

MODEL : RS-100-12
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 26 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 11.4V~ 13.2 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	11.18V~ 13.76 V/ 230VAC 11.18V~ 13.76 V/ 115VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -1 %~ 1% (Max)	I/P: 100 VAC / 264 VAC O/P:FULL/ 0 % LOAD Ta:25°C	V1: 0.05 %~ -0.05 %	P
4	LINE REGULATION	V1:-0.5 %~ 0.5 % (Max)	I/P: 100 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: 0.05 %~ -0.05 %	P
6	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	230VAC/ 186 ms 115VAC/ 824 ms	P
7	RISE TIME	230 VAC/20 ms (Max) 115 VAC/30 ms (Max)	I/P:230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 16 ms 115VAC/ 16 ms	P
8	HOLD UP TIME	230 VAC/ 50 ms (TYP) 115 VAC/ 10 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 103 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: 1200 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	289 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	66 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	81 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	82%	P
4	INPUT CURRENT	230 V/ 1.5 A(TYP) 115 V/ 2.5 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 1.2 A/ 230 VAC I = 1.9 A/ 115 VAC	P
5	INRUSH CURRENT	230 V/ 40 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: 0.43 mA N-FG: 0.43 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℃	125 %/ 230 VAC 125 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 13.8 V~ 16.2 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25℃	15.1 V/ 230 VAC 15.1 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

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																
1	TEMPERATURE RISE TEST	MODEL : RS-100-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: FULL LOAD Ta=29.5℃ 2. HIGH AMBIENT BURN-IN : 12 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 50.4 ℃ <table><thead><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 29.5 ℃</th><th>HIGH AMBIENT Ta= 50.4 ℃</th></tr></thead><tbody><tr><td>1</td><td>BD1</td><td>D3SB80 4A/800V SHI</td><td>75.9℃</td><td>93.0℃</td></tr><tr><td>2</td><td>LF1</td><td>LF-058</td><td>75.2℃</td><td>90.9℃</td></tr><tr><td>3</td><td>C5</td><td>150U/400V HU4 105℃</td><td>61.2℃</td><td>78.6℃</td></tr><tr><td>4</td><td>R2</td><td>330Ω /2W R/MO</td><td>106.4℃</td><td>118.7℃</td></tr><tr><td>5</td><td>ZD1</td><td>P6KE300A PAN JIT</td><td>80.5℃</td><td>96.3℃</td></tr><tr><td>6</td><td>D1</td><td>HER208 2A/1KV REC</td><td>87.9℃</td><td>104.1℃</td></tr><tr><td>7</td><td>Q1</td><td>2SK2082 9A/800V FUJI</td><td>83.7℃</td><td>104.1℃</td></tr><tr><td>8</td><td>U1</td><td>1203 ON</td><td>83.8℃</td><td>101.3℃</td></tr><tr><td>9</td><td>C10</td><td>100U/35V RUB 105℃ YXF</td><td>76.1℃</td><td>92.8℃</td></tr><tr><td>10</td><td>T1 CORE</td><td>TF-1043 LS</td><td>89.9℃</td><td>107.4℃</td></tr><tr><td>11</td><td>T1 COIL</td><td>TF-1043 LS</td><td>89.2℃</td><td>105.8℃</td></tr><tr><td>12</td><td>L60</td><td>TR-405</td><td>108.6℃</td><td>120.3℃</td></tr><tr><td>13</td><td>C64</td><td>1000U/35V NCC 105℃ KY</td><td>76.1℃</td><td>93.5℃</td></tr><tr><td>14</td><td>D60</td><td>S20LC20U 20A/200V SHI</td><td>83.9℃</td><td>101.1℃</td></tr><tr><td>15</td><td></td><td></td><td></td><td></td></tr></tbody></table>			NO	Position	P/N	ROOM AMBIENT Ta= 29.5 ℃	HIGH AMBIENT Ta= 50.4 ℃	1	BD1	D3SB80 4A/800V SHI	75.9℃	93.0℃	2	LF1	LF-058	75.2℃	90.9℃	3	C5	150U/400V HU4 105℃	61.2℃	78.6℃	4	R2	330Ω /2W R/MO	106.4℃	118.7℃	5	ZD1	P6KE300A PAN JIT	80.5℃	96.3℃	6	D1	HER208 2A/1KV REC	87.9℃	104.1℃	7	Q1	2SK2082 9A/800V FUJI	83.7℃	104.1℃	8	U1	1203 ON	83.8℃	101.3℃	9	C10	100U/35V RUB 105℃ YXF	76.1℃	92.8℃	10	T1 CORE	TF-1043 LS	89.9℃	107.4℃	11	T1 COIL	TF-1043 LS	89.2℃	105.8℃	12	L60	TR-405	108.6℃	120.3℃	13	C64	1000U/35V NCC 105℃ KY	76.1℃	93.5℃	14	D60	S20LC20U 20A/200V SHI	83.9℃	101.1℃	15					P
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 122% LOAD Ta:25℃	TEST : OK	P																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100 % LOAD Ta=-25 ℃	TEST : OK	P																																																																																
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 ℃ NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 50℃ HUMIDITY= 95 %R.H	TEST : OK	P																																																																																
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50℃)	I/P: 230 VAC O/P:FULL LOAD	± 0.01 %(0-50℃)	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℃		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: 4.72 mA I/P-FG: 4.38 mA O/P-FG: 2.19 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: 2 GΩ I/P-FG: 2 GΩ O/P-FG: 3 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	6 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50045826 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 64 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 123687 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 27838 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 260.8K 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	Q1 Rated 2SK2082 :800 V/9 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) 456 V (2) 544 V (3) 692 V	P
2	Diode Peak Voltage	D61 Rated S20LUC20U : 200V/ 20 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) 100 V (2) 99.2 V (3) 100 V	P
3	Clamp Diode Peak Voltage	D1 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) 552 V (2) 574 V	P
4	Input Capacitor Voltage	C 5 Rated RUBYCON :150u / 400 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) 392 V (2) 374 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) 14.6 V (2) 14.8 V (3) 12.9 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/1/19	RD SMAPLE	PASS	VICENT TSENG	MAX LIN
2004/7/7	PRODUCT SAMPLE A404B33	PASS	VICENT TSENG	MAX LIN
2004/8/16	PRODUCT SAMPLE A407C27	PASS	VICENT TSENG	MAX LIN

2003/12/12 A50-F023