

MODEL : SDR-240-48

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1:50 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 20 mVp-p (Max)	P
2	PEAK POWER	V1:360W (>3sec.)	I/P: 230VAC O/P:360W Ta:25°C	OK	P
3	OUTPUT VOLTAGE ADJUST RANGE	CH1:48 V - 55V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	46.97 V- 56.32 V/ 230 VAC 46.96 V- 56.31 V/ 115 VAC	P
4	OUTPUT VOLTAGE TOLERANCE	V1: 1 % - -1 % (Max)	I/P: 100 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.04 % - -0.04 %	P
5	LINE REGULATION	V1: 0.5 % - -0.5 % (Max)	I/P: 100VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.02 % - -0.02 %	P
6	LOAD REGULATION	V1: 1 % - -1 % (Max)	I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0.03 % - -0.03 %	P
7	SET UP TIME	230VAC: 650 ms (Max) 115 VAC: 1300 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 458.2 ms 115VAC/ 910 ms	P
8	RISE TIME	230VAC: 60 ms (Max) 115VAC: 60 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 43 ms 115VAC/ 41 ms	P
9	HOLD UP TIME	230VAC: 20 ms (TYP) 115VAC 20 Ms <b>【typ】</b>	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 35.6 ms 115 VAC/ 31.5 ms	P
10	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: <5 %	P
11	DYNAMIC LOAD	V1: 4800 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	192 mVp-p	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	81 V~264V	P
			I/P: LOW-LINE-3V= 85V HIGH-LINE+15%=300 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 NO DAMAGE OSC	I/P: 100VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	POWER FACTOR	0.94 / 230 VAC(TYP) 0.99 / 115 VAC(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	PF= 0.948 / 230 VAC PF= 0.997 / 115 VAC	P
4	EFFICIENCY	94% (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	94.1 %	P
5	INPUT CURRENT	230V/ 1.3 A (TYP) 115V/ 2.6 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 1.17 A/ 230 VAC I = 2.28 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 55 A (TYP) 115V/ 33 A(TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 53.9 A/ 230 VAC I = 28 A/ 115 VAC	P
7	LEAKAGE CURRENT	< 1 mA / 240 VAC	I/P: 264 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.72 mA N-FG: 0.72 mA	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110%~ 150 %  Normally works within 110 ~ 150% rated output power for more than 3 seconds and then shut down o/p voltage with auto-recovery >150% rated power, constant current limiting with auto-recovery within 2 seconds and may cause to shut down if over 2 seconds	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	116 %/ 230 VAC 116 %/ 115 VAC  Normally works within 110 ~ 150% rated output power for more than 3 seconds and then shut down o/p voltage with auto-recovery >150% rated power, constant current limiting with auto-recovery within 2 seconds and may cause to shut down if over 2 seconds	P
2	OVER VOLTAGE PROTECTION	CH1: 56 V~ 65V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	61.09 V/ 230 VAC 61.07 V/ 115 VAC Shut down o/p voltage with auto-recovery	P
3	OVER TEMPERATURE PROTECTION	SPEC: TSW1: 95 ± 5°C O.T.P. NO DAMAGE	I/P: 230 VAC 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: 264 VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE Shut down Re-power ON	P

**CONTROL FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC OK REALY CONTACT RATINGS (max.)	60Vdc/0.3A, 30Vdc/1A, 30Vac/0.5A resistive load	I/P: 230 VAC O/P:FULL LOAD	OK	P

**ENVIRONMENT TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																																																																		
1	TEMPERATURE RISE TEST	MODEL : SDR-240-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230VAC O/P: FULL LOAD Ta=25.2 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P: 230VAC O/P: FULL LOAD Ta=66.2 °C			P																																																																																																																																		
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 110 % LOAD Ta:25°C	TEST : OK	P																																																																																																																																		
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100 % LOAD Ta= -30 °C	TEST : OK	P																																																																																																																																		
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 °C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 60 °C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																																																																		
5	TEMPERATURE COEFFICIENT	± 0.03 % (0-50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.001 % (0-50°C)	P																																																																																																																																		
6	VIBRATION TEST	A.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 B. 1 Set Mounting: Compliance to IEC60068-2-6		TEST : OK	P																																																																																																																																		

**SAFETY TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3 KVAC/min I/P-FG: 2 KVAC/min O/P-FG: 0.5 KVAC/min O/P-DC OK:0.5KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG: 0.6 KVAC/min O/P-DC OK: 0.6 KVAC/min Ta:25°C	I/P-O/P: 6.07 mA I/P-FG: 4.67 mA O/P-FG: 23.99 mA O/P-DC OK: 0.017 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 / 70%RH	I/P-O/P: 3.47 GΩ I/P-FG: 3 GΩ O/P-FG: 27.2 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C / 70%RH	25 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50136177 UL: File NO : E215312			P

**E.M.C TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2,-3 CLASS A CLASS D	I/P: 230/240/220 VAC/50HZ O/P:100/75/50/25%LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 INDUSTRY AIR:8KV / Contact:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 INDUSTRY L-N :2KV L,N-PE:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
7	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	SDR-240-24:SUPPOSE C 105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 261285 HRS I/P: 230VAC O/P:FULL LOAD Ta= 60 °C LIFE TIME= 22614 HRS I/P: 230VAC O/P:75%OAD Ta= 60 °C LIFE TIME= 43752 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 169.3K HRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 30,000 hours @ TA 60°C			P

**COMPONENT STRESS TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q 5 Rated STF25NM50N 22A/550V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C	(1) 540 V (2) 466 V	P
2	Diode <b>Peak Voltage</b>	Q100 Rated YA868C15RSC 30A/150V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 113 V (2) 152 V	P
3	<b>PFC Transistor</b> ( D to S) or (C to E) <b>Peak Voltage</b>	Q1 Rated STP21NM60N 17A/600V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C	(1) 588 V (2) 556 V	P
4	<b>Input Capacitor Voltage</b>	C5 Rated 220u/450V 105°C HU	I/P:High-Line +3V = 267 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) 410.3 V (2) 410.4 V (3) 410.3 V	P
5	<b>Control IC Voltage Test</b>	U900 Rated L6599D 16V (max) 8.85V (min)	I/P:High-Line +3V = 267 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) 12.56 V (2) 12.46 V (3) 12.54 V	P

TEST RESULT	TESTER	APPROVAL
PASS	SANFORD SU	VINCENT TSENG

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