



Test Report: UHP-350-55

350W Slim Type with PFC Switching Power Supply

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

■ RELIABILITY TEST

Environment Test

■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	45V~58V	I/P: 230VAC/115VAC O/P: NO LOAD Ta: 25°C	38.41V~57.94V/230VAC 38.53V~57.92V/115VAC
2	Peak Load Test	150% peak load capability(100ms)	I/P: 230VAC O/P: 150% LOAD Ta: 25°C	TEST: OK
3	OUTPUT VOLTAGE TOLERANCE	-1% ~1%	I/P: 90VAC /264VAC O/P: FULL/ NO LOAD Ta: 25°C	-0.2%~0.127%
4	LINE REGULATION	-0.3%~0.3%	I/P: 100VAC ~ 264VAC O/P: FULL LOAD Ta: 25°C	-0.02% ~ 0%
5	LOAD REGULATION	-0.5%~0.5%	I/P: 230VAC O/P: FULL ~NO LOAD Ta: 25°C	-0.07%~0.24%
6	OVER/UNDERSHOOT TEST	<±5 %	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	1.0%
7	RIPPLE & NOISE (Max)	300mVp-p	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	97.6mVp-p /CCH 100%load
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>high frequency :</p> <p>20.0mV / 10.0µs / 100MS/s / 158 points / 35.4mV</p> <p>Peak-Peak 78.4mV</p> </div> <div style="text-align: center;"> <p>low frequency :</p> <p>20.0mV / 10.0ms / 100MS/s / 158 points / 35.4mV</p> <p>Peak-Peak 97.6mV</p> </div> </div>				
8	SET UP TIME(Max)	230VAC/ 550ms 115VAC/ 3000ms	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C	230VAC/446ms 115VAC/1870ms



	<p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH1: Output Voltage CH2: AC Input Voltage</p> <p>Δ: 444 V @: -424 V Δ: 446ms @: 20.0ms</p> <p>Ch1 10.0 V Ch2 200 V M 100ms A Ch1 40.4 V</p> <p>→ -220.000ms</p>	<p>INPUT=115VAC/60HZ @ FULL LOAD</p> <p>CH1: Output Voltage CH2: AC Input Voltage</p> <p>Δ: 192 V @: 20.0 V Δ: 1.87 s @: -1.85 s</p> <p>Ch1 10.0 V Ch2 200 V M 400ms A Ch1 40.4 V</p> <p>→ -220.000ms</p>
9	<p>RISE TIME (Max)</p> <p>230VAC/ 80ms 115VAC/ 80ms</p>	<p>I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C</p> <p>230VAC/32.8ms 115VAC/33.6ms</p>
	<p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH1: Output Voltage</p> <p>Δ: 3.00 V @: 39.0 V Δ: 32.8ms @: 0.00 s</p> <p>Ch1 10.0 V M 20.0ms A Ch1 5.60 V</p> <p>→ 30.00 %</p>	<p>INPUT=115VAC/60HZ @ FULL LOAD</p> <p>CH1: Output Voltage</p> <p>Δ: 43.8 V @: 5.20 V Δ: 33.6ms @: 0.00 s</p> <p>Ch1 10.0 V M 20.0ms A Ch1 5.60 V</p> <p>→ 30.00 %</p>
10	<p>HOLD UP TIME(Typ)</p> <p>230VAC/ 10ms 115VAC/ 10ms</p>	<p>I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta: 25°C</p> <p>230VAC/20.4ms 115VAC/20.8ms</p> <p>INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage</p> <p>INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage</p>

<p>11 DYNAMIC LOAD</p>	<p>5500mVp-p</p>	<p>I/P: 230VAC O/P: (1) FULL/50% LOAD 50%DUTY / 120HZ (2) FULL/50% LOAD 50%DUTY / 1KHZ Ta: 25°C</p>	<p>(1) 856mVp-p (2) 336mVp-p</p>
<p>12 TRANSIENT RECOVERY TIME</p>	<p>5500mVp-p</p>	<p>I/P: 230 VAC O/P: 40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us</p>	<p>864mVp-p</p>

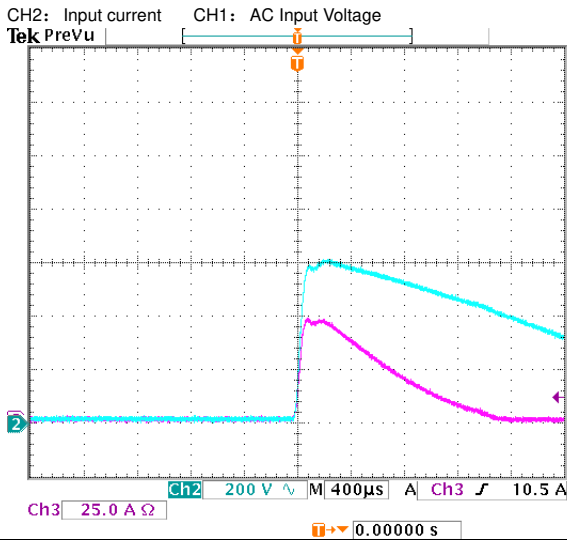
INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~264VAC	I/P: TESTING O/P: FULL LOAD Ta: 25°C	85 V~ 300 V
			I/P: LOW-LINE-3V=87 V HIGH-LINE+15%=300 V O/P: FULL/NO LOAD ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST: OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 90 VAC ~264 VAC O/P: FULL~NO LOAD Ta: 25°C	TEST: OK
3	Withstand 300VAC Surge Test	300VAC input for 5 seconds No damage	I/P: 300VAC O/P: FULL LOAD Ta: 25°C	OK

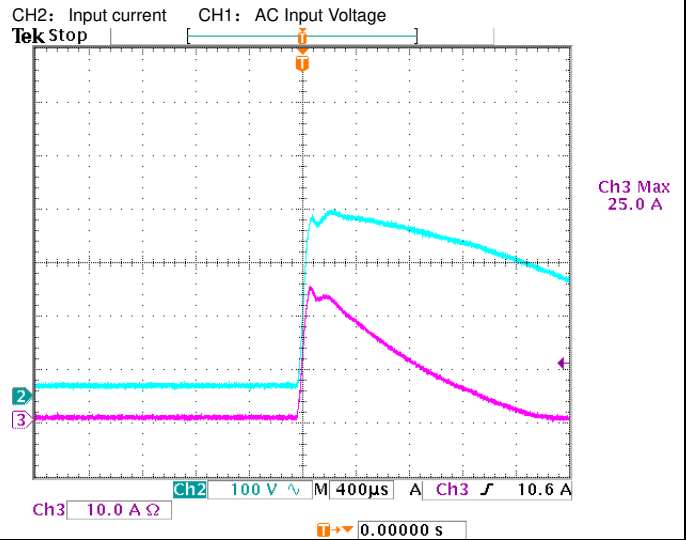


4	AC CURRENT	4A/115VAC 2A/230VAC	I/P: 115 VAC I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	I = 3.25A/ 115VAC I = 1.62A/ 230VAC
5	LEAKAGE CURRENT	< 0.75mA / 240VAC	I/P: 264 VAC O/P: NO LOAD Ta: 25°C	L-FG: 0.283mA N-FG: 0.298mA
6	NO LOAD CONSUMPTION	---	I/P: 115VAC I/P: 230VAC O/P: NO LOAD Ta: 25°C	1.5W/115VAC 1.21 W/230VAC
7	INRUSH CURRENT(Typ)	230V/ 60A 115V/ 30A COLD START	I/P: 230 VAC/115VAC O/P: FULL LOAD Ta: 25°C	I =47.5A/ 230VAC I =25A/ 115VAC

INPUT=230VAC/50HZ @ FULL LOAD

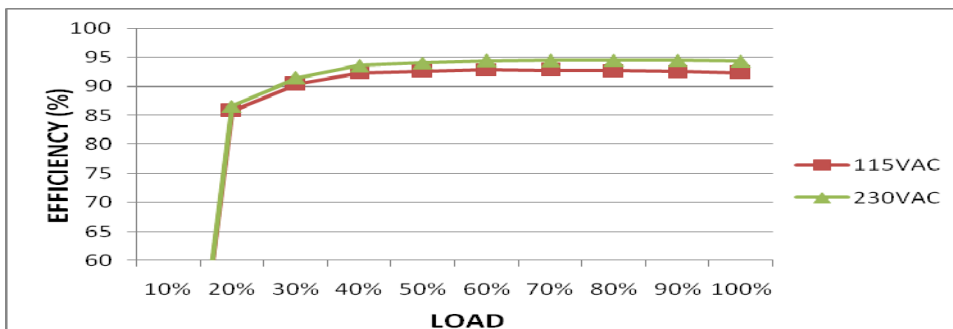


INPUT=115VAC/60HZ @ FULL LOAD

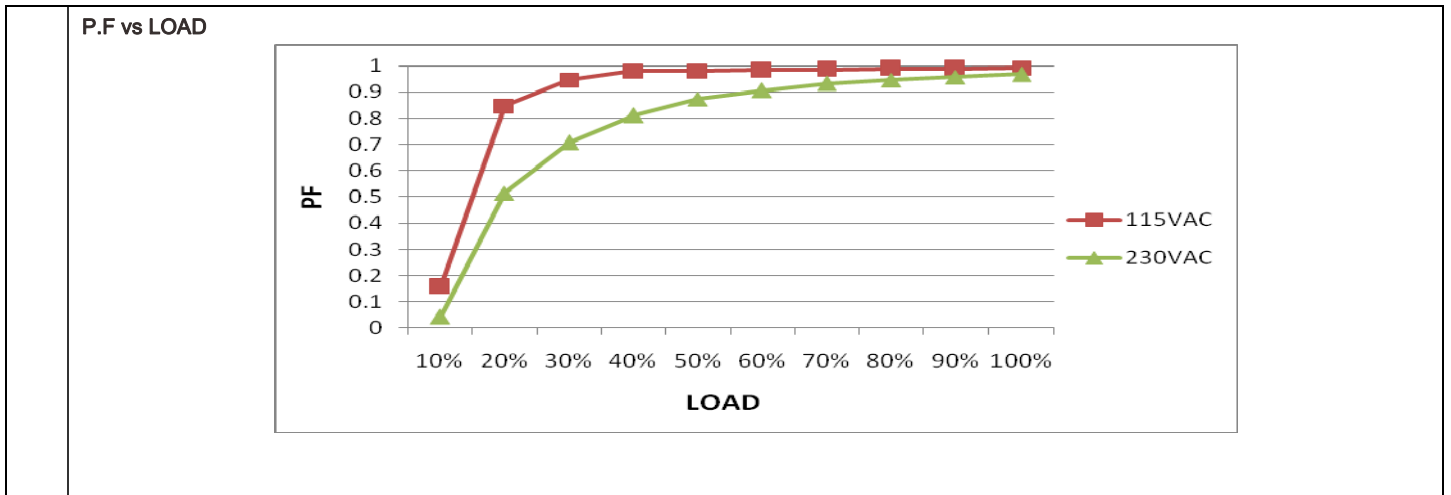


8	EFFICIENCY(Typ)	94%	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	94.32%
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EFFICIENCY vs LOAD



9	POWER FACTOR	0.98/ 115VAC 0.94/ 230VAC	I/P: 115 VAC I/P: 230 VAC O/P: FULL LOAD Ta: 25°C	PF= 0.992/ 115VAC PF= 0.973/ 230VAC
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PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER CURRENT PROTECTION	110%~140%	I/P: 110VAC I/P: 230VAC I/P: 264VAC O/P: TESTING Ta: 25°C	134.8%/ 110VAC 134.3%/ 230VAC 135.1%/ 264VAC ■ Hiccup mode, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	60V~69V	I/P: 90VAC I/P: 230VAC I/P: 264VAC O/P: NO LOAD Ta: 25°C	63.60V/ 90VAC 63.66V/ 230VAC 63.74V/ 264VAC ■ Shut down o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 100VAC I/P: 230VAC I/P: 264VAC O/P: FULL LOAD	O.T.P. Active ■ Shut down o/p voltage, recovers automatically after temperature goes down

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	REDUNDANT CONTROL	For parallel connection protection:For parallel applications,when one PSU can not work,the another one will be automatically enabled.This can prevent the system crash,and provide the reliability of system	I/P: 230VAC O/P: NO LOAD /FULL LOAD Ta: 25°C	TEST : OK
2	DCOK CONTACT RATINGS	30VDC/1A RESISTIVE LOAD	I/P:230VAC O/P:FULL LOAD Ta:25°C	TEST : OK

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q11 Rated 23.9A/600V	I/P:High-Line +3V =267V AC ON/OFF VDS: O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load FULL Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. I/P:Low-Line -3V = 87V O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load FULL Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load.	VDS: (1) 476V (2) 488V (3) 476V (4) 476V (5) 476V (6) 480V (7) 476V VDS: (1) 432V (2) 456V (3) 428V (4) 432V (5) 428V (6) 432V (7) 460V
2	Diode Peak Voltage	Q101 Rated 33A/150V Q103 Rated 33A/150V	I/P:High-Line +3V =267V AC ON/OFF O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load FULL Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD	Q101: VDS: (1) 126V (2) 8V (3) 126V (4) 128V (5) 128V (6) 126V (7) 36V (8) 128V Q103: VDS: (1) 130V (2) 62V (3) 136V (4) 132V (5) 134V (6)136V (7) 68V (8)124V
3	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q2 Rated 23.9A/600V	I/P:High-Line +3V =267V AC ON/OFF O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load FULL Load/	VDS: (1) 432V (2) 428V (3) 448V (4) 424V (5) 448V (6) 452V

			<p>Min. Load 50%Duty/120Hz (7)0%→400% Load. I/P:Low-Line -3V = 87V AC ON/OFF O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load FULL Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C</p>	<p>(7) 436V VDS: (1) 532V (2) 448V (3) 536V (4) 536V (5) 536V (6) 504V (7) 448V</p>																		
4	Input Capacitor Voltage	C5 Rated: : 180 μ / 400 V	<p>I/P:High-Line +3V =267V O/P: (1)Full Load (2) No Load (3)Full Load /No Load Change (4)Full load continue</p>	<p>(1) 444V (2) 444V (3) 432V (4) 404V</p>																		
5	Control IC Voltage Test	<p>PWM IC U1Rated 11 V ~20 V O/P IC U100Rated 8 V ~24V</p>	<p>I/P:High-Line +3V =267V AC ON/OFF O/P:(1)FULL LOAD (2) Output Short (3)O.L.P (4)O.V.P. (5)NO LOAD VR.LOW LINE</p>	<table border="0"> <tr> <td></td> <td>U1</td> <td>U100</td> </tr> <tr> <td>(1)</td> <td>13.1V</td> <td>12.4V</td> </tr> <tr> <td>(2)</td> <td>13.1V</td> <td>2.4V</td> </tr> <tr> <td>(3)</td> <td>13.1V</td> <td>5.16V</td> </tr> <tr> <td>(4)</td> <td>12.9V</td> <td>12.6V</td> </tr> <tr> <td>(5)</td> <td>11.5V</td> <td>8.16V</td> </tr> </table>		U1	U100	(1)	13.1V	12.4V	(2)	13.1V	2.4V	(3)	13.1V	5.16V	(4)	12.9V	12.6V	(5)	11.5V	8.16V
	U1	U100																				
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(4)	12.9V	12.6V																				
(5)	11.5V	8.16V																				
6	VCC Diode Peak Voltage	<p>D44Rated: 1.1A/200V D201 Rated: 1.1A/200V</p>	<p>I/P:High-Line +3V =267V O/P: (1) FULL Load (2) Output Short (3) NO Load (4) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz</p>	<table border="0"> <tr> <td>D44</td> <td>D201</td> </tr> <tr> <td>(1) 85.2V</td> <td>28.8V</td> </tr> <tr> <td>(2) 104V</td> <td>23.2V</td> </tr> <tr> <td>(3) 69.6V</td> <td>28.8V</td> </tr> <tr> <td>(4) 92.8V</td> <td>29.2V</td> </tr> </table>	D44	D201	(1) 85.2V	28.8V	(2) 104V	23.2V	(3) 69.6V	28.8V	(4) 92.8V	29.2V								
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■ SAFETY & E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	<p>I/P-FG: 2.0 KVAC/min I/P-O/P: 3.75 KVAC/min O/P-FG: 1.25 KVAC/min</p>	<p>I/P-FG: 2.4 KVAC/min I/P-O/P: 4.125 KVAC/min O/P-FG: 1.5 KVAC/min Ta:25°C</p>	<p>I/P-FG: 2.729mA I/P-O/P: 2.381mA O/P-FG: 3.627mA NO DAMAGE</p>
2	ISOLATION RESISTANCE	<p>I/P-FG: 500VDC>100MΩ I/P-O/P:500VDC>100MΩ O/P-FG:500VDC>100MΩ</p>	<p>I/P-FG: 500 VDC I/P-O/P: 500 VDC O/P-FG: 500 VDC Ta:25°C</p>	<p>I/P-FG: 9999MΩ I/P-O/P: 9999MΩ O/P-FG: 9999MΩ NO DAMAGE</p>
3	GROUNDING CONTINUITY	<p>FG(PE) TO CHASSIS OR TRACE < 100 mΩ</p>	<p>40A / 2min Ta:25°C</p>	<p>13mΩ</p>

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2	I/P: 230VAC/50HZ O/P: FULL/75% LOAD Ta: 25°C	PASS
2	CONDUCTION	EN55015 CLASS B	I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C	PASS Test by certified Lab
3	RADIATION	EN55015 CLASS B	I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 HEAVY INDUSTRY AIR: 8KV Contact: 4KV	I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C	CRITERIA
5	E.F.T	EN61000-4-4 HEAVY INDUSTRY INPUT: 1KV	I/P: 230VAC/50HZ O/P: FULL LOAD Ta: 25°C	CRITERIA
6	SURGE	EN61000-4-5 HEAVY INDUSTRY L-N: 2KV L,N-PE: 4KV	I/P: 230VAC/50HZ O/P: FULL LOAD L-N: 2KV L,N-PE: 4KV Ta: 25°C	CRITERIA
7	Test by certified Lab & Test Report Prepare			

■ **RELIABILITY TEST**

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																																																				
1	TEMPERATURE RISE TEST	MODEL: UHP-350-55 1. ROOM AMBIENT BURN-IN: 2HRS I/P: 230VAC O/P: FULL LOAD Ta=29.1 °C 2. HIGH AMBIENT BURN-IN: 2HRS I/P: 230VAC O/P: FULL LOAD Ta=51.8 °C																																																																																																						
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta=29.1 °C</th> <th>HIGH AMBIENT Ta=51.8 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>RT1</td><td>52.8°C</td><td>75.3°C</td></tr> <tr><td>2</td><td>C10</td><td>53.0°C</td><td>75.6°C</td></tr> <tr><td>3</td><td>L1</td><td>60.5°C</td><td>84.1°C</td></tr> <tr><td>4</td><td>C5</td><td>55.4°C</td><td>77.6°C</td></tr> <tr><td>5</td><td>BD1</td><td>57.6°C</td><td>80.0°C</td></tr> <tr><td>6</td><td>Q1</td><td>54.0°C</td><td>77.2°C</td></tr> <tr><td>7</td><td>Q2</td><td>54.9°C</td><td>77.9°C</td></tr> <tr><td>8</td><td>D1</td><td>57.1°C</td><td>79.4°C</td></tr> <tr><td>9</td><td>C36</td><td>60.5°C</td><td>83.7°C</td></tr> <tr><td>10</td><td>C92</td><td>60.7°C</td><td>83.6°C</td></tr> <tr><td>11</td><td>U1</td><td>51.5°C</td><td>74.2°C</td></tr> <tr><td>12</td><td>U2</td><td>51.5°C</td><td>74.1°C</td></tr> <tr><td>13</td><td>Q10</td><td>66.5°C</td><td>90.2°C</td></tr> <tr><td>14</td><td>Q11</td><td>66.6°C</td><td>90.5°C</td></tr> <tr><td>15</td><td>T1</td><td>75.6°C</td><td>99.9°C</td></tr> <tr><td>16</td><td>Q101</td><td>51.3°C</td><td>75.5°C</td></tr> <tr><td>17</td><td>Q103</td><td>52.9°C</td><td>77.6°C</td></tr> <tr><td>18</td><td>Q202</td><td>41.9°C</td><td>65.0°C</td></tr> <tr><td>19</td><td>U100</td><td>47.0°C</td><td>70.4°C</td></tr> <tr><td>20</td><td>C203</td><td>49.6°C</td><td>72.6°C</td></tr> <tr><td>21</td><td>C106</td><td>46.9°C</td><td>70.2°C</td></tr> <tr><td>22</td><td>C108</td><td>47.3°C</td><td>70.7°C</td></tr> <tr><td>23</td><td>TSW1</td><td>60.4°C</td><td>83.6°C</td></tr> <tr><td>24</td><td>TC</td><td>46.4°C</td><td>68.9°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta=29.1 °C	HIGH AMBIENT Ta=51.8 °C	1	RT1	52.8°C	75.3°C	2	C10	53.0°C	75.6°C	3	L1	60.5°C	84.1°C	4	C5	55.4°C	77.6°C	5	BD1	57.6°C	80.0°C	6	Q1	54.0°C	77.2°C	7	Q2	54.9°C	77.9°C	8	D1	57.1°C	79.4°C	9	C36	60.5°C	83.7°C	10	C92	60.7°C	83.6°C	11	U1	51.5°C	74.2°C	12	U2	51.5°C	74.1°C	13	Q10	66.5°C	90.2°C	14	Q11	66.6°C	90.5°C	15	T1	75.6°C	99.9°C	16	Q101	51.3°C	75.5°C	17	Q103	52.9°C	77.6°C	18	Q202	41.9°C	65.0°C	19	U100	47.0°C	70.4°C	20	C203	49.6°C	72.6°C	21	C106	46.9°C	70.2°C	22	C108	47.3°C	70.7°C	23	TSW1	60.4°C	83.6°C	24	TC	46.4°C	68.9°C		
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24	TC	46.4°C	68.9°C																																																																																																					
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 131%LOAD Ta: 25°C	TEST: OK																																																																																																				
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 264VAC/110VAC O/P: 100% LOAD Ta= -35°C	TEST: OK																																																																																																				
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50°C /95 %R.H NO DAMAGE	I/P: 272 VAC O/P: FULL LOAD Ta= 50°C HUMIDITY= 95 %R.H	TEST: OK																																																																																																				
5	TEMPERATURE COEFFICIENT	± 0.03 %/°C (0~50°C)	I/P: 230 VAC O/P: FULL LOAD	± 0.016%/°C (0~50°C)																																																																																																				



6	STORAGE TEMPERATURE TEST	-40~85°C	1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : STATIC
7	THERMAL SHOCK TEST	-30~50°C	1. Thermal shock Temperature : -35°C~ +55°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test
8	VIBRATION TEST	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency: 10~500Hz (3) Sweep Time: 12min/sweep cycle (4) Acceleration: 6G (5) Test Time: 180min in each axis (X.Y.Z) (6) Ta: 25°C
9	CAPACITOR LIFE CYCLE	UHP-350-55: SUPPOSE C108 IS THE MOST CRITICAL COMPONENT (1) I/P: 230VAC O/P: FULL LOAD Ta= 25 °C LIFE TIME (2) I/P: 230VAC O/P: FULL LOAD Ta=50 °C LIFE TIME (3) I/P: 230VAC O/P: 75% LOAD Ta=50 °C LIFE TIME (4) I/P: 230VAC O/P: 50% LOAD Ta=50 °C LIFE TIME	(1) 779402HRS (2) 174396HRS (3) 290265HRS (4) 398628HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 285K hrs min. MIL-HDBK-217F (25°C)	
11	Ongoing Reliability Test	I/P: 230VAC O/P: FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 30,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	WUWQ/HUANGMK	WENF	LIUWY

2018.4.30 GP-A50-F010