

MODEL : RQ-85B

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) V4: 80 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 21 mVp-p (Max) V2: 26 mVp-p (Max) V3: 18 mVp-p (Max) V4: 13 mVp-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	4.66V~ 5.58 V/ 230VAC 4.66V~ 5.58 V/ 115VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -2 %~ 2 % (Max) V2: -3 %~ +7 % (Max) V3: -8 %~ 8 % (Max) V4: -5 %~ 5 % (Max)	I/P: 115 VAC / 264 VAC O/P:FULL/ MIN 40 % LOAD Ta:25°C	V1: 0.4 %~ -0.4 % V2: 1.6 %~ -1.6 % V3: 4 %~ -4 % V4: 0.2 %~ -0.2 %	P
4	LINE REGULATION	V1: -0.5 %~ 0.5 % (Max) V2: -1 %~ 1 % (Max) V3: -1 %~ 1 % (Max) V4: -1 %~ 1 % (Max)	I/P: 115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~ 0 % V2: 0.05 %~ -0.05 % V3: 0.4 %~ -0.4 % V4: 0 %~ 0 %	P
5	LOAD REGULATION	V1: -1 %~ 1 % (Max) V2: -3 %~ 3 % (Max) V3: -6 %~ 6 % (Max) V4: -2 %~ 2 % (Max)	I/P:230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 % V2: 1.5 %~ -1.5 % V3: 1.3 %~ -1.3 % V4: 0.2 %~ -0.2 %	P
6	CROSS REGULATION	V1: -1 %~ 1 % (Max) V2: -3 %~ 3 % (Max) V3: -6 %~ 6 % (Max) V4: -2 %~ 2 % (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: 1.6 %~ -1.6 % V3: 4 %~ -4 % V4: 0.1 %~ -0.1 %	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	230VAC/ 179 ms 115VAC/ 594 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	230VAC/ 8 ms 115VAC/ 9 ms	P
9	HOLD UP TIME	230 VAC/ 50 ms (TYP) 115 VAC/ 10 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 127 ms 115VAC/ 26 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	94 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88 VAC~ 264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	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	76 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	76.8 %	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 = 1 A/ 230 VAC I = 1.6 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 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.8 mA N-FG: 0.8 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110 %~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C	116%/230VAC 116%/115VAC 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	5.89 V/ 230 VAC 5.89 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 : RQ-85C 1. ROOM AMBIENT BURN-IN : 62 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 33 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 42.7 °C			P	
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 132 % 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 35 °C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 35°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: 4.8 mA I/P-FG: 4.36 mA O/P-FG: 2.51 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: 3 G Ω I/P-FG: 4 G Ω O/P-FG: 1 G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	6 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	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 LIFE TIME= 159250 HRS I/P: 230 VAC O/P:FULL LOAD Ta=35 °C LIFE TIME= 104247 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 206.8K HRS			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q 1 Rated 2SK2082 : 800 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) 438 V (2) 532 V (3) 602 V	P
2	Diode Peak Voltage	D 60 Rated MBR3060PT : 60 V / 30 A D 55 Rated BYQ28X-200 : 200V / 10 A D52 Rated BYQ28X-200: 200V / 10 A D 52 Rated HER305 : 400 V / 3 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 (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 51.2 V (2) 43.8 V (3) 51 V (1) 108 V (2) 66.8 V (3) 107 V (1) 49.2 V (2) 50 V (3)52.6 V (1) 175 V (2) 130 V (3) 175 V	P
3	Clamp Diode Peak Voltage	D 1 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) 520 V (2) 524 V	P
4	Input Capacitor Voltage	C 5 Rated : 150 u / 400 V	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Min load (3)Full Load /Min load Change Ta:25°C	(1) 364 V (2) 370 V (3) 370 V	P
5	Control IC Voltage Test	U 1 Rated 1203 : 16 V	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Min load (3)Full Load /Min load Change Ta:25°C	(1) 14 V (2) 12.7 V (3) 10.4 V	P

ATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2003/12/30	RD SMAPLE	PASS	VINCENT TSENG	MAX LIN
2004/7/22	PRODUCT SAMPLE A404B36	PASS	VINCENT TSENG	MAX LIN
2004/8/19	PRODUCT SAMPLE A408A15	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023