

MODEL:PSP-600-12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 240 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 93 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 10V~ 13.2 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	9.38 V~ 13.9 V/ 230 VAC 9.38 V~ 13.9 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1 %~ -1 % (Max)	I/P: 155 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 155VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~ 0 %	P
5	LOAD REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.2 %~ -0.2 %	P
6	SET UP TIME	230VAC: 1500 ms (Max) 115 VAC: 1500 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 1184 ms 115VAC/ 853 ms	P
7	RISE TIME	230VAC: 50 ms (Max) 115VAC: 50 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 11 ms 115VAC/ 11 ms	P
8	HOLD UP TIME	230VAC: 16 ms (Min) 115VAC: 16 ms (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 23 ms 115VAC/ 23 ms	P
9	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: <5 %	P
10	DYNAMIC LOAD	V1: 1200 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	871 mVp-p	P

**INPUT FUNCTION TEST**

N O	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	59 V~264V	P
			I/P: LOW-LINE-3V= 85 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 ~63 HZ NO DAMAGE OSC	I/P: 88 VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	POWER FACTOR	0.95 / 230 VAC (Min) 0.98 / 115 VAC (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	PF= 0.97 / 230 VAC PF= 0.99 / 115 VAC	P
4	EFFICIENCY	84% (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	85.9%	P
5	INPUT CURRENT	230V/ 4.1 A (Max) 115V/ 8.2 A (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 3.1 A/ 230 VAC I = 6.5 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 50 A (Max) 115V/ 25 A (Max) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 33 A/ 230 VAC I = 18 A/ 115 VAC	P
7	LEAKAGE CURRENT	< 1 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.96 mA N-FG: 0.96 mA	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105%~ 135 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C	112 %/ 230 VAC 112 %/ 115 VAC Constant current limiting	P
2	OVER VOLTAGE PROTECTION	CH1: 13.8 V~ 16.2 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	15.5 V/ 230 VAC 15.5 V/ 115 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: TSW1: 85± 5°C O.T.P TSW2: 80± 5°C O.T.P NO DAMAGE	I/P: 230 VAC O/P: FULL LOAD	O.T.P. Active Shut down o/p voltage , recovers automatically after temperature goes down , than re-power on to recover	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE Foldback Current Limiting	P

**CONTROL FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	FAN SPEED CONTROL	-----	I/P: 230 VAC O/P: FULL LOAD Ta:25°C	Fan Voltage= 10.8V	P
2	REMOTE CONTROL	Rc+ / Rc- SHORT POWER ON OPEN POWER OFF	I/P: 230 VAC O/P: FULL LOAD Ta:25°C	SHORT POWER ON OPEN POWER OFF	P
3	POWER OK	POWER ON : 3.3V~6V POWER OFF : 0V~2V	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta:25°C	POWER ON : 4.86 V POWER OFF : 0 V	P
4	CURRENT SHARING	PSU1-PSU2 < 10%	I/P: 230 VAC O/P: FULL/50% LOAD Ta:25°C	O/P: 100% PSU1: 700 W PSU2: 746 W O/P: 50% PSU1: 342 W PSU2: 372 W	P
5	REMOTE SENSE	>0.3V	I/P: 230 VAC O/P: FULL LOAD Ta:25°C	>0.4V	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : PSP-600-24 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 230VAC O/P: FULL LOAD Ta= 33.6 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 52.6 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 111 % 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 45 °C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 45 °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 Operating at I/P: 230VAC NO LOAD (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 :	N/A

NO	Position	P/N	ROOM AMBIENT Ta= 33.6 °C	HIGH AMBIENT Ta= 52.6 °C
1	U1	ML480	49.1°C	69.0°C
2	C37	220U/25V NCC 105°C KY	43.7°C	65.1°C
3	C6	150U/400V RUB 85°C USC	35.1°C	54.9°C
4	D1	BYV10-600 10A/600V PH	43.0°C	63.2°C
5	Q1	16N50C3 16A/500V INF	47.5°C	68.7°C
6	L1	TR-498	49.3°C	70.9°C
7	D9	BYM26E 2.3A/1KV	44.1°C	64.1°C
8	BD1	D15XB60 15A/600V SHI	46.1°C	75.7°C
9	TRC1	BTA16-600 16A ST	59.7°C	80.8°C
10	LF2	TR-436	39.6°C	59.9°C
11	Q52	K2850 6A/900V FUJI	68.2°C	93.9°C
12	Q53	K2850 6A/900V FUJI	69.1°C	98.7°C
13	D72	D9202 20A/200V FUJI	58.5°C	78.9°C
14	T1 COIL	TF-1150	46.0°C	66.7°C
15	C208	680U/35V NIC 105°C KY	35.3°C	55.6°C

**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: 7 mA I/P-FG: 6.3 mA O/P-FG: 5.1 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: 4G Ω I/P-FG: 4.4G Ω O/P-FG: 17G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	5 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50051249 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:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 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 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 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 INDUSTRY L-N :2KV L,N-PE:4KV	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 &amp; LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C205 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 2220955 HRS I/P: 230VAC O/P:FULL LOAD Ta= 45 °C LIFE TIME= 655699 HRS			P
2	MTBF	Conducted by Parts Stress Analysis Prediction 1132.9K hrs min. Telcordia SR-332 (Bellcore) ; 142.2K hrs min. MIL-HDBK-217F (25°C)			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>	Q 52 Rated 2SK2850 : 900 V 6 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) 792 V (2) 820 V (3) 792 V	P
2	Diode <b>Peak Voltage</b>	D 72 Rated MBR3060PT : 60V 30A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 37.4 V (2) 47.2 V (3) 45.6 V	P
3	Clamp Diode <b>Peak Voltage</b>	D 50 Rated BYM26E : 1KV 2.3 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 776 V (2) 776 V	P
4	Input Capacitor <b>Voltage</b>	C5 Rated :150 u / 400V/ 85°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 Ta:25°C	(1) 380 V (2) 380 V (3) 396 V	P
5	Control IC <b>Voltage Test</b>	U50 Rated 3845 : 30V	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) 16.4 V (2) 14.7 V (3) 16.3 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/8/13	RD SMAPLE	PASS	VINCENT TSENG	MAX LIN
2004/11/9	PRODUCT SAMPLE W0409A42	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023