

MODEL : RS-50-3.3

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 12 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 3 V~ 3.6 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	2.9V~ 3.56 V/ 230VAC 2.9V~3.56 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 3 %~ -3 % (Max)	I/P: 115 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.4 %~ -0.4 %	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 %~ -0.2 %	P
5	LOAD REGULATION	V1: 2 %~ -2 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.4 %~ -0.4 %	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/ 197 ms 115VAC/ 218 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/ 5 ms 115VAC/ 5 ms	P
8	HOLD UP TIME	230VAC/ 50 ms (TYP) 115VAC/ 10 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 96 ms 115VAC/ 19 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: 660 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	282 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	28 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: 88VAC ~ 264VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	78 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	79.617 %	P
4	INPUT CURRENT	230V/ 0.8 A(TYP) 115V/ 1.3 A(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.5 A/ 230 VAC I = 0.8 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 36 A(TYP) 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: 0.3 mA N-FG: 0.3 mA	P
7	No load power consumption	<0.5W	I/P: 230VAC O/P:NO LOAD Ta:25°C	0.134W	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	132%/ 230 VAC 134%/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1:3.8 V~ 4.5 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	4.26V/ 230 VAC 4.26V/ 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-50-5 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 230 VAC O/P: FULL LOAD Ta=26.8 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: FULL LOAD Ta=41.7 °C			P																																																												
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT Ta=26.8 °C</th> <th>HIGH AMBIENT Ta= 41.7 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>LF1</td><td>TF-484</td><td>60.6°C</td><td>72.7°C</td></tr> <tr><td>2</td><td>D55</td><td>D83004 30A/40V</td><td>81.2°C</td><td>94.1°C</td></tr> <tr><td>3</td><td>D1</td><td>EGP20J 2A/600V</td><td>98.1°C</td><td>110.4°C</td></tr> <tr><td>4</td><td>BD1</td><td>D3SB60 4A/600V</td><td>77.4°C</td><td>90.1°C</td></tr> <tr><td>5</td><td>T1 CORE</td><td>TF-1010</td><td>82.1°C</td><td>94.3°C</td></tr> <tr><td>6</td><td>T1 COIL</td><td>TF-1010</td><td>83.3°C</td><td>95.7°C</td></tr> <tr><td>7</td><td>C5</td><td>100U/400V 105°C</td><td>53.4°C</td><td>66.4°C</td></tr> <tr><td>8</td><td>C10</td><td>22U/50V 105°C</td><td>54.9°C</td><td>67.7°C</td></tr> <tr><td>9</td><td>Q1</td><td>2SK2545 6A/600V</td><td>82.1°C</td><td>94.6°C</td></tr> <tr><td>10</td><td>C54</td><td>2200U/16V 105°C</td><td>65.9°C</td><td>79.6°C</td></tr> <tr><td>11</td><td>C55</td><td>1000U/16V 105°C</td><td>63.5°C</td><td>79.2°C</td></tr> </tbody> </table>	NO	Position		P/N	ROOM AMBIENT Ta=26.8 °C	HIGH AMBIENT Ta= 41.7 °C	1	LF1	TF-484	60.6°C	72.7°C	2	D55	D83004 30A/40V	81.2°C	94.1°C	3	D1	EGP20J 2A/600V	98.1°C	110.4°C	4	BD1	D3SB60 4A/600V	77.4°C	90.1°C	5	T1 CORE	TF-1010	82.1°C	94.3°C	6	T1 COIL	TF-1010	83.3°C	95.7°C	7	C5	100U/400V 105°C	53.4°C	66.4°C	8	C10	22U/50V 105°C	54.9°C	67.7°C	9	Q1	2SK2545 6A/600V	82.1°C	94.6°C	10	C54	2200U/16V 105°C	65.9°C	79.6°C	11	C55	1000U/16V 105°C	63.5°C	79.2°C		
NO	Position	P/N	ROOM AMBIENT Ta=26.8 °C	HIGH AMBIENT Ta= 41.7 °C																																																													
1	LF1	TF-484	60.6°C	72.7°C																																																													
2	D55	D83004 30A/40V	81.2°C	94.1°C																																																													
3	D1	EGP20J 2A/600V	98.1°C	110.4°C																																																													
4	BD1	D3SB60 4A/600V	77.4°C	90.1°C																																																													
5	T1 CORE	TF-1010	82.1°C	94.3°C																																																													
6	T1 COIL	TF-1010	83.3°C	95.7°C																																																													
7	C5	100U/400V 105°C	53.4°C	66.4°C																																																													
8	C10	22U/50V 105°C	54.9°C	67.7°C																																																													
9	Q1	2SK2545 6A/600V	82.1°C	94.6°C																																																													
10	C54	2200U/16V 105°C	65.9°C	79.6°C																																																													
11	C55	1000U/16V 105°C	63.5°C	79.2°C																																																													
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 125 % 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 50°C NO DAMAGE	I/P: 272 VAC 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	± 0.013 % (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: 2 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C	I/P-O/P: 2.8 mA I/P-FG: 2.1 mA O/P-FG: 1.5 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: 4G Ω I/P-FG: 5G Ω O/P-FG: 7G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	20 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 54 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 116688 I/P: 230 VAC O/P:FULL LOAD Ta= 40 °C LIFE TIME= 44498		HRS HRS	P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 228K 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) 554 V (2) 562 V (3) 592 V	P
2	Diode Peak Voltage	D 55 Rated D83004 : 400 V 30 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) 24.2 V (2) 28.1 V (3) 24.2 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) 550 V (2) 546 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) 378 V (2) 384V (3) 384V	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) 13.1 V (2) 12.8 V (3) 13 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