MODEL：RT-50B

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max) V2: 120 mVp-p (Max) V3: 120 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	V1: 11 mVp-p (Max) V2: 34 mVp-p (Max) V3: 14 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75 V~5.5 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	4.49V~5.92 V/230VAC 4.49V~5.92 V/115VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -2 %~ +2 % (Max) V2: -6 %~ +6 % (Max) V3: -2 %~ +2 % (Max)	I/P: 115 VAC / 264 VAC O/P:FULL LOAD Ta:25℃	V1: 0.4 %~ -0.4 % V2: 2 %~ -2 % V3: 0.1 %~ -0.1 %	P
4	LINE REGULATION	V1: -0.5 %~ +0.5 % (Max) V2: -1.5 %~ +1.5 % (Max) V3: -0.5 %~ +0.5 % (Max)	I/P: 115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25℃	V1: 0.15 %~ -0.15 % V2: 0.6 %~-0.6 % V3: 0.06 %~-0.06 %	P
5	LOAD REGULATION	V1: -1 %~ +1 % (Max) V2: -3 %~ +3 % (Max) V3: -1 %~ +1 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0.3 %~ -0.3 % V2: 0.2 %~ -0.2 % V3: 0 %~ 0 %	P
6	CROSS REGULATION	V1: -1 %~ +1 % (Max) V2: -3 %~ +3 % (Max) V3: -1 %~ +1 % (Max)	I/P: 230 VAC O/P: Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25℃	V1: 0.15 %~ -0.15 % V2: 1.1%~ -1.1% V3: 0 %~0 %	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℃	230 VAC/ 94 ms 115 VAC/ 106 ms	P
8	RISE TIME	230VAC/ 20ms (Max) 115VAC/ 30 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230 VAC/ 6 ms 115 VAC/ 6 ms	P
9	HOLD UP TIME	230 VAC/ 50 ms (Min) 115 VAC/ 10 ms (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230 VAC/ 85 ms 115 VAC/ 17 ms	P
10	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: <5 %	P
11	DYNAMIC LOAD	V1: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	111 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25℃	58 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℃	TEST: OK	P
3	EFFICIENCY	77 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	78.3 %	P
4	INPUT CURRENT	230 V/ 0.8 A (Max) 115 V/ 1.3 A (Max)	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	230 V/36 A (Max) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	I = 34 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25℃	L-FG: 0.45 mA N-FG: 0.45 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℃	145 %/230VAC 138 %/115VAC 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℃	6.1V/ 230 VAC 6.1 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℃	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： RT-50A
1. ROOM AMBIENT BURN-IN： 1.5 HRS
I/P: 230 VAC O/P: 100% LOAD Ta= 25.8 ℃
2. HIGH AMBIENT BURN-IN： 60 HRS
I/P: 230 VAC O/P: 100% LOAD Ta= 36.6 ℃
<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 25.8 ℃</th><th>HIGH AMBIENT Ta= 36.6 ℃</th></tr>
<tr><td>1</td><td>LF1</td><td>TF-484 LS</td><td>59.2℃</td><td>68.2℃</td></tr>
<tr><td>2</td><td>D56</td><td>SR360 3A/60V FMS</td><td>79.8℃</td><td>89.0℃</td></tr>
<tr><td>3</td><td>BD1</td><td>D3SB60 4A/600V SHI</td><td>74.9℃</td><td>85.6℃</td></tr>
<tr><td>4</td><td>C10</td><td>22U/50V NIPPON 105℃</td><td>55.5℃</td><td>65.7℃</td></tr>
<tr><td>5</td><td>D50</td><td>F10SC6 10A/60V SHI</td><td>80.9℃</td><td>90.2℃</td></tr>
<tr><td>6</td><td>Q1</td><td>K2628 6A/600V SYNYO</td><td>80.5℃</td><td>91.9℃</td></tr>
<tr><td>7</td><td>D1</td><td>EGP20J 2A/600V ZOW</td><td>89.0℃</td><td>100℃</td></tr>
<tr><td>8</td><td>C5</td><td>100U/400V RUB 105℃</td><td>52.3℃</td><td>62.7℃</td></tr>
<tr><td>9</td><td>T1 COIL</td><td>TF-1017 LS</td><td>74.4℃</td><td>84.2℃</td></tr>
<tr><td>10</td><td>D55</td><td>MBR1545CT 15A/45V ON</td><td>81.9℃</td><td>91.3℃</td></tr>
<tr><td>11</td><td>T1 CORE</td><td>TF-1017 LS</td><td>68.4℃</td><td>78.6℃</td></tr>
<tr><td>12</td><td>RG1</td><td>7905 1A/5V ON</td><td>74.2℃</td><td>84.1℃</td></tr>
<tr><td>13</td><td>C56</td><td>2200U/16V RUB 105℃</td><td>71.8℃</td><td>80.8℃</td></tr>
<tr><td>14</td><td>C53</td><td>1200U/16V RUB 105℃</td><td>65.8℃</td><td>74.8℃</td></tr>
<tr><td>15</td><td>C51</td><td>470U/25V RUB 105℃ YXG</td><td>67.9℃</td><td>77.0℃</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: 125%
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: 230 VAC
O/P: 100 % LOAD
Ta= -25 ℃</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 40 ℃
NO DAMAGE</td><td>I/P: 230 VAC
O/P:FULL LOAD
Ta= 40 ℃
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: 3.0 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℃	I/P-O/P: 4.8 mA I/P-FG: 4.52 mA O/P-FG: 3.01 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: 4G 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	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 56 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 ℃ LIFE TIME= 75208 HRS I/P: 230VAC O/P:FULL LOAD Ta= 40 ℃ LIFE TIME= 30126 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 169.2K 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 K2628 : 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) 420 V (2) 542 V (3) 550 V	P
2	Diode Peak **Voltage**	D55 Rated MBR1545CT : 45 V 15 A D50 Rated F10SC6 : 60V 10A D56 Rated HER303 : 200V 3A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 29.4 V (2) 33.4 V (3) 30 V (1) 39.6 V (2) 42.6 V (3) 39.8 V (1) 86 V (2) 92 V (3) 88 V	P
3	Clamp Diode Peak **Voltage**	D1 Rated EGP20J : 600 V 2A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25℃	(1) 442 V (2) 440 V	P
4	**Input Capacitor Voltage**	C 5 Rated : 150 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) 380 V (2) 386 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℃	(1) 13 V (4) 13 V (5) 10.6 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/3/2	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/10/14	PRODUCT SAMPLE W0409B16	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023