

MODEL : RS-25-48

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 200 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 39 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 42 V~ 54 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	39.6V~ 55.2 V/ 230VAC 39.6V~ 55.2 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°C	V1: 0.2 %~ -0.2 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 115VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0.05 %~ -0.05 %	P
5	LOAD REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
6	SET UP TIME	230VAC/ 1800 ms (Max) 115VAC/ 4000 ms (Max)	I/P: 230VAC I/P: 230VAC O/P:FULL LOAD Ta:25°C	230VAC/ 1320 ms 115VAC/ 2590 ms	P
7	RISE TIME	230VAC/ 23ms (Max) 115VAC/ 30ms (Max)	I/P: 230VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 17 ms 115VAC/ 16 ms	P
8	HOLD UP TIME	230VAC/ 80 ms(TYP) 115VAC/ 14 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 87 ms 115VAC/ 19 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: 4800 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	198 mVp-p	P

## INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	62 V~ 264 V	P
			I/P: LOW-LINE-3V= 85 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	47 HZ ~ 63 HZ NO DAMAGE OSC	I/P: 88VAC ~ 264VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	85 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	86.28 %	P
4	INPUT CURRENT	230V/ 0.4 A(TYP) 115V/ 0.7 A(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.33 A/ 230 VAC I = 0.5 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 36 A(TYP) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 32 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.6 mA N-FG: 0.6 mA	P

## CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	NO LOAD POWER CONSUMPTION	<0.5W	I/P : 230 VAC O/P : NO LOAD	0.471 W/230VAC	P

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110 %~ 180 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	133 %/ 230 VAC 131 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 55.2V~ 64.8 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	59 V/ 230 VAC 59 V/ 115 VAC Hiccup Model	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE Hiccup Mode	P

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																	
1	TEMPERATURE RISE TEST	MODEL : RS-25-48 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 29.1 °C 2. HIGH AMBIENT BURN-IN : 7 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 54.3 °C			P																																																																	
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT Ta= 29.1 °C</th> <th>HIGH AMBIENT Ta= 54.3 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>BD1</td><td>KBJ208G 2A/800V LT</td><td>56.7°C</td><td>74.0°C</td></tr> <tr><td>2</td><td>T1 CORE</td><td>TF-994 LS</td><td>63.9°C</td><td>80.6°C</td></tr> <tr><td>3</td><td>T1 COIL</td><td>TF-994 LS</td><td>61.6°C</td><td>78.8°C</td></tr> <tr><td>4</td><td>LF1</td><td>LF560</td><td>54.0°C</td><td>71.4°C</td></tr> <tr><td>5</td><td>C56</td><td>120U/63V NCC 105°C LXV</td><td>59.4°C</td><td>77.0°C</td></tr> <tr><td>6</td><td>C60</td><td>47U/63V RUB 105°C YXF</td><td>53.3°C</td><td>70.7°C</td></tr> <tr><td>7</td><td>D55</td><td>CF10A40</td><td>60.0°C</td><td>77.1°C</td></tr> <tr><td>8</td><td>Q1</td><td>K2545 6A/600V TOS</td><td>61.2°C</td><td>79.4°C</td></tr> <tr><td>9</td><td>ZD1</td><td>P6KE200A PAN</td><td>58.6°C</td><td>76.2°C</td></tr> <tr><td>10</td><td>C5</td><td>56U/400V RUB 105°C AXF</td><td>51.4°C</td><td>69.4°C</td></tr> <tr><td>11</td><td>C10</td><td>10U/50V NIPPON 105°C</td><td>51.7°C</td><td>69.2°C</td></tr> <tr><td>12</td><td>D1</td><td>EGP20J 2A/600V ZOW</td><td>57.3°C</td><td>75.5°C</td></tr> </tbody> </table>	NO	Position		P/N	ROOM AMBIENT Ta= 29.1 °C	HIGH AMBIENT Ta= 54.3 °C	1	BD1	KBJ208G 2A/800V LT	56.7°C	74.0°C	2	T1 CORE	TF-994 LS	63.9°C	80.6°C	3	T1 COIL	TF-994 LS	61.6°C	78.8°C	4	LF1	LF560	54.0°C	71.4°C	5	C56	120U/63V NCC 105°C LXV	59.4°C	77.0°C	6	C60	47U/63V RUB 105°C YXF	53.3°C	70.7°C	7	D55	CF10A40	60.0°C	77.1°C	8	Q1	K2545 6A/600V TOS	61.2°C	79.4°C	9	ZD1	P6KE200A PAN	58.6°C	76.2°C	10	C5	56U/400V RUB 105°C AXF	51.4°C	69.4°C	11	C10	10U/50V NIPPON 105°C	51.7°C	69.2°C	12	D1	EGP20J 2A/600V ZOW	57.3°C	75.5°C		
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 140% 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 Set Operating at I/P: 230 VAC NO LOAD (1) Waveform: Sine Wave (2) Frequency: 10~500Hz (3) Sweep Time: 10min/sweep cycle (4) Acceleration: 5G (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: 3 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C	I/P-O/P: 2.6 mA I/P-FG: 2.3 mA O/P-FG: 1.6 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: 5 G Ω I/P-FG: 3 G Ω O/P-FG: 8 G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	4 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50046664 UL: File NO : E183223			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	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 LIGHT 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 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :1KV L,N-PE:2KV	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	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C 57 (RS-25-24) IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 267989 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 49762 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 309.7K 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	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) Peak Voltage	Q 1 Rated K2545 : 600 V 6 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 492 V (2) 546 V (3) 580 V	P
2	Diode Peak Voltage	D 55 Rated F10LC40 : 400 V 10 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 177 V (2) 220 V (3) 236 V	P
3	Clamp Diode Peak Voltage	D 1 Rated EGP20J : 600 V 2 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 396 V (2) 396 V	P
4	Input Capacitor Voltage	C 5 Rated : 56 u 400 V 105°C	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) 390 V (2) 378 V (3) 378 V	P
5	Control IC Voltage Test	U Rated SG684 : 30V	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)16.3 V (2) 16.3 V (3) 13.6 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/5/21	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/8/2	PRODUCT SAMPLE A406A38	PASS	VINCENT TSENG	MAX LIN
2004/9/15	PRODUCT SAMPLE W0408C08	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023