

MODEL: SP-750-5

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1:120 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 27 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75 V~ 5.5 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	4.44 V~ 5.77 V/ 230 VAC 4.44 V~ 5.77 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 2 %~ -2 % (Max)	I/P: 100 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.5 %~ -0.5 %	P
4	LINE REGULATION	V1: 0.5%~ -0.5 % (Max)	I/P: 100 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.12 %~ -0.12 %	P
5	LOAD REGULATION	V1: 2 %~ -2 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.5 %~ -0.5 %	P
6	SET UP TIME	230VAC: 600 ms (Max) 115 VAC: 600 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 244 ms 115VAC/ 244 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/ 6 ms 115VAC/ 6 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/ 22 ms 115VAC/ 22 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: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	760 mVp-p	P

## INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	73V~264V	P
			I/P: LOW-LINE-3V= 87 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: 90 VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	POWER FACTOR	0.95 / 230 VAC (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	PF= 0.98 / 230 VAC	P
		0.98 / 115 VAC (Min)		PF= 0.99 / 115 VAC	
4	EFFICIENCY	80% (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	81.4 %	P
5	INPUT CURRENT	230V/ 5.3 A (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 3.3 A/ 230 VAC	P
		115V/ 11 A (Max)		I = 6.9 A/ 115 VAC	
6	INRUSH CURRENT	230V/ 50 A (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 31 A/ 230 VAC	P
		115V/ 30 A (Max) COLD START		I = 16 A/ 115 VAC	
7	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.9 mA N-FG: 0.9 mA	P

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105%~125 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C	114 %/ 230 VAC 114 %/ 115 VAC Constant Current Limiting ,unit will Hiccup after 3 sec	P
2	OVER VOLTAGE PROTECTION	CH1: 5.75 V~ 6.3 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	5.86V/ 230 VAC 5.86V/ 115 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: TSW1 85 ± 5°C O.T.P. TSW2 85 ± 5°C O.T.P. NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD	O.T.P. Active Shut down o/p voltage , recovers automatically after temperature goes down	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE Constant Current Limiting ,unit will Hiccup after 3 sec	P

### CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	FAN ON/OFF CONTROL	-----	I/P: 230 VAC O/P: FULL LOAD	FAN LOCK POWER OFF FAN NON-LOCK POWER ON	P
2	FAN SPEED CONTROL	-----	I/P: 230 VAC O/P: FULL LOAD Ta:25°C	Fan Voltage= 12.61 V	P
3	REMOTE CONTROL	Rc+ / Rc- SHORT POWER ON OPEN POWER OFF	I/P: 230 VAC O/P: FULL LOAD Ta:25°C	Rc+ / Rc- SHORT POWER ON OPEN POWER OFF	P
4	POWER GOOD SIGNAL	DELAY 50ms ~ 500ms	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta:25°C	141 ms/ 230 VAC 141 ms/ 115 VAC	P
5	POWER FAIL SIGNAL	>1ms	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta:25°C	7 ms/ 230 VAC 7 ms/ 115 VAC	P

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : SP-750-5 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 230VAC O/P: FULL LOAD Ta= 32.2 °C 2. HIGH AMBIENT BURN-IN : 44 HRS I/P: 230VAC O/P: FULL LOAD Ta= 48.2 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 114 % 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	± 0.05 % (0~50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.01 % (0~50°C)	P
6	VIBRATION TEST	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 : 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: 5.92 mA I/P-FG: 5.46 mA O/P-FG: 3.85 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: 14 GΩ I/P-FG: 12 GΩ O/P-FG: 11 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 : R50049701 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 C 122 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 376524 HRS I/P: 230VAC O/P:FULL LOAD Ta= 45 °C LIFE TIME= 92836 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 769.3K HRS			P

## COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor ( D to S) or (C to E) Peak Voltage	Q5 Rated FQA20N60C3 : 650 V 20 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) 356 V (2) 468 V (3) 476 V	P
2	Diode Peak Voltage	D103 Rated S60SC3ML : 30 V 60 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) 21.9 V (2) 23.1 V (3) 24.4 V	P
3	Input Capacitor Voltage	C5 Rated : 330 u / 450V/ 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 Ta:25°C	(1) 446 V (2) 446 V (3) 446 V	P
4	Control IC Voltage Test	U1 Rated 3845 : 30 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) 14 V (2) 14.2 V (3) 14.2 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2004/7/26	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2004/10/7	PRODUCT SAMPLE A408B38	PASS	VINCENT TSENG	MAX LIN
2004/11/25	PRODUCT SAMPLE W0410C28	PASS	VINCENT TSENG	MAX LIN
2005/1/5	PRODUCT SAMPLE W0411C30	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023