



Test Report: CXLA100F-19

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

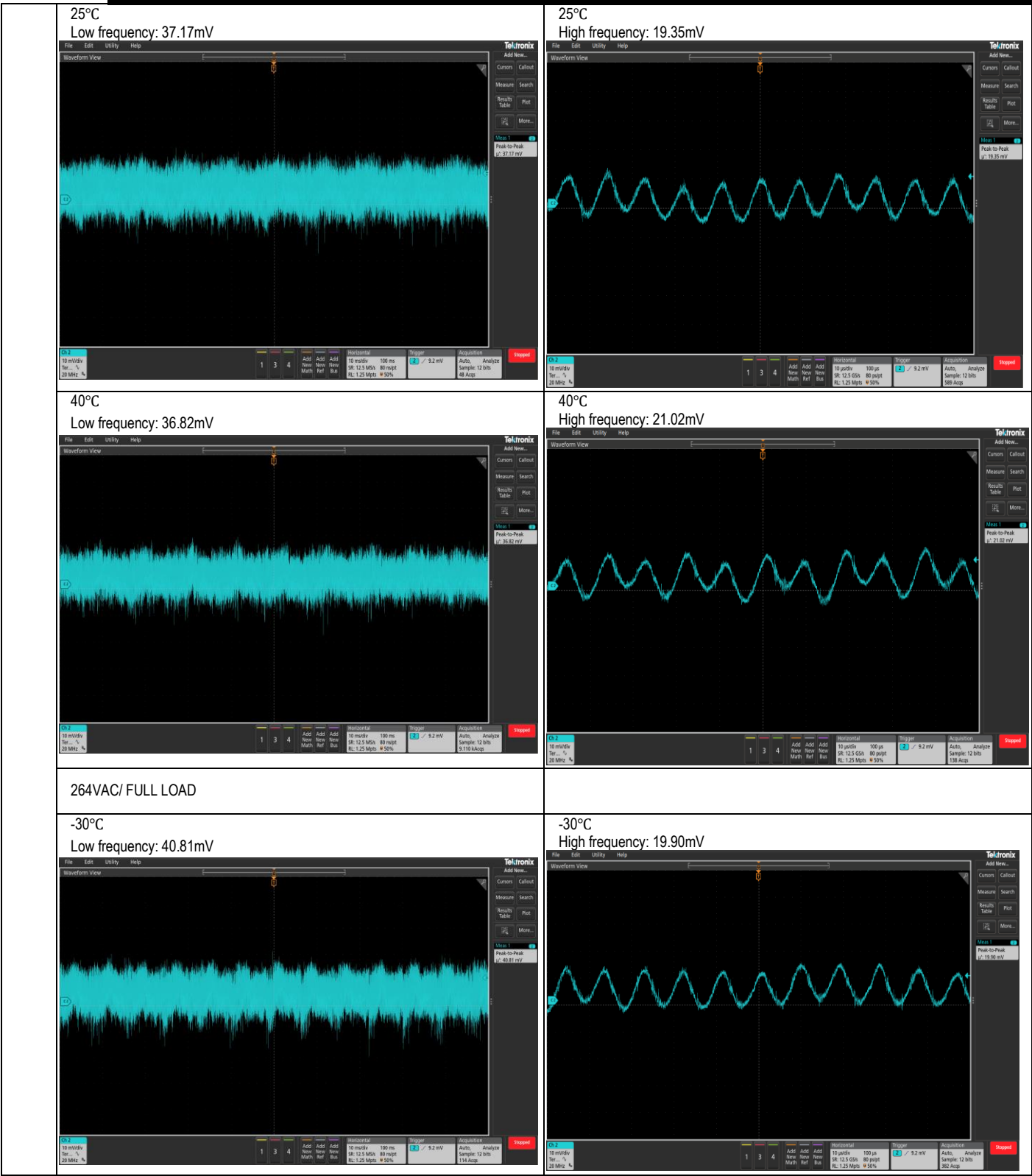
DESIGN VERIFY TEST

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	18.82 ~ 19.34V		
2	LINE REGULATION	-1%~+1%	I/P: 90VAC ~ 264VAC O/P: NO ~ FULL LOAD Ta: -30°C, 25°C, 40°C	90 to 100VAC	0.042 %	
				240 to 264VAC	0.074 %	
3	LOAD REGULATION	-5%~+5%	I/P: 90VAC ~ 264VAC O/P: NO ~FULL LOAD Ta: -30°C, 25°C, 40°C	-30°C	2.1%	
				25°C	2.1%	
				40°C	2.1%	
4	RIPPLE & NOISE	190mVp-p	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C		90VAC	264VAC
				-30°C	32.85mVp-p	40.81mVp-p
				25°C	37.17mVp-p	38.70mVp-p
				40°C	36.82mVp-p	36.34mVp-p
	90VAC/ FULL LOAD					
4	-30°C Low frequency: 32.85mV					
	-30°C High frequency: 19.51mV					

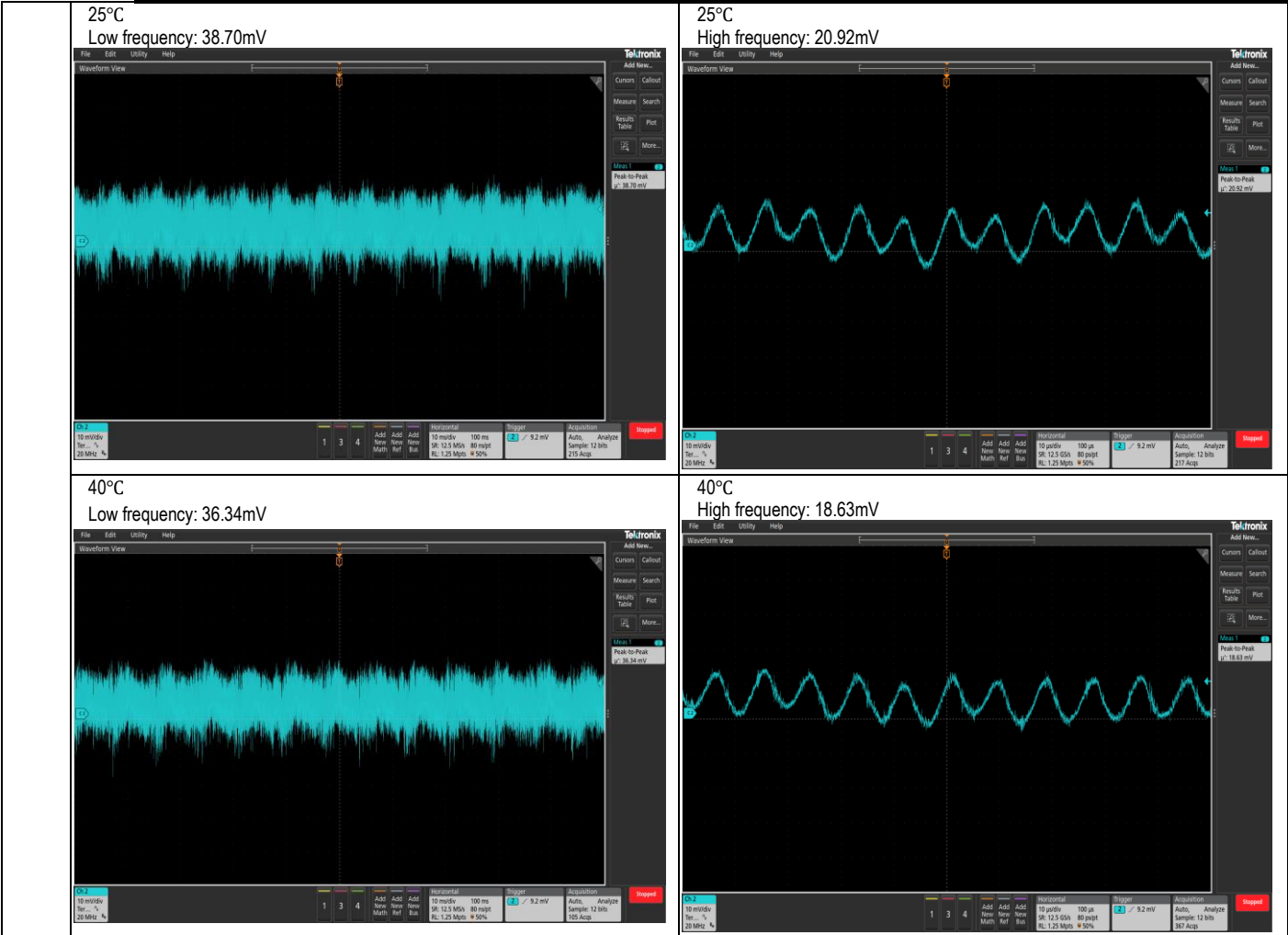
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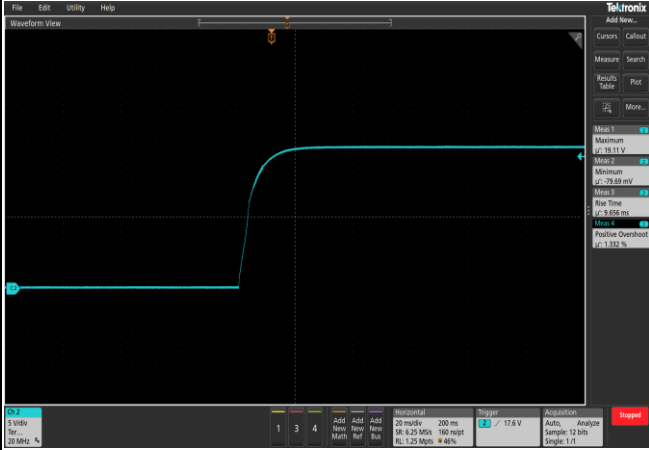
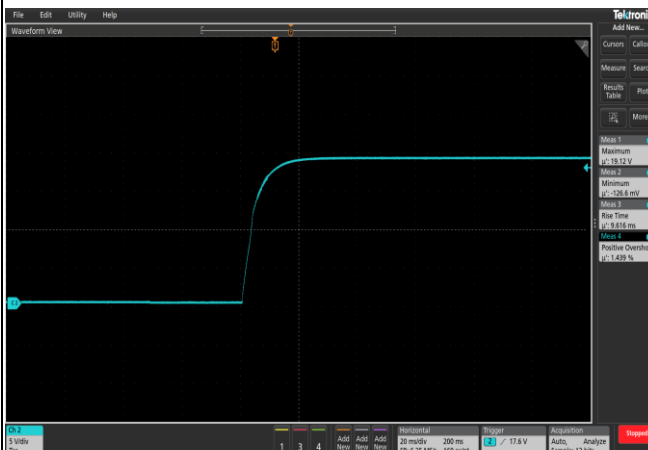
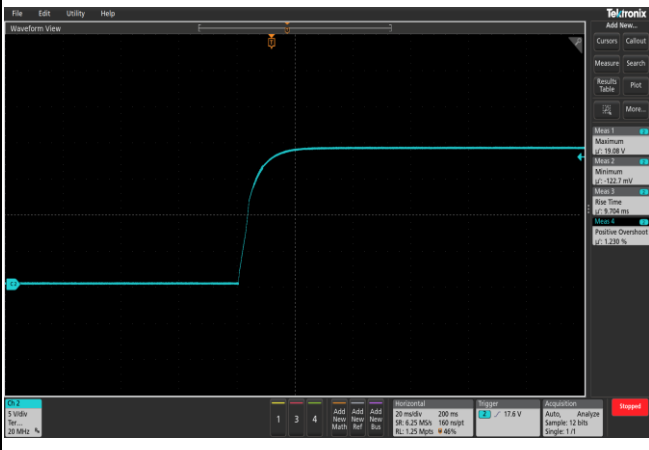
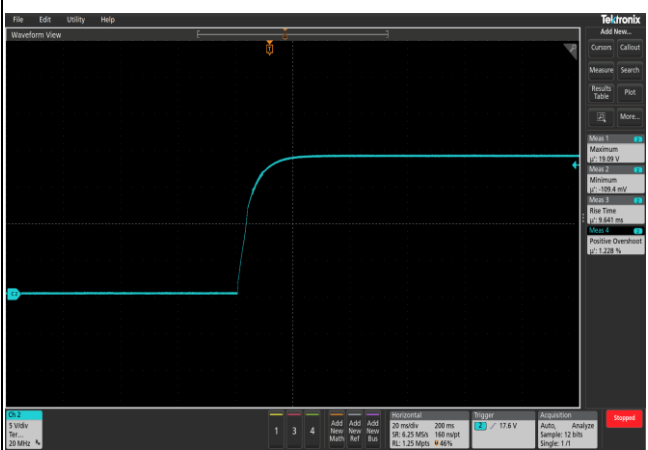
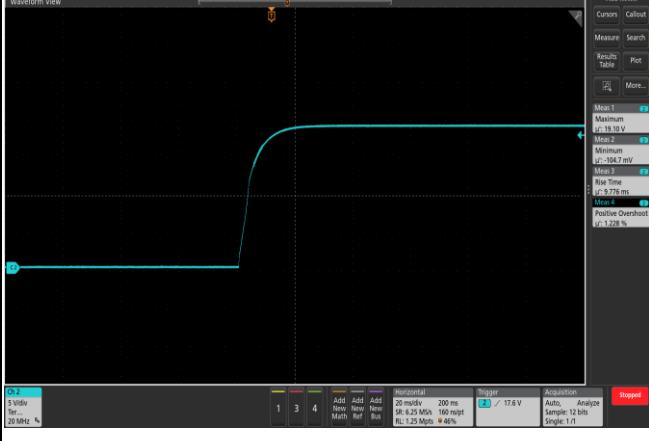
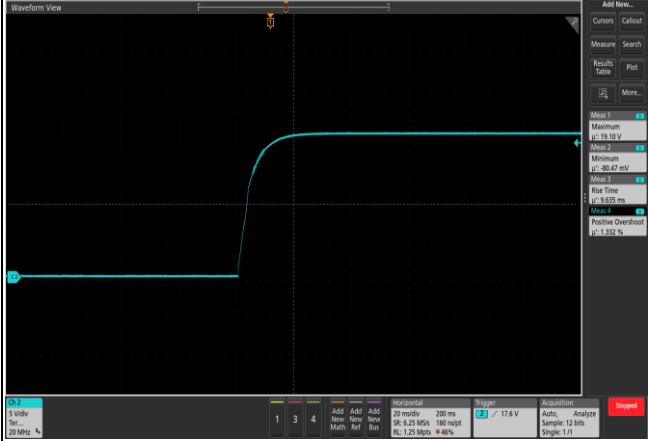
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5	START UP TIME	3000ms	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C	90VAC	264VAC
	INPUT=90VAC/47HZ @ FULL LOAD		INPUT=264VAC/63HZ @ FULL LOAD		
	-30°C: 483.88ms CH1: AC Input Voltage, CH2: Output Voltage		-30°C: 504.85ms CH1: AC Input Voltage, CH2: Output Voltage		
25°C: 547.94ms CH1: AC Input Voltage, CH2: Output Voltage		25°C: 608.51ms CH1: AC Input Voltage, CH2: Output Voltage			
40°C: 563.09ms CH1: AC Input Voltage, CH2: Output Voltage		40°C: 570.08ms CH1: AC Input Voltage, CH2: Output Voltage			

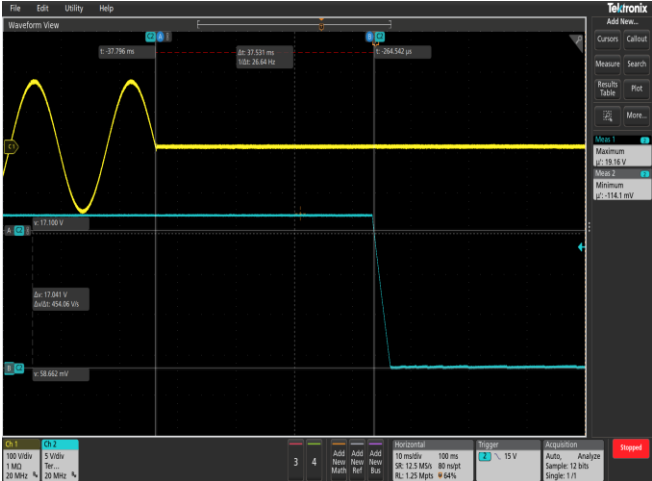
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6	RISE TIME	50ms	I/P: 90VAC I/P: 264VAC O/P: FULL LOAD Ta: -30°C, 25°C, 40°C	90VAC	264VAC
				9.78ms	9.64ms
	INPUT=90VAC/47HZ @ FULL LOAD			INPUT=264V/63HZ @ FULL LOAD	
	-30°C: 9.656ms 			-30°C: 9.616ms 	
	25°C: 9.704ms 			25°C: 9.641ms 	
	40°C: 9.776ms 			40°C: 9.635ms 	

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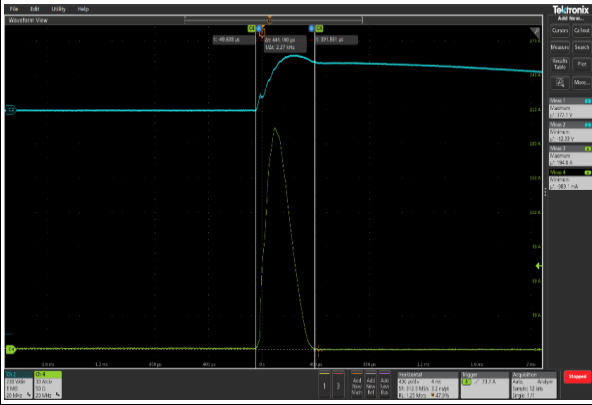
	HOLD UP TIME	> 20ms / 115VAC	I/P: 115VAC O/P: FULL LOAD Ta: 25°C	37.531ms
7	INPUT=115VAC/60HZ @ FULL LOAD CH1: AC Input Voltage, CH2: Output Voltage 			

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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	1.15A @100VAC 0.486A @240VAC
2	TOUCH CURRENT	< 0.1mA / 264VAC	I/P: 264VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.0263mA N-FG: 0.0285mA
3	LEAKAGE CURRENT	< 0.115mA / 264VAC	I/P: 264VAC O/P: FULL LOAD Ta: 25°C	L-FG: 0.0702mA N-FG: 0.0746mA
4	STANDBY POWER	≤ 0.15W	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	115VAC/0.004W 230VAC/0.011W
5	INRUSH CURRENT	< Fuse/Bridge diode I _{2t}	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	194A / 5.532 I _{2t} *
INPUT=230VAC/50HZ @ FULL LOAD CH2: AC Input Voltage, CH4: Input Current 				
6	EFFICIENCY	Typ. 91.5% / FULL LOAD at 230VAC	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/90.93% 230VAC/91.74%
7	POWER FACTOR	> 0.9	I/P: 115VAC I/P: 230VAC O/P: FULL LOAD Ta: 25°C	115VAC/0.972 230VAC/0.92

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	105%~150% 5.523 ~ 7.89A (Latch mode)	I/P: 90VAC I/P: 264VAC O/P: TESTING Ta : 25°C	90VAC/7.02A 264VAC/7.03A
2	OVER VOLTAGE PROTECTION	140% of Rated Voltage	I/P: 90VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	90VAC/23.62V 264VAC/23.58V
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) 399.4V (2) 395.0V (3) 395.1V
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) 402.5V (2) 399.8V (3) 398.0 V
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) 417.6V (2) 403.2V (3) 413.5V
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) 416.1V (2) 402.9V (3) 412.4V
5	Input Capacitor	C051 Rated 120uF/50V	I/P: 264VAC O/P: (1) Start-up (2) Output Short (3) FULL LOAD continues Ta: 25°C	(1) 402.8V (2) 402.5V (3) 403.5V

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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 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=81,690 hours (2)I/P: 240VAC O/P: FULLLOAD Ta= 40C LIFETIME=158,616 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		7,008,162 hours @ 90VAC 6,794,213 hours @ 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 temperature should not exceed maximum operation temperature.

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

No.	Location	90V	Result
1	C206	63.29	Pass
2	C204	65.098	Pass
3	C054	64.949	Pass
4	C051	69.119	Pass
5	T050-core	74.565	Pass
6	T050-coil	70.841	Pass
7	IC200	74.824	Pass
8	Q200	76.612	Pass
9	Q200-1	73.436	Pass
10	PC300	61.789	Pass
11	IC100	74.567	Pass
12	Q051	75.024	Pass
13	D004	76.263	Pass
14	Q050	79.265	Pass
15	D003	86.785	Pass
16	Q010	80.874	Pass
17	L002	88.201	Pass
18	D050	93.098	Pass
19	RT101	64.236	Pass
20	L010	86.779	Pass
21	Case Down	55.549	Pass
22	Case Input	64.971	Pass
23	Case Output	48.215	Pass
24	Case Back	45.332	Pass
25	Case Forth	55.726	Pass
26	Case Down	50.654	Pass
27	AMB1	40.469	

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