

MODEL : SE-600-24

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 150 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1: 61 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 22 V~ 26.4V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	19.43 V~ 28.55 V/ 230 VAC 19.43 V~ 28.55 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 1%~ -1% (Max)	I/P: 200 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.1 %~ -0.1 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 200VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C	V1: 0.03 %~ -0.03 %	P
5	LOAD REGULATION	V1: 0.5 %~ -0.5 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.06 %~ -0.06 %	P
6	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/ 135 ms 115VAC/ 141 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/ 20 ms 115VAC/ 23 ms	P
8	HOLD UP TIME	230VAC: 20 ms (TYP) 115VAC: 16 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230VAC/ 24 ms 115VAC/ 19 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: 2400 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	498 mVp-p	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	176VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	130 V~264V	P
			I/P: LOW-LINE-3V= 173 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:176VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	87 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	87.9 %	P
4	INPUT CURRENT	230V/ 7.5 A(TYP) 115V/ 12 A(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 6.2 A/ 230 VAC I = 10.4 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 50 A(TYP) 115V/ 25 A(TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 44 A/ 230 VAC I = 22 A/ 115 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25°C	L-FG: 1.4 mA N-FG: 1.4 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	120 %/ 230 VAC 120 %/ 115 VAC Shunt down Re-power ON	P
2	OVER VOLTAGE PROTECTION	CH1: 27.6V~ 32.4V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	30 V/ 230 VAC 30 V/ 115 VAC Shunt down Re- power ON	P
3	OVER TEMPERATURE PROTECTION	SPEC: 85 ± 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	P
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE Shunt down Re-power ON	P

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : SE-600-24 1. ROOM AMBIENT BURN-IN : 1HRS I/P: 230VAC O/P: FULL LOAD Ta=29.8°C 2. HIGH AMBIENT BURN-IN : 2HRS I/P: 230VAC O/P: FULL LOAD Ta=49.1°C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P: 230 VAC O/P: 120% 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 40°C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 40°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 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: 8.32 mA I/P-FG: 7.43 mA O/P-FG: 7.54 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: 4 GΩ I/P-FG: 2 GΩ O/P-FG: 2 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	7 mΩ	P
4	APPROVAL	TUV: Certificate NO : UL: File NO :			N/A

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
2	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
3	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
4	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
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	SE-600-24 :SUPPOSE C25 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25°C LIFE TIME= 360247 HRS I/P: 230VAC O/P:FULL LOAD Ta= 40°C LIFE TIME= 143309 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 197K HRS			P



**COMPONENT STRESS TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q 3 Rated FOA24N50 : 500V 24 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) 478 V (2) 380 V (3) 496 V	P
2	Diode Peak Voltage	D 14 Rated S20LC20U : 200V 20A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 156 V (2) 156 V (3) 130 V	P
3	Clamp Diode Peak Voltage	D5 Rated BYV26E : 1KV 1A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 522 V (2) 522 V	P
4	Control IC Voltage Test	U2 Rated 3525A : 40 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) 14.5 V (2) 14.5 V (3) 14.5 V	P
5	Power Transistor (D to S) or (C to E) Peak Voltage	U4 Rated TOP242P : 700V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 616 V (2) 536 V (3) 602 V	P
6	Control IC Voltage Test	U4 Rated TOP242P : 9V	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) 5.84 V (2) 5.84 V (3) 5.84 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2003/3/4	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2003/4/30	PRODUCT SAMPLE A303E35	PASS	VINCENT TSENG	MAX LIN
2006/3/22	PRODUCT SAMPLE W0601B192	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023