



Test Report: CXLA150F-12

150W 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

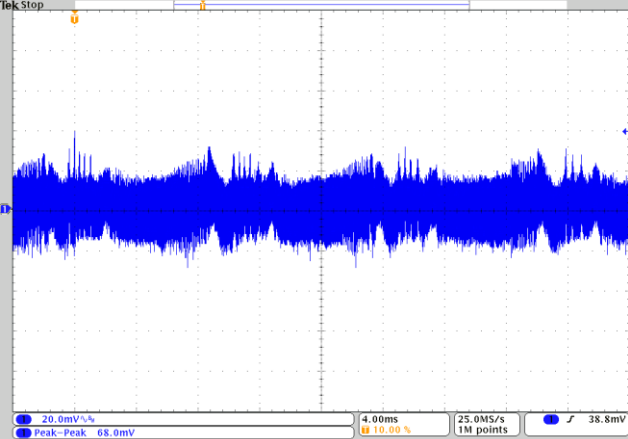
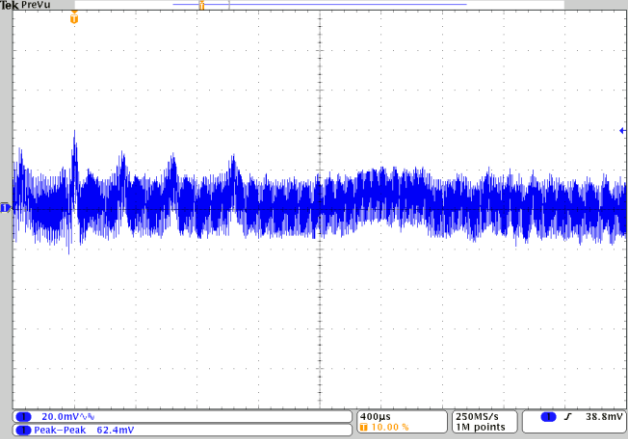
E.M.C. Test

■ RELIABILITY TEST

Environment Test

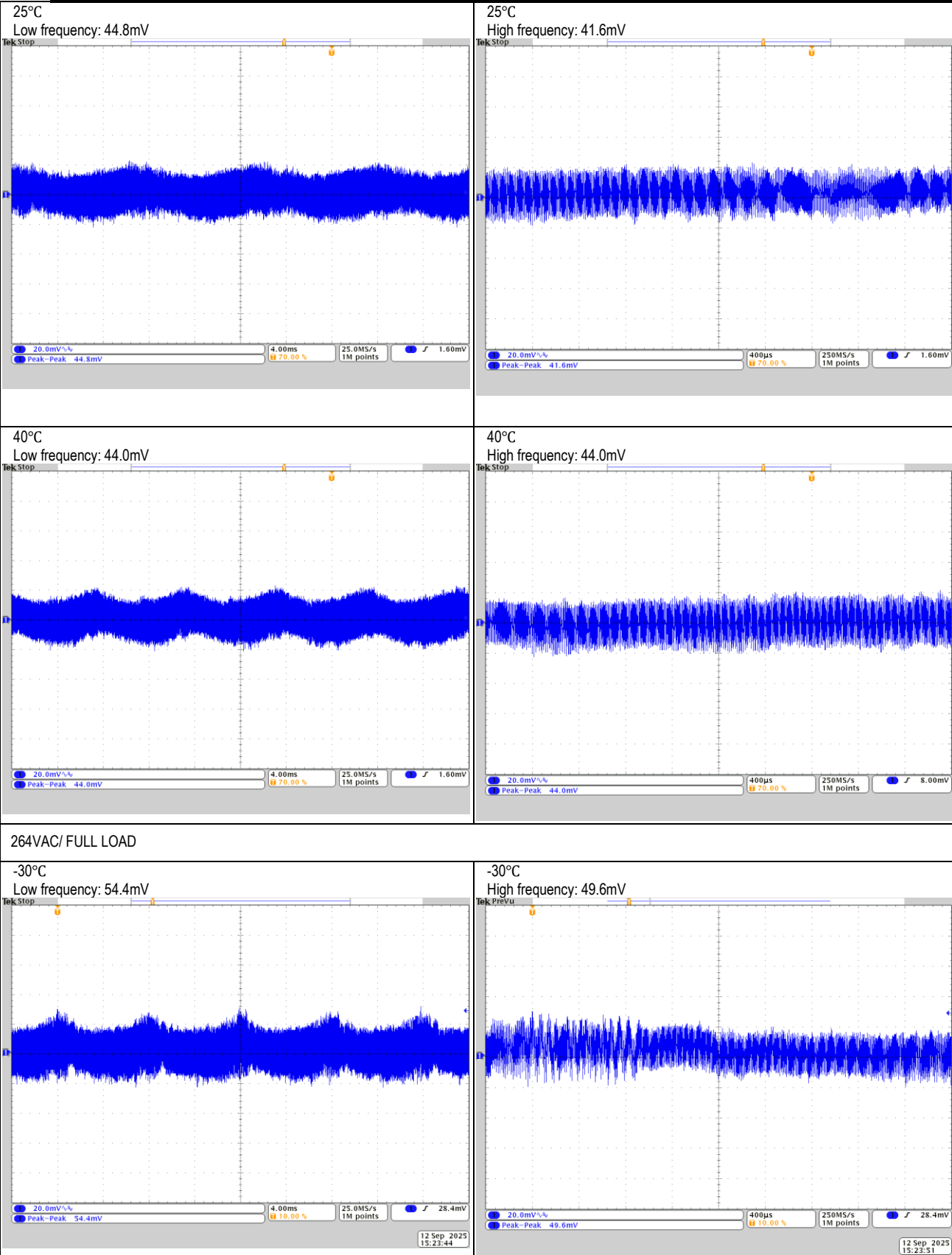
DESIGN VERIFY TEST

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	11.71 ~ 12.29V		
2	LINE REGULATION	-1%~+1%	I/P: 90VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 40°C	90 to 100VAC	0.081%	
				240 to 264VAC	0.058%	
3	LOAD REGULATION	-5%~+5%	I/P: 90VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 40°C	-30°C	4.6%	
				25°C	4.8%	
				40°C	4.8%	
4	RIPPLE & NOISE	120mVp-p	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C		90VAC	264VAC
				-30°C	68.0mVp-p	54.4mVp-p
				25°C	44.8mVp-p	44.0mVp-p
				40°C	44.0mVp-p	45.6mVp-p
				90VAC/ FULL LOAD		
4				-30°C Low frequency: 68.0mV		
						
4				-30°C High frequency: 62.4mV		
						

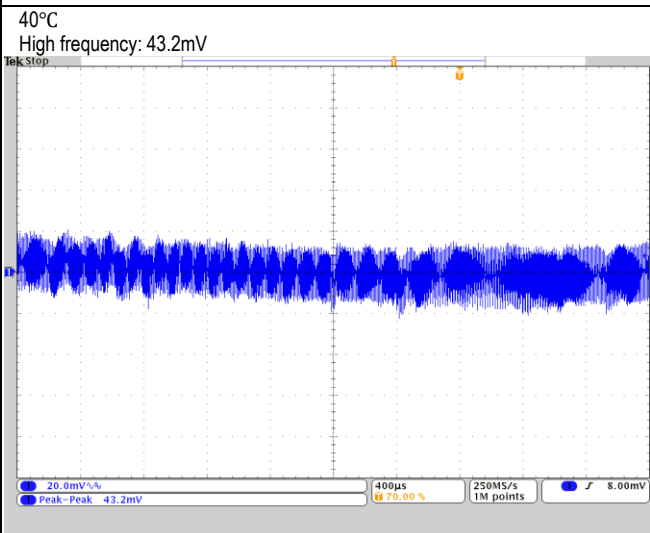
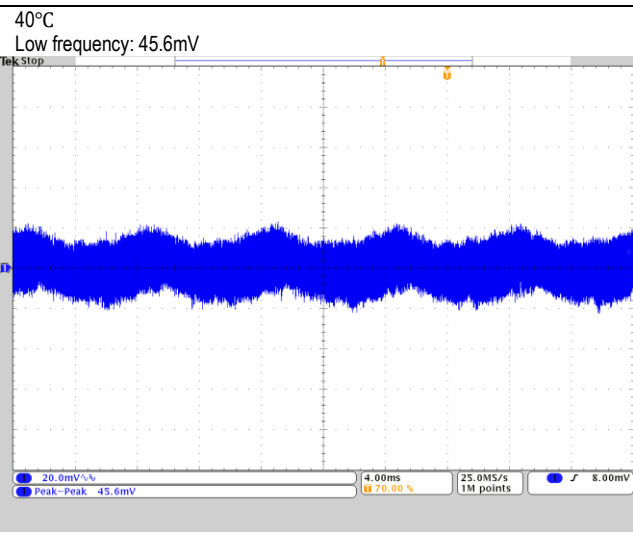
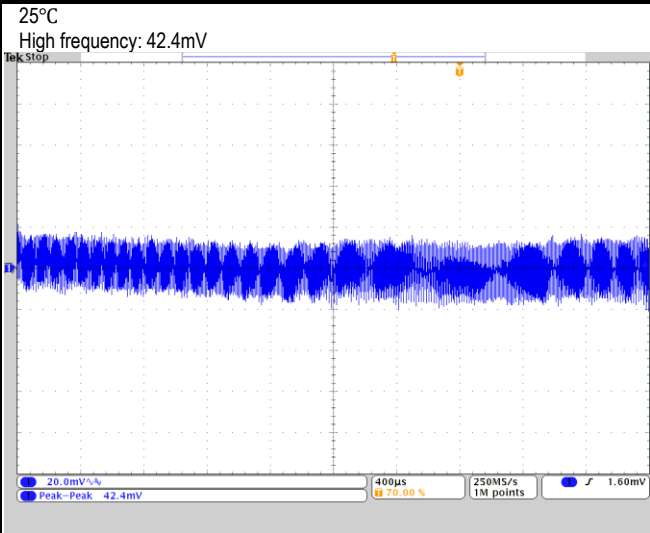
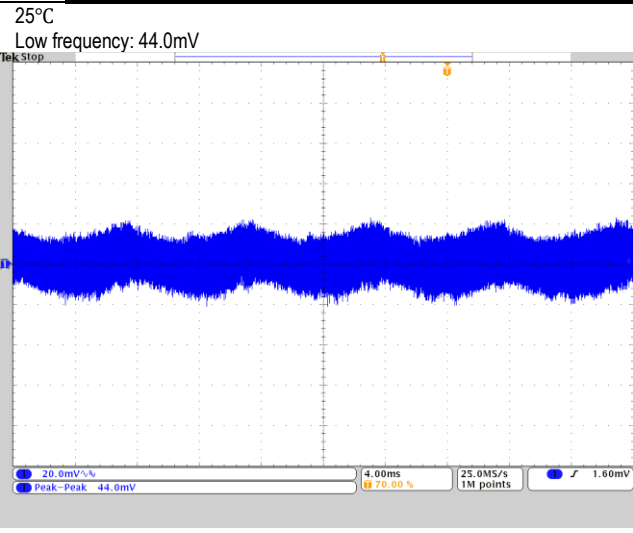
150W AC-DC Adapter

CXLA150F-12



150W AC-DC Adapter

CXLA150F-12



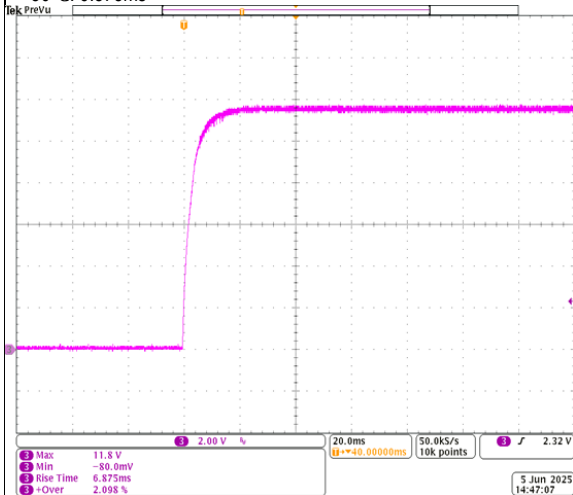
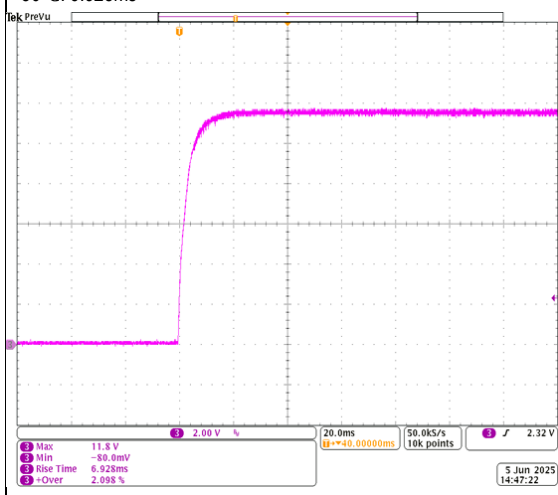
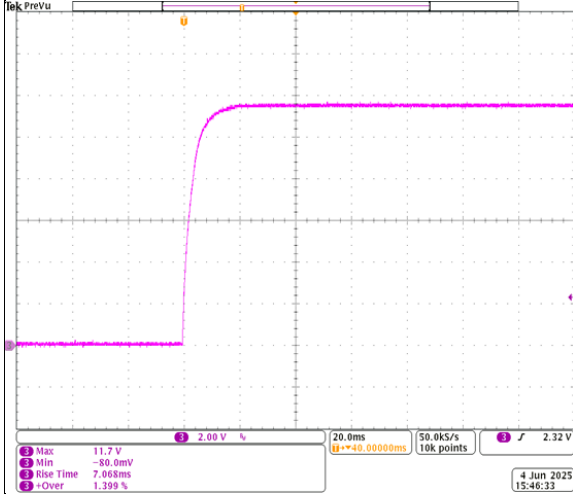
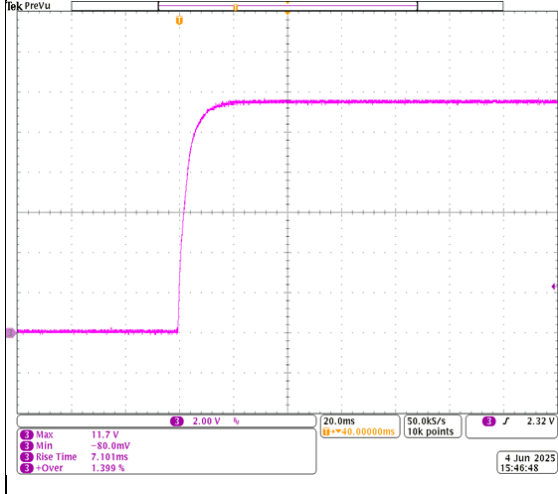
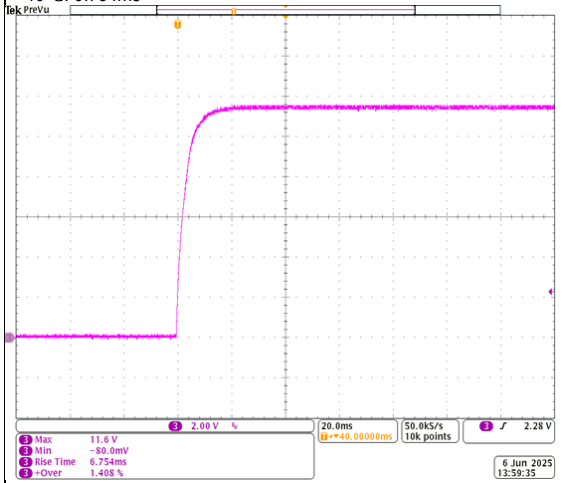
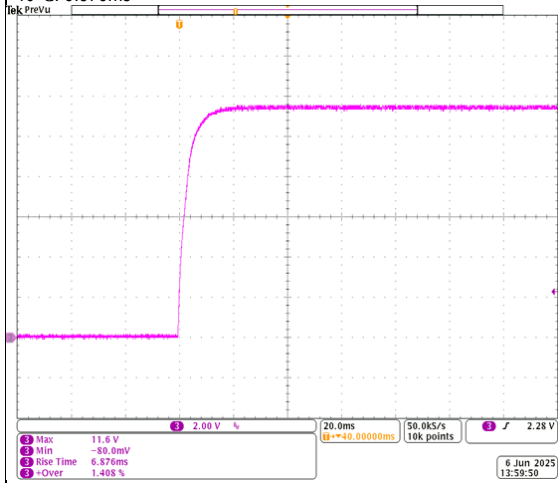
150W AC-DC Adapter

CXLA150F-12

START UP TIME	3000ms	I/P: 90VAC	90VAC	264VAC
		I/P: 264VAC	654.0ms	729.4ms
		O/P: FULL LOAD		
		Ta: -30°C, 25°C, 40°C		
INPUT=90VAC/47HZ @ FULL LOAD		INPUT=264VAC/63HZ @ FULL LOAD		
-30°C: 447.2ms CH1: AC Input Voltage, CH3: Output Voltage		-30°C: 443.2ms CH1: AC Input Voltage, CH3: Output Voltage		
25°C: 608.2ms CH1: AC Input Voltage, CH3: Output Voltage		25°C: 617.6ms CH1: AC Input Voltage, CH3: Output Voltage		
40°C: 654.0ms CH1: AC Input Voltage, CH3: Output Voltage		40°C: 729.4ms CH1: AC Input Voltage, CH3: Output Voltage		

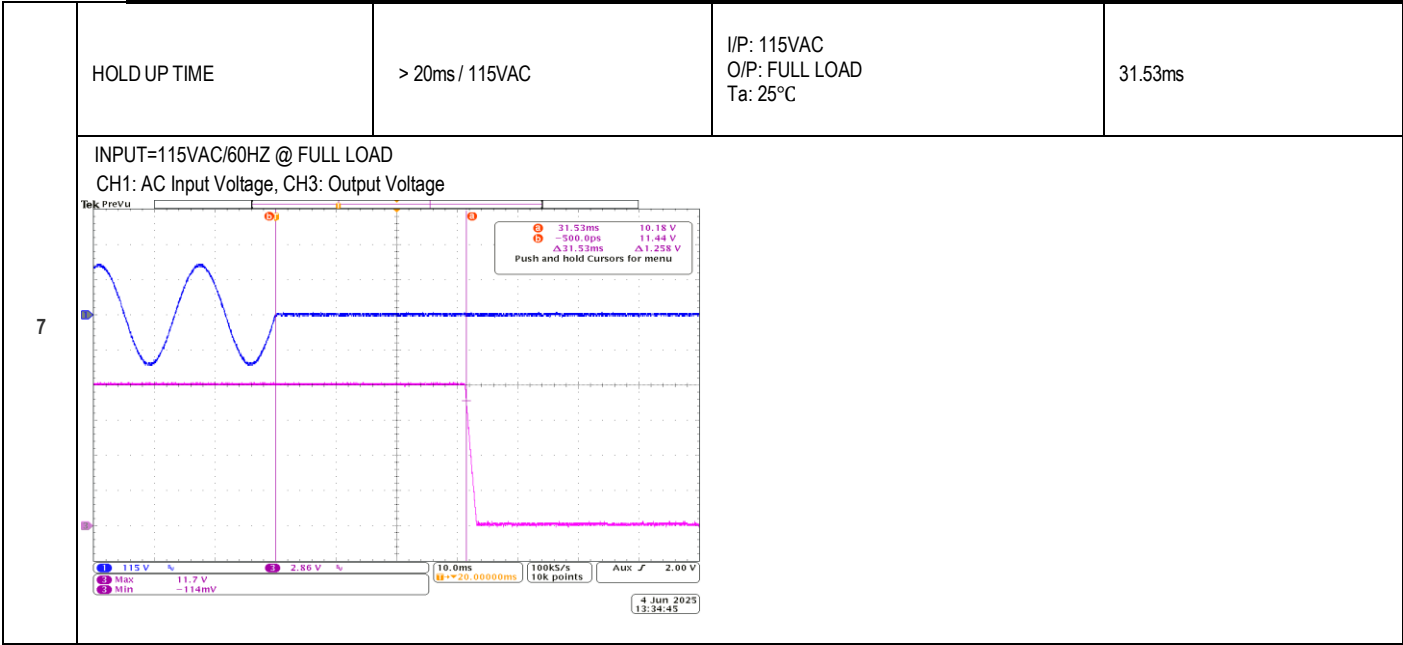
150W AC-DC Adapter

CXLA150F-12

RISE TIME	50ms	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C	90VAC	264VAC
			7.068ms	7.101ms
INPUT=90VAC/47HZ @ FULL LOAD		INPUT=264V/63HZ @ FULL LOAD		
-30°C: 6.875ms 		-30°C: 6.928ms 		
25°C: 7.068ms 		25°C: 7.101ms 		
40°C: 6.754ms 		40°C: 6.876ms 		

150 W AC-DC Adapter

CXLA150F-12

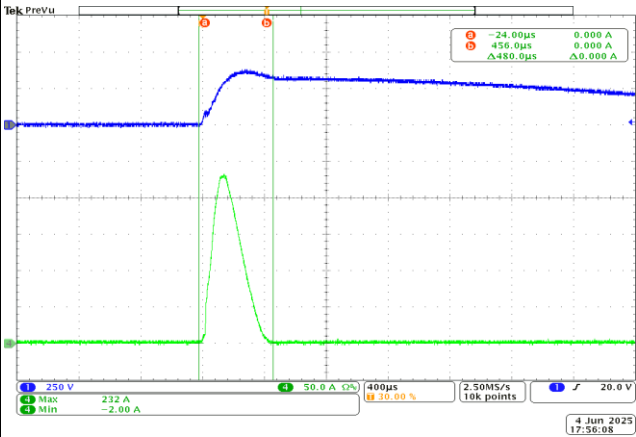


150W AC-DC Adapter

CXLA150F-12

8	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 CH1: AC Input Voltage, CH3: Output Voltage		-30°C CH1: AC Input Voltage, CH3: Output Voltage	
	25°C CH1: AC Input Voltage, CH3: Output Voltage		25°C CH1: AC Input Voltage, CH3: Output Voltage	
	40°C CH1: AC Input Voltage, CH3: Output Voltage		40°C CH1: AC Input Voltage, CH3: Output Voltage	

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT CURRENT	<2A/100VAC <0.8A/240VAC	I/P: 100VAC I/P: 240VAC O/P: FULL LOAD Ta: 25°C	1.67A @100VAC 0.744A @240VAC
2	TOUCH CURRENT	< 0.1mA / 264VAC	I/P: 264VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.0765mA N-FG: 0.0839mA
3	LEAKAGE CURRENT	< 0.115mA / 264VAC	I/P: 264VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.0247 mA N-FG: 0.0264 mA
4	STANDBY POWER	≤ 0.15W	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/0.072W 230VAC/0.074W
5	INRUSH CURRENT	< Fuse/Bridge diode I2t	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	232A/ 8.612 I2 *t
INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage, CH4: Input Current 				
6	EFFICIENCY	Typ. 90.0% / FULL LOAD at 230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/88.76% 230VAC/90.23%
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. 13.125<OCP<18.75A	I/P: 90VAC I/P: 264VAC O/P: TESTING Ta : 25°C	90VAC/16.1A 264VAC/16.1A
2	OVER VOLTAGE PROTECTION	140% of Rated Voltage	I/P: 90VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	90VAC/15.6V 264VAC/15.6V
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 10A/600V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 405V (2) 393V (3) 401V
1	PWM Power Transistor	Q051 Rated 10A/600V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 403V (2) 395V (3) 399V
1	PFC Power Transistor	Q010 Rated 13.5A/600V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 415V (2) 411V (3) 415V
1	PFC Power Transistor	Q010-1 Rated 13.5A/600V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 415V (2) 403V (3) 415V
3	Input Capacitor	C051 Rated 150uF/ 450V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 398.3V (2) 395.6V (3) 398.5V

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

150 W AC-DC Adapter

CXLA150F-12

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 CYCL	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= 40C LIFETIME=28,580 hours (2)I/P: 240VAC O/P: FULLLOAD Ta= 40C LIFETIME=66,035 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		3,077,432 hours @ 90VAC 3,378,457 hours @ 264VAC
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.

150W AC-DC Adapter

CXLA150F-12

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

No.	Location	90V	Result
1	C206	80.618	Pass
2	C204	80.002	Pass
3	C054	77.111	Pass
4	C051	76.334	Pass
5	T050-core	84.149	Pass
6	T050-coil	81.782	Pass
7	IC200	86.894	Pass
8	Q200	88.228	Pass
9	Q200-1	91.679	Pass
10	PC300	77.457	Pass
11	IC100	81.741	Pass
12	Q051	80.998	Pass
13	D004	80.481	Pass
14	Q050	82.274	Pass
15	D003	89.927	Pass
16	Q010	87.429	Pass
17	L002	89.362	Pass
18	D050	88.335	Pass
19	RT101	70.696	Pass
20	L010	78.086	Pass
21	Case Up	70.96	Pass
22	Case Down	70.898	Pass
23	Case Input	53.647	Pass
24	Case Output	53.153	Pass
25	Case Back	66.303	Pass
26	Case Forth	70.459	Pass
27	AMB1	40.98	

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