

MODEL : RD-125-1224

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max) V2: 200 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 19 mVp-p (Max) V2: 16 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 11.4V~ 13.2 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	11.21V~ 13.75 V/ 230VAC 11.21V~ 13.75 V/115VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 2 %~ -2 % (Max) V2: 8 %~ -5 % (Max)	I/P: 176 VAC / 264 VAC O/P:FULL/ MIN 40 % LOAD Ta:25°C	V1: 0.05 %~ -0.05 % V2: 3.4 %~ -3.4 %	P
4	LINE REGULATION	V1: 0.5%~ -0.5 % (Max) V2: 1%~ -1 % (Max)	I/P: 176 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.05 %~ -0.05 % V2: 0.1 %~ -0.1 %	P
5	LOAD REGULATION	V1: 1 %~ -1 % (Max) V2: 5 %~ -5 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.05 %~ -0.05 % V2: 0.7 %~ -0.7 %	P
6	CROSS REGULATION	V1: 1 %~ -1 % (Max) V2: 5 %~ -5 % (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: 1.5 %~ -1.5 %	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/ 181 ms 115 VAC/ 181 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/ 16 ms 115 VAC/ 16 ms	P
9	HOLD UP TIME	230 VAC/ 30 ms (Min) 115 VAC/ 22 ms (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 39 ms 115 VAC/ 36 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: 1200 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	182 mVp-p	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	176VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	100 V~ 264 V	P
			I/P: LOW-LINE-3V= 173 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: 176 VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	85 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	85.9 %	P
4	INPUT CURRENT	230 V/ 2 A(Max) 115 V/ 3 A(Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 1.3 A/ 230 VAC I = 2.3 A/ 115 VAC	P
5	INRUSH CURRENT	230 V/ 50 A(Max) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 28 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA/240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.5 mA N-FG: 0.5 mA	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110 %~ 150 %	I/P: 230VAC I/P: 115VAC O/P:TESTING Ta:25°C	140 %/ 230VAC 140 %/ 115VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 13.8 V~ 16.2 V	I/P: 230VAC I/P: 115VAC O/P:MIN LOAD Ta:25°C	15.17 V/ 230 VAC 15.17 V/ 115VAC Hiccup Model	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264VAC 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 : RD-125-1224 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 230 VAC O/P: Full LOAD Ta= 28.7 °C 2. HIGH AMBIENT BURN-IN : 5 HRS I/P: 230 VAC O/P: Full LOAD Ta= 45.5 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 122%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= -20 °C	TEST : OK	P
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 45 °C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 45 °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: 5.43 mA I/P-FG: 4.62 mA O/P-FG: 3.08 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: 2 G Ω I/P-FG: 2 G Ω O/P-FG: 3 G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	7 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50046942 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 &amp; LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C62 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 212727 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 45 °C LIFE TIME= 49662 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 218.2 K 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 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) 452 V (2) 570 V (3) 668 V	P
2	Diode Peak Voltage	D 60 Rated BYQ28X-200 : 200 V 10 A  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  (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 69.6 V (2) 67.6 V (3) 69.6 V  (1) 129 V (2) 122 V (3) 129 V	P
3	Clamp Diode Peak Voltage	D 1 Rated HER208: 1K V 2 A	I/P:High-Line +3V = 267V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 554 V (2) 554 V	P
4	Input Capacitor Voltage	C 6 Rated RUBYCON: 330 u / 200V 105°C	I/P:High-Line +3V =267V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 187 V (2) 191 V (3) 186 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 Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 12.5 V (2) 14.5 V (3) 10.2 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/6/7	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/8/2	PRODUCT SAMPLE A406D21	PASS	VINCENT TSENG	MAX LIN
2004/10/14	PRODUCT SAMPLE W0409C14	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023