

MODEL : SD-350C-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	V1 : 13 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 11 V- 16 V	I/P: 48 VDC O/P:MIN LOAD Ta:25°C	9.58V~ 17.93 V	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %~ -1 % (Max)	I/P:48 VDC / 72 VDC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
4	LINE REGULATION	V1: 0.3 %~ -0.3 % (Max)	I/P:48 VDC / 72 VDC O/P:FULL LOAD Ta:25°C	V1: 0.05 %~ -0.05 %	P
5	LOAD REGULATION	V1: 1 %~ -1 % (Max)	I/P: 48 VDC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.15 %~ -0.15 %	P
6	SET UP TIME	300 ms (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	42 ms	P
7	RISE TIME	50 ms (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	20 ms	P
8	OVER/UNDERSHOOT TEST	< ±5%	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	TEST: <5 %	P
9	DYNAMIC LOAD	V1: 1200 mVp-p	I/P: 48 VDC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	275 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°C	30 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°C	81.2 %	P
3	INPUT CURRENT	8.8A (TYP)	I/P: 48 VDC O/P: FULL LOAD Ta: 25°C	I = 8.5A	P
4	INRUSH CURRENT	45 A (TYP) COLD START	I/P: 48 VDC O/P: FULL LOAD Ta: 25°C	I = 29 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°C	117 % Shunt down Re-power ON	P
2	OVER VOLTAGE PROTECTION	CH1: 16.8 V- 20 V	I/P: 48 VDC O/P: MIN LOAD Ta: 25°C	19.2 V Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 95 ± 5 °C O.T.P. NO DAMAGE	I/P: 48 VDC O/P: FULL LOAD	O.T.P. Active Shut down o/p volotage , 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°C	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°C	Fan Voltage= 11.96 V	P

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : SD-350C-24 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 48 VDC O/P: FULL LOAD Ta= 31.7 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 48 VDC O/P: FULL LOAD Ta= 52.8 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 48 VDC O/P: 120 % LOAD Ta:25°C	TEST : OK	P
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 48 VDC 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: 72VDC O/P:FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK	P
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P: 48 VDC O/P:FULL LOAD	± 0.01 %(0-50°C)	P
6	VIBRATION TEST	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°C		TEST : OK	P

NO	Position	P/N	ROOM AMBIENT Ta= 31.7 °C	HIGH AMBIENT Ta= 52.8 °C
1	Q4	IRFP264 38A/250V IR	64.3°C	88.2°C
2	Q1	IRFP264 38A/250V IR	69.0°C	93.0°C
3	Q6	IRFP150N 35A/100V IR	45.8°C	70.7°C
4	C7	1000u/100V NCC 105°C	43.7°C	64.5°C
5	U1	SG3525 ON	50.8°C	72.7°C
6	C25	100U/25V RUB 105°C YXG	48.2°C	70.4°C
7	Q5	C5763 7A/400V SANYO	47.3°C	69.6°C
8	RG1	L7815CV 1A/15V	50.5°C	71.7°C
9	D100	S20LC20U 20A/200V SHI	57.4°C	79.1°C
10	D101	S20LC20U 20A/200V SHI	56.2°C	77.6°C
11	T1 COIL	TF-958	58.7°C	85.3°C
12	L100	TR-383	51.2°C	76.1°C
13	LF1	TR-507	59.4°C	65.8°C
14	RG2	L7812CV 1A/12V	45.8°C	52.8°C
15	C111	1500U/35V NCC 105°C KY	38.7°C	63.4°C

### 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°C	I/P-O/P: 4.46 mA I/P-FG: 4.62 mA O/P-FG: 7.58 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: 7G Ω I/P-FG: 7G Ω O/P-FG: 4G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	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°C	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°C	CRITERIA A	P
3	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	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 °C LIFE TIME= 1928901 HRS I/P: 48VDC O/P:FULL LOAD Ta= 50 °C 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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) <b>Peak Voltage</b>	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°C	(1) 136 V (2) 153 V (3) 76 V	P
2	Diode <b>Peak Voltage</b>	D 101 Rated KCH30A10 : 100 V 30 A	I/P:High-Line +3V = 75 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 82.4 V (2) 90.8 V (3) 0 V	P
3	<b>Input Capacitor Voltage</b>	C 8 Rated : 1000 u / 100V /105°C	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°C	(1) 75.6 V (2) 75.6 V (3) 75.6 V	P
4	<b>Control IC Voltage Test</b>	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°C	(1) 14.3 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
2004/9/29	PRODUCT SMAPLE W0409B42	PASS	VINCENT TSENG	MAX LIN
2004/11/25	PRODUCT SMAPLE W0411A25	PASS	VINCENT TSENG	MAX LIN

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