



Test Report: CXLA100F-24

100W AC-DC Adapter

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

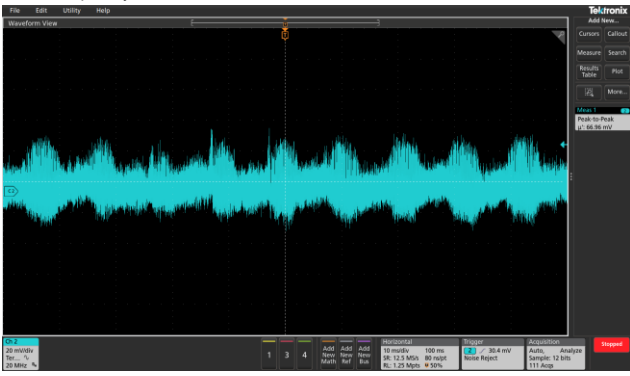
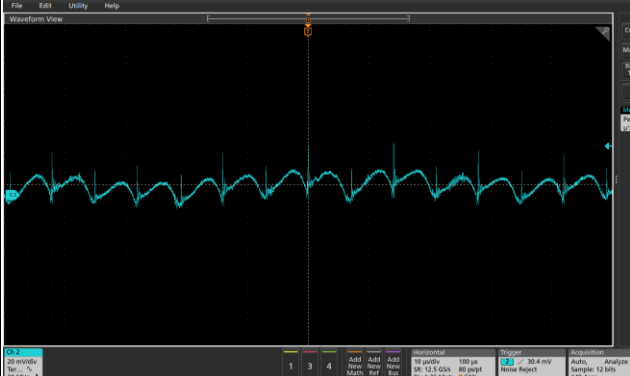
E.M.C. Test

■ RELIABILITY TEST

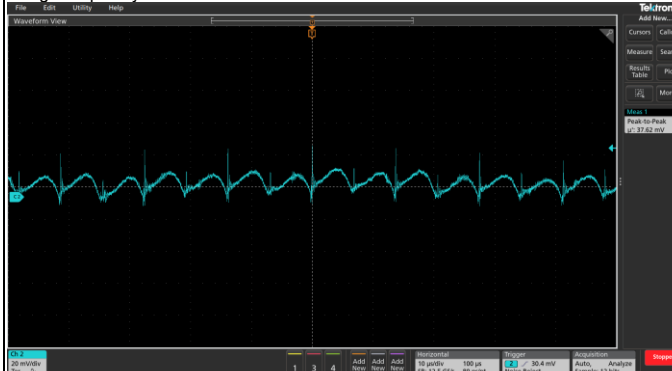
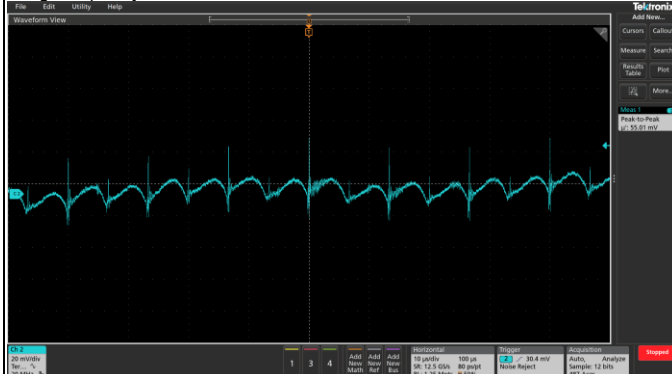
Environment Test

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

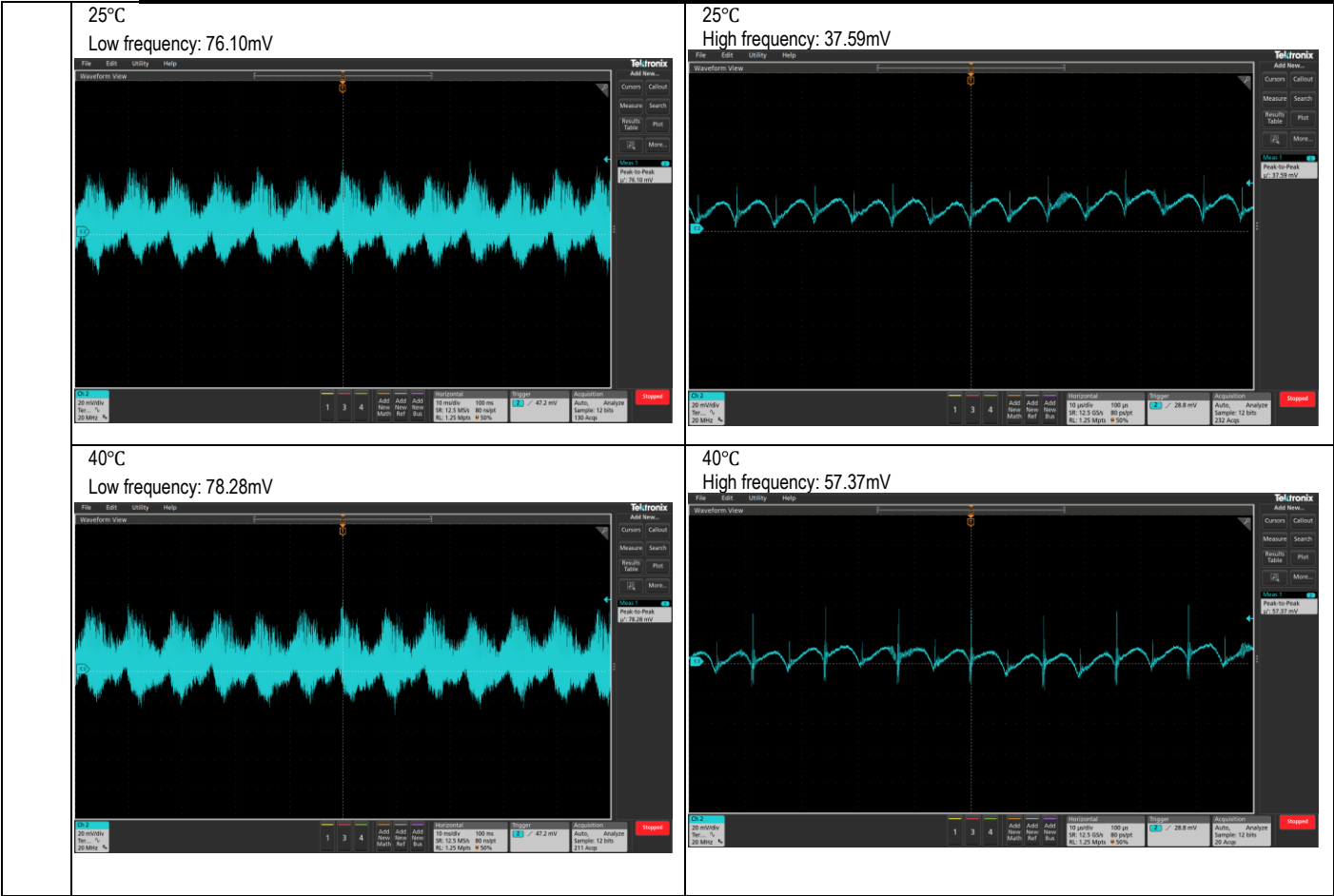
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT		
1	OUTPUT VOLTAGE TOLERANCE.	No specification	I/P: 90VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 40°C	23.56~24.08V		
2	LINE REGULATION	-1%~+1%	I/P: 90VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 40°C	90 to 100VAC	0.021%	
				240 to 264VAC	0.017%	
3	LOAD REGULATION	-5%~+5%	I/P: 90VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 40°C	-30°C	2.0%	
				25°C	2.1%	
				40°C	2.1%	
	RIPPLE & NOISE	240mVp-p	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C		90VAC	264VAC
				-30°C	66.96mVp-p	71.6mVp-p
				25°C	68.40mVp-p	76.1mVp-p
				40°C	69.19mVp-p	78.28mVp-p
				90VAC/ FULL LOAD		
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	-30°C Low frequency: 66.96mV					
	-30°C High frequency: 41.38mV					

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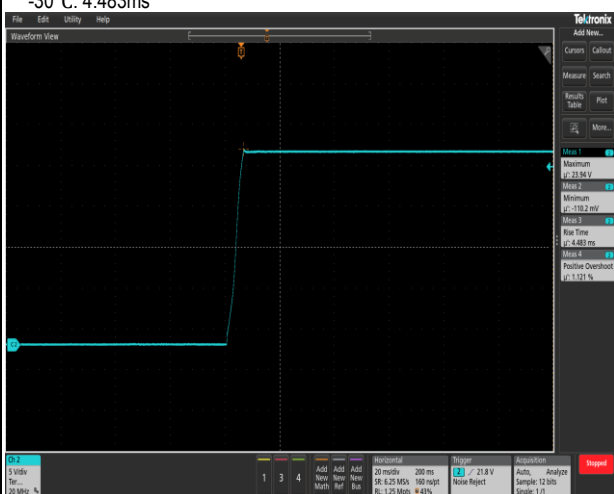
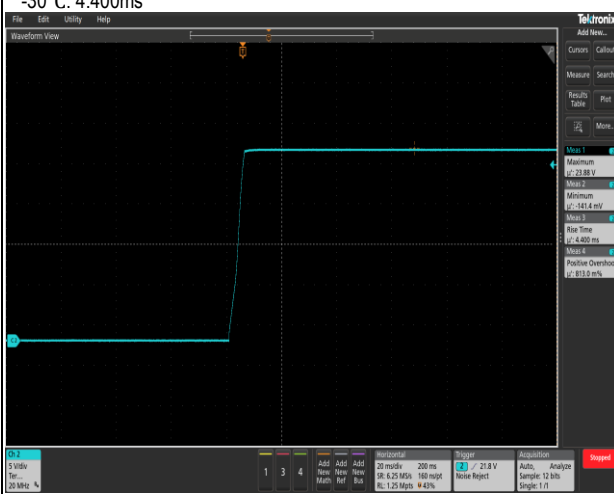
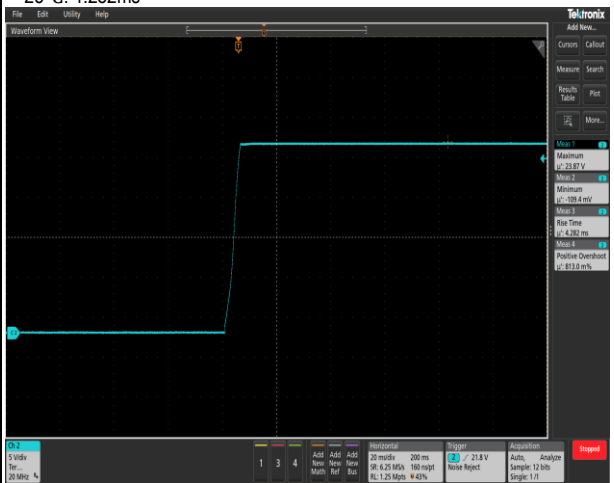
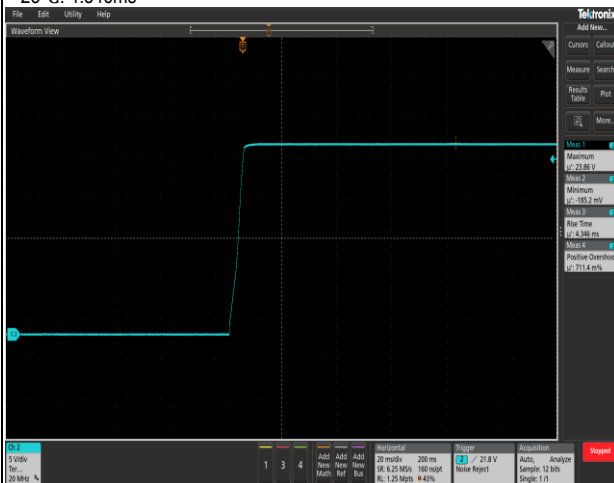
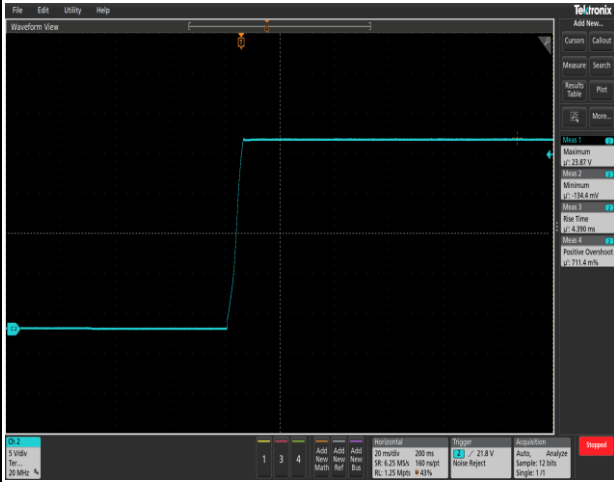
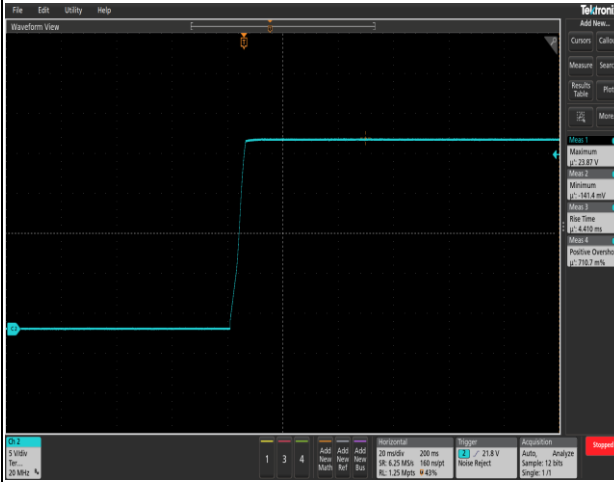
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START UP TIME		3000ms	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C	90VAC 702.97ms	264VAC 763.54ms
INPUT=90VAC/47HZ @ FULL LOAD			INPUT=264VAC/63HZ @ FULL LOAD		
-30°C: 659.87ms CH1: AC Input Voltage, CH2: Output Voltage			-30°C: 747.23ms CH1: AC Input Voltage, CH2: Output Voltage		
25°C: 658.71ms CH1: AC Input Voltage, CH2: Output Voltage			25°C: 733.26ms CH1: AC Input Voltage, CH2: Output Voltage		
40°C: 702.97ms CH1: AC Input Voltage, CH2: Output Voltage			40°C: 763.54ms CH1: AC Input Voltage, CH2: Output Voltage		

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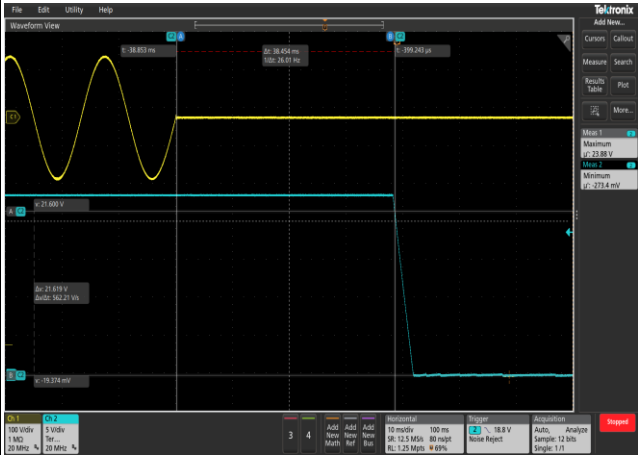
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6	RISE TIME		50ms	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C	90VAC 4.483ms	264VAC 4.410ms
	INPUT=90VAC/47HZ @ FULL LOAD				INPUT=264V/63HZ @ FULL LOAD	
	-30°C: 4.483ms 				-30°C: 4.400ms 	
	25°C: 4.282ms 				25°C: 4.346ms 	
	40°C: 4.390ms 				40°C: 4.410ms 	

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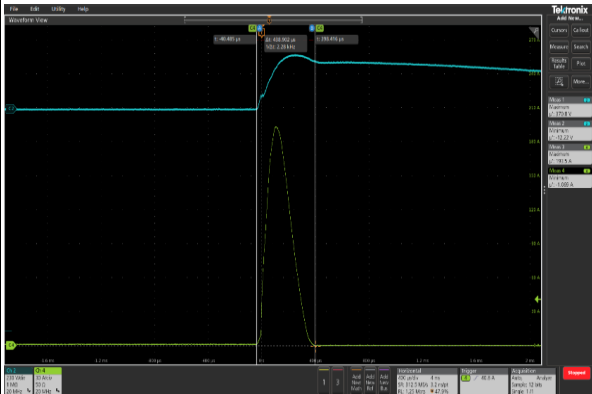
	HOLD UP TIME	> 20ms / 115VAC	I/P: 115VAC O/P: FULL LOAD Ta: 25°C	38.454ms
7	INPUT=115VAC/60HZ @ FULL LOAD CH1: AC Input Voltage, CH2: Output Voltage 			

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	DYNAMIC LOAD	No Specification	I/P: 90VAC O/P : (1) FULL LOAD 50%DUTY / 100HZ (2) FULL LOAD 50%DUTY / 1KHZ Ta: -30°C, 25°C, 40°C	-
	INPUT=90VAC/47HZ @ FULL LOAD 50%DUTY / 100HZ		INPUT=90VAC/47HZ @ FULL LOAD 50%DUTY / 1KHZ	
	-30°C CH2: Output Voltage, CH3: Output Current		-30°C CH2: Output Voltage, CH3: Output Current	
				
	25°C CH2: Output Voltage, CH3: Output Current		25°C CH2: Output Voltage, CH3: Output Current	
8				
	40°C CH2: Output Voltage, CH3: Output Current		40°C CH2: Output Voltage, CH3: Output Current	
				

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT CURRENT	<1.4A/100VAC <0.6A/240VAC	I/P: 100VAC I/P: 240VAC O/P: FULL LOAD Ta: 25°C	1.11A @100VAC 0.481A @240VAC
2	TOUCH CURRENT	< 0.1mA / 264VAC	I/P: 264VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.0285mA N-FG: 0.0296mA
3	LEAKAGE CURRENT	< 0.115mA / 264VAC	I/P: 264VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.0656mA N-FG: 0.0633mA
4	STANDBY POWER	≤ 0.15W	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/0.034W 230VAC/0.069W
5	INRUSH CURRENT	< Fuse/Bridge diode I _{2t}	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	194A / 5.636 I _{2t}
	INPUT=230VAC/50HZ @ FULL LOAD CH2: AC Input Voltage, CH4: Input Current 			
6	EFFICIENCY	Typ. 92.5% / FULL LOAD at 230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/91.66% 230VAC/93.00%
7	POWER FACTOR	> 0.9	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/0.982 230VAC/0.918

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	105%~150% rated current 4.38A<OCP<6.25A	I/P: 90VAC I/P: 264VAC O/P: TESTING Ta : 25°C	90VAC/5.2A 264VAC/5.23A
2	OVER VOLTAGE PROTECTION	140% of Rated Voltage	I/P: 90VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	90VAC/29.33V 264VAC/29.31V
3	SHORT CIRCUIT PROTECTION	NO DAMAGE (LATCH MODE)	I/P: 90VAC ~ 264VAC O/P: NO LOAD, FULL LOAD Ta: 25°C	PASS
4	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 90VAC ~ 264VAC O/P: FULL LOAD Ta: 40°C	O.T.P. Active Shut down o/p voltage recovers automatically after temperature goes down

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Power Transistor	Q050 Rated 6.5A/600V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 398V (2) 398V (3) 398V
2	PWM Power Transistor	Q051 Rated 6.5A/600V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 400V (2) 398V (3) 399V
3	PFC Power Transistor	Q010 Rated 10A/600V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 418V (2) 415V (3) 411V
4	PFC Power Transistor	Q010-1 Rated 10A/600V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 418V (2) 417V (3) 411V
5	Input Capacitor	C051 Rated 120uF/450V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 400V (2) 401.5V (3) 401.5V

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SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4.0KVAC/min I/P-FG: 1.5KVAC/min O/P-FG: 1.5KVAC/min	I/P-O/P: 4.0KVAC/min I/P-FG: 1.5KVAC/min O/P-FG: 1.5KVAC/min Ta: 25°C	PASS
2	ISOLATION RESISTANCE	I/P-O/P: 500VDC: >100MΩ I/P-FG: 500VDC: >100MΩ O/P-FG: 500VDC: >100MΩ	I/P-O/P: 500VDC I/P-FG: 500VDC O/P-FG: 500VDC Ta: 25°C/70%RH	PASS

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 100VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
2	RADIATION	EN55032 CLASS B	I/P: 100VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
3	CONDUCTION	EN55032 CLASS B	I/P: 100VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
4	E. S. D	EN61000-4-2 CRITERIA A AIR: ±15KV Contact: ±8KV	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
5	E. F. T	EN61000-4-4 CRITERIA A INPUT: ±2KV	I/P: 220VAC O/P: FULL LOAD Ta: 25°C	PASS
6	SURGE	EN61000-4-5 CRITERIA A L-N: ±2KV L, N-PE: ±4KV	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
7	VOLTAGE DIPS	IEC61000-4-11 (1) CRITERIA A 100% dip; 0.5 cycle(10ms) 0,45,90,135,180,225,270,115,360 degrees. (2) CRITERIA A 100% dip; 1 cycle(20ms) 0 degree. (3) CRITERIA A 30% dip; 25 cycles(500ms) 0 degree. (4) CRITERIA B 100% dip; 250 cycles(5000ms) 0 degree.	I/P: 100VAC I/P: 240VAC O/P: FULL LOAD Ta: 25°C	PASS



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8	Conducted Immunity	IEC61000-4-6 CRITERIA A 10Vrms	I/P: 120VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
9	Radiated Immunity	IEC61000-4-3 CRITERIA A 10V/m	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
10	Power Frequency Magnetic Field	IEC61000-4-8 CRITERIA A 30A/m	I/P: 120VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS

■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	TEMPERATURE	No components damaged	I/P: 90VAC @ 47Hz O/P: FULL LOAD Ta: 40°C	PASS*Table 1
2	CAPACITOR LIFE CYCLE	The electrolytical capacitor life is greater than 26280 hours	I/P: 100VAC/ 60Hz I/P: 240VAC/50Hz O/P: O/P: FULL LOAD Ta: 40°C	(1)I/P: 100VAC O/P: FULLLOAD Ta= 40°C LIFETIME=211,854 hours (2)I/P: 240VAC O/P: FULLLOAD Ta= 40°C LIFETIME=360,910 hours
3	MTBF	The power supply reliability, when calculated by SR332 exceed 240,000 hours with all output at 100% of maximum load and at ambient temperature of 25°C		7,453,494hours @ 90VAC 8,528,737hours @ 264VAC
4	HUMIDITY	Storage: 25°C / 5 ~ 95% RH / Dwell: 4hours Working: 25°C/ 10 ~ 95% RH / Dwell: 4hours I/P: 100~240VAC (Working) O/P: 100% load (Working)		PASS
5	VIBRATION TEST	Ware form: Random Acceleration: 2Grms Axis/Time: X, Y, Z / 10min per axis Frequency: 10~500Hz No functional, mechanical and safety fail.		PASS
6	ALTITUDE	Operational and Non-operational Altitude: 5000 meters Temperature: -5°C Dwell time: 24Hrs I/P: 100~240VAC (Operational) O/P: 100% load (Operational)		PASS
7	OVERLOAD BURN-IN TEST	I/P: 90VAC/ 60Hz O/P: Just before OCP kicks in Ta: 25°C Duration: 1hours		PASS

*1 All component temperatures should not exceed maximum operation temperature.

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Table 1. Components temperature @ 40°C 100% Load. (Unit °C)

No.	Location	90V	Result
1	C206	59.501	Pass
2	C204	61.756	Pass
3	C054	63.916	Pass
4	C051	68.327	Pass
5	T050X	69.095	Pass
6	T050C	64.492	Pass
7	IC200	79.663	Pass
8	Q200	73.023	Pass
9	Q200_1	72.721	Pass
10	PC300	60.822	Pass
11	IC100	74.746	Pass
12	Q051	73.916	Pass
13	D004	78.592	Pass
14	Q050	77.493	Pass
15	D003	90.821	Pass
16	Q010	86.734	Pass
17	L002	86.728	Pass
18	D050	93.824	Pass
19	RT101	65.49	Pass
20	L010	87.698	Pass
21	Case Up	52.696	Pass
22	Case Down	64.49	Pass
23	Case Input	46.848	Pass
24	Case Output	46.071	Pass
25	Case Back	51.459	Pass
26	Case Forth	57.411	Pass
27	AMB1	40.635	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Gen Chen	Luke Zhou	Ke Cao