

MODEL : PLN-30-48

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 3.7 Vp-p (Max)	I/P: 230VAC O/P: 100% LOAD Ta:25°C	V1: 1.98 Vp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 45.6 V~ 52.8 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	42.71V~ 53.72 V / 230 VAC 42.71 V~ 53.72 V / 115 VAC	P
3	OUTPUT CURRENT ADJUST RANGE	CH1: 0.473A-0.649A	I/P: 230 VAC I/P: 115 VAC Ta:25°C	0.43 A~ 0.77 A / 230 VAC 0.43 A~ 0.77 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: 1.6 %~ -1.6 %	P
5	LINE REGULATION	V1: 3 %~ -3 % (Max)	I/P: 100VAC ~ 295 VAC O/P: 100% LOAD Ta:25°C	V1: 0.03 %~ -0.03 %	P
6	LOAD REGULATION	V1: 5 %~ -5 % (Max)	I/P: 230 VAC O/P: 100% LOAD ~MIN LOAD Ta:25°C	V1: 0.05 %~ -0.05 %	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/ 394 ms 115VAC/ 978 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/ 77 ms 115VAC/ 55 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	61 V~295V	P
			I/P: LOW-LINE-3V= 87V HIGH-LINE+10V= 305V 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= 0.919 / 230 VAC PF= 0.987 / 115 VAC PF= 0.905 / 277VAC	P
4	EFFICIENCY	85.5% (TYP)	I/P: 230 VAC O/P: 100% LOAD Ta: 25°C	88.3 %	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 = 0.31 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 = 29 A/ 230 VAC	P
7	LEAKAGE CURRENT	< 0.5 mA / 240 VAC	I/P: 295 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 : 7.16 % THD : 10.42 %	P
			I/P : 277VAC O/P : 80% LOAD Ta : 25°C	THD : 14.78 %	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: 53 V~ 63 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta: 25°C	56V/ 230 VAC 56 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-30-24 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	± 0.027 % (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: 2.24 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: 13 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-30-24 : SUPPOSE C106 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P: 100% LOAD Ta= 25 °C LIFE TIME= 144427 HRS I/P: 230VAC O/P: 100% LOAD Ta= 40 °C LIFE TIME= 69825 HRS I/P: 230VAC O/P: 75% LOAD Ta= 40 °C LIFE TIME= 98735 HRS I/P: 230VAC O/P: 50% LOAD Ta= 40 °C LIFE TIME= 144427 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) <b>Peak Voltage</b>	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) 546 V (2) 500 V	P
2	Diode <b>Peak Voltage</b>	D100 Rated FCF10A40 : 10A/400V	I/P:High-Line +3V = 298 V O/P: (1) 100% LOAD Turn on (2)Output Short Ta:25°C	(1) 265 V (2) 260 V	P
3	Clamp Diode <b>Peak Voltage</b>	D2 Rated IN4007 : 1000V 1A	I/P:High-Line +3V = 298 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 346 V	P
4	<b>Control IC Voltage Test</b>	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) 14.5 V (2) 14.5 V (3) 14.5 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