



Jameco SKU Number: 2108517

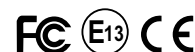
700W True Sine Wave DC-AC Power Inverter

TS-700 series



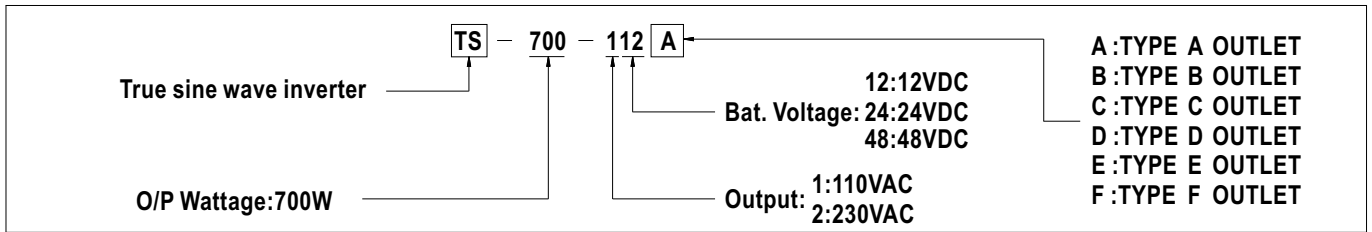
■ Features :

- True sine wave output (THD<3%)
- High surge power up to 1400W
- High efficiency up to 91%
- Power ON-OFF switch
- Standby saving mode can be selectable
- Front panel indicator for operation status
- Built-in fan ON-OFF control function
- Protections: Bat. low alarm / Bat. low shutdown / Over voltage / Over temp. / Output short / Reverse polarity / Overload
- Application : Home appliance, power tools, office and portable equipment, vehicle and yacht ...etc.
- 2 years warranty



SPECIFICATION

MODEL		TS-700-112	TS-700-124	TS-700-148	TS-700-212	TS-700-224	TS-700-248
OUTPUT	RATED POWER (Typ.)	700W					
	MAXIMUM OUTPUT POWER (Typ.)	800W for 180 sec. / 1050W for 10 sec. / surge power 1400W for 30 cycles					
	AC VOLTAGE	Factory setting set at 110VAC 100 / 110 / 115 / 120VAC selectable by setting button S.W			Factory setting set at 230VAC 200 / 220 / 230 / 240VAC selectable by setting button S.W		
	FREQUENCY	60±0.1Hz 50/60Hz selectable by setting button S.W			50±0.1Hz 50/60Hz selectable by setting button S.W		
	WAVEFORM	True sine wave (THD<3%) at rated input voltage					
	AC REGULATION (Typ.)	±3.0%					
	SAVING MODE (Typ.)	Load ≤5W will be changed to standby mode					
FRONT PANEL INDICATOR		Battery voltage level, output load level, saving mode, fault and operation status					
INPUT	BAT. VOLTAGE	12V	24V	48V	12V	24V	48V
	VOLTAGE RANGE (Typ.)	10.5 ~ 15VDC	21 ~ 30VDC	42 ~ 60VDC	10.5 ~ 15VDC	21 ~ 30VDC	42 ~ 60VDC
	DC CURRENT (Typ.)	75A	38A	19A	75A	38A	19A
	NO LOAD DISSIPATION	≤6W @ standby saving mode					
	OFF MODE CURRENT DRAW	≤1mA					
	EFFICIENCY (Typ.)	Note.1 86%	88%	89%	89%	90%	91%
	BATTERY TYPES	Open & sealed Lead Acid					
BATTERY INPUT PROTECTION	FUSE	40A*3	30A*2	20A*2	40A*3	30A*2	20A*2
	BAT. LOW ALARM	11.3±4%	22.5±4%	45±4%	11.3±4%	22.5±4%	45±4%
	BAT. LOW SHUTDOWN	10.5±4%	21±4%	42±4%	10.5±4%	21±4%	42±4%
	BAT. POLARITY	By internal fuse open					
OUTPUT PROTECTION	OVER TEMPERATURE	80℃ ± 5℃			75℃ ± 5℃		
	OUTPUT SHORT	Protection type : Shut down o/p voltage, re-power on to recover; by internal RTH3 detect on heatsink of power diode					
	OVER LOAD (Typ.)	105 ~ 115% load for 180 sec., 115% ~ 150% load for 10 sec. Protection type : Shut down o/p voltage, re-power on to recover					
	GFCI PROTECTION	Optional (Only type F)			None		
ENVIRONMENT	WORKING TEMP.	0 ~ +40℃ @ 100% load ; +60℃ @ 50% load					
	WORKING HUMIDITY	20% ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-30 ~ +70℃ / -22 ~ +158°F, 10 ~ 95% RH					
	VIBRATION	10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL458		None			
	LVD	None			EN60950-1		
	WITHSTAND VOLTAGE	Bat I/P - AC O/P:3.0KVAC AC O/P - FG:1.5KVAC					
	ISOLATION RESISTANCE	AC O/P-FG , Bat I/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH					
	EMI CONDUCTION&RADIATION	Compliance to FCC class A			Compliance to EN55022 class A, 72/ 245/ CEE, 95/ 54/ CE, E-Mark		
OTHERS	EMS IMMUNITY	None			Compliance to EN61000-4-2,3,8 ENV50204		
	DIMENSION	295*184*70mm (L*W*H)					
	PACKING	3.8Kg; 2pcs/8.6Kg/1.02CUFT					
NOTE	1.Efficiency is tested by 530W, linear load at 13V, 26V, 52V input voltage. 2.All parameters not specified above are measured at rated load, 25℃ of ambient temperature.						

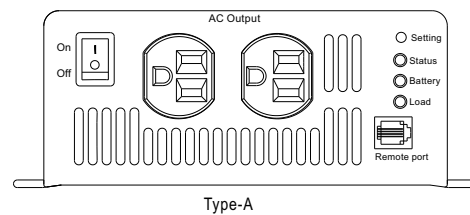
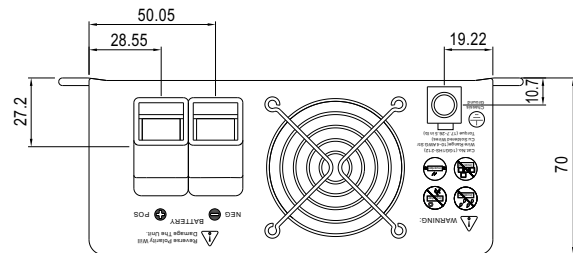
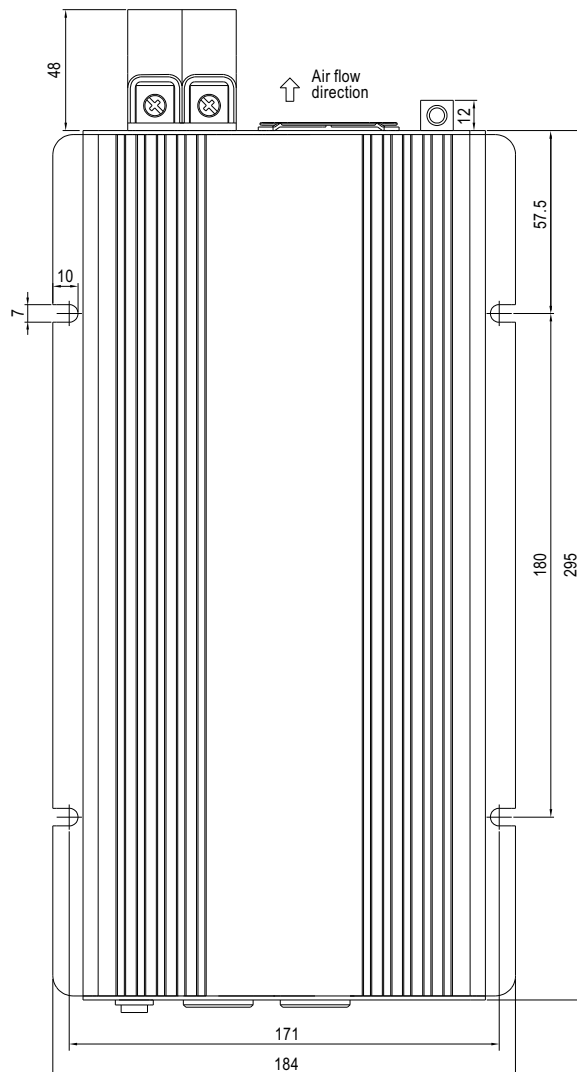


AC Output Receptacles (optional)

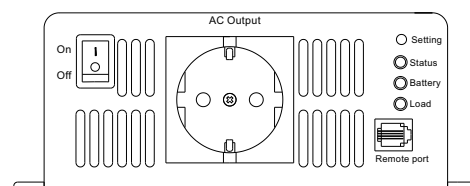
Receptacle type						
	TYPE-A	TYPE-B	TYPE-C	TYPE-D	TYPE-E	TYPE-F
Country	USA	EUROPE	AUSTRALIA	U.K	JAPAN	GFCI
Certificate	FC	E13 CE	E13 CE	E13 CE	FC	FC

Mechanical Specification

Unit:mm



Type-A



Type-B

MODEL : TS-700-148

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RATED POWER (TYP)	700W	IP: 48VDC Ta:25°C	700 W	P
2	WAVEFORM	True sine wave (THD<3%)	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 1.17 % NO LOAD: 0.66 %	P
3	FREQUENCY	60HZ $\pm$ 0.1HZ	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	FULL LOAD: 60 HZ NO LOAD: 59.98 HZ	P
4	AC REGULATION (TYP)	3%~-3%	IP: 48VDC OP: FULL LOAD/NO LOAD Ta:25°C	0.8% ~ -0.8 %	P
5	SAVING MODE TO NORMAL	$\leq$ 6S (5W~25W)	IP: 48VDC OP: TESTING Ta:25°C	<u> </u> > <u> </u> W <u> </u> SEC	P
6	NORMAL TO SAVING MODE	$\leq$ 6S (5W~15W)	IP: 48VDC OP: TESTING Ta:25°C	<u> </u> < <u> </u> W <u> </u> SEC	P
7	MAXIMUM OUTPUT POWER (TYP)	800W/180sec 1050w/10sec 1400W / 30cycle	IP: 48VDC OP: TESTING Ta:25°C	<u> </u> 800 <u> </u> W <u> </u> 180 <u> </u> SEC <u> </u> 1000 <u> </u> W <u> </u> 10 <u> </u> SEC <u> </u> 1341 <u> </u> W <u> </u> 30 <u> </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)	19A	IP: 48VDC OP: FULL LOAD Ta:25°C	16.7A	P
2	NO LOAD DISSIPATION	$\leq$ 6W @ saving mode	IP: 48VDC OP: NO LOAD Ta:25°C	5.33W	P
3	OFF MODE DRAW CURRENT	$\leq$ 1mA	IP: SW OFF OP: NO LOAD Ta:25°C	0.45mA	P
4	VOLTAGE RANGE (TYP)	42VDC~60VDC	IP: TESTING OP: NO LOAD Ta:25°C	42.1VDC~ 60 VDC	P
5	EFFICIENCY (TYP)	89%	IP: 52VDC OP: 530W Ta:25°C	89.8%	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 SW:ON Ta:25°C	45V	P
2	BAT LOW SHUT DOWN	42VDC $\pm 4\%$	IP: TESTING OP: NO LOAD SW:ON Ta:25°C	42.1V Shut down Recovery	P
3	BAT. RECOVERY VOLTAGE	48VDC~60VDC	IP: TESTING OP: NO LOAD SW:ON Ta:25°C	51.3V	P
4	BAT POLARITY	BY INTERNAL FUSE	IP: 48VDC 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	80 °C ± 5 °C (RTH3) detect on heatsink of power transistor	IP: 48VDC 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: 48VDC 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: 48VDC OP: TESTING Ta:25°C	<u>800 W 180 SEC</u> <u>1000 W 10 SEC</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 SW: ON Ta: 25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
2	INCANDESCENT LAMPS	700W	IP: 48VDC OP: 700W SW: ON Ta: 25°C	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
3	ELECTRONIC HOT BLOWERS	700W	IP: 48VDC OP: 700W SW: ON 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
●	V _{in} < 44.4V	<46.2V
●	---	47V-48V
●	V _{in} > 50.4V	>48.4V

Load LIGHT	CONDITION	RESULT
●	LOAD > 595W	>590W
●	LOAD=385W~525W	366W-581W
●	LOAD < 315W	<362W

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-700-112 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 12 VDC O/P: FULL LOAD Ta=27.1 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P: 12 VDC O/P: FULL LOAD Ta=52.9 °C <table><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta=27.1 °C</th><th>HIGH AMBIENT Ta=52.9 °C</th></tr><tr><td>6</td><td>C302</td><td>3300U/16V 105°C KY</td><td>57.2°C</td><td>84.3°C</td></tr><tr><td>7</td><td>L301</td><td>TF-1750</td><td>93.7°C</td><td>123.4°C</td></tr><tr><td>8</td><td>C308</td><td>565/250V</td><td>72.3°C</td><td>99.3°C</td></tr><tr><td>9</td><td>T301</td><td>TF-1753</td><td>78.3°C</td><td>105.5°C</td></tr><tr><td>10</td><td>D403</td><td>SF20LC30 20A/300V</td><td>55.7°C</td><td>80.8°C</td></tr><tr><td>11</td><td>C416</td><td>330U/250V 105°C MXG</td><td>48.9°C</td><td>75.5°C</td></tr><tr><td>12</td><td>L13</td><td>TR-792</td><td>63.3°C</td><td>90.2°C</td></tr><tr><td>13</td><td>L1</td><td>TR-794</td><td>41.9°C</td><td>69.3°C</td></tr><tr><td>14</td><td>C7</td><td>7u/250Vac</td><td>33.2°C</td><td>60.1°C</td></tr><tr><td>15</td><td>Q309</td><td>IRFZ44V 55A/60V</td><td>50.9°C</td><td>80.2°C</td></tr><tr><td>16</td><td>Q307</td><td>I XT160N075T</td><td>42.6°C</td><td>71.5°C</td></tr><tr><td>17</td><td>U307</td><td>TL3845P</td><td>60.1°C</td><td>89.3°C</td></tr><tr><td>18</td><td>C328</td><td>100U/25V 105°C YXG</td><td>41.1°C</td><td>69.1°C</td></tr><tr><td>19</td><td>D308</td><td>HER203 2A/200V</td><td>50.9°C</td><td>79.9°C</td></tr><tr><td>20</td><td>Q13</td><td>HGTG12N60A4D 12A/600V</td><td>59.4°C</td><td>86.7°C</td></tr><tr><td>21</td><td>U501</td><td>PIC18F65J10</td><td>36.0°C</td><td>63.3°C</td></tr><tr><td>22</td><td>RTH3</td><td>10KΩ 1%</td><td>54.1°C</td><td>80.1°C</td></tr><tr><td>23</td><td>RG300</td><td>LM317T 1.5A</td><td>35.5°C</td><td>63.9°C</td></tr><tr><td>24</td><td>Q601</td><td>IRF540N 27A/100V</td><td>41.4°C</td><td>71.2°C</td></tr><tr><td>25</td><td>RG601</td><td>LM317T 1.5A</td><td>39.4°C</td><td>68.5°C</td></tr><tr><td>26</td><td>D630</td><td>21DQ10 2A/100V</td><td>39.5°C</td><td>68.0°C</td></tr><tr><td>27</td><td>INTERNAL TA</td><td>2 cm above C416</td><td>48.4°C</td><td>75.2°C</td></tr><tr><td>28</td><td>CASE</td><td>Attach CASE</td><td>47.1°C</td><td>73.3°C</td></tr></table>			NO	Position	P/N	ROOM AMBIENT Ta=27.1 °C	HIGH AMBIENT Ta=52.9 °C	6	C302	3300U/16V 105°C KY	57.2°C	84.3°C	7	L301	TF-1750	93.7°C	123.4°C	8	C308	565/250V	72.3°C	99.3°C	9	T301	TF-1753	78.3°C	105.5°C	10	D403	SF20LC30 20A/300V	55.7°C	80.8°C	11	C416	330U/250V 105°C MXG	48.9°C	75.5°C	12	L13	TR-792	63.3°C	90.2°C	13	L1	TR-794	41.9°C	69.3°C	14	C7	7u/250Vac	33.2°C	60.1°C	15	Q309	IRFZ44V 55A/60V	50.9°C	80.2°C	16	Q307	I XT160N075T	42.6°C	71.5°C	17	U307	TL3845P	60.1°C	89.3°C	18	C328	100U/25V 105°C YXG	41.1°C	69.1°C	19	D308	HER203 2A/200V	50.9°C	79.9°C	20	Q13	HGTG12N60A4D 12A/600V	59.4°C	86.7°C	21	U501	PIC18F65J10	36.0°C	63.3°C	22	RTH3	10KΩ 1%	54.1°C	80.1°C	23	RG300	LM317T 1.5A	35.5°C	63.9°C	24	Q601	IRF540N 27A/100V	41.4°C	71.2°C	25	RG601	LM317T 1.5A	39.4°C	68.5°C	26	D630	21DQ10 2A/100V	39.5°C	68.0°C	27	INTERNAL TA	2 cm above C416	48.4°C	75.2°C	28	CASE	Attach CASE	47.1°C	73.3°C	P
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2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	IP: 12VDC 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: 14.6VDC OP:FULL LOAD Ta:= 40°C HUMIDITY= 95 %R.H	TEST : OK	P																																																																																																																								
4	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (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°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: 5.77 mA AC O/P-FG: 4.33 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: 19.9 GΩ BAT I/P-FG: 30 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:48VDC 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-700-112 : SUPPOSE C302 IS THE MOST CRITICAL COMPONENT I/P: 12VDC O/P:FULL LOAD Ta= 25°C LIFE TIME=274897 HRS I/P: 12VDC O/P:FULL LOAD Ta= 40°C LIFE TIME=88835 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 300 Rated IRFB4229PBF 91A/250V	I/P:58 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 167 V (2) 122 V	P
2	DCTO DC Diode Peak Voltage	D 400 Rated SF20LC30 20A/300V	I/P:58 VC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 225 V (2) 225 V	P
3	DC BUS Capacitor Voltage	C415 Rated 330u/250V 105℃	I/P:58VDC O/P: (1)Full Load Turn SW On /Off (2) Min load Turn SW On /Off Ta:25℃	(1) 217 V (2) 222 V	P
4	DC TO AC Power Transistor (D to S) or (C to E) Peak Voltage	Q 11 Rated HGTG12N60A4D 12A/600V	I/P:58 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 291 V (2) 315 V	P
7	DC TO FAN Power Transistor (D to S) or (C to E) Peak Voltage	Q 309 Rated 2SK2508 12A/250V	I/P:58VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 189 V (2) 121 V	P
8	DCTO FAN Diode Peak Voltage	D 450 Rated HER303 3A/200V	I/P:58 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 82 V (2) 44 V	P
9	FAN TO CPU Power Transistor (D to S) or (C to E) Peak Voltage	Q601 Rated IRF540N 27A/100V	I/P:58 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 46 V (2) 30 V	P
10	FAN TO CPU Diode Peak Voltage	D 630 Rated 21DQ10 2A/100V	I/P:58 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 31 V (2) 30 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

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