

MODEL : PLN-30-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 2 Vp-p (Max)	I/P: 230VAC O/P: 100% LOAD Ta:25°C	V1: 1.46 Vp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 11.4 V~ 13.2 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	10.52V~ 13.88 V/ 230 VAC 10.52V~ 13.88 V/ 115 VAC	P
3	OUTPUT CURRENT ADJUST RANGE	CH1: 1.875 A~2.575A	I/P: 230 VAC I/P: 115 VAC Ta:25°C	1.65 A~ 3.01 A/ 230 VAC 1.65 A~ 3.01 A/ 115 VAC	P
4	OUTPUT VOLTAGE TOLERANCE	V1: 10 %~ -5 % (Max)	I/P: 100 VAC / 295 VAC O/P: 100% LOAD / MIN LOAD Ta:25°C	V1: 0.6 %~ -0.6 %	P
5	LINE REGULATION	V1: 3 %~ -3 % (Max)	I/P: 100VAC ~ 295 VAC O/P: 100% LOAD Ta:25°C	V1: 0.1 %~ -0.1 %	P
6	LOAD REGULATION	V1: 5 %~ -5 % (Max)	I/P: 230 VAC O/P: 100% LOAD ~MIN LOAD Ta:25°C	V1: 0.4 %~ -0.4 %	P
7	SET UP TIME	230VAC: 500 ms (Max) 115 VAC: 3000 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P: 100% LOAD Ta:25°C	230VAC/ 360 ms 115VAC/ 1682 ms	P
8	RISE TIME	230VAC: 150 ms (Max) 115VAC: 150 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P: 100% LOAD Ta:25°C	230VAC/ 32 ms 115VAC/ 22 ms	P
9	OVER/UNDERSHOOT TEST	< ±10%	I/P: 230 VAC O/P: 100% LOAD Ta:25°C	TEST: <10 %	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~295 VAC	I/P:TESTING O/P: 100% LOAD Ta:25°C	69 V~295V	P
			I/P: LOW-LINE-3V= 87V HIGH-LINE+10V=305 V O/P: 100% LOAD /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: 90 VAC ~ 295 VAC O/P: 100% LOAD ~MIN LOAD Ta:25°C	TEST: OK	P
3	POWER FACTOR	0.90 / 230 VAC(TYP) 0.95 / 115 VAC(TYP) 0.90 / 277VAC(TYP)	I/P: 230 VAC I/P: 115 VAC I/P: 277 VAC O/P: 100% LOAD Ta:25°C	PF= 0.909 / 230 VAC PF= 0.987 / 115 VAC PF= 0.905 /277VAC	P
4	EFFICIENCY	82.5% (TYP)	I/P: 230 VAC O/P: 100% LOAD Ta:25°C	84.6 %	P
5	INPUT CURRENT	230V/ 0.2 A (TYP) 115V/ 0.4 A (TYP) 277V/ 0.15 A (TYP)	I/P: 230 VAC I/P: 115 VAC I/P: 277 VAC O/P: 100% LOAD Ta:25°C	I = 0.17 A/ 230 VAC I = 0.33 A/ 115 VAC I = 0.14 A/ 277 VAC	P
6	INRUSH CURRENT	230V/ 35 A (TYP) COLD START	I/P: 230 VAC O/P: 100% LOAD Ta:25°C	I = 28 A/ 230 VAC	P
7	LEAKAGE CURRENT	< 0.5 mA / 240 VAC	I/P: 240 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.001 mA N-FG: 0.001 mA	P
8	TOTAL HARMONIC DISTORTION	THD< 20% when output loading \geq 75% at 115VAC/230VAC input output loading \geq 80% at 277VAC input	I/P : 230VAC I/P : 115VAC O/P : 75% LOAD Ta : 25°C	THD : 17.57 % THD : 15.71 %	P
			I/P : 277VAC O/P : 80% LOAD Ta : 25°C	THD : 15.87 %	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	100 %~ 110 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	105 %/ 230 VAC 105%/ 115 VAC Constant Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1: 14 V~ 16 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	14.7 V/ 230 VAC 14.7 V/ 115 VAC Shunt down Re- power ON	P

3	OVER TEMPERATURE PROTECTION	SPEC: TSW1: 95 ± 10°C O.T.P NO DAMAGE	I/P: 230 VAC O/P: 100% LOAD	O.T.P. Active Shunt down Re-power ON	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 295 VAC O/P: 100% LOAD Ta:25°C	NO DAMAGE Hiccup Mode	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : PLN-30-9 1. ROOM AMBIENT BURN-IN : 17 HRS I/P: 230VAC O/P: 100% LOAD Ta= 24.7°C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P: 230VAC O/P: 100% LOAD Ta= 40.8 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 115 % LOAD Ta:25°C	TEST : OK	P
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100 % LOAD 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: 295 VAC O/P: 100% LOAD Ta= 40°C HUMIDITY= 95 %R.H	TEST : OK	P
5	TEMPERATURE COEFFICIENT	± 0.06 % (0~50°C)	I/P: 230 VAC O/P: 100% LOAD	± 0.03 % (0~50°C)	P
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency: 10~500Hz (3) Time: 72min (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: 3.75KVAC/min	I/P-O/P: 4.2KVAC/min Ta:25°C	I/P-O/P: 2.19 mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P: 500 VDC Ta:25°C /70% RH	I/P-O/P: 30 GΩ NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : R50164054 UL: File NO : E186843			P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A CLASS C	I/P: 230 VAC/50HZ O/P: 100% LOAD/70%LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55015 CLASS B	I/P: 230 VAC (50HZ) O/P: 100% LOAD /50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55015 CLASS B	I/P: 230 VAC (50HZ) O/P: 100% LOAD Ta:25°C	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P: 230 VAC/50HZ O/P: 100% LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P: 100% LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :1KV	I/P: 230 VAC/50HZ O/P: 100% LOAD Ta:25°C	CRITERIA A	P
7	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	PLN-30-9 : SUPPOSE C 106 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : 100% LOAD Ta= 25 °C LIFE TIME= 53282 HRS I/P : 230VAC O/P : 100% LOAD Ta= 40 °C LIFE TIME= 28012 HRS I/P : 230VAC O/P : 75% LOAD Ta= 40 °C LIFE TIME= 52924 HRS I/P : 230VAC O/P : 50% LOAD Ta= 40 °C LIFE TIME= 116577 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 621.4K HRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure(Expected Life) : 20,000 hours @ Tcase 80°C ; 50,000 hours @ Tcase 65°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	Q1 Rated STP9NK70ZFP : 700V 7.5A	I/P:High-Line +3V = 298 V O/P: (1) 100% LOAD Turn on (2) Output Short Ta:25°C	(1) 604 V (2) 458 V	P
2	Diode Peak Voltage	D100 Rated FME220A : 100V 20A	I/P:High-Line +3V = 298 V O/P: (1) 100% LOAD Turn on (2)Output Short Ta:25°C	(1) 76 V (2) 64 V	P
3	Clamp Diode Peak Voltage	D2 Rated IN4007 : 1000V 1A	I/P:High-Line +3V = 298 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 396 V	P
4	Control IC Voltage Test	U1 Rated TDA4863G : 22V	I/P:High-Line +3V = 298 V O/P: (1) 100% LOAD Turn on /Off (2) Min load Turn on /Off (3) 100% /Min load Change Ta:25°C	(1) 14.6 V (2) 14.6 V (3) 14.6 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2007/2/1	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2007/5/9	PRODUCT SAMPLE W0703A44	PASS	VINCENT TSENG	MAX LIN
2007/6/4	PRODUCT SAMPLE W0705C46	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023