



Test Report: CXLA100F-15

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

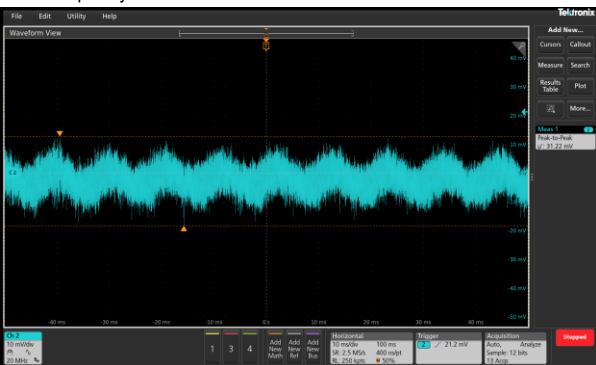
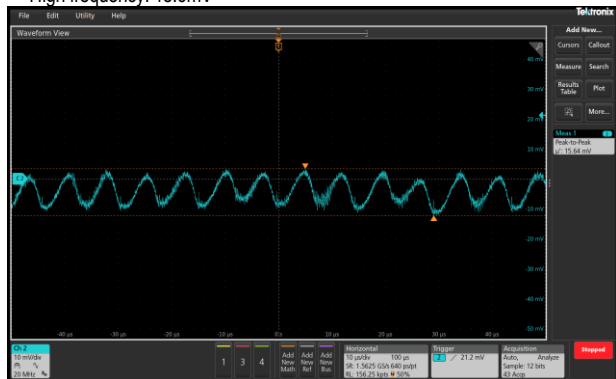
E.M.C. Test

■ 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	14.71 ~ 15.40V		
2	LINE REGULATION	-1%~+1%	I/P: 90VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 40°C	90 to 100VAC	0.065%	
				240 to 264VAC	0.026%	
3	LOAD REGULATION	-5%~+5%	I/P: 90VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 40°C	-30°C	4.4%	
				25°C	3.3%	
				-40°C	4.5%	
4	RIPPLE & NOISE	150mVp-p	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C		90VAC	264VAC
				-30°C	31.2mVp-p	36.4mVp-p
				25°C	38.6mVp-p	43.7mVp-p
				40°C	32.5mVp-p	36.7mVp-p
	90VAC/ FULL LOAD					
4	-30°C Low frequency: 31.2mV					
	-30°C High frequency: 15.6mV					

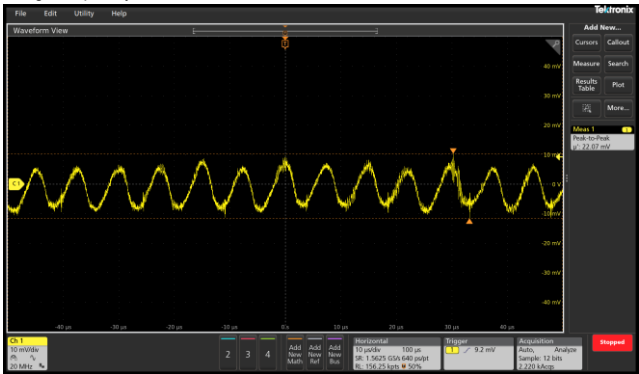
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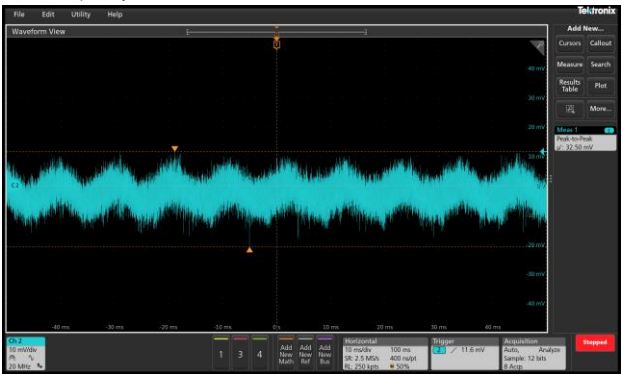
25°C
Low frequency: 38.6mV



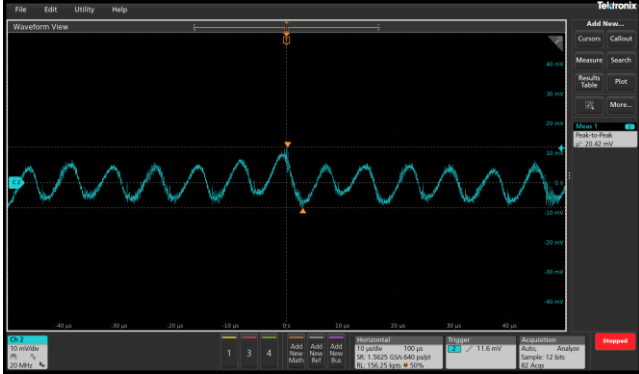
25°C
High frequency: 22.1mV



40°C
Low frequency: 32.5mV

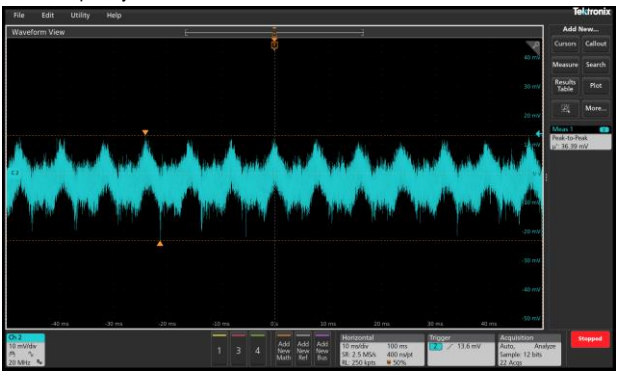


40°C
High frequency: 20.4mV

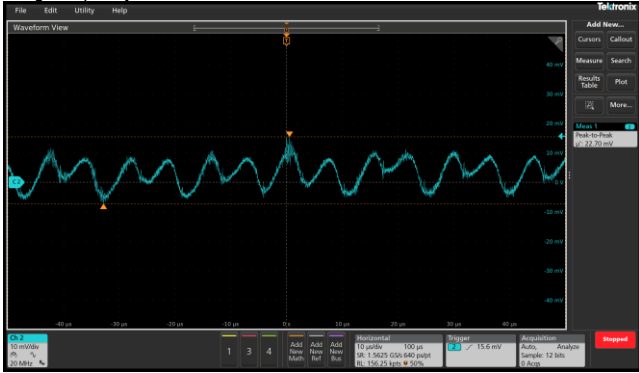


264VAC/ FULL LOAD

-30°C
Low frequency: 36.4mV

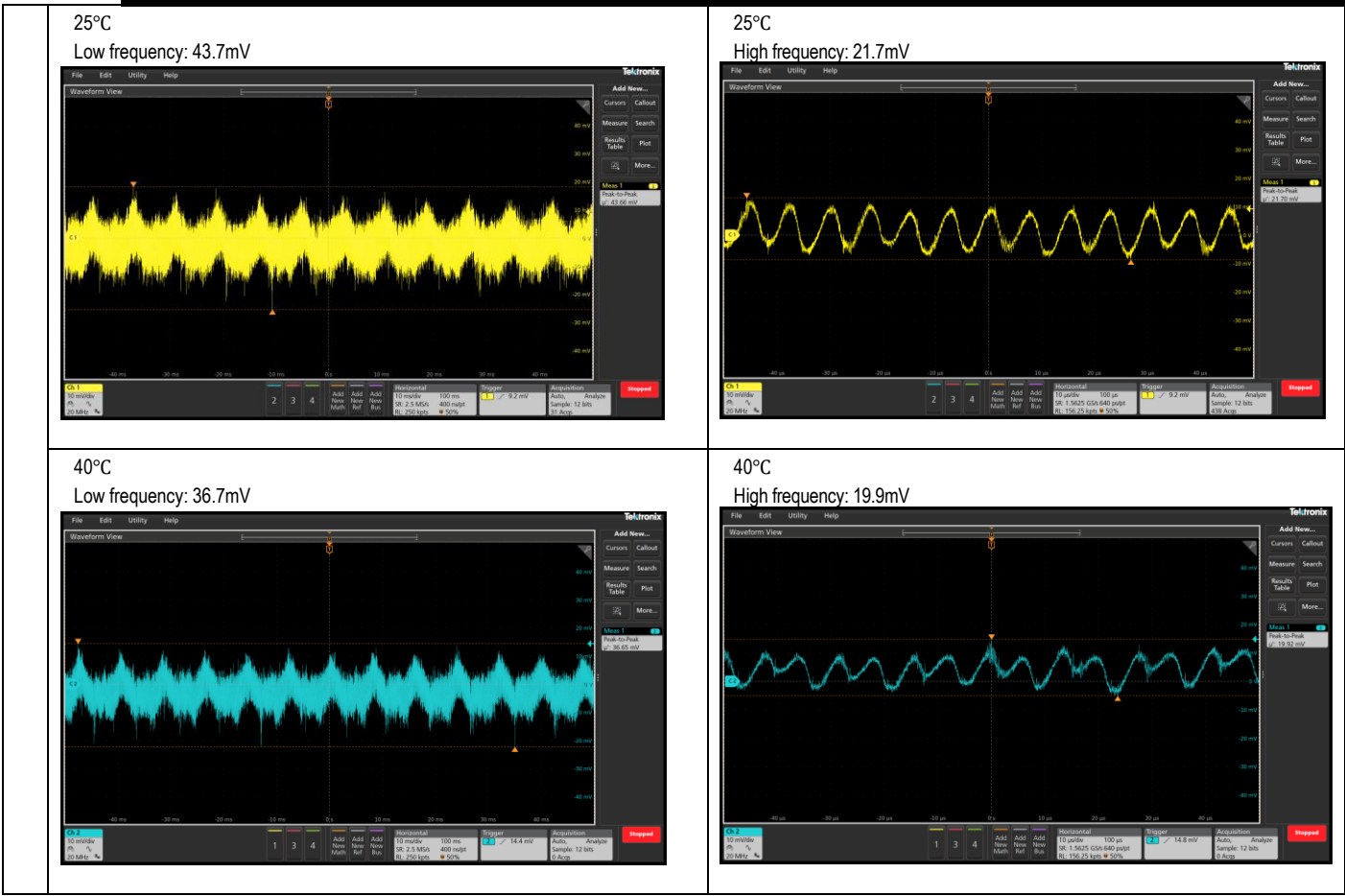


-30°C
High frequency: 22.7mV



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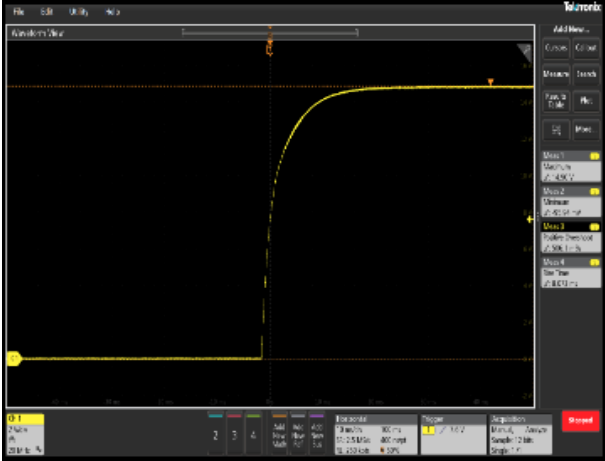
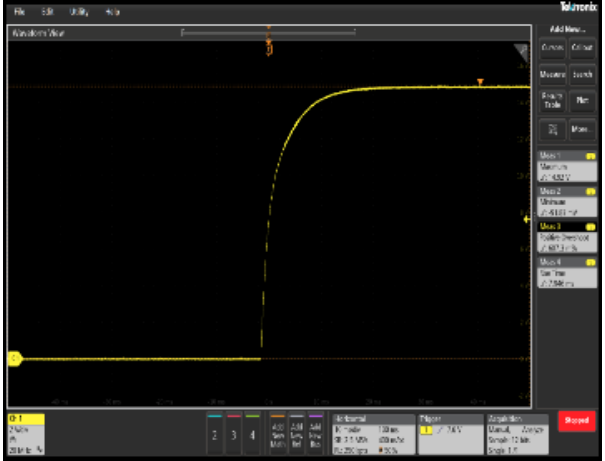
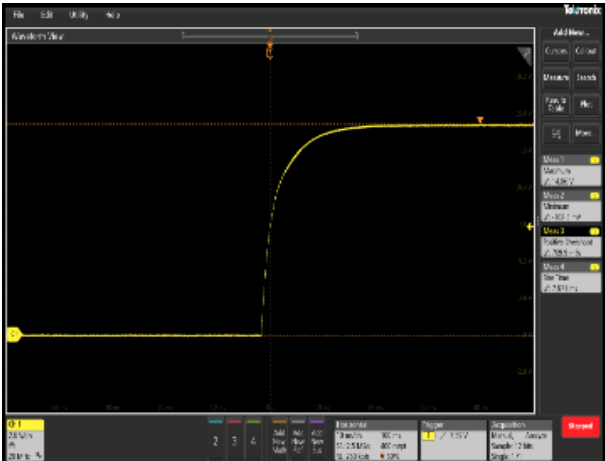
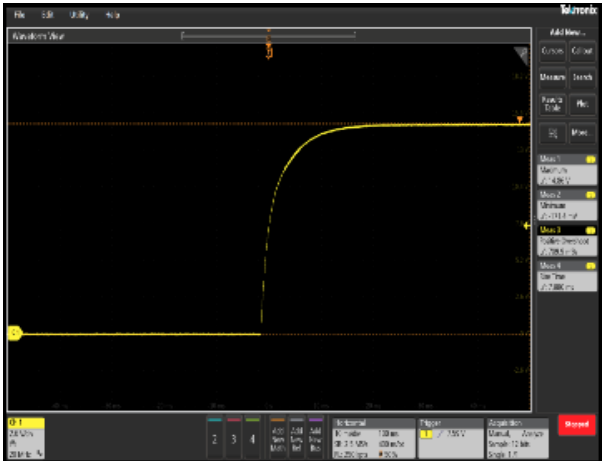
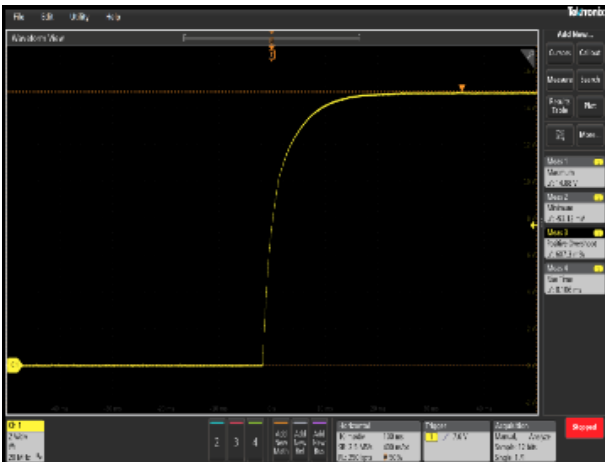
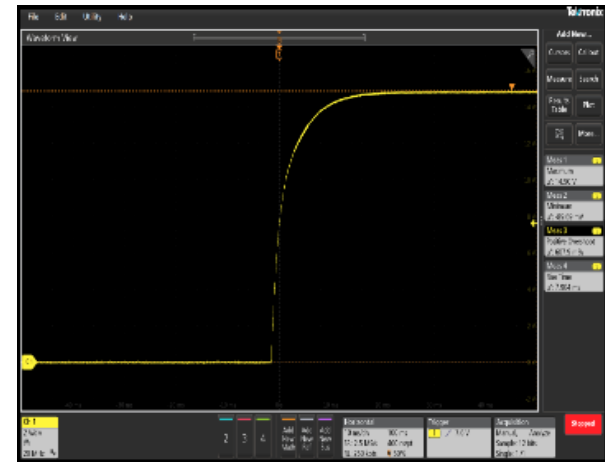
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5	START UP TIME		3000ms	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C	90VAC 622.0ms	264VAC 642.0ms
	INPUT=90VAC/47HZ @ FULL LOAD			INPUT=264V/63HZ @ FULL LOAD		
	-30°C: 498.0ms CH1: AC Input Voltage, CH3: Output Voltage			-30°C: 486.0ms CH1: AC Input Voltage, CH3: Output Voltage		
	25°C: 580.0ms CH1: AC Input Voltage, CH3: Output Voltage			25°C: 596.0ms CH1: AC Input Voltage, CH3: Output Voltage		
	40°C: 602.0ms CH1: AC Input Voltage, CH3: Output Voltage			40°C: 644.0ms CH1: AC Input Voltage, CH3: Output Voltage		

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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 8.106ms	264VAC 7.946ms
	INPUT=90VAC/47HZ @ FULL LOAD			INPUT=264V/63HZ @ FULL LOAD		
	-30°C: 8.073ms			-30°C: 7.946ms		
						
	25°C: 7.971ms			25°C: 7.880ms		
						
	40°C: 8.106ms			40°C: 7.904ms		
						

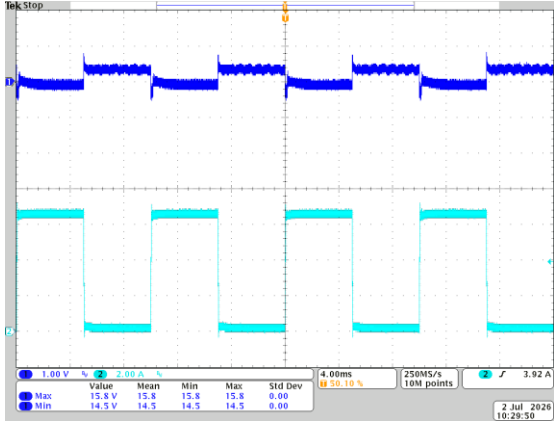
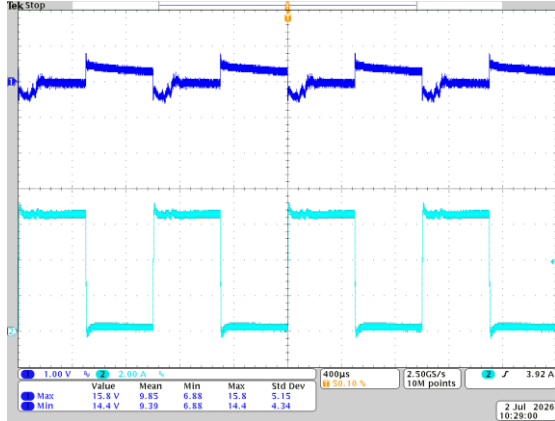
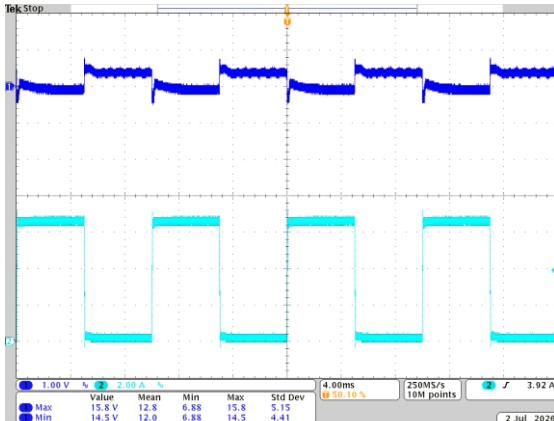
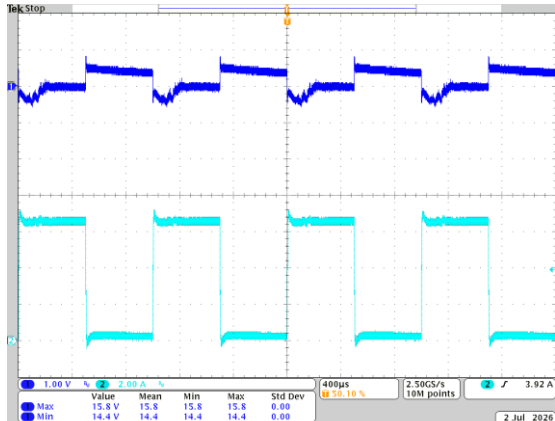
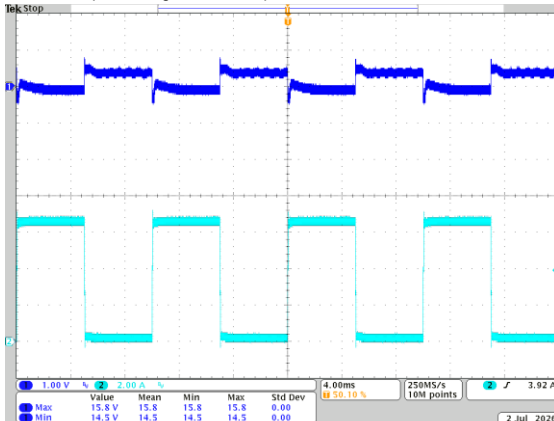
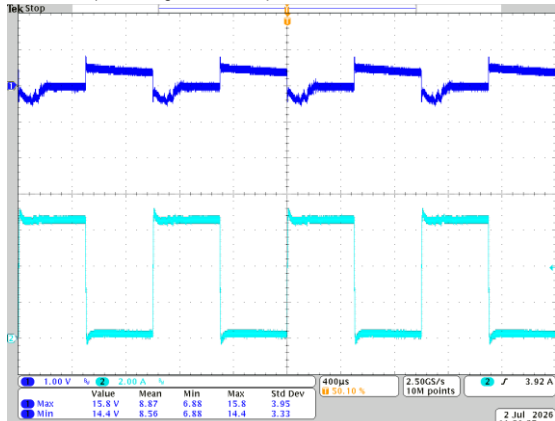
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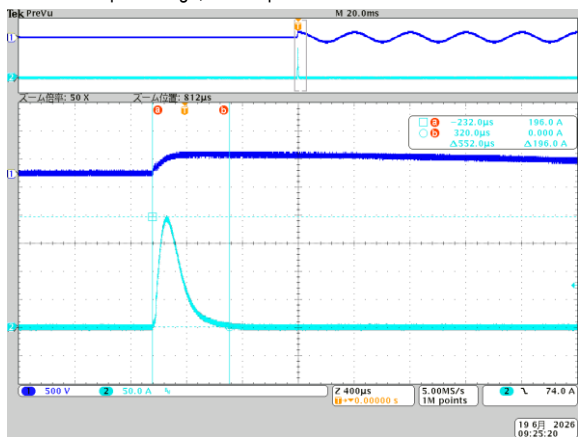
	HOLD UP TIME	> 20ms / 115VAC	I/P: 115VAC O/P: FULL LOAD Ta: 25°C	39.0ms
7	INPUT=115VAC/60HZ @ FULL LOAD CH1: AC Input Voltage, CH2: Output Voltage			

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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	
8	-30°C CH1: Output Voltage, CH2: Output Current 		-30°C CH1: Output Voltage, CH2: Output Current 	
	25°C CH1: Output Voltage, CH2: Output Current 		25°C CH1: Output Voltage, CH2: Output Current 	
	40°C CH1: Output Voltage, CH2: Output Current 		40°C CH1: Output Voltage, CH2: 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	1.16A @100VAC 0.52A @240VAC
2	TOUCH CURRENT	< 0.1mA / 264VAC	I/P: 264VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.0324mA N-FG: 0.0323mA
3	LEAKAGE CURRENT	< 0.115mA / 264VAC	I/P: 264VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.0793mA N-FG: 0.0780mA
4	STANDBY POWER	≤ 0.15W	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/0.004W 230VAC/0.01W
5	INRUSH CURRENT	< Fuse/Bridge diode I _{2t}	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	196.0A/ 7.069 I _{2t} *t
	INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage, CH2: Input Current 			
6	EFFICIENCY (Typ.)	Typ. 90.0% / FULL LOAD at 230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/89.59% 230VAC/90.77%
7	POWER FACTOR	> 0.9	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/0.978 230VAC/0.924

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	105%~150% rated current 6.993A<OCP<9.99A	I/P: 90VAC I/P: 264VAC O/P: TESTING Ta : 25°C	90VAC/8.89A 264VAC/8.89A
2	OVER VOLTAGE PROTECTION	140% of Rated Voltage	I/P: 90VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	90VAC/19.45V 264VAC/19.49V
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

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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) 405V (2) 403V (3) 403V
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) 407V (2) 398V (3) 405V
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) 415V (2) 415V (3) 416V
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) 415V (2) 414V (3) 415V

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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: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
6	SURGE	EN61000-4-5 CRITERIA A L-N: ±2KV L, N-PE: ±4KV	I/P: 220VAC 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: FULL LOAD Ta: 40°C	(1)I/P: 100VAC O/P: FULLLOAD Ta= 40°C LIFETIME=44,866 hours (2)I/P: 240VAC O/P: FULLLOAD Ta= 40°C LIFETIME=70,028 hours
3	MTBF	The power supply reliability, when calculated by SR332 exceeds 2,400,000 hours with all output at 100% of maximum load and at ambient temperature of 25°C		2,545,749 hours @ 100VAC 2,880,128 hours @ 240VAC
4	HUMIDITY	Storage: 25°C / 5 ~ 95% RH / Dwell: 4 hours Working: 25°C/ 10 ~ 95% RH / Dwell: 4 hours 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	90VAC	Result
1	C206	74.013	Pass
2	C204	78.970	Pass
3	C054	78.394	Pass
4	C051	81.231	Pass
5	T050-core	84.208	Pass
6	T050-coil	88.052	Pass
7	IC200	90.023	Pass
8	Q200	91.578	Pass
9	Q200_1	92.014	Pass
10	PC300	74.035	Pass
11	IC100	84.956	Pass
12	Q051	88.509	Pass
13	D004	93.348	Pass
14	Q050	94.939	Pass
15	D003	108.931	Pass
16	Q010	102.848	Pass
17	L002	101.095	Pass
18	D050	115.455	Pass
19	L010	98.453	Pass
20	RT101	76.212	Pass
21	UP	66.706	Pass
22	DOWN	71.356	Pass
23	INPUT	50.095	Pass
24	OUTPUT	57.345	Pass
25	BACK	63.605	Pass
26	FORTH	62.953	Pass
27	AMB1	40.622	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Victor Tran	Luke Zhou	Ke Cao