

MODEL : SD-15A-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 120 mVp-p (Max) V2: mVp-p (Max) V3: mVp-p (Max) V4: mVp-p (Max)	I/P: 12 VDC O/P:FULL LOAD Ta:25°C	V1: 17 mVp-p (Max) V2: mVp-p (Max) V3: mVp-p (Max) V4: mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	10.8 V- 13.2 V (TYP)	I/P: 12 VDC O/P:MIN LOAD Ta:25°C	13.897V-10.354V/ 12VDC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -1 %~ 1% (Max) V2: %~ % (Max) V3: %~ % (Max) V4: %~ % (Max)	I/P: 9.2VDC/18VDC O/P: FULL/ 0% LOAD Ta:25°C	V1: -0.11 %~ 0.21 % V2: %~ % V3: %~ % V4: %~ %	P
4	LINE REGULATION	V1: -0.3 %~ 0.3 % (Max) V2: %~ % (Max) V3: %~ % (Max) V4: %~ % (Max)	I/P: 9.2VDC/18VDC O/P:FULL LOAD Ta:25°C	V1: 0 %~ 0.05% V2: %~ % V3: %~ % V4: %~ %	P
5	LOAD REGULATION	V1: -0.3 %~ 0.3 % (Max) V2: %~ % (Max) V3: %~ % (Max) V4: %~ % (Max)	I/P: 12VDC O/P:FULL -MIN LOAD Ta:25°C	V1: -0.15 %~ 0.15 % V2: %~ % V3: %~ % V4: %~ %	P
6	CROSS REGULATION	V1: %~ % (Max) V2: %~ % (Max) V3: %~ % (Max) V4: %~ % (Max)	I/P: 12VDC O/P: Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25°C	V1: %~ % V2: %~ % V3: %~ % V4: %~ %	N
7	SET UP TIME	12VDC / 2500 ms (Max)	I/P: 12VDC O/P:FULL LOAD Ta:25°C	12VDC / 663 ms	P
8	RISE TIME	12VDC / 25 ms (Max)	I/P: 12VDC O/P:FULL LOAD Ta:25°C	12VDC / 6 ms	P
9	HOLD UP TIME	12VDC/ ms (Min)	I/P: 12VDC O/P:FULL LOAD Ta:25°C	12VDC / ms	N
10	OVER/UNDERSHOOT TEST	< ±5%	I/P: 12VDC O/P:FULL LOAD Ta:25°C	TEST: 3.3 %	P
11	DYNAMIC LOAD	V1: 1200 mVp-p	I/P: 12VDC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	155 mVp-p①	P
12	TRANSIENT RECOVERY TIME	V1: 1200 mVp-p	I/P: 12VDC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	65.6mVp-p②	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	9.2VDC~ 18VDC (Typ)	I/P:TESTING O/P:FULL LOAD Ta:25°C	7.99 V~ 18 V	P
			I/P: LOW-LINE- 3V=9 V HIGH-LINE+ 5%= 18.9 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST: OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ (Typ) NO DAMAGE OSC	I/P: VDC ~ VDC O/P:FULL-MIN LOAD Ta:25°C	TEST:	N
3	POWER FACTOR	/ 12 VDC(TYP)	I/P: 12 VDC O/P:FULL LOAD Ta:25°C	PF= / 12 VDC	N
4	EFFICIENCY	72% (TYP)	I/P: 12 VDC O/P:FULL LOAD Ta:25°C	73.2 %	P
5	INPUT CURRENT	12 VDC / 2.2 A (Max)	I/P: 12 VDC O/P:FULL LOAD Ta:25°C	I =1.906 A/ 12 VDC	P
6	INRUSH CURRENT	12 VDC / A (Max) COLD START	I/P: 12 VDC O/P:FULL LOAD Ta:25°C	I = A/ 12 VDC	N
7.	GAIN-PHASE MARGIN TEST	GAIN MARGIN < -10dB PHASE MARGIN>=60	(1)FULL LOAD/ 18 VDC (2)FULL LOAD/ 12 VDC (3)FULL LOAD/ 18 VDC (4)HALF LOAD/ 18 VDC (5)HALF LOAD/ 12 VDC (6)HALF LOAD/ 18 VDC (7)MIN. LOAD/ 18 VDC (8)MIN LOAD/ 12 VDC (9)MIN LOAD/ 18 VDC Ta:25°C	(1) (2) (3) (4) (5) (6) (7) (8) (9)	N
8	COMONENT STRESS DERATING				P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105%~ 160 %(Typ)	I/P: 18 VDC 18 VDC I/P: 12 VDC O/P: TESTING Ta:25°C	129.13 %/ 18 VDC 115.02%/ 9 VDC 117.65 %/ 12VDC <input checked="" type="checkbox"/> Hiccup Mode <input type="checkbox"/> Constant Current Limiting <input type="checkbox"/> Shunt down Re-power ON <input type="checkbox"/> Foldback Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1: 13.8 V~ 16.2 V(Typ)	I/P:----- O/P: MIN LOAD Ta:25°C	14.95 V/ 150 mA <input type="checkbox"/> Hiccup Model <input type="checkbox"/> Hold ON <input type="checkbox"/> Shunt down Re- power ON <input checked="" type="checkbox"/> Other	P
3	OVER TEMPERATURE PROTECTION	SPEC: > °C O.T.P. NO DAMAGE	I/P: 12 VDC O/P: FULL LOAD	°C / 12 VDC O.T.P. Active <input type="checkbox"/> Hiccup Mode <input type="checkbox"/> Shunt down Re-power ON <input type="checkbox"/> Other <input type="checkbox"/> Shut down o/p volotage · recovers automatically after temperature goes down	N
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 18 VDC O/P: FULL LOAD Ta:25°C	NO DAMAGE <input checked="" type="checkbox"/> Hiccup Mode <input type="checkbox"/> Constant Current Limiting <input type="checkbox"/> Shunt down Re-power ON <input type="checkbox"/> Other	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	FAN ON/OFF CONTROL	> °C FAN ON < °C FAN OFF	I/P: VDC O/P: FULL LOAD	°C FAN ON °C FAN OFF	N
2	FAN SPEED CONTROL	-----	I/P: VDC O/P: FULL LOAD Ta:25°C	Fan Voltage= V	N
3	REMOTE CONTROL	Rc+ / Rc- V- V POWER ON V- V POWER OFF	I/P: VDC O/P: FULL LOAD Ta:25°C	V - V POWER ON V - V POWER OFF	N
4	POWER GOOD SIGNAL	DELAY 10ms ~ 500ms	I/P: VDC I/P: VDC O/P: FULL LOAD Ta:25°C	ms/ VDC ms/ VDC	N
5	POWER FAIL SIGNAL	> 1ms	I/P: VDC I/P: VDC O/P: FULL LOAD Ta:25°C	ms/ VDC ms/ VDC	N
6	CURRENT SHARING	PSU1-PSU2 < 10%	I/P: VDC O/P: FULL/50% LOAD Ta:25°C	O/P: 100% PSU1: W PSU2: W O/P: 50% PSU1: W PSU2: W	N

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : 1. ROOM AMBIENT BURN-IN : HRS I/P: VDC O/P: LOAD Ta= °C 2. HIGH AMBIENT BURN-IN : HRS I/P: VDC O/P: LOAD Ta= °C			同 SD-15B-5
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: VDC O/P: A Ta:25°C	TEST :	同 SD-15B-5
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: VDC O/P: % LOAD Ta= °C	TEST :	同 SD-15B-5
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL °C NO DAMAGE	I/P: VDC O/P:FULL LOAD Ta= °C HUMIDITY= 95 %R.H	TEST :	同 SD-15B-5
5	TEMPERATURE COEFFICIENT	± %(0-50°C)	I/P: VDC O/P:FULL LOAD	± %(0-50°C)	同 SD-15B-5
6	VIBRATION TEST	1 Carton & 1 Set Operating at I/P: 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 :	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 KVAC/min O/P-FG:0.5KVAC/min	I/P-O/P: 2.4 KVAC/min I/P-FG: 1.2 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C	I/P-O/P: 0.66 mA I/P-FG: 3.33mA O/P-FG: 0.27mA NO DAMAGE	NOTE 1
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: 15.1G Ω I/P-FG: 4.45G Ω O/P-FG: 1.86G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	mΩ	N
4	APPROVAL	TUV: Certificate NO : UL: File NO :			N

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 <input type="checkbox"/> CLASS A <input type="checkbox"/> CLASS D	I/P: 12VDC /50HZ O/P:FULL LOAD Ta:25°C	<input type="checkbox"/> PASS <input type="checkbox"/> FAIL	N
2	CONDUCTION	<input type="checkbox"/> EN55022 <input type="checkbox"/> EN55011 <input type="checkbox"/> CLASS A <input type="checkbox"/> CLASS B	I/P: 12VDC (50HZ) O/P:FULL/50% LOAD Ta:25°C	<input type="checkbox"/> PASS <input type="checkbox"/> FAIL Test by certified Lab	N
3	RADIATION	<input checked="" type="checkbox"/> EN55022 <input type="checkbox"/> EN55011 <input type="checkbox"/> CLASS A <input checked="" type="checkbox"/> CLASS B	I/P: 12VDC (50HZ) O/P:FULL LOAD Ta:25°C	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL Test by certified Lab	P
4	E.S.D	EN61000-4-2 <input checked="" type="checkbox"/> LIGHT INDUSTRY <input type="checkbox"/> INDUSTRY AIR:8KV / Contact:4KV	I/P: 12VDC /50HZ O/P:FULL LOAD Ta:25°C	<input type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B	N
5	E.F.T	EN61000-4-4 <input checked="" type="checkbox"/> LIGHT INDUSTRY INPUT: 1KV <input type="checkbox"/> INDUSTRY INPUT: 2KV	I/P: 12VDC /50HZ O/P:FULL LOAD Ta:25°C	<input type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B	N
6	SURGE	IEC61000-4-5 <input type="checkbox"/> LIGHT INDUSTRY L-N :1KV L,N-PE:2KV <input type="checkbox"/> INDUSTRY L-N :2KV L,N-PE:4KV	I/P: 12VDC /50HZ O/P:FULL LOAD Ta:25°C	<input type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B	N
7	Test by certified Lab & Test Report Prepare				