

MODEL : PLC-100-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1 : 150 mVp-p (Max)	I/P : 230VAC O/P : FULL LOAD Ta : 25°C	V1 : 28 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 10.2V~ 12V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	9.597 V~ 12.388 V/230 VAC 9.593 V~ 12.390 V/ 115 VAC	P
3	OUTPUT CURRENT ADJUST RANGE	CH1 : 3.75A~ 5A	I/P : 230 VAC I/P : 115 VAC Ta : 25°C	3.32 A~ 5.97 A/230V 3.29 A~ 5.94 A/115V	P
4	CONSTANT CURRENT REGION	CH1 : 9V~12V	I/P : 230VAC I/P : 115VAC O/P : FULL LOAD Ta : 25°C	5.1 V~ 12 V/230V 5.2 V~ 12 V/115V	P
5	OUTPUT VOLTAGE TOLERANCE	V1 : 3% ~ -3% (Max)	I/P : 100VAC / 264 VAC O/P : FULL/ MIN LOAD Ta : 25°C	V1 : 0.5 %~ -0.5 %	P
6	LINE REGULATION	V1 : 1%~ -1% (Max)	I/P : 100 VAC ~ 264 VAC O/P : FULL LOAD Ta : 25°C	V1 : 0.05 %~ -0.05 %	P
7	LOAD REGULATION	V1 : 2%~ -2% (Max)	I/P : 230 VAC O/P : FULL ~MIN LOAD Ta : 25°C	V1 : 0.5 %~ -0.5 %	P
8	SET UP TIME	230VAC : 500 ms (Max) 115 VAC : 1200 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 353.213 ms 115VAC/ 335.647 ms	P
9	RISE TIME	230VAC : 80 ms (Max) 115VAC : 80 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 6.9 ms 115VAC/ 6.4 ms	P
10	HOLD UP TIME	230VAC : 60 ms 115VAC : 16 ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 182 ms 115VAC/ 61 ms	P
11	OVER/UNDERSHOOT TEST	< ±5%	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	TEST : < 5 %	P
12	DYNAMIC LOAD	V1 : 1200 mVp-p	I/P : 230 VAC O/P : FULL /Min LOAD 90%DUTY/1KHZ Ta : 25°C	263 mVp-p	P

## INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~264 VAC	I/P : TESTING O/P : FULL LOAD Ta : 25°C	46V~264V	P
			I/P : LOW-LINE-3V= 87 V (PLEASE CHECK DERATING CURVE) HIGH-LINE+15%=300 V O/P : FULL/MIN LOAD ON : 30 Sec. OFF : 30 Sec 10MIN ( AC POWER ON/OFF NO DAMAGE )	TEST : OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P : 100VAC ~ 264 VAC O/P : FULL~MIN LOAD Ta : 25°C	TEST : OK	P
3	POWER FACTOR	0.95 / 230 VAC 0.95 / 115 VAC	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF= 0.980 / 230 VAC PF= 0.983 / 115 VAC	P
4	EFFICIENCY	83% (TYP)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	86.7 %	P
5	INPUT CURRENT	230V/ 0.4 A (TYP) 115V/ 0.8 A (TYP)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 0.3 A/ 230 VAC I = 0.6 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 40 A (TYP) COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I = 33 A/ 230 VAC	P
7	LEAKAGE CURRENT	< 0.75 mA/ 240 VAC	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.4 mA N-FG : 0.4 mA	P

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	95 %~ 102 %	I/P : 230 VAC I/P : 115 VAC O/P : TESTING Ta : 25°C	100.8%/ 230 VAC 100.2%/ 115 VAC Constant Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1 : 13 V~ 16 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	14.27V/ 230 VAC 14.28V/ 115 VAC Constant current limiting, recovers automatically after fault condition is removed	P
3	OVER TEMPERATURE PROTECTION	Shut down Re-power ON	I/P : 230 VAC O/P : FULL LOAD	O.T.P. Active Shut down Re-power ON	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P : 264 VAC O/P : FULL LOAD Ta : 25°C	NO DAMAGE Constant Current Limiting	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																																																			
1	TEMPERATURE RISE TEST	MODEL : PLC-100-12 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 27 °C 2. HIGH AMBIENT BURN-IN : 1.5 HRS I/P : 230VAC O/P : FULL LOAD Ta= 42.4 °C			P																																																																																																																			
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3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 230 VAC O/P : LED=23V Ta= -30 °C	TEST : OK	P																																																																																																																			
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 40 °C NO DAMAGE	I/P : 272 VAC O/P : FULL LOAD Ta= 40 °C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																																																			
5	TEMPERATURE COEFFICIENT	± 0.03 %(0~50°C)	I/P : 230 VAC O/P : FULL LOAD	± 0.004 %(0~50°C)	P																																																																																																																			
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 2G (5) Test Time : 1 hour in each axis (X.Y.Z) (6) Ta : 25°C		TEST : OK	P																																																																																																																			

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P : 3.75 KVAC/min I/P-FG : 2KVAC/min O/P-FG : 0.5 KVAC/min	I/P-O/P : 4.5 KVAC/min I/P-FG : 2.4 KVAC/min O/P-FG : 0.6 KVAC/min Ta : 25°C	I/P-O/P : 5.89 mA I/P-FG : 4.85 mA O/P-FG : 2.556 mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P : 500VDC>100MΩ I/P-FG : 500VDC>100MΩ O/P-FG : 500VDC>100MΩ	I/P-O/P : 500 VDC I/P-FG : 500 VDC O/P-FG : 500 VDC Ta : 25°C /70%RH	I/P-O/P : 30 GΩ I/P-FG : 30 GΩ O/P-FG : 30 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta : 25°C / 70%RH	36 mΩ	P

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS C	I/P : 230 /240/220VAC/50HZ O/P : 100%75% 50%LOAD Ta : 25°C	PASS	P
2	CONDUCTION	EN55022 EN55015 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 EN55015 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab	P
4	Test by certified Lab & Test Report Prepare				

### M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	PLC-100-12: SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME= 141303 HRS I/P : 230VAC O/P : FULL LOAD Ta= 40 °C LIFE TIME=64602 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE : 297.9K HRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure(Expected Life) : 20,000 hours @ Tcase 65°C; 50,000 hours @ Tcase 50°C			P

### COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) Peak Voltage	Q 1 Rated SPA11N65C3 11A/650V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2) Output Short Ta : 25°C	(1) 640 V (2) 506 V	P
2	Diode Peak Voltage	Q100 Rated STP75NF75 80A/75V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2)Output Short Ta : 25°C	(1) 64 V (2) 47.2 V	P
3	Clamp Diode Peak Voltage	D2 Rated 1A/1KV 1N4007GP	I/P : High-Line +3V = 267 V O/P : (1) Dynamic Load 90%Duty/1KHz Ta : 25°C	(1) 512 V	P
4	Input Capacitor Voltage	C5 Rated 150u/400V 105°C 1 KMG	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta : 25°C	(1) 385 V (2) 385.3 V (3) 385.3 V	P
5	Control IC Voltage Test	U2 Rated TEA1552: 9.3V ~20V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta : 25°C	(1) 17.11 V (2) 13.80 V (3) 13.80 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/11/27	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2009/3/31	PRODUCT SAMPLE W0901D33	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023