

MODEL : PB-360P-12

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BOOST CHARGE VOLTAGE	14.4V (+0.1V~-0.4V)	I/P: 230 VAC I/P: 115 VAC O/P:90% LOAD Ta:25°C	14.31 V/ 230 VAC 14.31 V/ 115 VAC	P
2	FLOAT CHARGE VOLTAGE	13.45V~13.75V	I/P: 230 VAC I/P: 115 VAC O/P: NO LOAD Ta:25°C	13.69 V/ 230 VAC 13.69 V/ 115 VAC	P
3	OUTPUT VOLTAGE ADJUST RANGE	CH1: 13V - 14.7V	I/P: 230 VAC I/P: 115 VAC O/P:NO LOAD Ta:25°C	12.78 V- 15.31 V/ 230 VAC 12.78 V- 15.39 V/ 115 VAC	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	180VAC~264 VAC)	I/P:TESTING O/P: 90% LOAD Ta:25°C	150 V~264V	P
			I/P: LOW-LINE-3V= 177 V HIGH-LINE+15%=300 V O/P: 90% 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 OSC	I/P: 180VAC ~ 264 VAC O/P: 90% LOAD -MIN LOAD Ta:25°C	TEST: OK	P
3	POWER FACTOR	0.65 / 230 VAC (TYP)	I/P: 230 VAC O/P: 90% LOAD Ta:25°C	PF= 0.76 / 230 VAC	P
4	EFFICIENCY	85 % (TYP)	I/P: 230 VAC O/P: 90% LOAD Ta:25°C	86.1 %	P
5	INPUT CURRENT	230V/ 3.5 A (TYP) 115V/ 7 A(TYP)	I/P: 230 VAC I/P: 115 VAC O/P: 90% LOAD Ta:25°C	I = 2.1 A/ 230 VAC I = 5.4 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 60 A (TYP)  COLD START	I/P: 230 VAC O/P: 90% LOAD Ta:25°C	I = 52 A/ 230 VAC	P
7	LEAKAGE CURRENT	< 3.5 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 1.2 mA N-FG: 1.2 mA	P

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	90 %- 110 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C	98 / 230 VAC 99.8 %/ 115 VAC Constant Current Limiting	P
2	OVER VOLTAGE PROTECTION	CH1: 15V- 17V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	15.8 V/ 230 VAC 15.8 V/ 115 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	Automatically derate charge current until zero	I/P: 230 VAC O/P: 90% LOAD	O.T.P. Active Automatically derate charge current until zero	P
4	REVERSE POLARITY	BY internal fuse	I/P: 230 VAC Ta:25°C	Fuse open	p

### CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	FAN ON/OFF CONTROL ANO LED TEST	-----	I/P: 230 VAC O/P: TESTING	≤ 2.4 A FAN OFF LED: GREEN ≥ 2.5 A FAN ON LED: RED	P
2	FAN SPEED CONTROL	-----	I/P: 230 VAC O/P: 90% LOAD Ta:25°C	Fan Voltage= 12.3V	P
3	REMOTE CONTROL (CN5)	OPEN : Normal work Short : Stop charging	I/P: 230 VAC O/P: BAT 190AH Ta:25°C	OPEN : Normal work Short : Stop charging	p

### ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : PB-360P-12 1. HIGH AMBIENT BURN-IN : 18HRS I/P: 230VAC O/P: BAT 190AH Ta= 39.2 °C 2. HIGH AMBIENT BURN-IN : 19HRS I/P: 264VAC O/P: BAT 190AH Ta= 45.6 °C 3. HIGH AMBIENT BURN-IN : 33HRS I/P: 180VAC O/P: BAT 190AH Ta= 44.5 °C 4. HIGH AMBIENT BURN-IN : 24HRS I/P: 132VAC O/P: BAT 190AH Ta= 44.5 °C 5. HIGH AMBIENT BURN-IN : 10HRS I/P: 90VAC O/P: BAT 190AH Ta= 43.1 °C			P
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: BAT 190AH Ta= -10 °C	TEST : OK	P
3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 40 °C NO DAMAGE	I/P: 272 VAC O/P: 90% LOAD Ta= 95°C HUMIDITY= 95 %R.H	TEST : OK	P
4	TEMPERATURE COEFFICIENT	± 0.05 % (0-50°C)	I/P: 230 VAC O/P: BAT 190AH	± 0.02 % (0-50°C)	P
5	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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C	I/P-O/P: 10.5 mA I/P-FG: 8.43 mA O/P-FG: 11.93 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: 2 GΩ I/P-FG: 2 GΩ O/P-FG: 3 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	11 mΩ	p
4	APPROVAL	TUV: Certificate NO : UL: File NO : E183223			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: 90% LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P: 90% LOAD /50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P: 90% 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: 90% 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: 90% 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: 90% 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: 90% LOAD Ta= 25 °C LIFE TIME= 300817 HRS I/P: 230VAC O/P: 90% LOAD Ta= 40 °C LIFE TIME= 106382 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 115.8KHRS			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>	Q2 Rated 2SK2850 : 900V 6A	I/P:High-Line +3V = 267 V O/P: (1) 90% LOAD Turn on (2) 90% LOAD (3)Output Short Ta:25°C	(1) 850 V (2) 710 V (3) 755 V	P
2	Diode Peak <b>Voltage</b>	D102 Rated FME-230A : 100V 30 A	I/P:High-Line +3V = 267 V O/P: (1) 90% LOAD Turn on (2) 90% LOAD (3)Output Short Ta:25°C	(1) 86 V (2) 77 V (3) 86 V	P
3	Clamp Diode Peak <b>Voltage</b>	D2 Rated SF5408 : 1KV 3A	I/P:High-Line +3V = 267 V O/P: (1) 90% LOAD Ta:25°C	(1) 690 V	P
4	<b>Input Capacitor Voltage</b>	C5 Rated :680 u / 200V/85°C	I/P:High-Line +3V = 267 V O/P: (1) 90% LOAD Turn on /Off (2) Min load Turn on /Off (3) 90% /Min load Change (4)Burn in 1hour Ta:25°C	(1) 176 V (2) 191 V (3) 191 V (4) 176 V	P
5	<b>Control IC Voltage Test</b>	U1 Rated 3845 : 30V	I/P:High-Line +3V = 267 V O/P: (1) 90% LOAD Turn on /Off (2) Min load Turn on /Off (3) 90% /Min load Change Ta:25°C	(1) 18.7 V (2) 18.3 V (3) 18.7 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2005/11/30	RD SMAPLE	PASS	VINCENT TSENG	MAX LIN
2006/6/22	PRODUCT SAMPLE W0604B27	PASS	VINCENT TSENG	MAX LIN
2006/8/11	PRODUCT SAMPLE W0607B40	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023