

MODEL : TN-1500-112

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RATED POWER (TYP)	1500W	IP: 12VDC Ta:25°C	1430W	P
2	WAVEFORM	True sine wave (THD<3%)	IP: 13VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 1.69 % NO LOAD: 0.91 %	P
3	FREQUENCY	60HZ ± 1HZ	IP: 12VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 60.03 HZ NO LOAD: 59.96 HZ	P
6	AC REGULATION (TYP)	3%~3%	IP: 12VDC OP: FULL LOAD/NO LOAD Ta:25°C	0.8% - -0.8 %	P
7	TRANSFER TIME (TYP)	10 ms (By pass to inverter, vice versa inverter By pass)	IP: 12VDC OP: FULL LOAD Ta:25°C	By pass to Inverter: 3ms Inverter to By pass: 3ms	P
8	SAVING MODE TO NORMAL	≤3S (5W~25W)	IP: 12VDC OP:NO LOAD Ta:25°C	OK	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC CURRENT (TYP)	150A	IP: 13VDC OP:NO LOAD Ta:25°C	150.7A	P
2	NO LOAD DISSIPATION	≤18W @ saving mode	IP: 12VDC OP:NO LOAD Ta:25°C	14 W	P
3	OFF MODE DRAW CURRENT	≤1mA	IP: SW OFF OP:NO LOAD Ta:25°C	0.04mA	P
4	VOLTAGE RANGE (TYP)	10.5VDC~15VDC	IP: TESTING OP:NO LOAD Ta:25°C	10.5 VDC- 15 VDC	P
5	EFFICIENCY (TYP)	87%	IP: 13VDC OP: 1000W Ta:25°C	87.7%	P

### BATTERY INPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BAT LOW ALARM	10.7VDC $\pm 2\%$	IP: TESTING OP: NO LOAD Ta:25°C	11.1V	P
2	BAT LOW SHUT DOWN	10.3VDC $\pm 2\%$	IP: TESTING OP: NO LOAD Ta:25°C	10.5V Shunt down Recovery	P
3	BAT POLARITY	BY INTERNAL FUSE	IP: 12VDC OP: NO LOAD Ta:25°C	OK	P

### OUTPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER TEMPERATURE	40°C~45°C at full load , Reset: re-power on	IP: 12VDC OP: FULL LOAD Ta:25°C	O.T.P Active Reset: re-power on	P
2	OUTPUT SHORT	Shut-off , Reset: re-power on	IP: 12VDC OP: FULL LOAD Ta:25°C	Shut-off , Reset: re-power on	P
3	OVER LOAD (INVERTER)	105%~117% $\pm 5\%$ LOAD 180sec 117%~150% $\pm 5\%$ LOAD 10sec Shunt down Re-power ON	IP: 12VDC OP: TESTING Ta:25°C	111 %/ 180 SEC 126%/ 10 SEC Shunt down Re-power ON	P
4	OVER LOAD (AC LINE)	CIRCUIT BREAKER PROTECTION	IP: 110VAC OP: TESTING Ta:25°C	CIRCUIT BREAKER PROTECTION	P

### AC CHARGER FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CHARGE CURRENT	5.5A $\pm 0.5A$	IP: 110VAC OP: BAT LOAD Ta:25°C	5.25A	P
2	CHARGE VOLTAGE	14.5V $\pm 4\%$	IP: 110VAC OP: BAT LOAD Ta:25°C	14.3VDC	P
3	SHORT CIRCUIT PROTECTION	Constant current limiting	IP: 110VAC OP: BAT LOAD Ta:25°C	NO DAMAGE Constant current limiting	P



SOLAR CHARGER FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	MAX OPEN CIRCUIT VOLTAGE	25V	IP: TESTING OP: BAT LOAD Ta:25°C	25V	P
2	CHARGE CURRENT (MAX)	30A	IP: OPEN CIRCUIT VOLTAGE 25V OP: BAT LOAD Ta:25°C	30 A	P
3	V max CHARGE VOLTAGE	14.5VDC± 4%	IP: OPEN CIRCUIT VOLTAGE 25V OP: BAT LOAD Ta:25°C	14.3VDC	P



### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	BAT I/P-AC I/P: 3 KVAC/min BAT I/P-AC O/P: 3 KVAC/min AC I/P-FG: 1.5 KVAC/min	BAT I/P-AC I/P: 3.3 KVAC/min BAT I/P-AC O/P: 3.3 KVAC/min AC I/P-FG: 1.8 KVAC/min Ta:25°C	BAT I/P-AC I/P: 8.66 mA BAT I/P-AC O/P: 8.66mA AC I/P-FG: 9.32 mA NO DAMAGE	P
2	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	22 mΩ	P
3	APPROVAL	TUV: Certificate NO : UL: File NO :			N/A

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CONDUCTION	FCC CLASS A	I/P: 110 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
2	RADIATION	FCC CLASS A	I/P: 110 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
3	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	TN-1500-112 : SUPPOSE C812 IS THE MOST CRITICAL COMPONENT I/P: 12VDC O/P:FULL LOAD Ta= 25°C LIFE TIME= 420711 HRS I/P: 12VDC O/P:FULL LOAD Ta= 40°C LIFE TIME= 136874 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>	Q324 Rated IRF1405Z : 55V 75A	I/P:14 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 60 V (2) 50 V (3) 49 V	P
2	DCTO DC Diode <b>Peak Voltage</b>	D414 Rated SF20LC30 : 300V 20A	I/P:14VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 252 V (2) 236 V (3) 256 V	P
3	<b>Input Capacitor Voltage</b>	C417 Rated : 330u / 250V/ 105°C	I/P:14VDC O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change (4)Burn in 1hour Ta:25°C	(1) 209 V (2) 230 V (3) 209 V	P
4	INVERTER Power Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q12 Rated IRGP50B60PD : 600V 50A	I/P:14VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 430 V (2) 362 V (3) 372 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2006/4/18	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2006/9/25	PRODUCT SAMPLE W0605A45	PASS	VINCENT TSENG	MAX LIN
2007/5/15	PRODUCT SAMPLE W0703A19	PASS	VINCENT TSENG	MAX LIN
2007/1/17	PRODUCT SAMPLE W0711B50	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023