

MODEL : TP-150A

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 100 mVp-p (Max) V2: 120 mVp-p (Max) V3: 100 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 36 mVp-p (Max) V2: 37 mVp-p (Max) V3: 7 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	4.48V~5.81V/230 VAC 4.48V~5.81V/115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 3 %~ -3 % (Max) V2: 8 %~ -8 % (Max) V3: 6 %~ -6 % (Max)	I/P: 100 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.4 %~ -0.4 % V2: 2.6 %~ -2.6 % V3: 0.2 %~ -0.2 %	P
4	LINE REGULATION	V1: 1 %~ -1 % (Max) V2: 1 %~ -1 % (Max) V3: 1 %~ -1 % (Max)	I/P: 100 VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~ 0 % V2: 0 %~ 0 % V3: 0 %~ 0 %	P
5	LOAD REGULATION	V1: 3 %~ -3 % (Max) V2: 6 %~ -6 % (Max) V3: 4 %~ -4 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.3 %~ -0.5 % V2: 0.3 %~ -0.3 % V3: 0.2 %~ -0.3 %	P
6	CROSS REGULATION	V1: 3 %~ -3 % (Max) V2: 6 %~ -6 % (Max) V3: 4 %~ -4 % (Max)	I/P: 230 VAC O/P: Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25°C	V1: 0 %~ -0.15 % V2: 2.2 %~ -1.5 % V3: 0 %~ 0 %	P
7	SET UP TIME	230VAC/ 800 ms (Max) 115VAC/ 800ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 470 ms 115VAC/ 429 ms	P
8	RISE TIME	230VAC/ 60 ms (Max) 115VAC/ 60 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 9.3 ms 115VAC/ 9.2 ms	P
9	HOLD UP TIME	230VAC/ 20 ms (Min) 115VAC/ 20 ms (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 31 ms 115VAC/ 31 ms	P
10	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5 %	P
11	DYNAMIC LOAD	V1: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	194 mVp-p	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	90VAC~ 264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	66V~ 264 V	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	47 HZ ~ 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	0.94/ 230 VAC (Min) 0.98/ 115 VAC (Min)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	PF=0.98 / 230 VAC PF=0.99 / 115 VAC	P
4	EFFICIENCY	75 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	79.2 %	P
5	INPUT CURRENT	230V/ 1.2 A (Max) 115V/ 2.5 A (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 0.8 A/ 230 VAC I = 1.7 A/ 115 VAC	P
6	INRUSH CURRENT	230V/ 45 A (Max) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 20.2 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: 0.56 mA N-FG: 0.56 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105%~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C	115 %/ 230 VAC 115 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 5.75 V~ 6.75 V	I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C	6.34 V/ 230 VAC 6.34 V/ 115 VAC Shunt down Re- power ON	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

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : TP-150A 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 230 VAC O/P: FULL LOAD Ta=29.6 °C 2. HIGH AMBIENT BURN-IN : 14 HRS I/P: 230 VAC O/P: FULL LOAD Ta=67.4 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 131 % 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= -10 °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 Operating at I/P: 230 VAC 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: 3.0 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: 4.13 mA I/P-FG: 3.23 mA O/P-FG: 8.3 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: 11 GΩ I/P-FG: 11 GΩ O/P-FG: 5 GΩ NO DAMAGE	P
3	APPROVAL	TUV: Certificate NO : R50012327 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 LIGHT 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 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL 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: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 C 57 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta=25 °C LIFE TIME= 731828 HRS I/P: 230 VAC O/P:FULL LOAD Ta=50 °C LIFE TIME= 130285 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 161.6K HRS			P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2002/2/5	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2002/3/22	PRODUCT SAMPLE A203A32	PASS	VINCENT TSENG	MAX LIN
2002/12/7	PRODUCT SAMPLE A211C35	PASS	VINCENT TSENG	MAX LIN
2004/5/6	PRODUCT SAMPLE A403B38B	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023