MODEL：SD-350C-24

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 150 mVp-p (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25℃	V1：11 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 23 V~ 30 V	I/P: 48 VDC O/P:MIN LOAD Ta:25℃	21.89V~ 33.21 V	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %~ -1 % (Max)	I/P:48 VDC / 72 VDC O/P:FULL/ MIN LOAD Ta:25℃	V1: 0.06 %~ -0.06 %	P
4	LINE REGULATION	V1: 0.2 %~ -0.2 % (Max)	I/P:48 VDC / 72 VDC O/P:FULL LOAD Ta:25℃	V1: 0.03 %~ -0.03 %	P
5	LOAD REGULATION	V1: 1 %~ -1 % (Max)	I/P: 48 VDC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0.05 %~ -0.05 %	P
6	SET UP TIME	300 ms (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25℃	42 ms	P
7	RISE TIME	50 ms (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25℃	20 ms	P
8	OVER/UNDERSHOOT TEST	< ±5%	I/P: 48 VDC O/P:FULL LOAD Ta:25℃	TEST: <5 %	P
9	DYNAMIC LOAD	V1: 2400 mVp-p	I/P: 48 VDC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	189 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	36VDC~ 72 VDC	I/P:TESTING O/P:FULL LOAD Ta:25℃	29.5 V~ 72 V	P
			I/P: LOW-LINE-0.2V= 35.8 V HIGH-LINE+5%= 75.6 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST: OK	
2	EFFICIENCY	81 % (TYP)	I/P: 48 VDC O/P:FULL LOAD Ta:25℃	81.2 %	P
3	INPUT CURRENT	8.6A (TYP)	I/P: 48 VDC O/P:FULL LOAD Ta:25℃	I = 8.5 A	P
4	INRUSH CURRENT	45 A (TYP) COLD START	I/P: 48 VDC O/P:FULL LOAD Ta:25℃	I = 24 A	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %~ 135 %	I/P: 48 VDC O/P:TESTING Ta:25℃	119 % Shunt down Re-power ON	P
2	OVER VOLTAGE PROTECTION	CH1: 31.5 V~ 37.5 V	I/P: 48 VDC O/P:MIN LOAD Ta:25℃	36 V Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 95 ± 5 ℃ O.T.P. NO DAMAGE	I/P: 48 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: 48 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: 48VDC O/P:FULL LOAD Ta:25℃	Fan Voltage= 11.85 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-350C-24
1. ROOM AMBIENT BURN-IN：1.5 HRS
I/P: 48 VDC O/P: FULL LOAD Ta= 31.7 ℃
2. HIGH AMBIENT BURN-IN：2 HRS
I/P: 48 VDC O/P: FULL LOAD Ta= 52.8 ℃

<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 31.7 ℃</th><th>HIGH AMBIENT Ta= 52.8 ℃</th></tr>
<tr><td>1</td><td>Q4</td><td>IRFP264 38A/250V IR</td><td>64.3℃</td><td>88.2℃</td></tr>
<tr><td>2</td><td>Q1</td><td>IRFP264 38A/250V IR</td><td>69.0℃</td><td>93.0℃</td></tr>
<tr><td>3</td><td>Q6</td><td>IRFP150N 35A/100V IR</td><td>45.8℃</td><td>70.7℃</td></tr>
<tr><td>4</td><td>C7</td><td>1000u/100V NCC 105℃</td><td>43.7℃</td><td>64.5℃</td></tr>
<tr><td>5</td><td>U1</td><td>SG3525 ON</td><td>50.8℃</td><td>72.7℃</td></tr>
<tr><td>6</td><td>C25</td><td>100U/25V RUB 105℃ YXG</td><td>48.2℃</td><td>70.4℃</td></tr>
<tr><td>7</td><td>Q5</td><td>C5763 7A/400V SANYO</td><td>47.3℃</td><td>69.6℃</td></tr>
<tr><td>8</td><td>RG1</td><td>L7815CV 1A/15V</td><td>50.5℃</td><td>71.7℃</td></tr>
<tr><td>9</td><td>D100</td><td>S20LC20U 20A/200V SHI</td><td>57.4℃</td><td>79.1℃</td></tr>
<tr><td>10</td><td>D101</td><td>S20LC20U 20A/200V SHI</td><td>56.2℃</td><td>77.6℃</td></tr>
<tr><td>11</td><td>T1 COIL</td><td>TF-958</td><td>58.7℃</td><td>85.3℃</td></tr>
<tr><td>12</td><td>L100</td><td>TR-383</td><td>51.2℃</td><td>76.1℃</td></tr>
<tr><td>13</td><td>LF1</td><td>TR-507</td><td>59.4℃</td><td>65.8℃</td></tr>
<tr><td>14</td><td>RG2</td><td>L7812CV 1A/12V</td><td>45.8℃</td><td>52.8℃</td></tr>
<tr><td>15</td><td>C111</td><td>1500U/35V NCC 105℃ KY</td><td>38.7℃</td><td>63.4℃</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: 48 VDC
O/P: 120 % 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: 48 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: 72VDC
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: 48 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: 48 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: 4.46 mA I/P-FG: 4.66 mA O/P-FG: 7.28 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: 5 G Ω I/P-FG: 6 G Ω O/P-FG: 5 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: 48 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 I/P: 48 VDC O/P:FULL LOAD Ta:25℃	CRITERIA A	P
3	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 48 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 111 IS THE MOST CRITICAL COMPONENT I/P: 48VDC O/P:FULL LOAD Ta= 25 ℃ LIFE TIME= 1928901 HRS I/P: 48VDC O/P:FULL LOAD Ta= 50 ℃ LIFE TIME= 265730 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 IRFP264 : 250V 38A	I/P:High-Line +3V = 75 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 119 V (2) 221 V (3) 159 V	P
2	Diode Peak **Voltage**	D 101 Rated S20LC20U : 200 V 20 A	I/P:High-Line +3V = 75 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 48 V (2) 182 V (3) 173 V	P
3	**Input Capacitor Voltage**	C 8 Rated : 1000 u / 100V /105℃	I/P:High-Line +3V = 75 VDC O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25℃	(1) 76 V (2) 76 V (3) 76 V	P
4	**Control IC Voltage Test**	U 1 Rated SG3525 : 35 V	I/P:High-Line +3V = 75 VDC O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25℃	(1) 14 V (2) 14.3 V (3) 14.3 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/6/7	RD SMAPLE	PASS	VINCENT TSENG	MAX LIN
2004/8/20	PRODUCT SMAPLE A407A23	PASS	VINCENT TSENG	MAX LIN
2004/11/25	PRODUCT SMAPLE W0411A25	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023