MODEL：SD-350B-48

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 200 mVp-p (Max)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	V1：12 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 43 V~ 53 V	I/P: 24 VDC O/P:MIN LOAD Ta:25℃	41.74 V~ 56.26 V	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %~ -1 % (Max)	I/P:24VDC / 36 VDC O/P:FULL/ MIN LOAD Ta:25℃	V1: 0.02 %~ -0.02 %	P
4	LINE REGULATION	V1: 0.2 %~ -0.2 % (Max)	I/P:24 VDC / 36 VDC O/P:FULL LOAD Ta:25℃	V1: 0.02 %~ -0.02 %	P
5	LOAD REGULATION	V1: 1 %~ -1 % (Max)	I/P: 24 VDC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0.02 %~ -0.02 %	P
6	SET UP TIME	300 ms (Max)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	59 ms	P
7	RISE TIME	50 ms (Max)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	28 ms	P
8	OVER/UNDERSHOOT TEST	< ±5%	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	TEST: <5 %	P
9	DYNAMIC LOAD	V1: 4800 mVp-p	I/P: 24 VDC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	143 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	19VDC~ 36 VDC	I/P:TESTING O/P:FULL LOAD Ta:25℃	16 V~ 36 V	P
			I/P: LOW-LINE-0.2V= 18.8 V HIGH-LINE+5%= 37.8 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST: OK	
2	EFFICIENCY	84 % (TYP)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	84.2 %	P
3	INPUT CURRENT	17.6A (TYP)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	I = 17.5 A	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %~ 135 %	I/P: 24 VDC O/P:TESTING Ta:25℃	118 % Shunt down Re-power ON	P
2	OVER VOLTAGE PROTECTION	CH1: 16 53V~ 65 V	I/P: 24 VDC O/P:MIN LOAD Ta:25℃	63.7 V Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 95± 5 ℃ O.T.P. NO DAMAGE	I/P: 24 VDC 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: 24 VDC O/P: FULL LOAD Ta:25℃	NO DAMAGE Shunt down Re-power ON	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	FAN SPEED CONTROL	-------	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	Fan Voltage= 11.99 V	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： SD-350B-12
1. ROOM AMBIENT BURN-IN：1.5 HRS
I/P: 24 VDC O/P: FULL LOAD Ta= 30.2 ℃
2. HIGH AMBIENT BURN-IN： 3 HRS
I/P: 24 VDC O/P: FULL LOAD Ta= 52.4 ℃

<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 30.2 ℃</th><th>HIGH AMBIENT Ta= 52.4 ℃</th></tr>
<tr><td>1</td><td>Q4</td><td>IRFP460A 20A/500V IR</td><td>84.6℃</td><td>95.9℃</td></tr>
<tr><td>2</td><td>Q1</td><td>IRFP460A 20A/500V IR</td><td>67.1℃</td><td>90.3℃</td></tr>
<tr><td>3</td><td>TSW1</td><td>ST-95℃</td><td>70.4℃</td><td>88.7℃</td></tr>
<tr><td>4</td><td>C7</td><td>3300U/50V RUB YXA 105℃</td><td>42.2℃</td><td>57.6℃</td></tr>
<tr><td>5</td><td>C5</td><td>3300U/50V RUB YXA 105℃</td><td>44.0℃</td><td>62.0℃</td></tr>
<tr><td>6</td><td>U1</td><td>SG3525</td><td>55.3℃</td><td>74.6℃</td></tr>
<tr><td>7</td><td>C25</td><td>100U/25V RUB 105℃</td><td>50.0℃</td><td>70.8℃</td></tr>
<tr><td>8</td><td>Q5</td><td>C4242 7A/400V FUJI</td><td>51.2℃</td><td>72.0℃</td></tr>
<tr><td>9</td><td>RG1</td><td>7815 1A/15V ON</td><td>56.7℃</td><td>77.1℃</td></tr>
<tr><td>10</td><td>D100</td><td>30CPQ150 30A/150V IR</td><td>71.6℃</td><td>85.0℃</td></tr>
<tr><td>11</td><td>D101</td><td>30CPQ150 30A/150V IR</td><td>56.4℃</td><td>81.0℃</td></tr>
<tr><td>12</td><td>T1 CORE</td><td>TF-945B</td><td>76.4℃</td><td>95.4℃</td></tr>
<tr><td>13</td><td>L100</td><td>TR-382</td><td>57.4℃</td><td>80.4℃</td></tr>
<tr><td>14</td><td>C113</td><td>2200U/25V NCC 105℃ KY</td><td>40.6℃</td><td>60.7℃</td></tr>
<tr><td>15</td><td>LF1</td><td>TR-348</td><td>51.4℃</td><td>71.4℃</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: 24 VDC
O/P: 116 % 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: 24 VDC
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: 36VDC
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: 24 VDC
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 Operating at I/P: 24 VDC NO LOAD
(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: 1.5 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 1.8 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25℃	I/P-O/P: 3.39 mA I/P-FG: 3.47 mA O/P-FG: 6.71 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: 2 G Ω I/P-FG: 3 G Ω O/P-FG: 2 G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25℃	10 mΩ	P
4	APPROVAL	TUV: Certificate NO : UL: File NO :			N/A

E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RADIATION	EN55022 CLASS B	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	PASS Test by certified Lab	P
2	E.S.D	EN61000-4-2 INDUSTRY AIR:8KV / Contact:4KV	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	CRITERIA A	P
3	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	CRITERIA A	P
4	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 113 IS THE MOST CRITICAL COMPONENT I/P: 24VDC O/P:FULL LOAD Ta= 25 ℃ LIFE TIME= 1515165 HRS I/P: 24VDC O/P:FULL LOAD Ta= 50 ℃ LIFE TIME= 80687 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 209.4K 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 PSWN009 100W : 100V 100A	I/P:High-Line +3V = 39 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 42 V (2) 99.6 V (3) 38.8 V	P
2	Diode Peak **Voltage**	D 101 Rated PA905C06 : 600 V 20 A	I/P:High-Line +3V = 39 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 396 V (2) 476 V (3) 0 V	P
3	**Input Capacitor Voltage**	C 8 Rated : 3300 u / 50V /105℃	I/P:High-Line +3V = 39 VDC O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change (4)Burn-IN Hour Ta:25℃	(1) 38.6 V (2) 39.6 V (3) 38.8 V	P
4	**Control IC Voltage Test**	U 1 Rated SG3525 : 35 V	I/P:High-Line +3V = 39 VDC O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change (4) Output Short Ta:25℃	(1) 13.9 V (2) 13.9 V (3) 13.6 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/6/7	RD SMAPLE	PASS	VINCENT TSENG	MAX LIN
2004/8/19	PRODUCT SMAPLE A407A23	PASS	VINCENT TSENG	MAX LIN
2004/11/25	PRODUCT SMAPLE W0411A25	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023