



Test Report: CXLDA120F-24

120W AC-DC DIN Rail (1 Φ)

■ 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

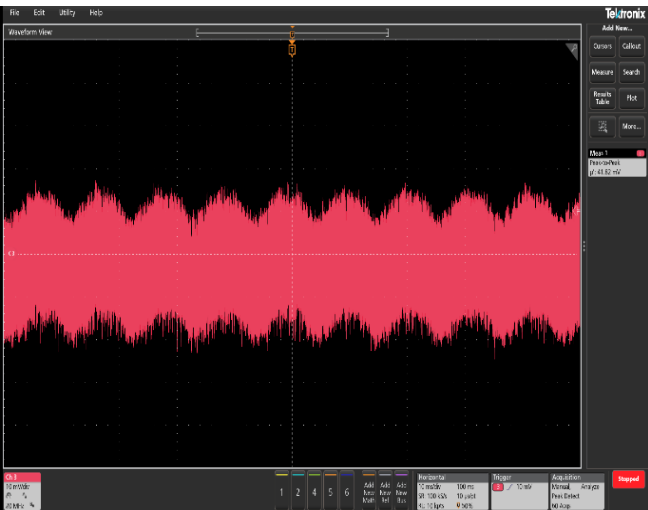
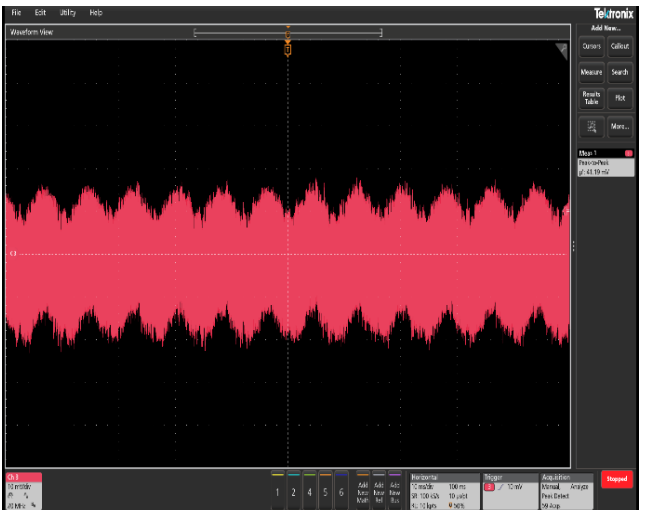
Environment Test

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DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	
1	OUTPUT VOLTAGE TOLERANCE.	No specification	I/P: 85VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -25°C, 25°C, 55°C	23.90 ~ 24.140V	
2	LINE REGULATION	-0.5%~+0.5%	I/P: 85VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -25°C, 25°C, 55°C	85 to 115VAC	-0.03% ~ +0.03%
				230 to 264VAC	-0.02% ~ +0.02%
3	LOAD REGULATION	-1%~+1%	I/P: 85VAC I/P: 264VAC O/P: NO ~ FULL LOAD Ta: 25°C	-0.30% ~ +0.30%	
4	RIPPLE & NOISE	100mVp-p	I/P: 85VAC	85VAC	41.8mVp-p
			I/P: 264VAC O/P: FULL LOAD Ta: 25°C	264VAC	41.2mVp-p
	85VAC/ FULL LOAD		264VAC/ FULL LOAD		
	25°C 41.8mV		25°C 41.2mV		
					

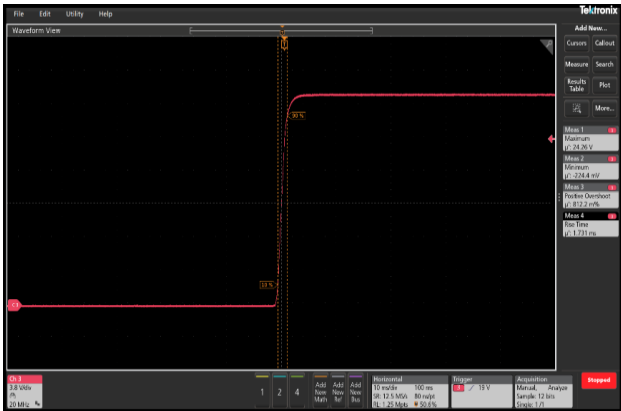
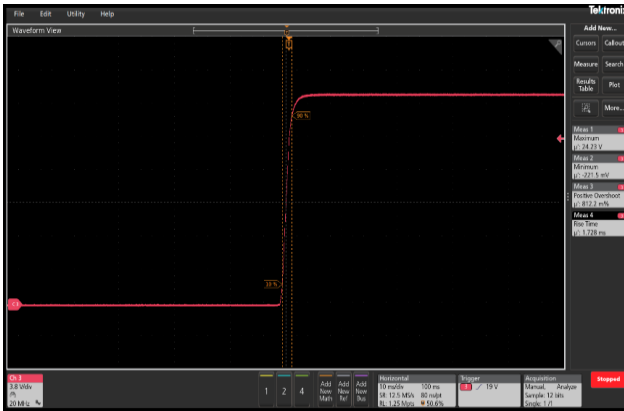
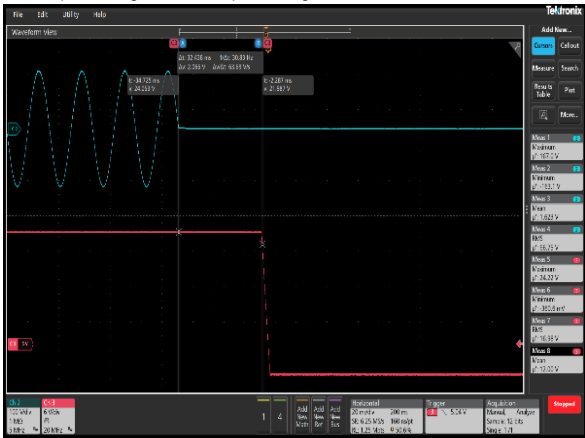
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5	START UP TIME		2000ms	I/P: 100VAC I/P: 264VAC O/P: FULL LOAD Ta: -25°C, 25°C, 55°C	100VAC 264VAC	379.6ms 439.7ms
	INPUT=100VAC/60HZ @ FULL LOAD			INPUT=264V/50HZ @ FULL LOAD		
	-25°C: 340.7ms CH2: AC Input Voltage, CH3: Output Voltage			-25°C: 379.0ms CH2: AC Input Voltage, CH3: Output Voltage		
	25°C: 357.2ms CH2: AC Input Voltage, CH3: Output Voltage			25°C: 420.2ms CH2: AC Input Voltage, CH3: Output Voltage		
55°C: 379.6ms CH2: AC Input Voltage, CH3: Output Voltage			55°C: 439.7ms CH2: AC Input Voltage, CH3: Output Voltage			

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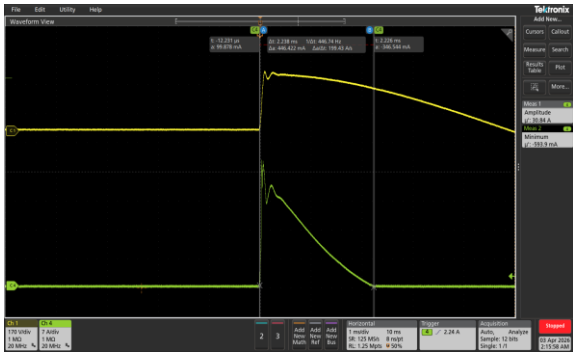
6	RISE TIME	50ms	I/P: 100VAC I/P: 264VAC O/P: FULL LOAD Ta: 25°C	100VAC 1.731ms 264VAC 1.728ms
	INPUT=100VAC/47HZ @ FULL LOAD		INPUT=264V/63HZ @ FULL LOAD	
	25°C: 1.731ms		25°C: 1.728ms	
7				
	HOLD UP TIME		I/P: 115VAC O/P: FULL LOAD Ta: 25°C	32.43ms
	INPUT=115VAC/60HZ @ FULL LOAD			
7	25°C CH2: AC Input Voltage, CH3: Output Voltage			
				

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DYNAMIC LOAD		No specification	I/P: 115VAC O/P: (1) LOAD 10%~100% 50%DUTY / 5HZ (2) LOAD 10%~100% 50%DUTY / 10KHZ (3) LOAD 100%~150% 100%: 100s, 150%: 3s (4) LOAD 50%~150% 50%: 15s, 150%: 3s Ta: 25°C	-
(1) INPUT=115VAC/60HZ @ LOAD 10%~100% 50%DUTY / 5HZ 25°C CH3: Output Voltage, CH4: Output Current		(3) INPUT=115VAC/60HZ @ LOAD 100%~150% 100%: 100s, 150%: 3s 25°C CH3: Output Voltage, CH4: Output Current		
8				
(2) INPUT=115VAC/60HZ @ LOAD 10%~100% 50%DUTY / 10KHZ 25°C CH3: Output Voltage, CH4: Output Current		(4) INPUT=115VAC/60HZ @ LOAD 50%~150% 50%: 15s, 150%: 3s 25°C CH3: Output Voltage, CH4: Output Current		

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT CURRENT	1.3A/115VAC 0.65A/230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	1.15A @115VAC 0.56A @230VAC
2	LEAKAGE CURRENT	< 0.75mA / 240VAC	I/P: 240VAC O/P: FULL LOAD Ta: 25°C	L-PE: 0.076mA N-PE: 0.075mA
3	STANDBY POWER	< 1.5W	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/0.63W 230VAC/0.65W
4	INRUSH CURRENT	40A at 230Vac (cold start)	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	30.8A
	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/91.4% 230VAC/93.2%
6	POWER FACTOR	> 0.9	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/0.997 230VAC/0.993

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	150%~185% rated current 7.5A<OCP<9.25A	I/P: 85VAC I/P: 100VAC I/P: 264VAC O/P: TESTING Ta: 25°C	85VAC/8.36A 100VAC/8.35A 264VAC/8.35A
2	OVER VOLTAGE PROTECTION	<35V Auto-recovery	I/P: 85VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	85VAC/31.6V 264VAC/31.6V
3	SHORT CIRCUIT PROTECTION	NO DAMAGE (auto-recovery)	I/P: 85VAC I/P: 264VAC O/P: NO LOAD, FULL LOAD Ta: 25°C	PASS
4	OVER TEMPERATURE PROTECTION	NO DAMAGE (auto-recovery)	I/P: 100VAC O/P: FULL LOAD	O.T.P. Active at 73.7°C 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	Q051 Rated 35A/700V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 416.2V (2) 0.542A
2	PWM Power Transistor	Q052 Rated 35A/700V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 414.2V (2) 0.581A
3	PFC Power Transistor	Q010 Rated 34A/750V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 424.2V (2) 1.732A
4	Input Capacitor	C050 Rated 120uF/450V	O/P: (1) Peak voltage at I/P: 264VAC (2) Peak current at I/P: 90VAC	(1) 410.9V (2) 0.978A

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SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3.0KVAC/min I/P-PE: 2.0KVAC/min O/P-PE: 0.5KVAC/min	I/P-O/P: 3.0KVAC/min I/P-PE: 2.0KVAC/min O/P-PE: 0.5KVAC/min Ta: 25°C	PASS
2	ISOLATION RESISTANCE	I/P-O/P: 500VDC: >100M Ω I/P-PE: 500VDC: >100M Ω O/P-PE: 500VDC: >100M Ω	I/P-O/P: 500VDC I/P-PE: 500VDC O/P-PE: 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: 110VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
3	CONDUCTION	EN55032 CLASS B	I/P: 110VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
4	E. S. D	EN61000-4-2 Air: ± 15 KV, Contact: ± 8 KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
5	E. F. T	EN61000-4-4 INPUT: ± 2 KV CRITERIA A	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	PASS
6	SURGE	EN61000-4-5 L-N: ± 2 KV L, N-PE: ± 4 KV 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: 100VAC @ 47Hz O/P: FULL LOAD Ta: 55°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: 70% Load Ta: 55°C	LIFETIME= 73,972 hours
3	MTBF	The power supply reliability, when calculated by SR332 exceeds 1,250,000 hours with all output at 100% of maximum load and at ambient temperature of 25°C		5,079,989 hours @ 230VAC
4	HUMIDITY	Storage: 25°C / 5 ~ 95% RH Working: 25°C/ 20 ~ 95% RH 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 O/P: 100% load (Operational)		PASS
7	OVERLOAD BURN-IN TEST	I/P: 100VAC/ 47Hz O/P: Just before OCP kicks in Ta: 55°C		PASS

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

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Table 1. Components temperature @ 55°C 100% Load. (Unit °C)

No.	Location	100VAC	Result
1	F001	80.2	Pass
2	L001	93.3	Pass
3	C001	86.6	Pass
4	L002	93.2	Pass
5	L202	80.8	Pass
6	L003	84.4	Pass
7	C003	82.2	Pass
8	RL001	81.7	Pass
9	L010-C	91.5	Pass
10	L010-W	89.6	Pass
11	Q010	98.0	Pass
12	IC906	81.1	Pass
13	D010	95.4	Pass
14	C050	87.4	Pass
15	C055	87.5	Pass
16	T050-C	103.2	Pass
17	T050-W	96.1	Pass
18	C113	87.9	Pass
19	C114	87.6	Pass
20	C211	85.3	Pass
21	RL201	86.1	Pass
22	BD050	102.4	Pass
23	D004	83.6	Pass
24	RT101	84.5	Pass
25	R014	92.5	Pass
26	IC100	93.6	Pass
27	Q052	88.5	Pass
28	Q051	86.0	Pass
29	C210	85.5	Pass
30	RT001	76.0	Pass
31	D200	99.9	Pass
32	D201	100.2	Pass
33	PC300	85.8	Pass
34	RT901	89.7	Pass

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TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Luke Zhou	Gino Huang	Xiubing Xiag