

MODEL : TN1500-148

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RATED POWER (TYP)	1500W	IP: 48VDC Ta:25°C	1429W	P
2	WAVEFORM	True sine wave (THD<3%)	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 0.51% NO LOAD: 0.65%	P
3	FREQUENCY	60HZ ± 1HZ	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 59.98HZ NO LOAD: 60 HZ	P
6	AC REGULATION (TYP)	3%~3%	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	0.2% - -0.2 %	P
7	TRANSFER TIME (TYP)	10 ms (By pass to inverter, vice versa inverter By pass)	IP: 48VDC OP: FULL LOAD Ta:25°C	By pass to Inverter: 2 ms Inverter to By pass: 3 ms	P
8	SAVING MODE TO NORMAL	≤3S (5W~25W)	IP: 48VDC OP:NO LOAD Ta:25°C	OK	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC CURRENT (TYP)	40A	IP: 48VDC OP:NO LOAD Ta:25°C	34.2A	P
2	NO LOAD DISSIPATION	≤18W @ saving mode	IP: 48VDC OP:NO LOAD Ta:25°C	5W	P
3	OFF MODE DRAW CURRENT	<1mA	IP: SW OFF OP:NO LOAD Ta:25°C	0.12mA	P
4	VOLTAGE RANGE(TYP)	42VDC~60VDC	IP: TESTING OP:NO LOAD Ta:25°C	40.5VDC~ 59.2 VDC	P
5	EFFICIENCY (TYP)	89%	IP: 52VDC OP: 1000W Ta:25°C	89.2%	P

BATTERY 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	44.3V	P
2	BAT LOW SHUT DOWN	42VDC \pm 4%	IP: TESTING OP: NO LOAD Ta:25°C	41.75V Shut down Recovery	P
3	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	40°C~45°C at full load , Reset: re-power on	IP: 48VDC 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: 48VDC OP: FULL LOAD Ta:25°C	Shut-off , Reset: re-power on	P
3	OVER LOAD (INVERTER)	100%~115% \pm 5% LOAD 180sec 115%~150% \pm 5% LOAD 10sec Shunt down Re-power ON	IP: 48VDC OP: TESTING Ta:25°C	103 %/ 180 SEC 115 %/ 10 SEC Shut 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
2	CHARGE CURRENT	1.35A \pm 0.2A	IP: 110VAC OP: BAT LOAD Ta:25°C	1.47 A	P
2	BOOST CHARGE VOLTAGE	58VDC \pm 4%	IP: 110VAC OP: BAT LOAD Ta:25°C	57.2 VDC	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	75V	IP: TESTING OP: BAT LOAD Ta:25°C	75V	P
2	CHARGE CURRENT (MAX)	30A	IP: OPEN CIRCUIT VOLTAGE 75V OP: BAT LOAD Ta:25°C	30 A	P
3	V max CHARGE VOLTAGE	58VDC \pm 4%	IP: OPEN CIRCUIT VOLTAGE 45V OP: BAT LOAD Ta:25°C	57.2VDC	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT																																																																																																																																																																									
1	TEMPERATURE RISE TEST	MODEL : TN-1500-112			P																																																																																																																																																																									
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3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	IP: 12VDC OP: FULL LOAD Ta= -10°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	IP: 13.6VDC OP: FULL LOAD Ta:= 40°C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																																																																																																									
5	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																																																																																																																																																																									

SPAFETY 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: 9.64 mA BAT I/P-AC O/P: 9.64 mA AC I/P-FG: 9.4 mA NO DAMAGE	P
2	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	11 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) Peak Voltage	Q324 Rated STP40N20 : 200V 40A	I/P:51 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 160 V (2) 151 V (3) 143 V	P
2	DCTO DC Diode Peak Voltage	D414 Rated SF20LC30 : 300V 20A	I/P:51VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 223 V (2) 221 V (3) 218 V	P
3	Input Capacitor Voltage	C417 Rated : 330u / 250V/ 105°C	I/P:51VDC 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) 204 V (2) 210 V (3) 204 V	P
4	INVERTER Power Transistor (D to S) or (C to E) Peak Voltage	Q12 Rated IRGP50B60PD : 600V 50A	I/P:51VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 370 V (2) 362 V (3) 350 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

2003/12/12 A50-F023