
		22	L100	TF2428		51.2°C	66.0°C
		23	C110	1000u/35V UL10Kh 12.5*25 KY		47.1°C	61.7°C
24	TSW1	BW-DCP-R0 80°C 105mm HH (H110)	41.4°C	57.2°C			
25	TSW2	BW-DCP-R0 85°C 60mm HH (H110)	53.3°C	67.4°C			
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 119 % LOAD Ta : 25°C	TEST : OK	P		
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/100VAC O/P : 100 % LOAD Ta= -35 °C	TEST : OK	P		
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C NO DAMAGE	I/P : 272 VAC O/P : FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK	P		
5	TEMPERATURE COEFFICIENT	± 0.03 %/°C (0~50°C)	I/P : 230 VAC O/P : FULL LOAD	± 0 %/°C (0~50°C)	P		

6	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	OK	P
7	THERMAL SHOCK TEST	1. Thermal shock Temperature : -35°C ~ +55°C 2. Temperature change rate : 25°C / 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 58sec ; turn off 2sec	OK	P
8	VIBRATION TEST	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 2G (5) Test Time : 60min in each axis (X.Y.Z) (6) Ta : 25°C	TEST : OK	P
9	CAPACITOR LIFE CYCLE	RSP-750-24:SUPPOSE C110 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= 50 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 50 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 50 °C LIFE TIME	(1) 1205160HRS (2) 213000HRS (3) 277200HRS (4) 320640HRS	P
10	MTBF	Conducted by Parts Stress Analysis Prediction 336.9K hrs min. Telcordia SR-332 (Bellcore) ; 109.1K hrs min. MIL-HDBK-217F (25°C)		P
11	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 50,000 hours @ TA 50°C		P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2012/5/16	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2012/7/11	PRODUCT SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2012/8/7	PRODUCT SAMPLE W1207C22	PASS	SANFORD SU	VINCENT TSENG

2009/08/04 A50-F023