

MODEL : PLP-60-12

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1 : 4.5 Vp-p (Max)	I/P : 230VAC O/P : FULL LOAD Ta : 25°C	V1 : 2.9 Vp-p (Max)	P
2	CURRENT ADJUST RANGE	CH1 : 3.75 A ~ 5 A	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	1.83 A ~ 5.3 A / 230 VAC 1.74 A ~ 5.43 A / 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1 : 10 % ~ -10 % (Max)	I/P : 100 VAC / 264 VAC O/P : FULL / MIN LOAD Ta : 25°C	V1 : 1.7 % ~ -1.7 %	P
4	LINE REGULATION	V1 : 3 % ~ -3 % (Max)	I/P : 100 VAC ~ 264 VAC O/P : FULL LOAD Ta : 25°C	V1 : 0.6 % ~ -0.6 %	P
5	LOAD REGULATION	V1 : 5 % ~ -5 % (Max)	I/P : 230 VAC O/P : FULL ~ MIN LOAD Ta : 25°C	V1 : 1 % ~ -1 %	P
6	SET UP TIME	230VAC : 500 ms (Max) 115VAC : 1200 ms (Max)	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC / 348 ms 115VAC / 784 ms	P
7	OVER/UNDERSHOOT TEST	< ±10%	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	TEST : < 10 %	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  I/P : LOW-LINE -3V= 87V HIGH-LINE+15%=300 V O/P : FULL/MIN LOAD ON : 30 Sec . OFF : 30 Sec 10MIN ( AC POWER ON/OFF NO DAMAGE )	79 V~264V  TEST : OK	P
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P : 100VAC ~ 264 VAC O/P : FULL -MIN LOAD Ta : 25°C	TEST : OK	P
3	POWER FACTOR	0.9 / 230 VAC(TYP) 0.9 / 115 VAC(TYP)	I/P : 230 VAC I/P : 115 VAC O/P : 75%-100% LOAD Ta : 25°C	0.926 /230VAC@full load 0.99 /115VAC@full load 0.918 /230VAC@75% load 0.986 /115VAC@75% load	P
4	EFFICIENCY	84 % (TYP)	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	84.2 %	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 = 0.33 A/ 230 VAC I = 0.637 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 35 A (TYP)  COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I = 30 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 : 0.32 mA N-FG : 0.32 mA	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	103.6 %/ 230 VAC 106 %/ 115 VAC Constant Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1 : 15- 18 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	15.3 V/ 230 VAC 15.3 V/ 115 VAC Shut down Re- power ON	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P : 264 VAC O/P : FULL LOAD Ta : 25°C	NO DAMAGE Hiccup Mode	P

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT	
1	TEMPERATURE RISE TEST	MODEL : PLP-60-24 1. ROOM AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD Ta= 28.2 °C 2. HIGH AMBIENT BURN-IN : 13 HRS I/P : 230VAC O/P : FULL LOAD Ta= 57.4 °C			<b>P</b>	
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P : 230 VAC O/P : 105 % LOAD Ta : 25°C	TEST : OK	<b>P</b>	
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 230 VAC O/P : LED=23V LOAD Ta= -35 °C	TEST : OK	<b>P</b>	
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 °C NO DAMAGE	I/P : 272 VAC O/P : FULL LOAD Ta= 60 °C HUMIDITY= 95 %R.H	TEST : OK	<b>P</b>	
5	TEMPERATURE COEFFICIENT	± 0.03 % (0-50°C)	I/P : 230 VAC O/P : FULL LOAD	± 0.01 % (0-50°C)	<b>P</b>	
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	<b>P</b>	

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P : 3.75 KVAC/min I/P-FG : 2 KVAC/min O/P-FG : 0.5 KVAC/min	I/P-O/P : 4 KVAC/min I/P-FG : 2.4KVAC/min O/P-FG : 0.6 KVAC/min Ta : 25°C	I/P-O/P : 3.92 mA I/P-FG : 4.02 mA O/P-FG : 1.41 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	7 mΩ	P
4	APPROVAL	TUV : Certificate NO : UL : File NO :			N/A

### 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%/75% LOAD Ta : 25°C	PASS	P
2	CONDUCTION	EN55015 CLASS B	I/P : 230 V(50HZ)/115V(60HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab	P
3	RADIATION	EN55015 CLASS B	I/P : 230 V(50HZ)/115V(60HZ) O/P : FULL 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 : FULL 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 : FULL LOAD Ta : 25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N : 1KV L,N-PE : 2KV	I/P : 230 VAC/50HZ O/P : FULL 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	PLP-60-24 : SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME= 423279.2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 60 °C LIFE TIME= 50064 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE : 583.3K HRS			P
3	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure : Above 20,000 hours @ TA 60°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 : STP10NK70ZFP 10A/700V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2) Output Short Ta : 25°C	(1) 638 V (2) 578 V	P
2	Diode Peak Voltage	D 100 Rated : FMEN-2308 30A/80V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2)Output Short Ta : 25°C	(1) 71.6 V (2) 72 V	P
3	Clamp Diode Peak Voltage	D 2 Rated : HER206 2A/600V	I/P : High-Line +3V = 267 V O/P : (1)Full Load Turn on (2)Output Short Ta : 25°C	(1) 564 V (2) 494 V	P
4	Control IC Voltage Test	U1 Rated : PWM L6561D 10.3V-18V	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) 15.48 V (2) 11.62 V (3) 15.48 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2009/3/20	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2009/6/16	PRODUCT SAMPLE W0904D29	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023