

MODEL : SD-500H-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1:150 mVp-p (Max)	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	V1: 39 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 11V- 15V	I/P: 96VDC O/P:MIN LOAD Ta:25°C	10.3 V-15.3 V	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1%- -1%	I/P: 72 VDC / 144 VDC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.2 %- -0.2 %	P
4	LINE REGULATION	V1: 0.5 %- -0.5 %	I/P: 72VDC -144VDC O/P:FULL LOAD Ta:25°C	V1: 0 %- 0 %	P
5	LOAD REGULATION	V1: 0.5 %- -0.5 %	I/P: 96VDC O/P:FULL -MIN LOAD Ta:25°C	V1: 0.1 %- 0.1 %	P
6	SET UP TIME	500 ms	I/P: 96VDC O/P:FULL LOAD Ta:25°C	141 ms	P
7	RISE TIME	50ms	I/P: 96VDC O/P:FULL LOAD Ta:25°C	16 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: 1200mVp-p	I/P: 96 VDC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	630 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	72VDC~144VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	70.5 V~ 144V	P
			I/P: LOW-LINE-0.2V= 71.8 V HIGH-LINE+5%= 151 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST: OK	
2	EFFICIENCY	86 % (TYP)	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	86.5 %	P
3	INPUT CURRENT	6 A(TYP)	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	I = 5.77 A	P
4	INRUSH CURRENT	60A (TYP) COLD START	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	I = 45 A	P
5	CURRENT (at no load)	0.1A (MAX)	I/P: 96 VDC O/P:NO LOAD Ta:25°C	I = 0.07 A	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %- 125 %	I/P: 96 VDC O/P:TESTING Ta:25°C	114 % Constant Current Limiting , Shut down O/P voltage ,after about 5 sec Re-power ON to recover	P
2	OVER VOLTAGE PROTECTION	CH1: 16 V~ 19V	I/P: 96 VDC O/P:MIN LOAD Ta:25°C	17 V Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: TSW2 > 95°C $\pm 5^{\circ}\text{C}$ O.T.P TSW1 > 80°C $\pm 5^{\circ}\text{C}$ O.T.P NO DAMAGE	I/P: 96 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: 144 VDC O/P: FULL LOAD Ta:25°C	NO DAMAGE Constant Current Limiting , Shut down O/P voltage ,after about 5 sec Re-power ON to recover	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT									
1	FAN SPEED CONTROL	NO LOAD= 8.5V ± 1V FULL LOAD= 12.6V ± 0.5V	I/P: 96VDC O/P:FULL LOAD Ta:25°C	NO LOAD= 8.55 V FULL LOAD=12.64 V	P									
2	REMOTE ON/OFF	Remote on/off control becomes available by applying voltage in CN3 (RC/RCG) <table border="1" data-bbox="375 504 805 638"> <tr> <td>Connection method</td> <td>Fig 1.2(A)</td> <td>Fig 1.2(B)</td> </tr> <tr> <td>Output on</td> <td>SW Open</td> <td>V=0-0.8VDC</td> </tr> <tr> <td>Output off</td> <td>SW Close</td> <td>V=4VDC-10VDC</td> </tr> </table> Fig 1.2(A)/ Fig 1.2(B) see SPEC function manual	Connection method	Fig 1.2(A)	Fig 1.2(B)	Output on	SW Open	V=0-0.8VDC	Output off	SW Close	V=4VDC-10VDC	I/P: 96VDC O/P:FULL LOAD Ta:25°C	a. OK b. 0V-2.7 V POWER ON 2.8 V-10V POWER OFF	P
Connection method	Fig 1.2(A)	Fig 1.2(B)												
Output on	SW Open	V=0-0.8VDC												
Output off	SW Close	V=4VDC-10VDC												
3	REMOTE SENSE	S+ / S-: >0.3V	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	>0.3 V	P									
4	OUTPUT OK SIGNAL	OPEN COLLECTOR SIGNAL LOW WHEN PSU TURN ON,MAX.SINK CURRENT 10mA,external voltage is 13V 0-0.5V OUTPUT STATUS ON 12-13V OUTPUT STATUS OFF	I/P: 96 VDC O/P:FULL LOAD Ta:25°C	SINK CURRENT: 10 mA 0.03V:OUTPUT STATUS ON 12.78V:OUTPUT STATUS OFF	P									

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : SD-500H--24 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 96VDC O/P: FULL LOAD Ta=30.7 °C 2. HIGH AMBIENT BURN-IN : 13 HRS I/P: 96 VDC O/P: FULL LOAD Ta=54.7 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 96 VDC O/P: 111 % LOAD Ta:25°C	TEST : OK	P
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 144 VDC / 72VDC O/P: 100% LOAD Ta= -25°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	± 0.02 % (0-50°C)	I/P: 96 VDC O/P:FULL LOAD	± 0.005 % (0-50°C)	P
6	VIBRATION TEST	1 Carton & 1 Set (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	



SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 2 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 2.4 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C / 70%RH	I/P-O/P: 4.8 mA I/P-FG: 3.95 mA O/P-FG: 5.56 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: 6.23 GΩ I/P-FG: 1.83 GΩ O/P-FG: 30 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C / 70%RH	7 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: 96VDC O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
2	E.S.D	EN61000-4-2 LIGHT 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 LIGHT INDUSTRY INPUT: 1KV	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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SD-500H-24 : SUPPOSE C110 IS THE MOST CRITICAL COMPONENT I/P:96VDC O/P:FULL LOAD Ta= 25°C LIFE TIME= 2249259 HRS I/P:96 VDC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 301329 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 196.3K HRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 30,000 hours @ TA 45°C			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q201 Rated IRFP460A 20A/500V	I/P:High-Line +3V = 147 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 390 V (2) 398 V	P
2	Diode Peak Voltage	D100 Rated S60SC6M 60A/60V (65V max)	I/P:High-Line +3V = 147 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 60 V (2) 61 V	P
3	Input Capacitor Voltage	C5 Rated 330u/200V 105°C	I/P:High-Line +3V = 147 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 173 V (2) 172 V (3) 173 V	P
4	Control IC Voltage Test	U2 Rated KA3846 :40 V	I/P:High-Line +3V = 147 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 12.9 V (2) 13 V (3) 13 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/1/21	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2008/3/17	PRODUCT SAMPLE W0802B72	PASS	SANFORD SU	VINCENT TSENG
2008/5/29	PRODUCT SAMPLE W0804B61	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023