

MODEL : RPS-60-48

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 100 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25℃	V1: 14 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 45.6V~ 52.8V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	42.2 V~ 53.52 V/ 230 VAC 42.2 V~ 53.52 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %~ -1 % (Max)	I/P: 115 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25℃	V1: 0.15 %~ -0.15 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 115VAC ~ 264 VAC O/P:FULL LOAD Ta:25℃	V1: 0.08 %~ -0.08 %	P
5	LOAD REGULATION	V1: 1%~ -1 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0.11 %~ -0.11 %	P
6	SET UP TIME	230VAC: 500 ms (Max) 115 VAC: 500 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 373 ms 115VAC/ 374 ms	P
7	RISE TIME	230VAC: 30 ms (Max) 115VAC: 30 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 23 ms 115VAC/ 26 ms	P
8	HOLD UP TIME	230VAC: 60 ms (TYP) 115VAC: 12 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 77 ms 115VAC/ 17.1 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: <5 %	P
10	DYNAMIC LOAD	V1: 4800 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	145 mVp-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℃	71V~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: 90VAC ~ 264 VAC O/P:FULL ~MIN LOAD Ta:25℃	TEST: OK	P
3	EFFICIENCY	86 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	86.4 %	P
4	INPUT CURRENT	230V/ 1 A (TYP) 115V/ 1.8 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	I = 0.68 A/ 230 VAC I = 1.06 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 60 A (TYP) 115V/ 30 A(TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	I = 46 A/ 230 VAC I = 23 A/ 115 VAC	P
6	LEAKAGE CURRENT	< 130 uA/ 264 VAC for earth leakage current	I/P: 264 VAC O/P:Min LOAD Ta:25℃	L-FG: 117 uA N-FG: 117 uA	P
		< 100 uA/264 VAC for touch leakage current	I/P: 264 VAC O/P:Min LOAD Ta:25℃	L-V+ : 79 uA L-V-: 79 uA N-V+: 79 uA N-V-: 79 uA	

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	115 %~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25℃	122 %/ 230 VAC 120 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 55.2 V~ 64.8 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	61.2 V/ 230 VAC 61.2 V/ 115 VAC Shunt down Re- power ON	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P:FULL LOAD Ta:25℃	NO DAMAGE Hiccup Mode	P

ONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	No load power consumption	<0.75W	I/P: 240 VAC O/P:NO LOAD	0.6 W/240VAC	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																	
1	TEMPERATURE RISE TEST	MODEL : RPS-60-24 1. ROOM AMBIENT BURN-IN : 1HRS I/P: 230VAC O/P: FULL LOAD Ta= 28.1 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230VAC O/P: FULL LOAD Ta= 51.6 °C <table><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 28.1°C</th><th>HIGH AMBIENT Ta= 51.6 °C</th></tr><tr><td>1</td><td>LF1</td><td>LF158</td><td>56.3°C</td><td>72.7°C</td></tr><tr><td>2</td><td>BD1</td><td>US4K 4A/800V SHI</td><td>60.4°C</td><td>77.2°C</td></tr><tr><td>3</td><td>C5</td><td>100U/400V NCC 105°C</td><td>57.2°C</td><td>74.6°C</td></tr><tr><td>4</td><td>D1</td><td>EGP20J 2A/600V ZOW</td><td>83.0°C</td><td>99.2°C</td></tr><tr><td>5</td><td>Q1</td><td>2SK2545 2A/600V TOS</td><td>95.8°C</td><td>112.6°C</td></tr><tr><td>6</td><td>ZD1</td><td>P6KE100A PAN</td><td>68.9°C</td><td>84.8°C</td></tr><tr><td>7</td><td>C36</td><td>100U/50V NCC 105°C KY</td><td>64.7°C</td><td>79.9°C</td></tr><tr><td>8</td><td>T1 COIL</td><td>TF-1417 LS</td><td>76.1°C</td><td>90.3°C</td></tr><tr><td>9</td><td>D100</td><td>S20LC30 20A/300V SHI</td><td>82.6°C</td><td>97.7°C</td></tr><tr><td>10</td><td>C105</td><td>470U/35V NCC 105°C KY</td><td>66.5°C</td><td>81.1°C</td></tr><tr><td>11</td><td>L100</td><td>RB023D</td><td>59.8°C</td><td>72.7°C</td></tr><tr><td>12</td><td>U1</td><td>NCP1230D</td><td>69.1°C</td><td>83.6°C</td></tr></table>			NO	Position	P/N	ROOM AMBIENT Ta= 28.1°C	HIGH AMBIENT Ta= 51.6 °C	1	LF1	LF158	56.3°C	72.7°C	2	BD1	US4K 4A/800V SHI	60.4°C	77.2°C	3	C5	100U/400V NCC 105°C	57.2°C	74.6°C	4	D1	EGP20J 2A/600V ZOW	83.0°C	99.2°C	5	Q1	2SK2545 2A/600V TOS	95.8°C	112.6°C	6	ZD1	P6KE100A PAN	68.9°C	84.8°C	7	C36	100U/50V NCC 105°C KY	64.7°C	79.9°C	8	T1 COIL	TF-1417 LS	76.1°C	90.3°C	9	D100	S20LC30 20A/300V SHI	82.6°C	97.7°C	10	C105	470U/35V NCC 105°C KY	66.5°C	81.1°C	11	L100	RB023D	59.8°C	72.7°C	12	U1	NCP1230D	69.1°C	83.6°C	P
NO	Position	P/N	ROOM AMBIENT Ta= 28.1°C	HIGH AMBIENT Ta= 51.6 °C																																																																		
1	LF1	LF158	56.3°C	72.7°C																																																																		
2	BD1	US4K 4A/800V SHI	60.4°C	77.2°C																																																																		
3	C5	100U/400V NCC 105°C	57.2°C	74.6°C																																																																		
4	D1	EGP20J 2A/600V ZOW	83.0°C	99.2°C																																																																		
5	Q1	2SK2545 2A/600V TOS	95.8°C	112.6°C																																																																		
6	ZD1	P6KE100A PAN	68.9°C	84.8°C																																																																		
7	C36	100U/50V NCC 105°C KY	64.7°C	79.9°C																																																																		
8	T1 COIL	TF-1417 LS	76.1°C	90.3°C																																																																		
9	D100	S20LC30 20A/300V SHI	82.6°C	97.7°C																																																																		
10	C105	470U/35V NCC 105°C KY	66.5°C	81.1°C																																																																		
11	L100	RB023D	59.8°C	72.7°C																																																																		
12	U1	NCP1230D	69.1°C	83.6°C																																																																		
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 125 % LOAD Ta:25°C	TEST : OK	P																																																																	
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P:100 % LOAD Ta= -20°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 %(0~50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.01 %(0~50°C)	P																																																																	
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10~500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:2G (5) Test Time:1 hour in each axis (X.Y.Z) (6) Ta:25°C		TEST : OK	P																																																																	

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 4 KVAC/min I/P-FG: 2 KVAC/min O/P-FG: 1.5 KVAC/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: 2.14 mA I/P-FG: 1.49 mA O/P-FG: 1.5 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	I/P-O/P: 30 GΩ I/P-FG: 30 GΩ O/P-FG: 30 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	8 mΩ	P
4	APPROVAL	TUV: Certificate NO : R 50112371 UL: File NO : E227340			P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55011 (CISPR11) CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55011 (CISPR11) 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 AIR:15KV / Contact:8KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 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				

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 202938 HRS I/P: 230VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 66511 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 353.6K HRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 30,000 hours @ TA 50°C			P

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 K2545 : 600V 6A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25℃	(1) 594 V (2) 598 V	P
2	Diode Peak Voltage	D100 Rated HFA16TA60C : 600V 8A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25℃	(1) 586 V (2) 576 V	P
3	Clamp Diode Peak Voltage	D1 Rated EGP20J : 600V 2A	I/P:High-Line +3V = 267 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25℃	(1) 474 V	P
4	Input Capacitor Voltage	C5 Rated :100u / 400V/ 105℃	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℃	(1) 372 V (2) 376 V (3) 372 V	P
5	Control IC Voltage Test	U1 Rated 1230D : 18 V	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℃	(1) 15.7 V (2) 14.2 V (3) 15.6 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2006/4/3	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2006/6/2	PRODUCT SAMPLE W0605A17	PASS	VINCENT TSENG	MAX LIN
2006/7/20	PRODUCT SAMPLE W0607A12	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023