

MODEL : PM-20-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 150 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 7 mVp-p (Max)	P
2	OUTPUT VOLTAGE TOLERANCE	V1: 2 %- -2 % (Max)	I/P:115 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.05 %- -0.05 %	P
3	LINE REGULATION	V1: 0.5 %- -0.5 % (Max)	I/P:115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.05 %- -0.05 %	P
4	LOAD REGULATION	V1: 1 %- -1 % (Max)	I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0.05 %- -0.05 %	P
5	SET UP TIME	230VAC: 500 ms (Max) 115 VAC: 500 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 172 ms 115VAC/ 167 ms	P
6	RISE TIME	230VAC: 20 ms (Max) 115VAC: 20 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 7.1 ms 115VAC/ 6.7 ms	P
7	HOLD UP TIME	230VAC: 50 ms (TYP) 115VAC: 16 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 91 ms 115VAC/ 18.9 ms	P
8	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: <5 %	P
9	DYNAMIC LOAD	V1: 1200 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	372 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	85VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	58V~264V	P
			I/P: LOW-LINE-3V= 82 V 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 ~440 HZ NO DAMAGE OSC	I/P: 85 VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	81% (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	82 %	P
4	INPUT CURRENT	230V/ 0.4 A (TYP) 115V/ 0.6 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.31 A/ 230 VAC I = 0.45 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 65 A (TYP) 115V/ 30 A(TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 53 A/ 230 VAC I = 26 A/ 115 VAC	P
6	LEAKAGE CURRENT	< 300 uA/ 264 VAC for earth leakage current	I/P: 264 VAC O/P:Min LOAD Ta:25°C	L-FG: 285 uA N-FG: 285 uA	P
		< 100 uA/264 VAC for touch leakage current	I/P: 264 VAC O/P:Min LOAD Ta:25°C	L-V+ : 82 uA L-V-: 82 uA N-V+: 82 uA N-V-: 82 uA	

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	Above 105 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	361 %/ 230 VAC 255 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 13.8V~ 16.2V	O/P:MIN LOAD Ta:25°C	15V/ 80mA Shut off	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

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	No load power consumption	<0.75W	I/P: 240 VAC O/P:NO LOAD	0.42W/ 240 VAC	P

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 4 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 1.5 KVAC/min	I/P-O/P: 4.2 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 1.8 KVAC/min Ta:25°C	I/P-O/P: 0.83 mA I/P-FG: 0.09 mA O/P-FG: 0.06 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	I/P-O/P: 30 GΩ I/P-FG: 30 GΩ O/P-FG: 29 GΩ NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : TA50083713 UL: File NO : E227340			P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 EN55011 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 EN55011 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 MEDICAL AIR:8KV / Contact:6KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 MEDICAL INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 MEDICAL L-N :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	SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 461738 HRS I/P: 230VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 104741 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 487.8KHRS			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	U1 Rated VIPER53 : 620 V 2.3A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 584 V (2) 480 V (3) 608 V	P
2	Diode Peak Voltage	D100 Rated C92-02 : 200V 10 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 88 V (2) 86 V (3) 89 V	P
3	Clamp Diode Peak Voltage	D1 Rated IN4007 : 1KV 1 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 472 V (2) 474 V	P
4	Input Capacitor Voltage	C5 Rated :47u / 400V/ 105°C	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 (4)Burn in 1hour Ta:25°C	(1) 377 V (2) 382 V (3) 382 V (4) 377 V	P
5	Control IC Voltage Test	U1 Rated VIPER53 : 19 V	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) 12.6 V (2) 10.6 V (3) 12.6 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2006/4/3	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2006/6/29	PRODUCT SAMPLE W0604C12	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023