

**MODEL : TS-700-224**
**OUTPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RATED POWER (TYP)	700W	IP: 24VDC Ta:25°C	700 W	P
2	WAVEFORM	True sine wave (THD<3%)	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 1.1 % NO LOAD: 0.35 %	P
3	FREQUENCY	50HZ ± 0.1HZ	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 49.97 HZ NO LOAD: 50 HZ	P
4	AC REGULATION (TYP)	3%~3%	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	0.8% - 0.8 %	P
5	SAVING MODE TO NORMAL	≤6S (5W-25W)	IP: 24VDC OP: TESTING Ta:25°C	> 10 W 5 SEC	P
6	NORMAL TO SAVING MODE	≤6S (5W-15W)	IP: 24VDC OP: TESTING Ta:25°C	< 8 W 5 SEC	P
7	MAXIMUM OUTPUT POWER (TYP)	800W/180sec 1050w/10sec 1400W / 30cycle	IP: 24VDC OP:TESTING Ta:25°C	800 W 180 SEC 1000 W 10 SEC 1528 W 27 cycle Shut down o/p voltage , re-power on to recover	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC CURRENT (TYP)	38A	IP: 24VDC OP:FULL LOAD Ta:25°C	32A	P
2	NO LOAD DISSIPATION	≤ 6W @ saving mode	IP: 24VDC OP:NO LOAD Ta:25°C	5.34W	P
3	OFF MODE DRAW CURRENT	≤1mA	IP: SW OFF OP:NO LOAD Ta:25°C	0.45mA	P
4	VOLTAGE RANGE (TYP)	21VDC-30VDC	IP: TESTING OP:NO LOAD Ta:25°C	21.2VDC- 30.2 VDC	P
5	EFFICIENCY (TYP)	90%	IP: 26VDC OP: 530W Ta:25°C	92%	P

INPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BAT LOW ALARM	22.5VDC $\pm$ 4%	IP: TESTING OP: NO LOAD SW:ON Ta:25°C	22.5V	P
2	BAT LOW SHUT DOWN	21VDC $\pm$ 4%	IP: TESTING OP: NO LOAD SW:ON Ta:25°C	21.1V Shut down Recovery	P
3	BAT. RECOVERY VOLTAGE	24VDC-30VDC	IP: TESTING OP: NO LOAD SW:ON Ta:25°C	26V	P
4	BAT POLARITY	BY INTERNAL FUSE	IP: 24VDC OP: NO LOAD SW:ON Ta:25°C	OK	P

OUTPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER TEMPERATURE	75°C $\pm$ 5°C (RTH3) detect on heat sink of power transistor	IP: 24VDC OP: FULL LOAD SW:ON Ta:25°C	O.T.P Active Shut down o/p voltage , re-power on to recover	P
2	OUTPUT SHORT	Shut-off :Shut down o/p voltage , re-power onto recover	IP: 24VDC OP: FULL LOAD SW:ON Ta:25°C	Shut down o/p voltage , re-power on to recover	P
3	OVER LOAD (TYP)	105%-115% LOAD for 180sec 115%-150% LOAD for 10sec	IP: 24VDC OP:TESTING Ta:25°C	<u>800 W 180_SEC</u> <u>1000 W 10SEC</u> Shut down o/p voltage , re-power on to recover	P

APPLICATION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	INDUCTION MOTOR	0.5HP	IP: 24VDC OP:0.5HP SW:ON Ta:25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
2	INCANDESCENT LAMPS	700W	IP: 24VDC OP: 700W SW:ON Ta:25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
3	SWITCHING POWER SUPPLY	RSP-1500-48(Pin=700W)	IP: 24VDC OP: RSP-1500-48 Ta:25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P

LED CONTROL TEST

LED IS TREECOLOR LIGHT (●●●)	PANEL
● ● ●	Status Battery Load

Status LIGHT	CONDITION	RESULT
●	Inverter Ok	P
★ flash per second	Saving mode	P

Battery LIGHT	CONDITION	RESULT
●	Vin < 22.2V	<23.4V
●	---	23.8V-24.2V
●	Vin >25.2V	>24.4V

Load LIGHT	CONDITION	RESULT
●	LOAD > 595W	>536W
●	LOAD=385W-525W	334W-533W
●	LOAD < 315W	<330W

VOLTAGE AND SAVING MODE SETTING CODES

★ flash per second. ● Light on. ○ Light off.

	100V (200V)	110V (220V)	115V (230V)	120V (240V)
50Hz	● ○ ○	● ○ ●	● ● ○	● ● ●
RESULT	OK	OK	OK	OK
60Hz	★ ○ ○	★ ○ ●	★ ● ○	★ ● ●
RESULT	OK	OK	OK	OK

Saving Status	LIGHT	RESULT
Enable	★ ★ ●	P
Disable	★ ★ ○	P

ERROR CODE LED

Error Code	LIGHT	EXTRAORDINARY	RESULT
001	○ ○ ★	OLP 105±5%~115±5% error code	P
010	○ ★ ○	OLP 115%±5%~ 150±10% error code	P
011	○ ★ ★	OLP 150%±10% error code	P
100	★ ○ ○	OTP error code	P
110	★ ★ ○	INV fault error code (Output short)	P
111	★ ★ ★	Battery Shut Down (Low: No Alarm)	P

**ENVIRONMENT TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : TS-700-212 1. ROOM AMBIENT BURN-IN : 14 HRS I/P: 12 VDC O/P: FULL LOAD Ta=27.9 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 12 VDC O/P: FULL LOAD Ta=48.2 °C			P
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	IP: 12.1VDC OP:FULL LOAD Ta= -5°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	IP: 14.56VDC OP:FULL LOAD Ta:= 40°C HUMIDITY= 95 %R.H	TEST : OK	P
4	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (3) Sweep Time:10min/sweep cycle (5) Test Time:1 hour in each axis (X.Y.Z)	(2) Frequency:10-500Hz (4) Acceleration:3G (6) Ta:25°C	TEST : OK	P

**SAFETY TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	BAT I/P-AC O/P: 3 KVAC/min AC O/P-FG: 1.5 KVAC/min	BAT I/P-AC O/P: 3.6 KVAC/min AC O/P-FG: 1.8 KVAC/min Ta:25°C	BAT I/P-AC O/P: 6.17 mA AC O/P-FG: 4.64 mA NO DAMAGE	P
2	ISOLATION RESISTANCE	BAT I/P-AC O/P:500VDC>100MΩ BAT I/P-FG: 500VDC>100MΩ	BAT I/P-AC O/P: 500 VDC BAT I/P-FG: 500 VDC Ta:25°C	BAT I/P-AC O/P: 8.55 GΩ BAT I/P-FG: 12.3 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	14 mΩ	P
4	APPROVAL	TUV: Certificate NO : UL: File NO :			N

**E.M.C TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RADIATION	EN 55022 CLASS B	I/P:24 VDC O/P: :FULL/50% LOAD Ta:25°C	PASS	P
2	E.S.D	EN 61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P: 24VDC O/P:100 %LOAD Ta:25°C	CRITERIA A	P
3	E.F.T	EN 61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 24VDC O/P: 100 %LOAD Ta:25°C	CRITERIA A	P
4	SURGE	EN 61000-4-5 LIGHT INDUSTRY L-N :1KV L,N-PE:1KV	I/P: 24 VDC O/P: 100 %LOAD Ta:25°C	CRITERIA A	P
5	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	TS-700-212 : SUPPOSE C301 IS THE MOST CRITICAL COMPONENT I/P: 12VDC O/P:FULL LOAD Ta= 25°C LIFE TIME= 245227 HRS I/P: 12VDC O/P:FULL LOAD Ta= 40°C LIFE TIME= 134178 HRS			P



## COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC TO DC Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q 300 Rated STP80NF12 80A/120V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 82 V (2) 65 V	P
2	DCTO DC Diode Peak <b>Voltage</b>	D 400 Rated YG975C6R 20A/600V	I/P:29 VC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 478 V (2) 456 V	P
3	<b>DC BUS Capacitor Voltage</b>	C415 Rated 150u/450V 105°C	I/P:29VDC O/P: (1)Full Load Turn SW On /Off (2) Min load Turn SW On /Off Ta:25°C	(1) 432 V (2) 447 V	P
4	DC TO AC Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q 11 Rated HGTG12N60A4D 12A/600V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 490 V (2) 518 V	P
7	DC TO FAN Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q 309 Rated IRF540N 27A/100V	I/P:29VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 92 V (2) 68 V	P
8	DCTO FAN Diode Peak <b>Voltage</b>	D 450 Rated HER303 3A/200V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 63 V (2) 38 V	P
9	FAN TO CPU Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q601 Rated IRF540N 27A/100V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 47 V (2) 27 V	P
10	FAN TO CPU Diode Peak <b>Voltage</b>	D 630 Rated 21DQ10 2A/100V	I/P:29 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 31 V (2) 31 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2008/4/29	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2008/8/7	PRODUCT SAMPLE W0804C23	PASS	SANFORD SU	VINCENT TSENG
2008/9/16	PRODUCT SAMPLE W0808C64	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023