

## MODEL : RS-25-15

### 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: 9 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 13.5 V~ 16.5 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	12.66V~ 17.49 V/ 230VAC 12.66V~ 17.49 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 %~ 0 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 115VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~ 0 %	P
5	LOAD REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0 %~ -0.04 %	P
6	SET UP TIME	230VAC/ 1200 ms (Max) 115VAC/ 2200 ms (Max)	I/P: 230VAC I/P: 230VAC O/P:FULL LOAD Ta:25°C	230VAC/ 422 ms 115VAC/ 810 ms	P
7	RISE TIME	230VAC/ 20ms (Max) 115VAC/ 30ms (Max)	I/P: 230VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 6 ms 115VAC/ 6 ms	P
8	HOLD UP TIME	230VAC/ 50 ms (Min) 115VAC/ 12 ms (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 88 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: 1500 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	124 mVp-p	P

## INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	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	82 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	82%	P
4	INPUT CURRENT	230V/ 0.4 A (Max) 115V/ 0.7 A (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.31 A/ 230 VAC I = 0.47 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 36 A (Max) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 29 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.44 mA N-FG: 0.44 mA	P

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110 %~ 180 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C	162 %/ 230 VAC 146 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 17.25V~ 20.25 V	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C	18.5V/ 230VAC 18.5V/ 115VAC Hiccup Mode	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°C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 49.5 °C																																																																				
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT Ta= 25.4 °C</th> <th>HIGH AMBIENT Ta= 49.5 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>BD1</td><td>KBJ208G 2A/800V LT</td><td>53.0°C</td><td>74.2°C</td></tr> <tr><td>2</td><td>T1 CORE</td><td>TF-995 LS</td><td>60.9°C</td><td>80.7°C</td></tr> <tr><td>3</td><td>T1 COIL</td><td>TF-995 LS</td><td>58.2°C</td><td>79.1°C</td></tr> <tr><td>4</td><td>LF1</td><td>LF560</td><td>50.7°C</td><td>72.3°C</td></tr> <tr><td>5</td><td>C60</td><td>220U/35V NCC 105°C LXZ</td><td>51.6°C</td><td>72.3°C</td></tr> <tr><td>6</td><td>C57</td><td>330U/35V NCC 105°C LXJ</td><td>56.1°C</td><td>76.1°C</td></tr> <tr><td>7</td><td>D55</td><td>BYQ28X-200X 10A/200V</td><td>54.2°C</td><td>75.1°C</td></tr> <tr><td>8</td><td>Q1</td><td>K2545 6A/600V TOS</td><td>52.5°C</td><td>73.5°C</td></tr> <tr><td>9</td><td>ZD1</td><td>P6KE200 PAN</td><td>66.6°C</td><td>86.8°C</td></tr> <tr><td>10</td><td>C5</td><td>56U/400V RUB 105°C AXF</td><td>50.2°C</td><td>71.9°C</td></tr> <tr><td>11</td><td>C10</td><td>10U/50V NIPPON 105°C</td><td>45.5°C</td><td>68.5°C</td></tr> <tr><td>12</td><td>D1</td><td>EGP20J 2A/600V ZOW</td><td>52.2°C</td><td>73.6°C</td></tr> </tbody> </table>	NO	Position	P/N	ROOM AMBIENT Ta= 25.4 °C	HIGH AMBIENT Ta= 49.5 °C	1	BD1	KBJ208G 2A/800V LT	53.0°C	74.2°C	2	T1 CORE	TF-995 LS	60.9°C	80.7°C	3	T1 COIL	TF-995 LS	58.2°C	79.1°C	4	LF1	LF560	50.7°C	72.3°C	5	C60	220U/35V NCC 105°C LXZ	51.6°C	72.3°C	6	C57	330U/35V NCC 105°C LXJ	56.1°C	76.1°C	7	D55	BYQ28X-200X 10A/200V	54.2°C	75.1°C	8	Q1	K2545 6A/600V TOS	52.5°C	73.5°C	9	ZD1	P6KE200 PAN	66.6°C	86.8°C	10	C5	56U/400V RUB 105°C AXF	50.2°C	71.9°C	11	C10	10U/50V NIPPON 105°C	45.5°C	68.5°C	12	D1	EGP20J 2A/600V ZOW	52.2°C	73.6°C			P
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 124 % 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= -25°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: 2.49 mA I/P-FG: 2.01 mA O/P-FG: 1.75 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: 2G Ω I/P-FG: 2G Ω O/P-FG: 3G 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 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				



M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C 57 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 109545 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 25733 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 309.7K HRS			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) 454 V (2) 554 V (3) 554 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) 56.8 V (2) 70.4 V (3) 67.6 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) 406 V (2) 406 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) 372 V (2) 372 V (3) 372 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) 16.9 V (2) 16.8 V (3) 15.4 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