

MODEL : RSP-1500-48

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 200 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 61 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 43V-56 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	38.96 V- 57.62 V/ 230 VAC 38.96 V- 57.62 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %- -1 % (Max)	I/P: 100 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: 100 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.03 %- -0.03 %	P
5	LOAD REGULATION	V1: 0.5 %- -0.5 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.03 %- -0.03 %	P
6	SET UP TIME	230VAC: 1500 ms (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 734 ms	P
7	RISE TIME	230VAC: 100 ms (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 51 ms	P
8	HOLD UP TIME	230VAC: 16 ms (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 17.8 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: 4800 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	413 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	100VAC-264 VAC	I/P: TESTING O/P: FULL LOAD Ta: 25°C	90V-264V	P
			I/P: LOW-LINE-3V= 97 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	47HZ -63 HZ NO DAMAGE OSC	I/P: 90 VAC ~ 264 VAC O/P: FULL -MIN LOAD Ta: 25°C	TEST: OK	P
3	POWER FACTOR	0.95 / 230 VAC(TYP) 0.98 / 115 VAC(TYP)	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C	PF= 0.96 / 230 VAC PF= 0.99 / 115 VAC	P
4	EFFICIENCY	91 % (TYP)	I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	91.2%	P
5	INPUT CURRENT	230V/ 8 A (TYP) 115V/ 17 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C	I = 7.62 A / 230 VAC I = 15.58 A / 115 VAC	P
6	INRUSH CURRENT	230V/ 60 A (TYP) 115V/ 30 A (TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C	I = 50 A / 230 VAC I = 25 A / 115 VAC	P
7	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P: Min LOAD Ta: 25°C	L-FG: 0.9 mA N-FG: 0.9 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %~ 135 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta: 25°C	125 % / 230 VAC 125 % / 115 VAC Constant Current Limiting unit will shut down o/p voltage after 5sec Re-power on to recover	P
2	OVER VOLTAGE PROTECTION	CH1: 57.6V~ 67.2 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta: 25°C	63.8V / 230 VAC 63.8 V / 115 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: TSW2 : 95 ± 5°C O.T.P. NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD	O.T.P. Active Shut down o/p voltage , recovers automatically after temperature goes down	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD Ta: 25°C	NO DAMAGE Constant Current Limiting unit will shut down o/p voltage after 5sec Re-power on to recover	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT														
1	AUXILIARY POWER (AUX)	12V @ 0.1A (Only for Remote ON/OFF control)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	12.57V	P														
2	REMOTE CONTROL	Table1.1 Fig1.2(a)(b)(c) Specification of Remote ON/OFF	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	<table border="1"> <thead> <tr> <th colspan="2">Connection Method</th> <th>Fig1.2(a)</th> <th>Fig1.2(b)</th> <th>Fig1.2(c)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">SW Logic</td> <td>Output on</td> <td>SW Open</td> <td>SW Open</td> <td>SW Close</td> </tr> <tr> <td>Output off</td> <td>SW Close</td> <td>SW Close</td> <td>SW Open</td> </tr> </tbody> </table>	Connection Method		Fig1.2(a)	Fig1.2(b)	Fig1.2(c)	SW Logic	Output on	SW Open	SW Open	SW Close	Output off	SW Close	SW Close	SW Open	P
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SW Logic	Output on	SW Open	SW Open	SW Close															
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3	ALARM SIGNAL OUTPUT	<p>Table2.1 Explanation of alarm</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>POK Alarm</th> </tr> </thead> <tbody> <tr> <td>P OK</td> <td>The signal is "LOW"when ther power supply is above 65%of the rated output voltage</td> </tr> <tr> <td>P OK GND</td> <td>The signal turns to be "HIGH" when ther power supply is under 65%of the rated output voltage</td> </tr> </tbody> </table>	Pin	POK Alarm	P OK	The signal is "LOW"when ther power supply is above 65%of the rated output voltage	P OK GND	The signal turns to be "HIGH" when ther power supply is under 65%of the rated output voltage	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	<table border="1"> <thead> <tr> <th colspan="2">Output of alarm</th> </tr> </thead> <tbody> <tr> <td>Good:Low</td> <td>(0.5V max at 10mA)</td> </tr> <tr> <td>Fail:High or open</td> <td>(50V 10mA max)</td> </tr> </tbody> </table>	Output of alarm		Good:Low	(0.5V max at 10mA)	Fail:High or open	(50V 10mA max)	P		
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Fail:High or open	(50V 10mA max)																		
4	OUTPUT VOLTAGE PROGRAMMABLE(PV)	Adjustment of output voltage is possible between 75~100% of the rated output by following	I/P: 230 VAC O/P:NOL LOAD Ta:25°C	70%-100%	P														
5	CURRENT SHARING	PSU1-PSU2 < 10%	I/P: 230 VAC O/P:FULL/50% LOAD Ta:25°C	O/P:100% PSU1: 1705 W PSU2: 1688 W <hr/> O/P:50% PSU1: 872 W PSU2: 845 W	P														
6	REMOTE SENSE	>0.3V	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	> 0.3 V	P														

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : RSP-1500-24 1. ROOM AMBIENT BURN-IN : 2HRS I/P: 230VAC O/P: FULL LOAD Ta= 29 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230VAC O/P: FULL LOAD Ta= 51.4 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 119 % 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	± 0.05 %(0-50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.01 %(0-50°C)	P
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10-500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:2G (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: 11.6 mA I/P-FG: 8.84 mA O/P-FG: 16.04 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: 1 GΩ I/P-FG: 1 GΩ O/P-FG: 1 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	9 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50063850 UL: File NO : E183223			P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2,-3 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 A	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 LIGHT 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 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :1KV L,N-PE:2KV	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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	RSP-1500-24 :SUPPOSE C 114 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 1098401 HRS I/P: 230VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 188843 HRS			P
2	MTBF	Conducted by Parts Stress Analysis Prediction 313.1K hrs min. Telcordia SR-332 (Bellcore) ; 116.75K hrs min. MIL-HDBK-217F (25°C)			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 50,000 hours @ TA 50°C			P



COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q900 Rated FOA24N50 : 500V 24 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) 388 V (2) 406 V (3) 152 V	P
2	Diode Peak Voltage	D102 Rated S20LC20U : 200V 20A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 157 V (2) 170 V (3) 154 V	P
3	Input Capacitor Voltage	C15 Rated : 150 u / 450V/ 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 (4)Burn in 1hour Ta:25°C	(1) 444 V (2) 444 V (3) 406 V (4) 390 V	P
4	Control IC Voltage Test	U100 Rated UCC2895W : 18 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) 12.7 V (2) 12.7 V (3) 12.7 V	P
5	PFC Power Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 20N60C3 : 600V 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) 420 V (2) 452 V (3) 406 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2005/4/19	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2005/7/29	PRODUCT SAMPLE W0505A40	PASS	VINCENT TSENG	MAX LIN
2005/9/3	PRODUCT SAMPLE W0507C27	PASS	VINCENT TSENG	MAX LIN
2005/9/21	PRODUCT SAMPLE W0509B35	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023