

MODEL : RD-35B

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max) V2: 120 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 17 mVp-p (Max) V2: 8 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75 V--5.75 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	4.39V ~ 5.71 V/230 VAC 4.39V ~ 5.71 V/115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -2%~ 2 % (Max) V2: -5%~ 5 % (Max)	I/P: 88VAC / 264 VAC O/P:FULL/ Min LOAD Ta:25°C	V1: 0.2%~ -0.2 % V2: 4%~ -4 %	P
4	LINE REGULATION	V1: -0.5%~ 0.5 % (Max) V2: -1%~ 1 % (Max)	I/P: 88VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0%~ 0 % V2: 0.03%~ -0.03 %	P
5	LOAD REGULATION	V1: -0.5%~ 0.5 % (Max) V2: -2%~ 2 % (Max)	I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0.2%~ -0.2 % V2: 1%~ -1 %	P
6	CROSS REGULATION	V1: -0.5%~ 0.5 % (Max) V2: -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: 1.8%~ -1.8 %	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/ 185 ms 115 VAC/ 224 ms	P
8	RISE TIME	230VAC/ 30ms (Max) 115VAC/ 30 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 9 ms 115 VAC/ 9 ms	P
9	HOLD UP TIME	230 VAC/ 50 ms (TYP) 115 VAC/ 16 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 98 ms 115 VAC/ 21 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	65 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	59 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	82 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	82.6 %	P
4	INPUT CURRENT	230 V/ 0.55 A(TYP) 115 V/ 0.8 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.41 A/ 230 VAC I = 0.65 A/ 115 VAC	P
5	INRUSH CURRENT	230 V/ 36 A (TYP) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 26 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.32 mA N-FG: 0.32 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	132 %/230VAC 136 %/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	6.2 V/ 230 VAC 6.2 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 : RD-35B 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 28.8 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 45.5 °C			P																																																																						
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 139 %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: 272VAC 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: 3.0 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: 3.18 mA I/P-FG: 2.85 mA O/P-FG: 1.73 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: 3G Ω O/P-FG: 4G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	4 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50046884 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: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 216919 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 79981 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 172.6K 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) 410 V (2) 474 V (3) 440 V	P
2	Diode Peak Voltage	D 55 Rated YG802C04 : 40V 10 A D 50 Rated BYQ28X-200 : 200V 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) 31.2 V (2) 36.6 V (3) 31.4 V (1) 160 V (2) 188 V (3) 163 V	P
3	Clamp Diode Peak Voltage	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) 468 V (2) 470 V	P
4	Input Capacitor Voltage	C 5 Rated : 82 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) 388 V (2) 388 V (3) 374 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) 12.6 V (2) 12.6 V (3) 11.5 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/4/29	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/8/2	PRODUCT SAMPLE A405B15	PASS	VINCENT TSENG	MAX LIN
2004/9/22	PRODUCT SAMPLE W04A09A12	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023