



Test Report: CXLPA100F-15

100W AC-DC Enclosed

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

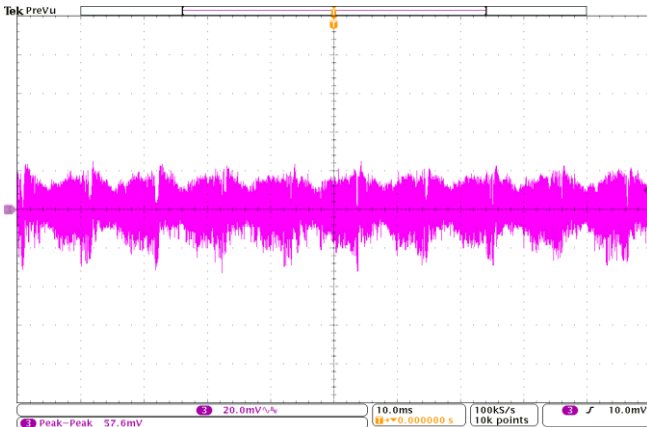
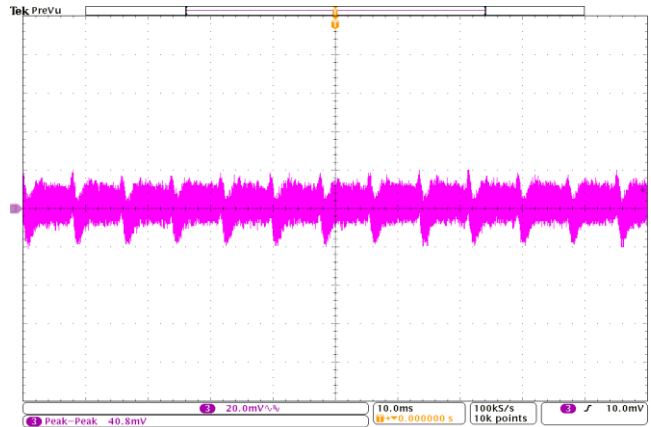
E.M.C. Test

■ 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: 85VAC ~ 305VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 50°C	15.02 ~ 15.11V	
2	LINE REGULATION	-0.5%~+0.5%	I/P: 85VAC ~ 305VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 50°C	85 to 115VAC	-0.01% ~ +0.01%
				230 to 305VAC	-0.01% ~ +0.01%
3	LOAD REGULATION	-1%~+1%	I/P: 85VAC I/P: 305VAC O/P: NO ~ FULL LOAD Ta: 25°C	-0.10% ~ +0.10%	
4	RIPPLE & NOISE	150mVp-p	I/P: 85VAC I/P: 305VAC O/P: FULL LOAD Ta: 25°C	85VAC	57.6mVp-p
				305VAC	40.8mVp-p
	85VAC/ FULL LOAD		305VAC/ FULL LOAD		
	25°C 57.6mV 		25°C 40.8mV 		

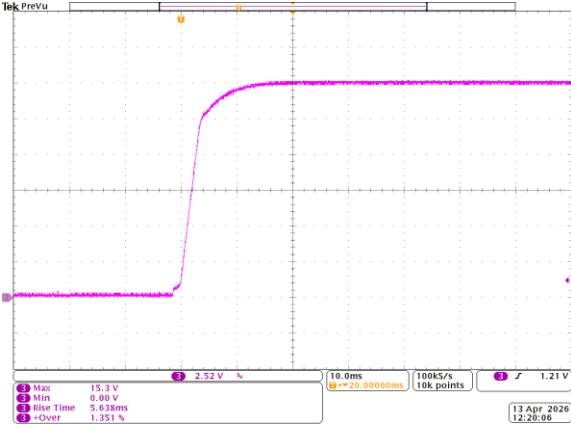
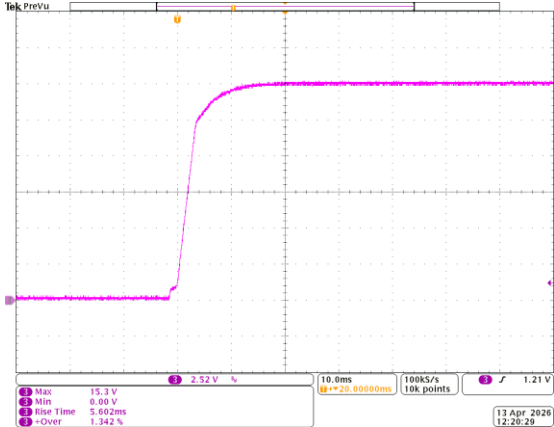
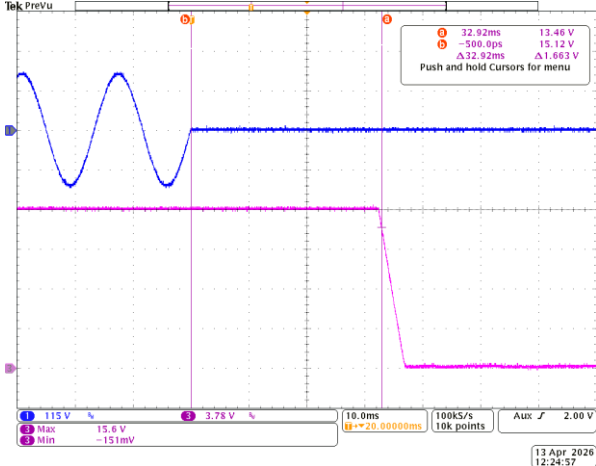
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5	START UP TIME	1000ms	I/P: 85VAC I/P: 305VAC O/P: FULL LOAD Ta: -30°C, 25°C, 50°C	85VAC	427.3ms
	INPUT=85VAC/47HZ @ FULL LOAD		INPUT=305V/63HZ @ FULL LOAD		
	-30°C: 352.7ms CH1: AC Input Voltage, CH3: Output Voltage		-30°C: 311.8ms CH1: AC Input Voltage, CH3: Output Voltage		
	25°C: 374.8ms CH1: AC Input Voltage, CH3: Output Voltage		25°C: 366.7ms CH1: AC Input Voltage, CH3: Output Voltage		
	50°C: 427.3ms CH1: AC Input Voltage, CH3: Output Voltage		50°C: 446.3ms CH1: AC Input Voltage, CH3: Output Voltage		

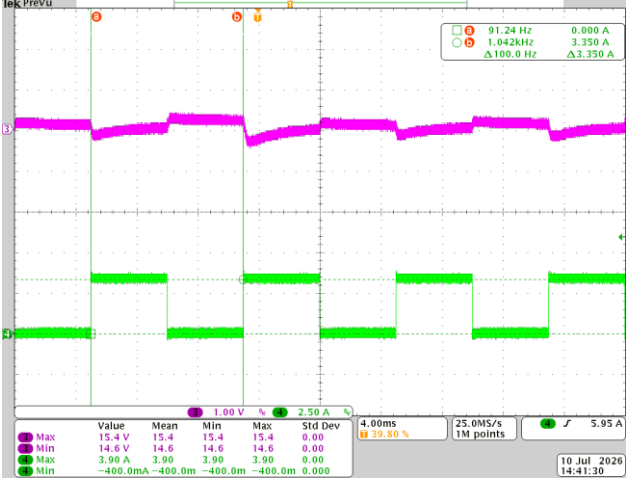
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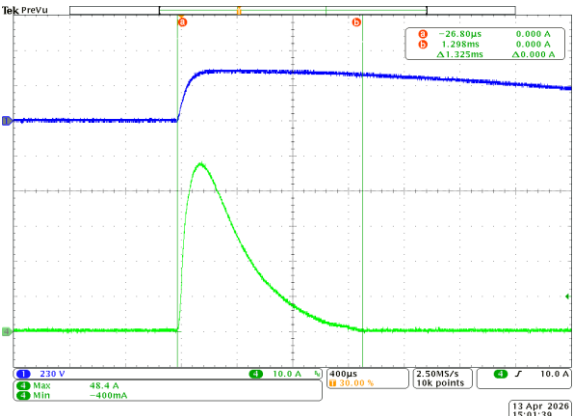
6	RISE TIME	50ms	I/P: 85VAC I/P: 305VAC O/P: FULL LOAD Ta: 25°C	85VAC	5.638ms
				305VAC	5.602ms
	INPUT=85VAC/47HZ @ FULL LOAD		INPUT=305V/63HZ @ FULL LOAD		
25°C: 5.638ms					
			25°C: 5.602ms		
					
7	HOLD UP TIME	> 20ms / 115VAC	I/P: 115VAC O/P: FULL LOAD Ta: 25°C	32.92ms	
	INPUT=115VAC/60HZ @ FULL LOAD				
	25°C CH1: AC Input Voltage, CH3: Output Voltage				
					

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DYNAMIC LOAD		No specification	I/P: 85VAC O/P: (1) LOAD 0%~50% 50%DUTY / 100HZ (2) LOAD 50%~100% 50%DUTY / 100HZ (3) LOAD 0%~50% 50%DUTY / 1KHZ (4) LOAD 50%~100% 50%DUTY / 1KHZ Ta: 25°C	-
(1) INPUT=85VAC/47HZ @ LOAD 0%~50% 50%DUTY / 100HZ			(3) INPUT=85VAC/47HZ @ LOAD 0%~50% 50%DUTY / 1KHZ	
25°C CH3: Output Voltage, CH4: Output Current 			25°C CH3: Output Voltage, CH4: Output Current 	
(2) INPUT=85VAC/47HZ @ LOAD 50%~100% 50%DUTY / 100HZ			(4) INPUT=85VAC/47HZ @ LOAD 50%~100% 50%DUTY / 1KHZ	
25°C CH3: Output Voltage, CH4: Output Current 			25°C CH3: Output Voltage, CH4: Output Current 	

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT CURRENT	1.1A/115VAC 0.55A/230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	0.975A @115VAC 0.479A @230VAC
2	LEAKAGE CURRENT	< 2mA / 240VAC	I/P: 240VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.155mA N-FG: 0.152mA
3	STANDBY POWER	No specification	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/0.35W 230VAC/0.47W
4	INRUSH CURRENT	60A at 230Vac (cold start)	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	48.4A
INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage, CH4: Input Current 				
5	EFFICIENCY	92.0% / FULL LOAD at 230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/90.29% 230VAC/92.22%
6	POWER FACTOR	> 0.9	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/0.998 230VAC/0.990

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	105%~135% rated current 7.035A<OCP<9.045A	I/P: 85VAC I/P: 305VAC O/P: TESTING Ta: 25°C	85VAC/7.55A 305VAC/7.55A
2	OVER VOLTAGE PROTECTION	120% to 150% of Rated Voltage	I/P: 85VAC I/P: 305VAC O/P: NO LOAD Ta: 25°C	85VAC/20.1V 305VAC/20.1V
3	SHORT CIRCUIT PROTECTION	NO DAMAGE (auto-recovery)	I/P: 85VAC ~ 305VAC O/P: NO LOAD, FULL LOAD Ta: 25°C	PASS
4	OVER TEMPERATURE PROTECTION	NO DAMAGE (auto-recovery)	I/P: 85VAC ~ 305VAC O/P: FULL LOAD	O.T.P. Active at 79.1°C 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 11.5A/600V	O/P: (1) Peak voltage at I/P: 305VAC (2) Peak current at I/P: 85VAC	(1) 442.0V (2) 0.5714A
2	PFC Power Transistor	Q010 Rated 18A/600V	O/P: (1) Peak voltage at I/P: 305VAC (2) Peak current at I/P: 85VAC	(1) 434.4V (2) 1.667A
3	Input Capacitor	C052 Rated 82uF/450V	O/P: (1) Peak voltage at I/P: 305VAC (2) Peak current at I/P: 85VAC	(1) 433.0V (2) 1.068A

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NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4.0KVAC/min I/P-FG: 2.0KVAC/min O/P-FG: 0.5KVAC/min	I/P-O/P: 4.0KVAC/min I/P-FG: 2.0KVAC/min O/P-FG: 0.5KVAC/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	PASS

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
2	RADIATION	EN55032 CLASS B	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
3	CONDUCTION	EN55032 CLASS B	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
4	E. S. D	EN61000-4-2 Air: ±8KV, Contact: ±4KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
5	E. F. T	EN61000-4-4 INPUT: ±2KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
6	SURGE	EN61000-4-5 L-N: ±1KV L, N-PE: ±2KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
7	VOLTAGE DIPS	IEC61000-4-11 (1) < 5 % residual voltage, 0.5 cycle CRITERIA A (2) 70% residual voltage, 25 cycles (at 50Hz) CRITERIA A (3) < 5 % residual voltage, 250 cycles (at 50 Hz) CRITERIA B	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS

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8	Conducted Immunity	IEC61000-4-6 0.15-10 MHz, 3V, 80% AM (1kHz), 10-30 MHz, 3V-1V, 80% AM (1kHz), 30-80 MHz, 1V, 80% AM (1kHz), CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
9	Radiated Immunity	IEC61000-4-3 (1) 80 to 1000(MHz), 3 V/m, 80 % AM (1 kHz) (2) 1800, 2600, 3500, 5000 MHz (± 1 %), 3V/m, 80% AM (1kHz) CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
10	Power Frequency Magnetic Field	IEC61000-4-8 1A/m, 50Hz CRITERIA A	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: 85VAC @ 47Hz O/P: FULL LOAD Ta: 50°C	PASS*Table 1
2	CAPACITOR LIFE CYCLE	The electrolytical capacitor life is greater than 43,800 hours	I/P: 230 VAC @ 50Hz O/P: FULL LOAD Ta: 50°C	LIFETIME= 125,337 hours
3	MTBF	The power supply reliability, when calculated by SR332 exceeds 2,500,000 hours with all output at 100% of maximum load and at ambient temperature of 25°C		5,999,805 hours @ 115VAC 8,084,449 hours @ 230VAC
4	HUMIDITY	Storage: 25°C / 10 ~ 95% RH Working: 25°C/ 20 ~ 90% RH I/P: 100~277VAC (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: 100~277VAC (Operational) O/P: 100% load (Operational)		PASS
7	OVERLOAD BURN-IN TEST	I/P: 115VAC/ 60Hz O/P: Just before OCP kicks in Ta: 50°C		PASS

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

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Table 1. Components temperature @ 50°C 100% Load. (Unit °C)

No.	Location	85VAC	Result
1	Q010	83.6	Pass
2	L010	101.5	Pass
3	L003	83.4	Pass
4	D050	79.5	Pass
5	L002	88.8	Pass
6	L001	76.9	Pass
7	T050W	78.7	Pass
8	T050C	82.5	Pass
9	C200	73.2	Pass
10	C052	75.0	Pass
11	Q050	83.4	Pass
12	D010	79.4	Pass
13	Q210	78.4	Pass
14	IC201	81.0	Pass

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Shuan Pan	Geoffery Wu	Jimmy LW Lin