



MODEL : SD-200D-5

## OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 100 mVp-p (Max)	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	V1: 22 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.5 V~ 5.5 V	I/P: 96 VDC O/P:MIN LOAD Ta:25°C	4.28V~ 5.73 V	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 2 %~ -2 % (Max)	I/P:96 VDC / 144 VDC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.7 %~ -0.7 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P:96 VDC / 144 VDC O/P:FULL LOAD Ta:25°C	V1: 0.15 %~ -0.15 %	P
5	LOAD REGULATION	V1: 1 %~ -1 % (Max)	I/P: 96 VDC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.63 %~ -0.63 %	P
6	SET UP TIME	300 ms (Max)	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	45 ms	P
7	RISE TIME	50 ms (Max)	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	34 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: 1000 mVp-p	I/P: 96 VDC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	74 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	60 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	82.3 %	P
3	INPUT CURRENT	2.6A (TYP)	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	I = 2.5 A	P
4	INRUSH CURRENT	45 A (TYP) COLD START	I/P: 96 VDC O/P: FULL LOAD Ta: 25°C	I = 34 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	117 % Shunt down Re-power ON	P
2	OVER VOLTAGE PROTECTION	CH1: 5.75 V - 6.75 V	I/P: 96 VDC O/P: MIN LOAD Ta: 25°C	6.2 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: 4.61 mA I/P-FG: 4.82 mA O/P-FG: 7.07 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: 8 G Ω I/P-FG: 7G Ω O/P-FG: 6G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	11 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) 254 V (2) 316 V (3) 147 V	P
2	Diode <b>Peak Voltage</b>	D 100 Rated S60SC4M : 40V 60 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) 35.4 V (2) 36.8 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) 149 V (2) 149 V (3) 151 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) 14.5 V (2) 14.5 V (3) 14.5 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
2004/11/25	PRODUCT SMAPLE W0411A24	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023