MODEL：RSP-1500-5

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 150 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25℃	V1: 20 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.5V~5.5 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	4.29 V~ 5.69 V/ 230 VAC 4.29 V~ 5.69 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 2 %~ -2 % (Max)	I/P: 100 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25℃	V1: 0.12 %~ -0.12 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 100 VAC ~ 264 VAC O/P:FULL LOAD Ta:25℃	V1: 0.12 %~ -0.12 %	P
5	LOAD REGULATION	V1: 2 %~ -2 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0.12 %~ -0.12 %	P
6	SET UP TIME	230VAC: 1500 ms (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 1200 ms	P
7	RISE TIME	230VAC: 100 ms (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 64 ms	P
8	HOLD UP TIME	230VAC: 10 ms (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 11.6 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: <5 %	P
10	DYNAMIC LOAD	V1: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	694 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℃	85V~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℃	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℃	PF= 0.96 / 230 VAC PF= 0.99 / 115 VAC	P
4	EFFICIENCY	80 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	81.1 %	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℃	I = 6.9 A/ 230 VAC I = 14.1 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℃	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℃	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℃	122 %/ 230 VAC 123 %/ 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: 5.75 V~ 6.75 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	6.5 V/ 230 VAC 6.5 V/ 115 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	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℃	NO DAMAGE Constant Current Limiting unit will shut down o/p voltage after 5sec Re-power on to recover	P

CONTROL FUNCTION 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>AUXILIARY POWER (AUX)</td><td>12V @ 0.1A
(Only for Remote ON/OFF control)</td><td>I/P: 230 VAC
O/P:FULL LOAD
Ta:25℃</td><td>12.25V</td><td>P</td></tr>
<tr><td>2</td><td>REMOTE CONTROL</td><td>Table1.1 Fig1.2(a)(b)(c)
Specification of Remote ON/OFF</td><td>I/P: 230 VAC
O/P:FULL LOAD
Ta:25℃</td><td><table><tr><td colspan="2">Connection Method</td><td>Fig1.2(a)</td><td>Fig1.2(b)</td><td>Fig1.2(c)</td></tr><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></table></td><td>P</td></tr>
<tr><td>3</td><td>ALARM SIGNAL OUTPUT</td><td>Table2.1 Explanation of alarm<table><tr><td>Pin</td><td>POK Alarm</td></tr><tr><td>P OK
P OK GND</td><td>The signal is “LOW”when ther power supply is above 65%of the rated output voltage</td></tr><tr><td></td><td>The signal turns to be “HIGH” when ther power supply is under 65%of the rated output voltage</td></tr></table></td><td>I/P: 230 VAC
O/P:FULL LOAD
Ta:25℃</td><td><table><tr><td>Output of alarm</td></tr><tr><td>Good:Low
(0.5V max at 10mA)</td></tr><tr><td>Fail:High or open
(50V 10mA max)</td></tr></table></td><td>P</td></tr>
<tr><td>4</td><td>OUTPUT VOLTAGE PROGRAMMABLE(PV)</td><td>Adjustment of output voltage is possible between 75~100% of the rated output by following</td><td>I/P: 230 VAC
O/P:NOL LOAD
Ta:25℃</td><td>71%~100%</td><td>P</td></tr>
<tr><td>5</td><td>CURRENT SHARING</td><td>PSU1-PSU2 < 10%</td><td>I/P: 230 VAC
O/P:FULL/50% LOAD
Ta:25℃</td><td>O/P:100%
PSU1: 1574 W
PSU2: 1538 W
O/P:50%
PSU1: 780 W
PSU2: 753 W</td><td>P</td></tr>
<tr><td>6</td><td>REMOTE SENSE</td><td>>0.25V</td><td>I/P: 230 VAC
O/P:FULL LOAD
Ta:25℃</td><td>> 0.25 V</td><td>P</td></tr>
</table>

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：RSP-1500-5
1. ROOM AMBIENT BURN-IN：1 HRS
I/P: 230VAC O/P: FULL LOAD Ta= 37.8 ℃
2. HIGH AMBIENT BURN-IN：2 HRS
I/P: 230VAC O/P: FULL LOAD Ta= 41.5 ℃

<table>
<tr><th>NO</th><th>Position</th><th>ROOM AMBIENT
Ta= 37.8 ℃</th><th>HIGH AMBIENT
Ta= 41.5 ℃</th></tr>
<tr><td>1</td><td>LF2</td><td>49.7℃</td><td>53.1℃</td></tr>
<tr><td>2</td><td>BD1</td><td>59.2℃</td><td>62.0℃</td></tr>
<tr><td>3</td><td>D2</td><td>49.3℃</td><td>52.4℃</td></tr>
<tr><td>4</td><td>L1 COIL</td><td>53.8℃</td><td>56.4℃</td></tr>
<tr><td>5</td><td>Q7</td><td>45.7℃</td><td>49.0℃</td></tr>
<tr><td>6</td><td>U3</td><td>54.5℃</td><td>57.8℃</td></tr>
<tr><td>7</td><td>U2</td><td>52.4℃</td><td>55.7℃</td></tr>
<tr><td>8</td><td>C17</td><td>42.3℃</td><td>45.3℃</td></tr>
<tr><td>9</td><td>L900 COIL</td><td>68.9℃</td><td>72.4℃</td></tr>
<tr><td>10</td><td>T900 COIL</td><td>78.5℃</td><td>82.6℃</td></tr>
<tr><td>11</td><td>Q900</td><td>76.6℃</td><td>81.3℃</td></tr>
<tr><td>12</td><td>D900</td><td>65.0℃</td><td>69.0℃</td></tr>
<tr><td>13</td><td>L102</td><td>62.9℃</td><td>66.3℃</td></tr>
<tr><td>14</td><td>TSW2</td><td>83.6℃</td><td>88.7℃</td></tr>
<tr><td>15</td><td>D102</td><td>80.3℃</td><td>83.7℃</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:119% 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: 230 VAC
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 40℃
NO DAMAGE</td><td>I/P: 272 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>± 0.05 %(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 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℃</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: 10.92 mA I/P-FG: 8.3 mA O/P-FG: 15.52 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: 6 GΩ I/P-FG: 6 GΩ O/P-FG: 6 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25℃	9 mΩ	P
4	APPROVAL	TUV: Cerificate NO ：R50063850 UL: File NO ：E183223			P

E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2,-3 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 A	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25℃	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℃	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℃	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℃	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	RSP-1500-5: SUPPOSE C116 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25℃ LIFE TIME= 406245 HRS I/P: 230VAC O/P:FULL LOAD Ta= 40℃ LIFE TIME= 146693 HRS			P
2	MTBF	Conducted by Parts Stress Analysis Prediction 814.4K hrs min. Telcordia SR-332 (Bellcore) ; 90.4K hrs min. MIL-HDBK-217F (25℃)			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 50,000 hours @ TA 50℃			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 FQA24N50 : 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℃	(1) 394 V (2) 396 V (3) 392 V	P
2	Diode Peak **Voltage**	D102 Rated S60SC3ML : 30V 60A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 20.4 V (2) 20.2 V (3) 0.1 V	P
3	**Input Capacitor Voltage**	C15 Rated : 150 u / 450V/ 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 (4)Burn in 1hour Ta:25℃	(1) 442 V (2) 440 V (3) 409 V (4) 394 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℃	(1) 12.6 V (2) 12.6 V (3) 12.6 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℃	(1) 420 V (2) 442 V (3) 428 V	P

TEST RESULT	TESTER	APPROVAL
PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023