MODEL：RS-50-48

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 200 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	V1: 48 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1:42 V~ 54 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	39.89V~ 55.34 V/ 230VAC 29.89V~ 55.34 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℃	V1: 0.15 %~ -0.15 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25℃	V1: 0.15 %~ -0.15 %	P
5	LOAD REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0.15 %~ -0.15 %	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℃	230VAC/ 192 ms 115VAC/ 161 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℃	230VAC/ 11 ms 115VAC/ 11 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℃	230VAC/ 95 ms 115VAC/ 20 ms	P
9	OVER/UNDERSHOOT TEST	＜±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: ＜ 5 %	P
10	DYNAMIC LOAD	V1: 4800 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	251 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℃	58 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℃	TEST: OK	P
3	EFFICIENCY	89 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	89.51 %	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℃	I = 0.6 A/ 230 VAC I = 1 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 36 A (TYP) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	I = 26 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25℃	L-FG: 0.7 mA N-FG: 0.7 mA	P
7	No load power consumption	<0.5W	I/P: 230VAC O/P:NO LOAD Ta:25℃	0.365W	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℃	140%/ 230 VAC 137%/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1:55.2V~ 64.8 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	62V/ 230 VAC 62V/ 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℃	NO DAMAGE Hiccup Mode	P

ENVIRONMENT TEST

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECICATION</th><th>TEST CONDITION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">MODEL：RS-50-24
1. ROOM AMBIENT BURN-IN：1 HRS
I/P: 230VAC O/P: FULL LOAD Ta=29.3 ℃
2. HIGH AMBIENT BURN-IN： 9 HRS
I/P: 230VAC O/P:FULL LOAD Ta=46.5 ℃
<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 29.3 ℃</th><th>HIGH AMBIENT Ta= 46.5 ℃</th></tr>
<tr><td>1</td><td>LF1</td><td>TF-484 LS</td><td>59.2℃</td><td>71.2℃</td></tr>
<tr><td>2</td><td>D55</td><td>BYQ28X-200 10A/200V PH</td><td>66.4℃</td><td>78.5℃</td></tr>
<tr><td>3</td><td>D1</td><td>S3L60 4A/60V SHI</td><td>72.9℃</td><td>85.1℃</td></tr>
<tr><td>4</td><td>BD1</td><td>D3SB60 4A/600V SHI</td><td>67.5℃</td><td>80.3℃</td></tr>
<tr><td>5</td><td>T1 CORE</td><td>TF-1013 LS</td><td>62.9℃</td><td>74.5℃</td></tr>
<tr><td>6</td><td>T1 COIL</td><td>TF-1013 LS</td><td>72.0℃</td><td>83.3℃</td></tr>
<tr><td>7</td><td>C5</td><td>100U/400V RUB 105℃</td><td>51.3℃</td><td>63.8℃</td></tr>
<tr><td>8</td><td>C10</td><td>100U/35V RUB 105℃ YXF</td><td>51.7℃</td><td>64.0℃</td></tr>
<tr><td>9</td><td>Q1</td><td>2SK2545 6A/600V TOS</td><td>69.7℃</td><td>82.2℃</td></tr>
<tr><td>10</td><td>C55</td><td>220U/35V RUB 105℃ ZL</td><td>49.9℃</td><td>63.4℃</td></tr>
<tr><td>11</td><td>R5</td><td>P6KE150A PAN</td><td>73.4℃</td><td>85.2℃</td></tr>
</table></td><td>P</td></tr>
<tr><td>2</td><td>OVER LOAD BURN-IN TEST</td><td>NO DAMAGE
1 HOUR (MIN)</td><td>I/P: 230 VAC
O/P: 127 % LOAD
Ta:25℃</td><td>TEST： OK</td><td>P</td></tr>
<tr><td>3</td><td>LOW TEMPERATURE
TURN ON TEST</td><td>TURN ON AFTER 2 HOUR</td><td>I/P: 230VAC
O/P: 100% LOAD
Ta= -20 ℃</td><td>TEST： OK</td><td>P</td></tr>
<tr><td>4</td><td>HIGH HUMIDITY
HIGH TEMPERATURE
HIGH VOLTAGE
TURN ON TEST</td><td>AFTER 12 HOURS
IN CHAMBER ON
CONTROL 50℃
NO DAMAGE</td><td>I/P: 272VAC
O/P:FULL LOAD
Ta= 50℃
HUMIDITY= 95 %R.H</td><td>TEST： OK</td><td>P</td></tr>
<tr><td>5</td><td>TEMPERATURE
COEFFICIENT</td><td>± 0.03 %(0~50℃)</td><td>I/P: 230 VAC
O/P:FULL LOAD</td><td>± 0.01 %(0~50℃)</td><td>P</td></tr>
<tr><td>6</td><td>VIBRATION TEST</td><td colspan="2">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℃</td><td>TEST： OK</td><td>P</td></tr>
</table>

SAFETY TEST

NO	TEST ITEM	SPECICATION	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℃	I/P-O/P: 4.95 mA I/P-FG: 4.54 mA O/P-FG: 3.06 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℃	I/P-O/P: 8 G Ω I/P-FG: 7 G Ω O/P-FG: 12 G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25℃	5 mΩ	P
4	APPROVAL	TUV: Certificate NO ：R50046939 UL: File NO ：E183223			P

E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25℃	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25℃	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℃	CRITERIA A	P
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	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℃	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 ℃ LIFE TIME= 514386 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 50 ℃ LIFE TIME= 117557 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℃	(1) 414 V (2) 492 V (3) 554 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℃	(1) 314 V (2) 374 V (3) 358 V	P
3	Clamp Diode Peak Voltage	D 1 Rated S3L60 : 600 V 4 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25℃	(1) 482 V (2) 488 V	P
4	Input Capacitor Voltage	C 5 Rated RUBYCON : 100 u / 400 V 105℃	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℃	(1) 384 V (2) 378 V (3) 378 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℃	(1) 12.6 V (2) 12.6 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
2004/9/2	PRODUCT SAMPLE W0408B08	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023