

MODEL : PM-15-3.3

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 5 mVp-p (Max)	P
2	OUTPUT VOLTAGE TOLERANCE	V1: 3 % - -3 % (Max)	I/P:115 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.2 % - -0.2 %	P
3	LINE REGULATION	V1: 1 % - -1 % (Max)	I/P:115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0 % - 0 %	P
4	LOAD REGULATION	V1: 1 % - -1 % (Max)	I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C	V1: 0.2 % - -0.2 %	P
5	SET UP TIME	230VAC: 1000 ms (Max) 115 VAC: 1000 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 705 ms 115VAC/ 340 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/ 6 ms 115VAC/ 5 ms	P
7	HOLD UP TIME	230VAC: 100 ms (TYP) 115VAC: 24 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 146 ms 115VAC/ 30 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: 660 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	428 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	46 V~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	73 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	73.4 %	P
4	INPUT CURRENT	230V/ 0.2 A (TYP) 115V/ 0.35 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.16 A/ 230 VAC I = 0.25 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 50 A (TYP) 115V/ 30 A (TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 33 A/ 230 VAC I = 17 A/ 115 VAC	P
6	LEAKAGE CURRENT	<80uA /264 VAC for touch leakage current	I/P: 264 VAC O/P:Min LOAD Ta:25°C	L-V+ : 68 uA L-V-: 68 uA N-V+: 68 uA N-V-: 68 uA	P

### 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	144 %/ 230 VAC 154 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 3.8V~ 4.95V	O/P:MIN LOAD Ta:25°C	4.4 V/ 100mA 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	<0.5W	I/P: 240 VAC O/P:NO LOAD	0.28 W/ 240 VAC	P

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																
1	TEMPERATURE RISE TEST	MODEL : PM-15-5 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 26.5 °C 2. HIGH AMBIENT BURN-IN : 1.5 HRS I/P: 230VAC O/P: FULL LOAD Ta= 55.8 °C																																																																																			
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT Ta= 26.5 °C</th> <th>HIGH AMBIENT Ta= 55.8 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>U1</td><td>DM0265R FAIR</td><td>70.8°C</td><td>94.8°C</td></tr> <tr><td>2</td><td>C36</td><td>47U/50V RUB 105°C YXF</td><td>58.5°C</td><td>81.9°C</td></tr> <tr><td>3</td><td>D1</td><td>BYV26C 1A/600V VIS</td><td>72.2°C</td><td>95.9°C</td></tr> <tr><td>4</td><td>ZD1</td><td>P6KE200 PAN</td><td>70.3°C</td><td>93.7°C</td></tr> <tr><td>5</td><td>BD1</td><td>KBP208G 2A/800V LT</td><td>57.2°C</td><td>80.4°C</td></tr> <tr><td>6</td><td>T1 COIL</td><td>TF-1398 LS</td><td>61.1°C</td><td>83.4°C</td></tr> <tr><td>7</td><td>C5</td><td>47U/400V NIC 105°C PT</td><td>57.2°C</td><td>80.4°C</td></tr> <tr><td>8</td><td>LF1</td><td>LF-508 LS</td><td>57.0°C</td><td>80.7°C</td></tr> <tr><td>9</td><td>D100</td><td>MBR1545CT 15A/45V ON</td><td>64.8°C</td><td>88.0°C</td></tr> <tr><td>10</td><td>C105</td><td>470U/16V NCC 105°C KY</td><td>62.7°C</td><td>86.1°C</td></tr> <tr><td>11</td><td>L100</td><td>DR008D</td><td>58.0°C</td><td>81.7°C</td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>				NO	Position	P/N	ROOM AMBIENT Ta= 26.5 °C	HIGH AMBIENT Ta= 55.8 °C	1	U1	DM0265R FAIR	70.8°C	94.8°C	2	C36	47U/50V RUB 105°C YXF	58.5°C	81.9°C	3	D1	BYV26C 1A/600V VIS	72.2°C	95.9°C	4	ZD1	P6KE200 PAN	70.3°C	93.7°C	5	BD1	KBP208G 2A/800V LT	57.2°C	80.4°C	6	T1 COIL	TF-1398 LS	61.1°C	83.4°C	7	C5	47U/400V NIC 105°C PT	57.2°C	80.4°C	8	LF1	LF-508 LS	57.0°C	80.7°C	9	D100	MBR1545CT 15A/45V ON	64.8°C	88.0°C	10	C105	470U/16V NCC 105°C KY	62.7°C	86.1°C	11	L100	DR008D	58.0°C	81.7°C																				
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 133 % 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= -20 °C	TEST : OK	P																																																																																
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50°C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.01 %(0-50°C)	P																																																																																
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10-500Hz (3) Sweep Time:10min/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	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 4 KVAC/min	I/P-O/P: 4.4 KVAC/min Ta:25°C	I/P-O/P: 0.85 mA  NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P: 500 VDC Ta:25°C	I/P-O/P: 30 GΩ  NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : TA 50079957 UL: File NO :			P

### E.M.C TEST

NO	TEST ITEM	SPECICATION	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	SPECICATION	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= 155358 HRS I/P: 230VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 41339 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 499.7KHRS			P

## COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	U1 Rated DM0265RNB : 660 V 1.5A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 580 V (2) 570 V (3) 575 V	P
2	Diode Peak <b>Voltage</b>	D100 Rated MBR1545CT : 45V 15 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) 23 V (2) 26 V (3) 24 V	P
3	Clamp Diode Peak <b>Voltage</b>	D1 Rated BYV26C : 600V 1 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 496 V (2) 502 V	P
4	<b>Input Capacitor Voltage</b>	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) 392 V (2) 392 V (3) 394 V (4) 392 V	P
5	<b>Control IC Voltage Test</b>	U1 Rated DM0265RNB : 20 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) 13.3 V (2) 12.9 V (3) 13.4 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2005/11/30	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2006/4/7	PRODUCT SAMPLE W0601C06	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023