

MODEL : RS-25-24

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 12 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 22 V~ 27.6 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	20.78V~ 28.17 V/ 230VAC 20.78V~ 28.17 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: 0.08 %~ -0.08 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 115VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0.03 %~ -0.05 %	P
5	LOAD REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.05 %~ -0.05 %	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/ 7 ms 115VAC/ 7 ms	P
8	HOLD UP TIME	230VAC/ 80 ms (TYP) 115VAC/ 14ms(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 87 ms 115VAC/ 18 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: 2400 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	133 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	54V~ 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	86 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	87.84 %	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 = 0.31 A/ 230 VAC I = 0.5 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 30 A(TYP) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 30 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.33 mA N-FG: 0.33 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	0.329 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	142 %/ 230 VAC 136 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 27.6V~ 32.4 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	29.7V/ 230 VAC 29.7V/ 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-25-24 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 25.4℃ 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 49.5 ℃			P																																																																	
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT Ta= 25.4 ℃</th> <th>HIGH AMBIENT Ta= 49.5 ℃</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BD1</td> <td>KBJ208G 2A/800V LT</td> <td>53.0℃</td> <td>74.2℃</td> </tr> <tr> <td>2</td> <td>T1 CORE</td> <td>TF-995 LS</td> <td>60.9℃</td> <td>80.7℃</td> </tr> <tr> <td>3</td> <td>T1 COIL</td> <td>TF-995 LS</td> <td>58.2℃</td> <td>79.1℃</td> </tr> <tr> <td>4</td> <td>LF1</td> <td>LF560</td> <td>50.7℃</td> <td>72.3℃</td> </tr> <tr> <td>5</td> <td>C60</td> <td>220U/35V NCC 105℃ LXZ</td> <td>51.6℃</td> <td>72.3℃</td> </tr> <tr> <td>6</td> <td>C57</td> <td>330U/35V NCC 105℃ LXJ</td> <td>56.1℃</td> <td>76.1℃</td> </tr> <tr> <td>7</td> <td>D55</td> <td>BYQ28X-200X 10A/200V</td> <td>54.2℃</td> <td>75.1℃</td> </tr> <tr> <td>8</td> <td>Q1</td> <td>K2545 6A/600V TOS</td> <td>52.5℃</td> <td>73.5℃</td> </tr> <tr> <td>9</td> <td>ZD1</td> <td>P6KE200 PAN</td> <td>66.6℃</td> <td>86.8℃</td> </tr> <tr> <td>10</td> <td>C5</td> <td>56U/400V RUB 105℃ AXF</td> <td>50.2℃</td> <td>71.9℃</td> </tr> <tr> <td>11</td> <td>C10</td> <td>10U/50V NIPPON 105℃</td> <td>45.5℃</td> <td>68.5℃</td> </tr> <tr> <td>12</td> <td>D1</td> <td>EGP20J 2A/600V ZOW</td> <td>52.2℃</td> <td>73.6℃</td> </tr> </tbody> </table>	NO	Position		P/N	ROOM AMBIENT Ta= 25.4 ℃	HIGH AMBIENT Ta= 49.5 ℃	1	BD1	KBJ208G 2A/800V LT	53.0℃	74.2℃	2	T1 CORE	TF-995 LS	60.9℃	80.7℃	3	T1 COIL	TF-995 LS	58.2℃	79.1℃	4	LF1	LF560	50.7℃	72.3℃	5	C60	220U/35V NCC 105℃ LXZ	51.6℃	72.3℃	6	C57	330U/35V NCC 105℃ LXJ	56.1℃	76.1℃	7	D55	BYQ28X-200X 10A/200V	54.2℃	75.1℃	8	Q1	K2545 6A/600V TOS	52.5℃	73.5℃	9	ZD1	P6KE200 PAN	66.6℃	86.8℃	10	C5	56U/400V RUB 105℃ AXF	50.2℃	71.9℃	11	C10	10U/50V NIPPON 105℃	45.5℃	68.5℃	12	D1	EGP20J 2A/600V ZOW	52.2℃	73.6℃		
NO	Position	P/N	ROOM AMBIENT Ta= 25.4 ℃	HIGH AMBIENT Ta= 49.5 ℃																																																																		
1	BD1	KBJ208G 2A/800V LT	53.0℃	74.2℃																																																																		
2	T1 CORE	TF-995 LS	60.9℃	80.7℃																																																																		
3	T1 COIL	TF-995 LS	58.2℃	79.1℃																																																																		
4	LF1	LF560	50.7℃	72.3℃																																																																		
5	C60	220U/35V NCC 105℃ LXZ	51.6℃	72.3℃																																																																		
6	C57	330U/35V NCC 105℃ LXJ	56.1℃	76.1℃																																																																		
7	D55	BYQ28X-200X 10A/200V	54.2℃	75.1℃																																																																		
8	Q1	K2545 6A/600V TOS	52.5℃	73.5℃																																																																		
9	ZD1	P6KE200 PAN	66.6℃	86.8℃																																																																		
10	C5	56U/400V RUB 105℃ AXF	50.2℃	71.9℃																																																																		
11	C10	10U/50V NIPPON 105℃	45.5℃	68.5℃																																																																		
12	D1	EGP20J 2A/600V ZOW	52.2℃	73.6℃																																																																		
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 124 % LOAD Ta:25℃	TEST : OK	P																																																																	
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100% LOAD Ta= -20℃	TEST : OK	P																																																																	
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50℃ NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 50℃ HUMIDITY= 95 %R.H	TEST : OK	P																																																																	
5	TEMPERATURE COEFFICIENT	± 0.03 %(0~50℃)	I/P:230 VAC O/P:FULL LOAD	± 0.01 %(0~50℃)	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℃		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: 2.34 mA I/P-FG: 2.26 mA O/P-FG: 2.01 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: 12 G Ω I/P-FG: 9 G Ω O/P-FG: 19 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) 382 V (2) 560 V (3) 576 V	P
2	Diode Peak Voltage	D 55 Rated BYQ28X-200 : 200 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) 107 V (2) 102 V (3) 124 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) 462 V (2) 482 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) 376 V (2) 376 V (3) 376 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) 16.8 V (2) 16.7 V (3) 16.7 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

2003/12/12 A50-F023