

MODEL : RT-85A

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: 100 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 370 mVp-p (Max) V2: 45 mVp-p (Max) V3: 22mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75V ~ 5.5V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	4.55V-5.8V / 230VAC 4.55V-5.8V / 115VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1:-2 %~ 2 % (Max) V2:-5 %~ 5 % (Max) V3:-6 %~ 6 % (Max)	I/P: 100 VAC / 264 VAC O/P:FULL/ MIN % LOAD Ta:25°C	V1:-0.12 %~ -0.98 % V2-1.66 %~1.45 % V3:-5.18 %~-0.24 %	P
4	LINE REGULATION	V1:-0.5 %~ 0.5 % (Max) V2:-1 %~1 % (Max) V3: -1 %~1 % (Max)	I/P: 100 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~0.12 % V2:0 %~0 % V3: 0 %~0.12 %	P
5	LOAD REGULATION	V1:-1 %~ 1 % (Max) V2:-3 %~3 % (Max) V3:-6 %~6 % (Max)	I/P:230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.61 %~ 0.36 % V2:-0.15 %~0.1% V3:-1.27 %~3.18 %	P
6	CROSS REGULATION	V1:-1 %~1 % (Max) V2:-3 %~3 % (Max) V3:-6 %~6 % (Max)	I/P: 230 VAC O/P:Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25°C	V1:-0.24 %~0.12 % V2:-0.68 %~1.09 % V3:-1.66 %~-2.56 %	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/ 200 ms 115 VAC/ 1111 ms	P
8	RISE TIME	230 VAC/ 20 ms (Max) 115 VAC/ 30 ms (Max)	I/P:230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 11 ms 115 VAC/ 11 ms	P
9	HOLD UP TIME	230 VAC/ 100 ms (TYP) 115 VAC/ 18 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 114 ms 115 VAC/ 23 ms	P
10	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5 %	P
11	DYNAMIC LOAD	V1: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	226 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	53.45 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: 100 VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	76 % (TYP)	I/P: VAC O/P:FULL LOAD Ta:25°C	76.65 %	P
4	INPUT CURRENT	230 V/ 1.5 A(TYP) 115 V/ 2.5 A(TYP)	I/P: 230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C	I = 0.993 A/ 230 VAC I = 1.629 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 = 33.44 A	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P:254 VAC O/P:Min LOAD Ta:25°C	L-FG: 1.1 mA N-FG: 1.1 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	115.9 %/ 230 VAC 116.76 %/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	6.11 V/230 VAC 6.12 V/115 VAC Hold On	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-85A 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P:230 VAC O/P:100% LOAD Ta= 30.1 °C 2. HIGH AMBIENT BURN-IN : 14 HRS I/P:230 VAC O/P:100% LOAD Ta= 43.9 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 130% 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 40 °C NO DAMAGE	I/P: 272 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 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:5.18 mA I/P-FG:4.39 mA O/P-FG:3.47 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: 5.97G Ω I/P-FG: 8.76G Ω O/P-FG:9.64G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	50 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50045826 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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C 62 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C I/P: 230 VAC O/P:FULL LOAD Ta= 40 °C	LIFE TIME=	59951 HRS 23701 HRS	P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 215K HRS			P

**COMPONENT STRESS TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) <b>Peak Voltage</b>	Q1 Rated 2SK2082: 900 V 9 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) 414 V (2) 556 V (3) 640 V	P
2	Diode <b>Peak Voltage</b>	D60 Rated MBR3060PT : 60 V 30 A  D55 Rated BYQ-28X:200 V 10 A  D50 Rated BYQ-28X:200 V 10 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short  (1)Full Load Turn on (2) Full Load (3)Output Short  (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 50 V (2) 46 V (3) 50 V  (1) 82.4 V (2) 70.8 V (3) 82.4 V  (1) 58.2 V (2) 51.6 V (3) 58.2 V	P
3	Clamp Diode <b>Peak Voltage</b>	D Rated HER208: 1K 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) 550 V (2) 550 V	P
4	Input Capacitor <b>Voltage</b>	C5 Rated RUBYCON : 150 u / 400 V °C / Series	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) 372V (3) 372V	P
5	Control IC <b>Voltage Test</b>	U1 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 (4) Output Short Ta:25°C	(1) 12.9 V (2) 12.8 V (3) 10.2 V (4) 12.8 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2003/12/30	RD SMAPLE	PASS	VICENT TSENG	MAX LIN

2003/12/12 A50-F023