

MODEL : RS-50-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 14 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1:10.8 V~ 13.2 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	10.3V~13.8 V/ 230VAC 10.3V~13.8 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1%~ -1% (Max)	I/P: 115 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.1%~ -0.1%	P
4	LINE REGULATION	V1: 0.5%~ -0.5% (Max)	I/P: 115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0%~ 0%	P
5	LOAD REGULATION	V1: 0.5%~ -0.5% (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.1%~ -0.1%	P
6	SET UP TIME	230VAC/ 500 ms (Max) 115VAC/ 1200 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 200 ms 115VAC/ 158 ms	P
7	RISE TIME	230VAC/ 20ms (Max) 115VAC/ 30ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 10 ms 115VAC/ 12 ms	P
8	HOLD UP TIME	230VAC/ 50 ms (Min) 115VAC/ 10 ms (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 72 ms 115VAC/ 15 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5 %	P
10	DYNAMIC LOAD	V1: 1200 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	121 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	65 V~ 264 V	P
			I/P: LOW-LINE-3V= 87 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 ~ 264VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	81 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	82.9 %	P
4	INPUT CURRENT	230V/ 0.8 A (Max) 115V/ 1.3 A (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.57 A/ 230 VAC I = 0.91 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 36 A (Max) 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: 0.3 mA N-FG:0.3 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	127 %/ 230 VAC 123 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1:13.8V~ 16.2 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	15.02 V/ 230 VAC 15.02 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 : RS-50-24 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 230VAC O/P: FULL LOAD Ta=29.3 °C 2. HIGH AMBIENT BURN-IN : 9 HRS I/P: 230VAC O/P: FULL LOAD Ta=46.5 °C			P																																																												
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT Ta= 29.3 °C</th> <th>HIGH AMBIENT Ta= 46.5 °C</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>LF1</td> <td>TF-484 LS</td> <td>59.2°C</td> <td>71.2°C</td> </tr> <tr> <td>2</td> <td>D55</td> <td>BYQ28X-200 10A/200V PH</td> <td>66.4°C</td> <td>78.5°C</td> </tr> <tr> <td>3</td> <td>D1</td> <td>S3L60 4A/60V SHI</td> <td>72.9°C</td> <td>85.1°C</td> </tr> <tr> <td>4</td> <td>BD1</td> <td>D3SB60 4A/600V SHI</td> <td>67.5°C</td> <td>80.3°C</td> </tr> <tr> <td>5</td> <td>T1 CORE</td> <td>TF-1013 LS</td> <td>62.9°C</td> <td>74.5°C</td> </tr> <tr> <td>6</td> <td>T1 COIL</td> <td>TF-1013 LS</td> <td>72.0°C</td> <td>83.3°C</td> </tr> <tr> <td>7</td> <td>C5</td> <td>100U/400V RUB 105°C</td> <td>51.3°C</td> <td>63.8°C</td> </tr> <tr> <td>8</td> <td>C10</td> <td>100U/35V RUB 105°C YXF</td> <td>51.7°C</td> <td>64.0°C</td> </tr> <tr> <td>9</td> <td>Q1</td> <td>2SK2545 6A/600V TOS</td> <td>69.7°C</td> <td>82.2°C</td> </tr> <tr> <td>10</td> <td>C55</td> <td>220U/35V RUB 105°C ZL</td> <td>49.9°C</td> <td>63.4°C</td> </tr> <tr> <td>11</td> <td>R5</td> <td>P6KE150A PAN</td> <td>73.4°C</td> <td>85.2°C</td> </tr> </tbody> </table>	NO	Position		P/N	ROOM AMBIENT Ta= 29.3 °C	HIGH AMBIENT Ta= 46.5 °C	1	LF1	TF-484 LS	59.2°C	71.2°C	2	D55	BYQ28X-200 10A/200V PH	66.4°C	78.5°C	3	D1	S3L60 4A/60V SHI	72.9°C	85.1°C	4	BD1	D3SB60 4A/600V SHI	67.5°C	80.3°C	5	T1 CORE	TF-1013 LS	62.9°C	74.5°C	6	T1 COIL	TF-1013 LS	72.0°C	83.3°C	7	C5	100U/400V RUB 105°C	51.3°C	63.8°C	8	C10	100U/35V RUB 105°C YXF	51.7°C	64.0°C	9	Q1	2SK2545 6A/600V TOS	69.7°C	82.2°C	10	C55	220U/35V RUB 105°C ZL	49.9°C	63.4°C	11	R5	P6KE150A PAN	73.4°C	85.2°C		
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 127 % LOAD Ta:25°C	TEST : OK	P																																																												
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230VAC 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 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 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 mA I/P-FG: 2.4 mA O/P-FG: 1.9 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: 7G Ω I/P-FG: 7G Ω O/P-FG: 10G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	25 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50046939 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 55 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 514386 I/P: 230 VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 117557		HRS HRS	P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 228KHRS			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)420 V (2)518 V (3)582 V	P
2	Diode Peak Voltage	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 Ta:25°C	(1) 74 V (2)89.2 V (3)78.4 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) 510 V (2) 510 V	P
4	Input Capacitor Voltage	C 5 Rated RUBYCON : 100 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) 400 V (2) 394V (3) 382V	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) 12.8 V (3) 12.6 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/3/3	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/6/1	PRODUCT SAMPLE A403C10	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023