

MODEL : SD-200D-12

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max)	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	V1: 12 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 11 V- 16 V	I/P: 96 VDC O/P: MIN LOAD Ta: 25°C	9.9V- 17.9 V	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %- -1 % (Max)	I/P: 96 VDC / 144 VDC 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: 96 VDC / 144 VDC O/P: FULL LOAD Ta: 25°C	V1: 0 %- 0 %	P
5	LOAD REGULATION	V1: 1 %- -1 % (Max)	I/P: 96 VDC O/P: FULL - MIN LOAD Ta: 25°C	V1: 0.1 %- -0.1 %	P
6	SET UP TIME	300 ms (Max)	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	41 ms	P
7	RISE TIME	50 ms (Max)	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	20 ms	P
8	OVER/UNDERSHOOT TEST	< ±5%	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	TEST: <5 %	P
9	DYNAMIC LOAD	V1: 1200 mVp-p	I/P: 96 VDC O/P: FULL / Min LOAD 90% DUTY / 1KHZ Ta: 25°C	243 mVp-p	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	72VDC - 144 VDC	I/P: TESTING O/P: FULL LOAD Ta: 25°C	50 V - 144 V	P
			I/P: LOW-LINE-0.2V= 71.8 V HIGH-LINE+5%= 151.2 V O/P: FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN ( AC POWER ON/OFF NO DAMAGE )	TEST: OK	
2	EFFICIENCY	82 % (TYP)	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	82.5 %	P
3	INPUT CURRENT	2.5A (TYP)	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	I = 2.4 A	P
4	INRUSH CURRENT	45 A (TYP) COLD START	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	I = 35 A	P

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 % - 135 %	I/P: 96 VDC O/P: TESTING Ta: 25°C	120 % Shunt down Re-power ON	P
2	OVER VOLTAGE PROTECTION	CH1: 16.8 V - 20 V	I/P: 96 VDC O/P: MIN LOAD Ta: 25°C	19 V Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 85 ± 5 °C O.T.P. NO DAMAGE	I/P: 96 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: 96 VDC O/P: FULL LOAD Ta: 25°C	NO DAMAGE Shunt down Re-power ON	P

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : SD-200D-24 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 96 VDC O/P: FULL LOAD Ta= 29.1 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 96 VDC O/P: FULL LOAD Ta= 49.4 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 96 VDC O/P: 120 % LOAD Ta:25°C	TEST : OK	P
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 96 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: 144VDC O/P:FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK	P
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P: 96 VDC O/P:FULL LOAD	± 0.01 %(0-50°C)	P
6	VIBRATION TEST	1 Carton & 1 Set Operating at I/P: 96 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



## SAFETY TEST

NO	TEST ITEM	SPECIFICATION	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:4.25 mA I/P-FG: 4.43 mA O/P-FG: 6.79 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: 3 G Ω I/P-FG: 2 G Ω O/P-FG: 3 G 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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RADIATION	EN55022 CLASS B	I/P: 96 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/P: 96 VDC O/P:FULL LOAD Ta:25°C	CRITERIA A	P
3	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 96 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: 96VDC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 263682 HRS I/P: 96VDC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 561172 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 218.2K HRS			P

**COMPONENT STRESS TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q 1 Rated IRFP460A : 500 V 20 A	I/P:High-Line +3V = 147 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 200 V (2) 312 V (3) 146 V	P
2	Diode <b>Peak Voltage</b>	D 100 Rated KCH30A10 : 100V 30 A	I/P:High-Line +3V = 147 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 90.8 V (2) 92.4 V (3) 0 V	P
3	<b>Input Capacitor Voltage</b>	C 8 Rated : 470u / 200 V / 85°C	I/P:High-Line +3V = 147 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) 148 V (2) 149 V (3) 149 V	P
4	<b>Control IC Voltage Test</b>	U 1 Rated SG3525 : 35 V	I/P:High-Line +3V = 147 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) 14.2 V (2) 14.2 V (3) 13.9 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/6/7	RD SMAPLE	PASS	VINCENT TSENG	MAX LIN
2004/8/20	PRODUCT SMAPLE A407A22	PASS	VINCENT TSENG	MAX LIN
2004/9/29	PRODUCT SMAPLE W0409B41	PASS	VINCENT TSENG	MAX LIN
2004/11/25	PRODUCT SMAPLE W0411A24	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023