JAMECO ELECTRONICS

Jameco SKU Number: 2108509

MEAN WELL

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			Factory setting set at 230VAC		
		100 / 110 / 115 / 120VAC selectable by setting button S.W			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℃		
		Protection type : Shut down o/p voltage, re-power on to recover; by internal RTH3 detect on heatsink of power diode					
	OUTPUT SHORT	Protection type : Shut down o/p voltage, re-power on to recover					
	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 PROCTECTION	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		
	EMS IMMUNITY	None			Compliance to EN61000-4-2,3,8 ENV50204		
OTHERS	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.						

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Jameco SKU Number: 2108509

MEAN WELL

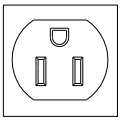
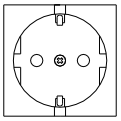
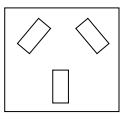
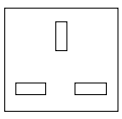
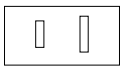
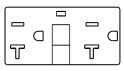
700W True Sine Wave DC-AC Power Inverter

TS-700 series

TS – 700 – 112 A

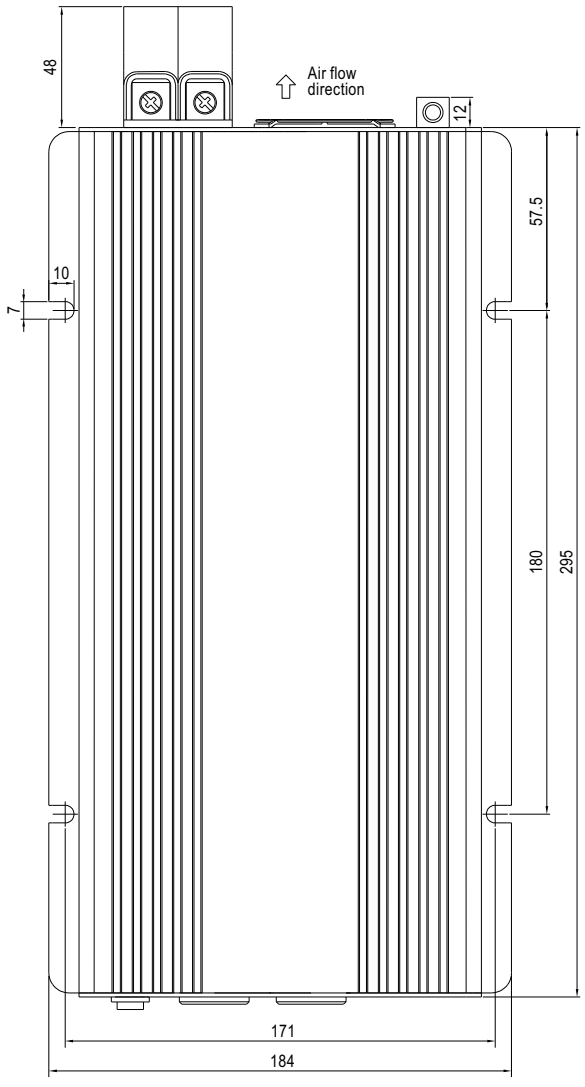
- TS: True sine wave inverter
- 700: O/P Wattage:700W
- 112: Bat. Voltage: 12:12VDC, 24:24VDC, 48:48VDC; Output: 1:110VAC, 2:230VAC
- A: A :TYPE A OUTLET, B :TYPE B OUTLET, C :TYPE C OUTLET, D :TYPE D OUTLET, E :TYPE E OUTLET, F :TYPE F OUTLET

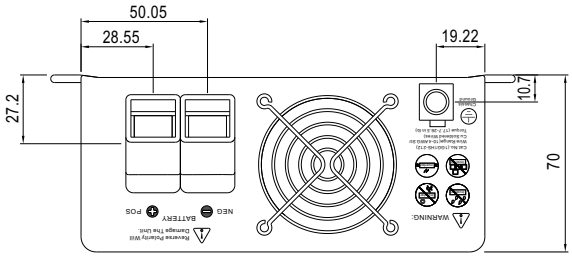
■ AC Output Receptacles (optional)

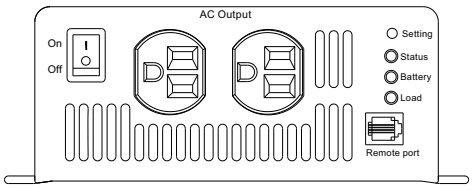
Receptacle type						
	TYPE-A	TYPE-B	TYPE-C	TYPE-D	TYPE-E	TYPE-F
Country	USA	EUROPE	AUSTRALIA	U.K	JAPAN	GFCI
Certificate	FC	E13 CE	E13 CE	E13 CE	FC	FC

■ Mechanical Specification

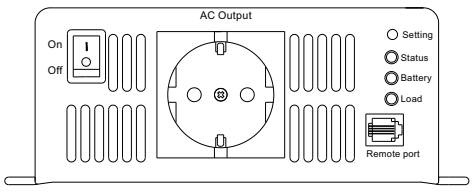
Unit:mm







Type-A



Type-B

MODEL：TS-700-112

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RATED POWER (TYP)	700W	IP: 12VDC Ta:25℃	700 W	P
2	WAVEFORM	True sine wave (THD<3%)	IP: 12VDC OP: FULL LOAD/NO LOAD Ta:25℃	FULL LOAD: 1.8 % NO LOAD: 0.98 %	P
3	FREQUENCY	60HZ ± 0.1HZ	IP: 12VDC OP: FULL LOAD/NO LOAD Ta:25℃	FULL LOAD: 60.04 HZ NO LOAD: 59.98 HZ	P
4	AC REGULATION (TYP)	3%~-3%	IP: 12VDC OP: FULL LOAD/NO LOAD Ta:25℃	0.2% ~ -0.6 %	P
5	SAVING MODE TO NORMAL	≦6S (5W~25W)	IP: 12VDC OP: TESTING Ta:25℃	> 13 W 5 SEC	P
6	NORMAL TO SAVING MODE	≦6S (5W~15W)	IP: 12VDC OP: TESTING Ta:25℃	< 8 W 5 SEC	P
7	MAXIMUM OUTPUT POWER (TYP)	800W/180sec 1050w/10sec 1400W / 30cycle	IP: 12VDC OP:TESTING Ta:25℃	800 W 180 SEC 1000 W 10 SEC 1294 W 31 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)	75A	IP: 12VDC OP:FULL LOAD Ta:25℃	67.2A	P
2	NO LOAD DISSIPATION	≤ 6W @ saving mode	IP: 12VDC OP:NO LOAD Ta:25℃	5.3W	P
3	OFF MODE DRAW CURRENT	≤1mA	IP: SW OFF OP:NO LOAD Ta:25℃	0.58mA	P
4	VOLTAGE RANGE (TYP)	10.5VDC~15VDC	IP: TESTING OP:NO LOAD Ta:25℃	10.4VDC~ 14.8 VDC	P
5	EFFICIENCY (TYP)	86%	IP: 13VDC OP: 530W Ta:25℃	89.8%	P

INPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	BAT LOW ALARM	11.3VDC ±4%	IP: TESTING OP: NO LOAD SW:ON Ta:25℃	11.19V	P
2	BAT LOW SHUT DOWN	10.5VDC ± 4%	IP: TESTING OP: NO LOAD SW:ON Ta:25℃	10.4V Shut down Recovery	P
3	BAT. RECOVERY VOLTAGE	12VDC~15VDC	IP: TESTING OP: NO LOAD SW:ON Ta:25℃	12.8V	P
4	BAT POLARITY	BY INTERNAL FUSE	IP: 12VDC OP: NO LOAD SW:ON Ta:25℃	OK	P

OUTPUT PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER TEMPERATURE	80 ℃ ±5 ℃ (RTH3) detect on heatsink of power transistor	IP: 12VDC OP: FULL LOAD SW:ON Ta:25℃	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: 12VDC OP: FULL LOAD SW:ON Ta:25℃	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: 12VDC OP:TESTING Ta:25℃	800 W 180 SEC 1000 W 10SEC 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: 12VDC OP:0.5HP SW:ON Ta:25℃	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
2	INCANDESCENT LAMPS	700W	IP: 12VDC OP: 700W SW:ON Ta:25℃	INVERTER TURN ON/OFF :OK INDUCTION MOTOR ON/OFF:OK	P
3	ELECTRONIC HOT BLOWERS	700W	IP:12VDC OP: 700W SW:ON Ta:25℃	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
●	**Vin < 11.1V**	**<11.47V**
●	**---**	**11.5V-11.88V**
●	**Vin >12.6V**	**>11.96V**

Load LIGHT	CONDITION	RESULT
●	**LOAD > 595W**	**>582W**
●	**LOAD=385W~525W**	**369W-571W**
●	**LOAD < 315W**	**<361W**

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	★ ★ ●	OK
Disable	★ ★ ○	OK

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

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECIFICATION</th><th>TEST CONDITION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">MODEL： TS-700-112
1. ROOM AMBIENT BURN-IN：1.5 HRS
I/P: 12 VDC O/P: FULL LOAD Ta=27.1 ℃
2. HIGH AMBIENT BURN-IN：1 HRS
I/P: 12 VDC O/P: FULL LOAD Ta=52.9 ℃</td><td>P</td></tr>
<tr><td colspan="6"><table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta=27.1 ℃</th><th>HIGH AMBIENT Ta=52.9 ℃</th></tr>
<tr><td>6</td><td>C302</td><td>3300U/16V 105℃ KY</td><td>57.2℃</td><td>84.3℃</td></tr>
<tr><td>7</td><td>L301</td><td>TF-1750</td><td>93.7℃</td><td>123.4℃</td></tr>
<tr><td>8</td><td>C308</td><td>565/250V</td><td>72.3℃</td><td>99.3℃</td></tr>
<tr><td>9</td><td>T301</td><td>TF-1753</td><td>78.3℃</td><td>105.5℃</td></tr>
<tr><td>10</td><td>D403</td><td>SF20LC30 20A/300V</td><td>55.7℃</td><td>80.8℃</td></tr>
<tr><td>11</td><td>C416</td><td>330U/250V 105℃ MXG</td><td>48.9℃</td><td>75.5℃</td></tr>
<tr><td>12</td><td>L13</td><td>TR-792</td><td>63.3℃</td><td>90.2℃</td></tr>
<tr><td>13</td><td>L1</td><td>TR-794</td><td>41.9℃</td><td>69.3℃</td></tr>
<tr><td>14</td><td>C7</td><td>7u/250Vac</td><td>33.2℃</td><td>60.1℃</td></tr>
<tr><td>15</td><td>Q309</td><td>IRFZ44V 55A/60V</td><td>50.9℃</td><td>80.2℃</td></tr>
<tr><td>16</td><td>Q307</td><td>IXT160N075T</td><td>42.6℃</td><td>71.5℃</td></tr>
<tr><td>17</td><td>U307</td><td>TL3845P</td><td>60.1℃</td><td>89.3℃</td></tr>
<tr><td>18</td><td>C328</td><td>100U/25V 105℃ YXG</td><td>41.1℃</td><td>69.1℃</td></tr>
<tr><td>19</td><td>D308</td><td>HER203 2A/200V</td><td>50.9℃</td><td>79.9℃</td></tr>
<tr><td>20</td><td>Q13</td><td>HGTG12N60A4D 12A/600V</td><td>59.4℃</td><td>86.7℃</td></tr>
<tr><td>21</td><td>U501</td><td>PIC18F65J10</td><td>36.0℃</td><td>63.3℃</td></tr>
<tr><td>22</td><td>RTH3</td><td>10KΩ 1%</td><td>54.1℃</td><td>80.1℃</td></tr>
<tr><td>23</td><td>RG300</td><td>LM317T 1.5A</td><td>35.5℃</td><td>63.9℃</td></tr>
<tr><td>24</td><td>Q601</td><td>IRF540N 27A/100V</td><td>41.4℃</td><td>71.2℃</td></tr>
<tr><td>25</td><td>RG601</td><td>LM317T 1.5A</td><td>39.4℃</td><td>68.5℃</td></tr>
<tr><td>26</td><td>D630</td><td>21DQ10 2A/100V</td><td>39.5℃</td><td>68.0℃</td></tr>
<tr><td>27</td><td>INTERNAL TA</td><td>2 cm above C416</td><td>48.4℃</td><td>75.2℃</td></tr>
<tr><td>28</td><td>CASE</td><td>Attach CASE</td><td>47.1℃</td><td>73.3℃</td></tr>
</table></td></tr>
<tr><td>2</td><td>LOW TEMPERATURE
TURN ON TEST</td><td>TURN ON AFTER 2 HOUR</td><td>IP: 12VDC
OP:FULL LOAD
Ta= -5℃</td><td>TEST：OK</td><td>P</td></tr>
<tr><td>3</td><td>HIGH HUMIDITY
HIGH TEMPERATURE
HIGH VOLTAGE
TURN ON TEST</td><td>AFTER 12 HOURS
IN CHAMBER ON
CONTROL 40℃
NO DAMAGE</td><td>IP: 14.6VDC
OP:FULL LOAD
Ta:= 40℃
HUMIDITY= 95 %R.H</td><td>TEST：OK</td><td>P</td></tr>
<tr><td>4</td><td>VIBRATION TEST</td><td colspan="2">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℃</td><td>TEST：OK</td><td>P</td></tr>
</table>

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℃	BAT I/P-AC O/P: 6.10 mA AC O/P-FG: 4.48 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℃	BAT I/P-AC O/P: 12.9 GΩ BAT I/P-FG: 20.4 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25℃	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:12 VDC O/P: :FULL/50% LOAD Ta:25℃	PASS	P
2	E.S.D	EN 61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P: 12VDC O/P:100 %LOAD Ta:25℃	CRITERIA A	P
3	E.F.T	EN 61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 12VDC O/P: 100 %LOAD Ta:25℃	CRITERIA A	P
4	SURGE	EN 61000-4-5 LIGHT INDUSTRY L-N :1KV L,N-PE:1KV	I/P: 12 VDC O/P: 100 %LOAD Ta:25℃	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℃ LIFE TIME=274897 HRS I/P: 12VDC O/P:FULL LOAD Ta= 40℃ 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 IXT160N075T 160A/75V	I/P:14.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 51 V (2) 40 V	P
2	DCTO DC Diode Peak **Voltage**	D 400 Rated SF20LC30 20A/300V	I/P:14.5 VC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 220 V (2) 214 V	P
3	**DC BUS Capacitor Voltage**	C415 Rated 330u/250V 105℃	I/P:14.5VDC O/P: (1)Full Load Turn SW On /Off (2) Min load Turn SW On /Off Ta:25℃	(1) 202 V (2) 214 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:14.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 346 V (2) 339 V	P
7	DC TO FAN Power Transistor (D to S) or (C to E) **Peak Voltage**	Q 309 Rated IRFZ44V 55A/60V	I/P:14.5VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 49 V (2) 43 V	P
8	DCTO FAN Diode Peak **Voltage**	D 450 Rated HER303 3A/200V	I/P:14.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 72 V (2) 48 V	P
9	FAN TO CPU Power Transistor (D to S) or (C to E) **Peak Voltage**	Q601 Rated IRF540N 27A/100V	I/P:14.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 48 V (2) 31 V	P
10	FAN TO CPU Diode Peak **Voltage**	D 630 Rated 21DQ10 2A/100V	I/P:14.5 VDC O/P: (1)Full Load Turn On (2) Output Short Ta:25℃	(1) 31 V (2) 26 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 W0806C64	PASS	SANFORD SU	VINCENT TSENG

2003/12/12 A50-F023