

MODEL : TS-1500-224

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RATED POWER (TYP)	1500W	IP: 24VDC Ta:25°C	1436 W	P
2	WAVEFORM	True sine wave (THD<3%)	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 1.02 % NO LOAD: 0.86%	P
3	FREQUENCY	60HZ $\pm$ 1HZ	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 59.99HZ NO LOAD: 60.02HZ	P
4	AC REGULATION (TYP)	3%~3%	IP: 24VDC OP: FULL LOAD/NO LOAD Ta:25°C	0.3% ~ -0.3%	P
5	SAVING MODE TO NORMAL	$\leq$ 3S (5W~25W)	IP: 24VDC OP:NO LOAD Ta:25°C	OK	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC CURRENT (TYP)	75A	IP: 24VDC OP:NO LOAD Ta:25°C	66A	P
2	NO LOAD DISSIPATION	$\leq$ 18W @ saving mode	IP: 24VDC OP:NO LOAD Ta:25°C	9W	P
3	OFF MODE DRAW CURRENT	<1mA	IP: SW OFF OP:NO LOAD Ta:25°C	0.03mA	P
4	VOLTAGE RANGE (TYP)	21VDC~30VDC	IP: TESTING OP:NO LOAD Ta:25°C	20.2 VDC~ 29.8 VDC	P
5	EFFICIENCY(TYP)	90%	IP: 24VDC OP: 1000W Ta:25°C	91.4%	P

BATTERY INPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BAT LOW ALARM	21VDC $\pm$ 2%	IP: TESTING OP: NO LOAD Ta:25°C	21 V	P

2	BAT LOW SHUT DOWN	20VDC $\pm$ 2%	IP: TESTING OP: NO LOAD Ta:25°C	20.2 V Shunt down Recovery	P
3	BAT POLARITY	BY INTERNAL FUSE	IP: 24VDC 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: 24VDC 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: 24VDC OP: FULL LOAD Ta:25°C	Shut-off , Reset: re-power on	P
3	OVER LOAD (INVERTER)	100%~117% $\pm$ 5% LOAD 180sec 117%~150% $\pm$ 5% LOAD 10sec Shunt down Re-power ON	IP: 24VDC OP: TESTING Ta:25°C	109 %/ 180 SEC 118 %/ 10 SEC Shut down Re-power ON	P
4	OVER LOAD (AC LINE)	CIRCUIT BREAKER PROTECTION	IP: 220VAC OP: TESTING Ta:25°C	CIRCUIT BREAKER PROTECTION	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : TS-1500-212 1. ROOM AMBIENT BURN-IN : 2HRS I/P: 12 VDC O/P:FULL LOAD Ta= 27.55 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P: 12 VDC O/P: FULL LOAD Ta= 41.6 °C			P

			NO	Position	ROOM AMBIENT Ta= 27.5℃	HIGH AMBIENT Ta= 41.6℃		
			1	C301	54.2℃	66.6℃		
			2	C311	60.0℃	73.8℃		
			3	PCB	85.5℃	103.7℃		
			4	L301	92.8℃	108.4℃		
			5	D413	54.5℃	65.5℃		
			6	T302	78.4℃	90.9℃		
			7	C416	50.2℃	61.8℃		
			8	L13	74.1℃	85.9℃		
			9	C7	32.7℃	44.3℃		
			10	L1	40.7℃	55.7℃		
			11	CT1	28.1℃	41.7℃		
			12	Q328	61.3℃	73.7℃		
			13	RTH3	59.2℃	71.5℃		
			14	Q11	56.3℃	67.4℃		
			15	U301	45.6℃	55.5℃		
			16	Q602	39.6℃	49.6℃		
			17	D601	42.3℃	52.0℃		
			18	RG602	37.1℃	46.1℃		
			19	RG601	42.0℃	51.6℃		
			20	U509	31.0℃	38.6℃		
			21	Q702	32.9℃	44.8℃		
			22	D806	34.8℃	47.1℃		
			23	T701	33.8℃	46.6℃		
			24	Q802	36.4℃	49.5℃		
			25	C811	32.7℃	45.9℃		
			26	內環溫	43.9℃	53.8℃		
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	IP: 12VDC OP:FULL LOAD Ta= -10℃		TEST : OK		P	
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 40℃ NO DAMAGE	IP: 13.6VDC OP:FULL LOAD Ta:= 40℃ HUMIDITY= 95 %R.H		TEST : OK		P	
5	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10~500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:3G (5) Test Time:1 hour in each axis (X.Y.Z) (6) Ta:25℃			TEST : OK		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℃	BAT I/P-AC I/P: 9.05 mA BAT I/P-AC O/P: 9.05 mA AC I/P-FG: 9.12 mA NO DAMAGE	P
2	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25℃	21 mΩ	P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
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1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :1KV L,N-PE:2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA B	P
7	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--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 STP80NF10 : 100V 80A	I/P:27 VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 112 V (2) 74 V (3) 74 V	P
2	DCTO DC Diode Peak Voltage	D414 Rated HFA16TA60C : 8A 600V	I/P:27VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 396 V (2) 384 V (3) 394 V	P
3	Input Capacitor Voltage	C417 Rated : 220u / 450V/ 105°C	I/P:27VDC 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) 352 V (2) 369 V (3) 369 V	P
4	INVERTER Power Transistor (D to S) or (C to E) Peak Voltage	Q12 Rated HGTG12N60A4D : 12A/ 600V	I/P:27VDC O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 510 V (2) 492 V (3) 490 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

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