



# Test Report: UHP-1500-380

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1500W Conduction Cooling with High Voltage Output

## ■ DESIGN VERIFY TEST

- Output Function Test
- Input Function Test
- Protection Function Test
- Control Function Test
- Component Stress Test

## ■ SAFETY & E.M.C. TEST

- Safety Test
- E.M.C. Test

## ■ RELIABILITY TEST

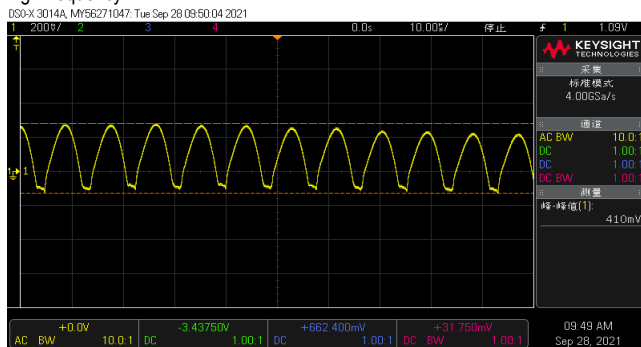
- ENVIRONMENT TEST

## DESIGN VERIFY TEST

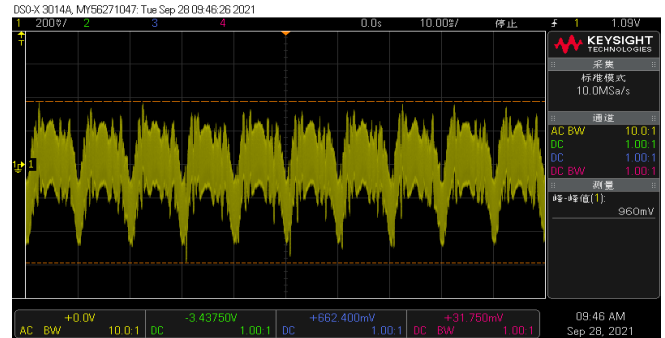
### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 260V~400V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	252.84V~404.21V/230VAC 252.69V~404.46V /115VAC
2	OUTPUT VOLTAGE(Max) TOLERANCE	V1: 1%~ -1 %	I/P: 90VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1:-0.032%~0.137%
3	LINE REGULATION (Max)	V1: 0.5%~-0.5 %	I/P: 90VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0%~-0.0342%
4	LOAD REGULATION(Max)	V1: 0.5%~ -0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.084%~0.011%
5	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	2.11%
6	RIPPLE & NOISE(Max)	V1: 3800mVp-p	I/P: 230 VAC O/P:(1) FULL LOAD Ta:25°C	(1) 960 mVp-p (Max)

high frequency :



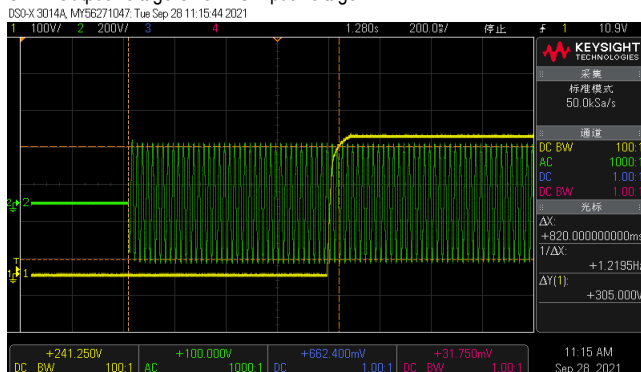
low frequency :



7	SET UP TIME(Max)	230VAC/1800ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 820 ms
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INPUT=230VAC/50HZ @ FULL LOAD

CH2 : Output Voltage CH3 : AC Input Voltage



8	RISE TIME (Max)	230VAC/60ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 42 ms
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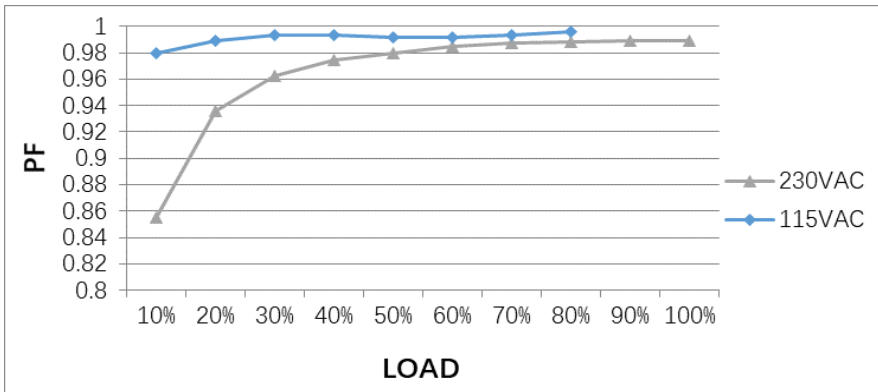
<p>INPUT=230VAC/50HZ @ FULL LOAD CH2 : Output Voltage</p>									
9	HOLD UP TIME (Typ.)	230VAC/10ms at full load 230VAC/16ms at 75% load	I/P : 230 VAC O/P : FULL LOAD/75% LOAD Ta : 25°C	230VAC/ 19 ms /full load 230VAC/ 29 ms /75% load					
<p>INPUT=230VAC/50HZ @ FULL LOAD CH2 : Output Voltage CH3 : AC Input Voltage</p>					<p>INPUT=230VAC/60HZ @ 75% LOAD CH2 : Output Voltage CH3 : AC Input Voltage</p>				
10	DYNAMIC LOAD	V1: 38000 mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	1110 mVp-p 1000mVp-p					
<p>FULL /50% LOAD 50%DUTY / 120HZ</p>					<p>FULL /50% LOAD 50%DUTY / 1KHZ</p>				

## INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
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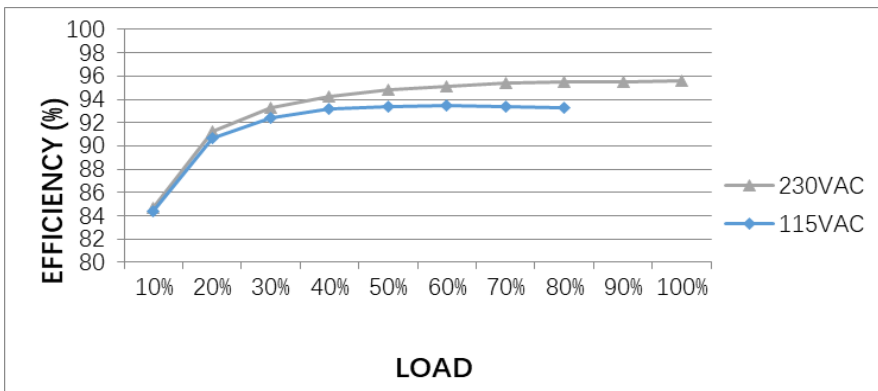
1	INPUT VOLTAGE RANGE	90VAC~264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	180V~264V full load 90V 60% load
			I/P: LOW-LINE-3V=87 V HIGH-LINE+15%=300 V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST:OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:90 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	INPUT CURRENT (Typ.)	230V/ 8 A	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I = 6.886 A/ 230VAC
4	LEAKAGE CURRENT	< 0.75mA / 240 VAC	I/P : 240 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.5825 mA N-FG : 0.5755 mA
5	POWER FACTOR (Typ.)	0.95/ 230VAC	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	PF=0.989 /230VAC

P.F vs LOAD

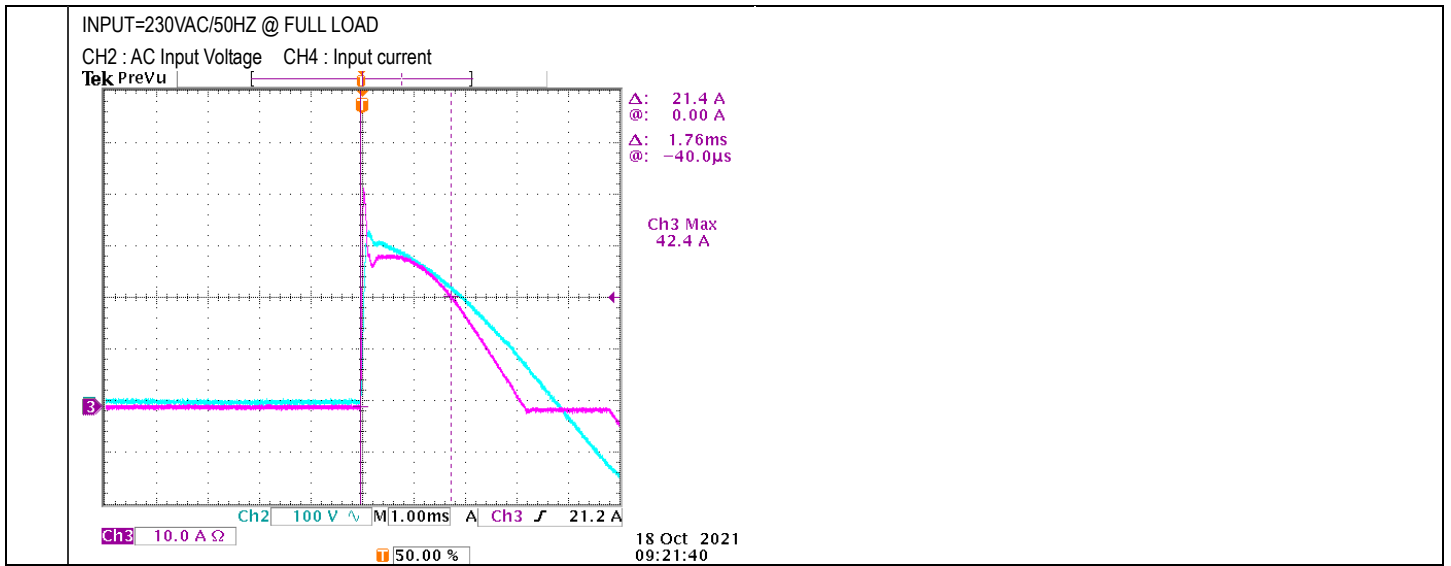


6	EFFICIENCY(Typ.)	95.5%	I/P:230 VAC O/P :FULL LOAD Ta:25°C	96.5%
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EFFICIENCY vs LOAD



7	INRUSH CURRENT(Typ.)	230VAC/60A COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I =42.4A/ 230VAC T50=1760 us/230V
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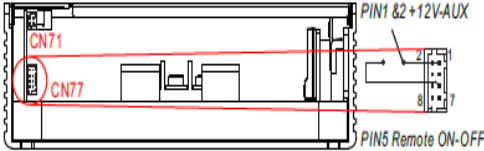


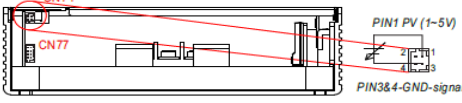
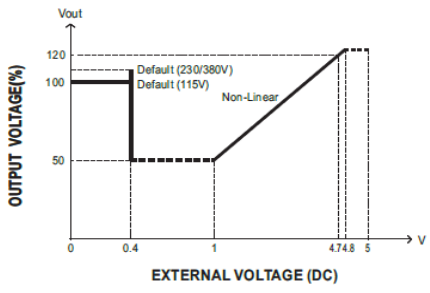
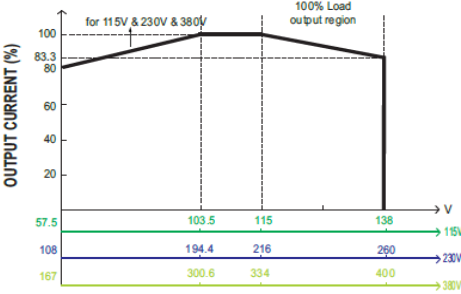
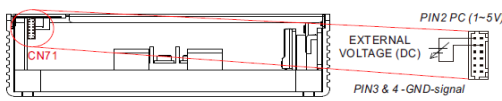
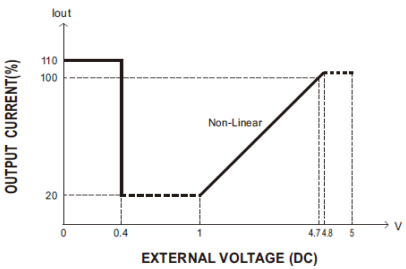
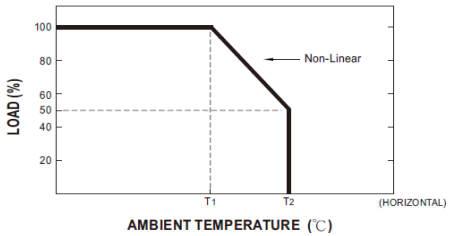
## PROTECTION FUNCTION TEST

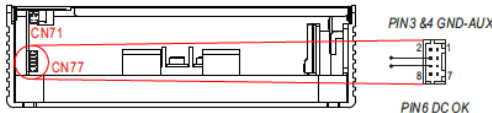
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~ 125 %	I/P: 264VAC I/P: 230VAC I/P: 180VAC O/P: TESTING Ta:25°C	PROTECTION TYPE : Constant current limiting, unit will shutdown after 5 sec, re-power on to recover. 264VAC : 111.39% 230VAC : 111.14% 180VAC : 111.90 %
2	OVER VOLTAGE PROTECTION	420V~460V	I/P: 264VAC I/P: 230VAC I/P: 90VAC O/P: MIN LOAD Ta:25°C	PROTECTION TYPE : Shut down O/P voltage, re-power on to recover 264VAC : 431 V 230VAC : 431 V 90VAC : 431V
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 264VAC I/P: 90VAC O/P: FULL LOAD	O.T.P. Active OK Protection type : Shut down O/P voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264VAC I/P: 90VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE OK PROTECTION TYPE : Constant current limiting, unit will shutdown after 5 sec, re-power on to recover.

## CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
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1	AUXILIARY POWER (AUX)	<p>I/P: 230 VAC O/P:FULL LOAD Ta:25°C</p> <p>Test Result :</p> <table border="1" data-bbox="587 414 1423 560"> <thead> <tr> <th>AUX</th> <th>TOLERANCE</th> <th>RIPPLE</th> <th>TEST RESULT</th> </tr> </thead> <tbody> <tr> <td>12V / 0.4A</td> <td>10.8~13.2 V</td> <td>150mVp-p</td> <td>11.86V/ 23mV</td> </tr> </tbody> </table>	AUX	TOLERANCE	RIPPLE	TEST RESULT	12V / 0.4A	10.8~13.2 V	150mVp-p	11.86V/ 23mV				
AUX	TOLERANCE	RIPPLE	TEST RESULT											
12V / 0.4A	10.8~13.2 V	150mVp-p	11.86V/ 23mV											
2	REMOTE ON/OFF CONTROL	<p><b>Remote ON-OFF Control</b> The power supply can be turned ON/OFF individually or along with other units in parallel by using the "Remote ON-OFF" function.</p>  <table border="1" data-bbox="1161 1077 1513 1209"> <thead> <tr> <th>Remote ON-OFF</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>Short circuit</td> <td>ON</td> </tr> <tr> <td>Open circuit</td> <td>OFF</td> </tr> </tbody> </table> <p>I/P: 230 VAC O/P:FULL LOAD Ta:25°C</p> <p>Test Result :</p> <table border="1" data-bbox="507 1355 1054 1456"> <thead> <tr> <th>Between ON/OFF and +12V-AUX</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>SW SHORT (10.8 ~ 13.2V)</td> <td>12.04V / ON</td> </tr> <tr> <td>SW OPEN (-0.5 ~ 0.5V)</td> <td>0.166V/OFF</td> </tr> </tbody> </table>	Remote ON-OFF	Power Supply Status	Short circuit	ON	Open circuit	OFF	Between ON/OFF and +12V-AUX	Power Supply Status	SW SHORT (10.8 ~ 13.2V)	12.04V / ON	SW OPEN (-0.5 ~ 0.5V)	0.166V/OFF
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Between ON/OFF and +12V-AUX	Power Supply Status													
SW SHORT (10.8 ~ 13.2V)	12.04V / ON													
SW OPEN (-0.5 ~ 0.5V)	0.166V/OFF													

<p>3</p> <p>OUTPUT VOLTAGE PROGRAMMABLE(PV)</p>	<p><b>1. Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)</b>          ※ In addition to the adjustment via the built-in potentiometer, the output voltage can be trimmed to 50%~120% by applying EXTERNAL VOLTAGE.          ※ When PC/PV are used at the same time, PC is preferred</p>  <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: right;">©The rated current should change with the Output Voltage Programming accordingly</p> <p>I/P: 230 VAC          O/P: FULL LOAD          Ta: 25°C          TEST RESULT :</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>MODEL \</th> <th>0V (0~0.3V)</th> <th>1V (0.45~1V)</th> <th>4.7V</th> <th>5V</th> </tr> </thead> <tbody> <tr> <td>SPEC</td> <td>334V±5%</td> <td>167V±5%</td> <td>400V±5%</td> <td>407V±5%</td> </tr> <tr> <td>Vout</td> <td>333.85V</td> <td>162.19V</td> <td>402.52V</td> <td>407.421V</td> </tr> </tbody> </table>	MODEL \	0V (0~0.3V)	1V (0.45~1V)	4.7V	5V	SPEC	334V±5%	167V±5%	400V±5%	407V±5%	Vout	333.85V	162.19V	402.52V	407.421V
MODEL \	0V (0~0.3V)	1V (0.45~1V)	4.7V	5V												
SPEC	334V±5%	167V±5%	400V±5%	407V±5%												
Vout	333.85V	162.19V	402.52V	407.421V												
<p>4</p> <p>OUTPUT CURRENT PROGRAMMABLE (PC)</p>	<p><b>2. Constant Current Programming (or, PC / remote current programming / dynamic current trim)</b>          ※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.</p>  <p>©Covered by over temperature protection auto de-rating function works under operation either in PC mode or under control by communication protocol.          T<sub>1</sub>(Typ.): Maximum ambient temperature of full load.          T<sub>2</sub>(Typ.): T<sub>1</sub>+5°C.</p> <div style="display: flex; justify-content: space-around;">   </div> <p>I/P: 230 VAC          O/P: TESTING          Ta: 25°C</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>ADJ V</th> <th>0V (0~0.3V)</th> <th>1V (0.45~1V)</th> <th>4.7V</th> <th>5V</th> </tr> </thead> <tbody> <tr> <td>SPEC</td> <td>110%±5%</td> <td>20%±5%</td> <td>100%±5%</td> <td>100%±5%</td> </tr> <tr> <td>TEST</td> <td>109.4%</td> <td>20.1%</td> <td>100.7%</td> <td>102.3%</td> </tr> </tbody> </table>	ADJ V	0V (0~0.3V)	1V (0.45~1V)	4.7V	5V	SPEC	110%±5%	20%±5%	100%±5%	100%±5%	TEST	109.4%	20.1%	100.7%	102.3%
ADJ V	0V (0~0.3V)	1V (0.45~1V)	4.7V	5V												
SPEC	110%±5%	20%±5%	100%±5%	100%±5%												
TEST	109.4%	20.1%	100.7%	102.3%												

5	DC OK CONTACT RATINGS	<p><b>4.DC-OK Signal</b> DC-OK signal is a TTL level signal. The maximum sink current is 10mA and the maximum external voltage is 5.6V.</p>  <table border="1" data-bbox="1173 353 1519 450"> <thead> <tr> <th>DC-OK signal</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>"High" &gt;4.4~5.5V</td> <td>ON</td> </tr> <tr> <td>"Low" &lt;-0.5~-0.5V</td> <td>OFF</td> </tr> </tbody> </table> <p>CH1: CH3: I/P: 230 VAC O/P: TESTING Ta: 25°C</p> <table border="1" data-bbox="754 638 1305 741"> <thead> <tr> <th>DC-OK signal</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>"High" &gt;4.5~5.5V</td> <td>5.13V / ON</td> </tr> <tr> <td>"Low" &lt;-0.5~-0.5V</td> <td>0.016V/OFF</td> </tr> </tbody> </table>	DC-OK signal	Power Supply Status	"High" >4.4~5.5V	ON	"Low" <-0.5~-0.5V	OFF	DC-OK signal	Power Supply Status	"High" >4.5~5.5V	5.13V / ON	"Low" <-0.5~-0.5V	0.016V/OFF
DC-OK signal	Power Supply Status													
"High" >4.4~5.5V	ON													
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"High" >4.5~5.5V	5.13V / ON													
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## COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q903 Rated 22A/ 600V	<p>AC ON/OFF</p> <p>I/P: High-Line +3V = 267V</p> <p>VDS:</p> <p>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 100% Load/ Min. Load 50%Duty/120Hz (7) 0% → 400% Load. (8) NO LOAD (9) 200% Load</p> <p>I/P: Low-Line -3V = 177V</p> <p>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 100% Load/ Min. Load 50%Duty/120Hz (7) 0% → 400% Load. (8) NO LOAD (9) 200% Load</p> <p>Ta: 25°C</p>	<p>VDS:</p> <p>(1) 443V (2) 439V (3) 447V (4) 447V (5) 451V (6) 463V (7) 483V (8) 443V (9) 443V</p> <p>VDS:</p> <p>(1) 455V (2) 439V (3) 459V (4) 459V (5) 463V (6) 475V (7) 487V (8) 447V (9) 439V</p>



2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q51 Rated 34A/600V	<p>I/P:High-Line +3V =267 V 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 100% Load/ Min. Load 50%Duty/120Hz (7) 0%→400% Load. (8) NO LOAD (9) 200% Load</p> <p>I/P:Low-Line -3V = 177V 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 100% Load/ Min. Load 50%Duty/120Hz (7) 0%→400% Load. (8) NO LOAD (9) 200% Load</p> <p>Ta:25°C</p>	<p>VDS: (1)464V (2)397V (3)462V (4)466V (5)462V (6)466V (7)442V (8)446V (9)422V</p> <p>VDS: (1)478V (2)390V (3)466V (4)466V (5)470V (6)470V (7)458V (8)458V (9)414V</p>																						
3	Diode Peak Voltage	<p>D201 Rated: 10A/600V</p> <p>D203 Rated: 10A/600V</p>	<p>AC ON/OFF I/P:High-Line +3V =267 V 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 100% Load/ Min. Load 50%Duty/120Hz (7) 0%→400% Load. (8)NO LOAD (9) burst Mode (10) (6) 200% Load</p> <p>Ta:25°C</p>	<table border="0"> <tr> <td>D201:</td> <td>D203:</td> </tr> <tr> <td>(1)389V</td> <td>(1)402V</td> </tr> <tr> <td>(2)3.44V</td> <td>(2)47.9V</td> </tr> <tr> <td>(3)390V</td> <td>(3)398V</td> </tr> <tr> <td>(4)390V</td> <td>(4)402V</td> </tr> <tr> <td>(5)390V</td> <td>(5)402V</td> </tr> <tr> <td>(6)394V</td> <td>(6)410V</td> </tr> <tr> <td>(7)394V</td> <td>(7)406V</td> </tr> <tr> <td>(8)390V</td> <td>(8)406V</td> </tr> <tr> <td>(9)390V</td> <td>(9)406V</td> </tr> <tr> <td>(10)35.5V</td> <td>(10)41.2V</td> </tr> </table>	D201:	D203:	(1)389V	(1)402V	(2)3.44V	(2)47.9V	(3)390V	(3)398V	(4)390V	(4)402V	(5)390V	(5)402V	(6)394V	(6)410V	(7)394V	(7)406V	(8)390V	(8)406V	(9)390V	(9)406V	(10)35.5V	(10)41.2V
D201:	D203:																									
(1)389V	(1)402V																									
(2)3.44V	(2)47.9V																									
(3)390V	(3)398V																									
(4)390V	(4)402V																									
(5)390V	(5)402V																									
(6)394V	(6)410V																									
(7)394V	(7)406V																									
(8)390V	(8)406V																									
(9)390V	(9)406V																									
(10)35.5V	(10)41.2V																									
4	Input Capacitor Voltage	C5 Rated: 220u/450V	<p>I/P:High-Line +3V =267V O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change (4)Full load continue</p> <p>Ta:25°C</p>	<p>(1)443V (2)439V (3)444V (4)443V</p>																						

5	Control IC Voltage Test	<p>PWM IC U800 Rated 8.85 V~ 16V</p> <p>MCU IC U701 Rated -0.3V~ 4V</p> <p>MCU IC U450 Rated 2.3V~ 6.5V</p>	<p>AC ON/OFF</p> <p>I/P:High-Line +3V =267 V O/P(1)FULL LOAD (2) Output Short (3)O.L.P (4)O.V.P. (5)NO LOAD VRmin(Low LINE) (6)NO/FULL LOAD (AC on) (7)NO LOAD(AC on) Ta:25°C</p>	<p>U800:</p> <p>(1) 16.1 V (2) 16.5V (3) 14.7 V (4) 13.5V (5) 13.5V (6) 13.3V (7) 13.3V</p> <p>U701:</p> <p>(1) 3.50 V (2) 3.54V (3) 3.50V (4) 3.46 V (5) 3.42V (6) 3.38V (7) 3.34V</p> <p>U450</p> <p>(1)5.57V (2) 5.33V (3)5.17V (4)5.65V (5)5.09V (6) 5.09V (7) 5.09V</p>
6	TOP SWITCHING STAND BY POWER	U601 Rated 800V	<p>AC ON/OFF</p> <p>I/P:High-Line +3V =267 V O/P: (1)Full Load (2)Remote On/Off</p> <p>I/P:Low-Line -3V =97 V O/P: (1)Full Load (2)Remote On/Off Ta:25°C</p>	<p>U601</p> <p>(1)551V (2)575V</p> <p>(1)543V (2)575V</p>

## SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 6KVDC/min I/P-FG: 4KVDC/min O/P-FG:4KVDC/min	I/P-O/P: 6.6 KVDC/min I/P-FG: 4.4 KVDC/min O/P-FG:4.4KVDC/min Ta:25°C	I/P-O/P:0.3 mA I/P-FG: 1.3mA O/P-FG:0.6 m A  NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: >9999MΩ I/P-FG: >9999 MΩ O/P-FG: >9999 MΩ  NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	3 mΩ

## E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	EN55032 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	EN55032 CLASS A	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 INDUSTRY AIR: 8KV / Contact: 4KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	EN61000-4-4 INDUSTRY INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
6	SURGE	IEC61000-4-5 INDUSTRY L-N : 2KV L,N-PE : 4KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
7	Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report			

## ■ RELIABILITY TEST

## ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																																																								
1	TEMPERATURE RISE TEST	MODEL : UHP-1500-380 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 33.4 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=51.6 °C																																																																																																										
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P : 230 VAC O/P : 107.3% LOAD Ta : 25 °C	TEST : OK																																																																																																								
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/90 VAC O/P : FULL LOAD/60% LOAD Ta= - 35 °C	TEST : OK																																																																																																								
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 45 °C NO DAMAGE	I/P : 272C VAC O/P : FULL LOAD Ta= 45 °C HUMIDITY= 95 %R.H	TEST : OK																																																																																																								
5	TEMPERATURE COEFFICIENT	±0.03%/°C (0-50 °C)	I/P : 230 VAC O/P : FULL LOAD	±0.0038%/°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 : 10CYCLE 5. Input/Output condition : STATIC TEST : OK
7	THERMAL SHOCK TEST	-30~+45°C	1. Thermal shock Temperature : -35°C+50°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16CYCLE 5. Input/Output condition : 15cycle:230VAC/ FULL LOAD AC on 3 sec/AC off 1 sec TEST 1cycle:230VAC/ FULL LOAD Burn In Test TEST : OK
8	VIBRATION TEST	10~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 10min/sweep cycle (4) Acceleration : 6G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C TEST : OK
9	CAPACITOR LIFE CYCLE	SUPPOSE C123 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=45 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta=45 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta=45 °C LIFE TIME	(1) 205740 HRS (2) 75829 HRS (3) 135964 HRS (4) 186871 HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 597.3K hrs min. Telcordia SR-332 (Bellcore) ; 63.3K 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 : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	WUWQ/HUANGMK	WENF	LINKX