

MODEL : SD-1000L-48

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 150 mVp-p (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	V1: 42 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1:46 V - 60 V	I/P: 48 VDC O/P:MIN LOAD Ta:25°C	43.64 V - 61.57 V	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1%~ -1 % (Max)	I/P: 48 VDC / 72VDC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.02 %~ -0.02 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 48VDC ~ 72VDC O/P:FULL LOAD Ta:25°C	V1: 0.02 %~ -0.02 %	P
5	LOAD REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 48 VDC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.02 %~ -0.02 %	P
6	SET UP TIME	500 ms (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	97 ms	P
7	RISE TIME	50 ms (Max)	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	29 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: 4800 mVp-p	I/P: 48 VDC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	908 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	19VDC~ 72 VDC	I/P:TESTING O/P:LOW LINE /70% LOAD HIGH LINE /FULL LOAD Ta:25°C	17.9 V - 72 V	P
			I/P: LOW-LINE-0.2V= 18.8V O/P:70%/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE) HIGH-LINE+5%= 75 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST: OK	
2	EFFICIENCY	90 % (TYP)	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	90.9 %	P
3	INPUT CURRENT	23.5 A/ 48 V (TYP)	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	I = 23.2 A	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105 %~ 125 %	I/P: 48VDC O/P:TESTING Ta:25°C	117 % Constant Current Limiting, unit will shut down o/p voltage above 5sec Re-power on to recover	P
2	OVER VOLTAGE PROTECTION	CH1: 62V~ 68V	I/P: 48VDC O/P:MIN LOAD Ta:25°C	63.6 V Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 75°C ± 5°C OT.P. (TSW1) 85°C ± 5°C OT.P. (TSW2) 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: 72 VDC O/P: FULL LOAD Ta:25°C	NO DAMAGE Constant Current Limiting, unit will shut down o/p voltage above 5sec Re-power on to recover	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	FAN SPEED CONTROL	0%LOAD=6V-8.5V 100%LOAD=11.8V-12.8V	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	Fan Voltage= 7.3 V/ NO LOAD Fan Voltage= 12.31 V/ 100%LOAD	P
2	REMOTE CONTROL	Rc+ / Rc- POWER ON:OPEN BETWEEN ON/OFF POWEROFF:SHORT BETWEEN ON/OFF (A) Using External Voltage Source (B) Using Internal 12V Auxiliary Output (C) Using Internal 12V Auxiliary Output.	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	(A)OK (B)OK (C)OK	P
3	REMOTE SENSE	>0.3V	I/P: 48 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: 48 VDC O/P:FULL LOAD Ta:25°C	SINK CURRENT: 10 mA OUTPUT STATUS ON= 0 V OUTPUT STATUS OFF=12.56 V	P
5	FAN LOCK	SHUTDOWN RE-POWER ON	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	SHUTDOWN RE-POWER ON	P
6	AUX POWER	0-0.25A(10.8V-13.2V)	I/P: 48 VDC Ta:25°C	12.88V/0A 12.71V/0.25A	P
7	DC I/P UVP	17V-18.7V	O/P:70% LOAD Ta:25°C	17.9VDC	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																																																			
1	TEMPERATURE RISE TEST	MODEL : SD-1000L-24 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 48 VDC O/P: FULL LOAD Ta= 29.6℃ 2. HIGH AMBIENT BURN-IN : 2HRS I/P: 48 VDC O/P: FULL LOAD Ta= 53.6℃			P																																																																																																																			
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 48 VDC O/P: 113 % LOAD Ta:25℃	TEST : OK	P																																																																																																																			
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 48 VDC O/P: 100% LOAD Ta= -20℃	TEST : OK	P																																																																																																																			
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50℃ NO DAMAGE	I/P: 72 VDC O/P:FULL LOAD Ta= 50℃ HUMIDITY= 95 %R.H	TEST : OK	P																																																																																																																			
5	TEMPERATURE COEFFICIENT	± 0.02%(0-50℃)	I/P: 48VDC O/P:FULL LOAD	± 0.013 %(0-50℃)	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℃		TEST : OK	P																																																																																																																			

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: 4.85 mA I/P-FG: 4.59 mA O/P-FG: 4.59 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: 9 GΩ I/P-FG: 2.13 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	8mΩ	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: 48VDC 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: 48 VDC O/P:FULL LOAD Ta:25°C	CRITERIA A	P
3	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 48VDC O/P:FULL LOAD Ta:25°C	CRITERIA A	P
4	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :0.5KV L,N-PE:0.5KV	I/P: 48 VDC O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	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-1000L-24 : SUPPOSE C113 IS THE MOST CRITICAL COMPONENT I/P: 48VDC O/P:FULL LOAD Ta=50 °C LIFE TIME= 251623 HRS I/P: 48VDC O/P:FULL LOAD Ta=50 °C LIFE TIME= 55554 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 32KHRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 30,000 hours @ TA 50°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	Q 900 Rated IRFP260N: 200 V 50 A	I/P:High-Line +3V = 75 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 198 V (2) 225 V	P
2	Diode Peak Voltage	D101 Rated ESAD92-02 20A/200V	I/P:High-Line +3V = 72V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 152 V (2) 84 V	P
3	Clamp Diode Peak Voltage	D 900 Rated S3L60 2.2A/600V	I/P:High-Line +3V = 75 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 157 V	P
4	Input Capacitor Voltage	C5 Rated 1000u /100 V /105°C	I/P:High-Line +3V = 75 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) 80 V (2) 80 V (3) 80 V	P
5	Control IC Voltage Test	U2 Rated UCC28220: 8V-14 V	I/P:High-Line +3V = 75 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) 13.68 V (2) 13.64 V (3) 13.68 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2007/9/14	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2007/11/16	PRODUCT SAMPLE W0710C50	PASS	VINCENT TSENG	MAX LIN
2008/1/10	PRODUCT SAMPLE W0712C58	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023