

MODEL : RT-65A

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max) V2: 120 mVp-p (Max) V3: 80 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 4 mVp-p (Max) V2: 8 mVp-p (Max) V3: 3 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75 V-5.5 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	4.404V-5.75V/230 VAC 4.405V-5.757V/115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -2%~ +2% (Max) V2: -6%~ +6% (Max) V3: -5%~ +5% (Max)	I/P:115 VAC / 264 VAC O/P:FULL LOAD Ta:25°C	V1: -0.26%~ 0% V2: -0.85%~ -3.02% V3: -0.12%~ -0.26%	P
4	LINE REGULATION	V1: -0.5%~ +0.5% (Max) V2: -1.5%~ +1.5% (Max) V3: -0.5%~ +0.5% (Max)	I/P: 115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0%~ 0% V2: 0%~ -1.05% V3: 0%~ 0%	P
5	LOAD REGULATION	V1: -1%~ +1% (Max) V2: -3%~ +3% (Max) V3: -1%~ +1% (Max)	I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0%~ -0.12% V2: -0.36%~ -0.47% V3: -0.12%~ 0%	P
6	CROSS REGULATION	V1: -1%~ +1% (Max) V2: -3%~ +3% (Max) V3: -1%~ +1% (Max)	I/P: 230 VAC O/P: Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25°C	V1: 0%~ 0% V2: -1.21%~ -1.59% V3: -0.12%~ -0.12%	P
7	SET UP TIME	230 VAC/ 500 ms (Max) 115 VAC/ 1200 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 150.3 ms 115 VAC/ 49.15 ms	P
8	RISE TIME	230VAC/ 20ms (Max) 115VAC/ 30 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 6.47 ms 115 VAC/ 6.076 ms	P
9	HOLD UP TIME	230 VAC/ 50 ms (TYP) 115 VAC/ 12 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 97.56 ms 115 VAC/ 118.6 ms	P
10	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: 1.2%	P
11	DYNAMIC LOAD	V1: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	155 mVp-p	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	41.58 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: 88 VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	77 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	77.64 %	P
4	INPUT CURRENT	230 V/ 1.2 A (TYP) 115 V/ 2 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.89 A/ 230 VAC I = 1.32 A/ 115 VAC	P
5	INRUSH CURRENT	230 V/40 A(TYP) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 31.95 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.34 mA N-FG: 0.34 mA	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110 %- 150 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	132.2 %/ 230VAC 138.53%/115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 5.75 V~ 6.75 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	6.40 V/ 230 VAC 6.42 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 : RT-65A 1. ROOM AMBIENT BURN-IN : 2.5 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 27.3 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 40.8 °C			P																																																																																
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 126% 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 40 °C NO DAMAGE	I/P: 230 VAC O/P:FULL LOAD Ta= 40 °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: 3.0 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: 3.92 mA I/P-FG: 3.19 mA O/P-FG: 2.24 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: 13.1 GΩ I/P-FG: 9.92 GΩ O/P-FG: 15.6 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	15 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50045775 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 56 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 65268 HRS I/P: 230VAC O/P:FULL LOAD Ta= 40 °C LIFE TIME= 31752 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 254.6K HRS			P

**COMPONENT STRESS TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q 1 Rated 2SK2545 : 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) 440 V (2) 568 V (3) 568 V	P
2	Diode <b>Peak Voltage</b>	D55 Rated SBL3040PT : 40 V 30 A  D50 Rated BYQ-28X-200 : 200V 10A  D56 Rated HER302 100V/3A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 31.6 V (2) 36 V (3) 32 V  (1) 44.2 V (2) 50 V (3) 51.2 V  (1) 40 V (2) 46.6 V (3) 45 V	P
3	Clamp Diode <b>Peak Voltage</b>	D1 Rated HER306 : 600 V 3 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 564 V (2) 564 V	P
4	<b>Input Capacitor Voltage</b>	C 5 Rated : 150 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) 364 V (2) 370V (3) 372V	P
5	<b>Control IC Voltage Test</b>	U 1 Rated 1203 : 16 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°C	(1) 12.7 V (2) 12.7V (3) 10.4V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2003/9/29	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023