

MODEL : TS-400-148

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RATED POWER (TYP)	400W	IP: 48VDC Ta:25°C	400 W	P
2	WAVEFORM	True sine wave (THD<3%)	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 1.15 % NO LOAD: 0.56 %	P
3	FREQUENCY	50/60HZ ± 0.1HZ	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 60.04 HZ NO LOAD: 59.97 HZ	P
4	AC REGULATION (TYP)	3%~-3%	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	1% ~ -1%	P
7	MAXIMUM OUTPUT POWER (TYP)	460W/180sec 600w/10sec 800W / 30cycle	IP: 48VDC OP:TESTING Ta:25°C	<u>462</u> W <u>180</u> SEC <u>586</u> W <u>7</u> SEC <u>743</u> W <u>44</u> 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)	12A	IP: 48VDC OP:FULL LOAD Ta:25°C	11.6A	P
2	NO LOAD POWER DRAW	≤0.32A	IP: 48VDC OP:NO LOAD Ta:25°C	0.24A	P
3	OFF MODE DRAW CURRENT	≤1mA	IP: SW OFF OP:NO LOAD Ta:25°C	0.8mA	P
4	VOLTAGE RANGE (TYP)	42VDC~60VDC	IP: TESTING OP:NO LOAD Ta:25°C	41.5VDC~ 58.4 VDC	P
5	EFFICIENCY (TYP)	87 %	IP: 48VDC OP: 300W Ta:25°C	88.5%	P

INPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BAT LOW ALARM	45VDC \pm 4%	IP: TESTING OP: NO LOAD Ta:25°C	45.8V	P
2	BAT LOW SHUT DOWN	42VDC \pm 4%	IP: TESTING OP: NO LOAD Ta:25°C	41.6V Shut down Recovery	P
3	BAT. RECOVERY VOLTAGE	48VDC~60VDC	IP: TESTING OP: NO LOAD Ta:25°C	50.6V	P
4	BAT POLARITY	BY INTERNAL FUSE	IP: 48VDC OP: NO LOAD Ta:25°C	OK	P

OUTPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER TEMPERATURE	70°C \pm 5°C (RTH1) detect power MOSFET	IP: 48VDC OP: FULL LOAD 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: 48VDC OP: FULL LOAD 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: 48VDC OP: TESTING Ta:25°C	<u>460 W 180_SEC</u> <u>600 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: 48VDC OP: 0.5HP Ta: 25°C	INVERTER TURN ON/OFF :OLP protect INDUCTION MOTOR ON/OFF:OLP protect	P
2	INCANDESCENT LAMPS	400W	IP: 48VDC OP: 400W Ta: 25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
3	ELECTRONIC HOT BLOWERS	400W	IP: 48VDC OP: 400W Ta: 25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P

LED instruction : (★ Flash ● Light ON)

LED IS TREECOLOR LIGHT	status	RESULT
●	Inverter fail	P
★	Remote OFF	P
●	Inverter OK	P

VOLTAGE AND FREQUENCY SETTING CODES

Vout	100V	110V	115V	120V
LED	●	★	●	★
RESULT	P	P	P	P

Frequency	LED	RESULT
50HZ	●	P
60HZ	★	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : TS-400-112 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 12 VDC O/P: FULL LOAD Ta= 27.8 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 12 VDC O/P: FULL LOAD Ta=42.8 °C			P
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	IP: 12VDC OP:FULL LOAD Ta= -10°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: 14.6VDC 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:4.38 mA AC O/P-FG:5.25 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:21.9 GΩ BAT I/P-FG: 25.1 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 : UL: File NO :			N/A

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RADIATION	EN 55022 CLASS A	I/P:48 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: 48VDC O/P:100 %LOAD Ta:25°C	CRITERIA A	P
3	E.F.T	EN 61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 48VDC 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: 48 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-400-224: SUPPOSE C300 IS THE MOST CRITICAL COMPONENT	I/P: 12VDC O/P:FULL LOAD Ta= 25°C LIFE TIME=2363856 HRS I/P: 12VDC O/P:FULL LOAD Ta= 40°C LIFE TIME=818565 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) Peak Voltage	Q 310 Rated IRFB4229PbF 46A/250V	I/P:57.5VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 204 V (2) 206 V	P
2	DCTO DC Diode Peak Voltage	D 400 Rated STTH2003CT 20A/300V	I/P:59.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 278 V (2) 283 V	P
3	DC BUS Capacitor Voltage	C400 Rated 330u/250V 105°C 22*30 HU5	I/P:59.5VDC O/P: (1)Full Load Turn On /Off (2) Min load Turn On /Off Ta:25°C	(1) 228 V (2) 233 V	P
4	DC TO AC Power Transistor (D to S) or (C to E) Peak Voltage	Q 520 Rated STP21NM60N 17A/600V	I/P:59.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 520 V (2) 532 V	P
5	DC TO FAN Power Transistor (D to S) or (C to E) Peak Voltage	Q600 Rated IRF640N 18A/200V	I/P:59.5VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 172 V (2) 175 V	P
6	DCTO FAN Diode Peak Voltage	D 700 Rated HER203 2A/200V	I/P:59.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 128 V (2) 180 V	P
7	DC TO CPU Power Transistor (D to S) or (C to E) Peak Voltage	D710 Rated HER203 2A/200V	I/P:59.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 97 V (2) 111 V	P
8	FAN TO CPU Diode Peak Voltage	D 730 Rated MBR1200 1A/200V	I/P:59.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25°C	(1) 142 V (2) 165 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2009/4/15	RD SAMPLE	PASS	SANFORD SU	VINCENT TSENG
2009/6/3	PRODUCT SAMPLE W0904E57	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023