



Test Report: UHP-1500-230

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

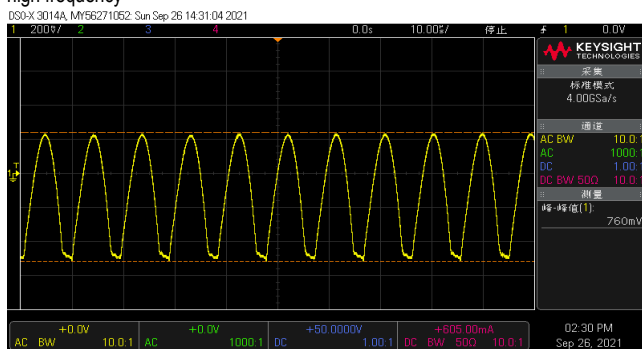
ENVIRONMENT TEST

DESIGN VERIFY TEST

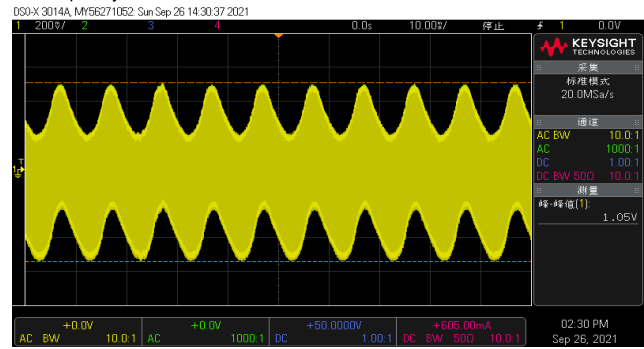
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 170V~ 260V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	164.5V ~ 265.7V/230VAC 164.5V ~ 265.7V /115VAC
2	OUTPUT VOLTAGE(Max) TOLERANCE	V1: 1%~ -1 %	I/P: 90VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1:-0.039%~+0.074%
3	LINE REGULATION (Max)	V1: 0.5%~- 0.5 %	I/P: 90VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1:-0.001%~+0.00%
4	LOAD REGULATION(Max)	V1: 0.5%~ -0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1:- 0.013%~+0.035%
5	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	1.74%
6	RIPPLE & NOISE(Max)	V1: 23000mVp-p	I/P: 230 VAC O/P:(1) FULL LOAD Ta:25°C	(1) 1050 mVp-p (FULL LOAD)

high frequency :



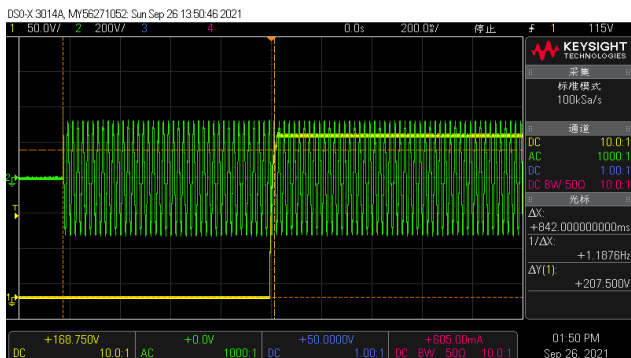
low frequency :



7	SET UP TIME(Max)	230VAC/1800ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/842ms
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INPUT=230VAC/50HZ @ FULL LOAD

CH1 : Output Voltage CH2 : AC Input Voltage



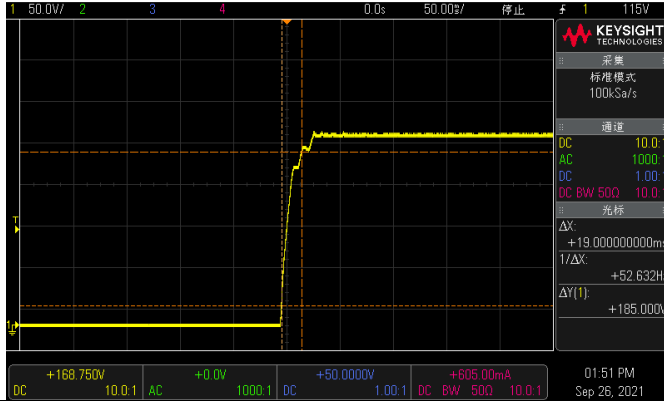
8	RISE TIME (Max)	230VAC/60ms	I/P : 230 VAC O/P : FULL LOAD	230VAC/19ms
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Ta : 25°C

INPUT=230VAC/50HZ @ FULL LOAD

CH1 : Output Voltage

DSO-X 3014A, M156271052, Sun Sep 26 13:51:39 2021



9 HOLD UP TIME (Typ.)

230VAC/10ms at full load
230VAC/16ms at 75% load

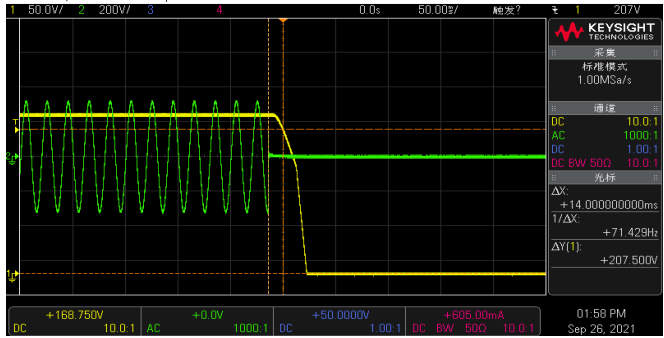
I/P : 230 VAC
O/P : FULL LOAD/75% LOAD
Ta : 25°C

230VAC/14ms /full load
230VAC/24ms/75% load

INPUT=230VAC/50HZ @ FULL LOAD

CH1 : Output Voltage CH2 : AC Input Voltage

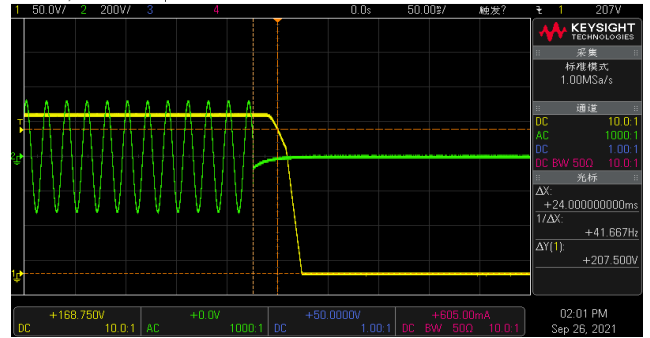
DSO-X 3014A, M156271052, Sun Sep 26 13:59:15 2021



INPUT=230VAC/60HZ @ 75% LOAD

CH1 : Output Voltage CH2 : AC Input Voltage

DSO-X 3014A, M156271052, Sun Sep 26 14:01:26 2021



10 DYNAMIC LOAD

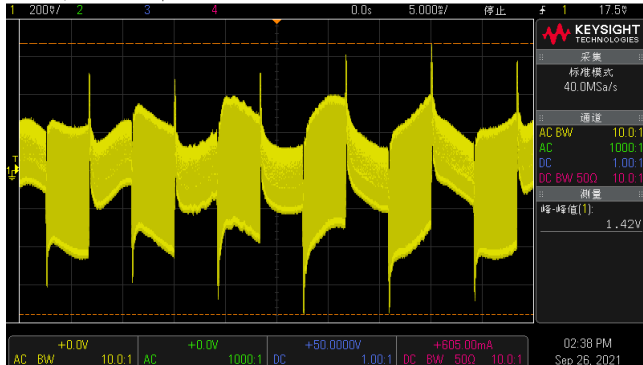
V1: 23000 mVp-p

I/P: 230VAC
O/P:
(1)FULL /50% LOAD 50%DUTY / 120HZ
(2)FULL /50% LOAD 50%DUTY / 1KHZ
Ta:25°C

1420mVp-p
1410mVp-p

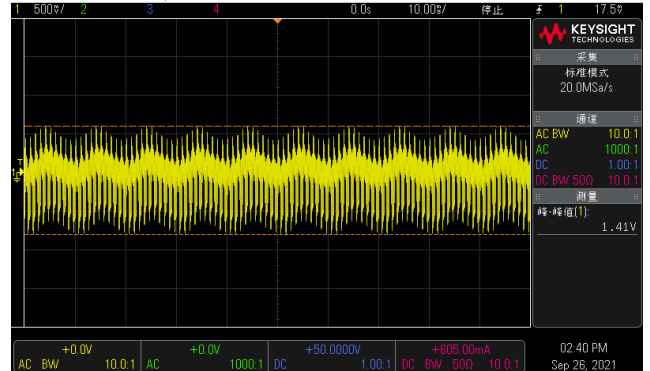
FULL /50% LOAD 50%DUTY / 120HZ

DSO-X 3014A, M156271052, Sun Sep 26 14:38:21 2021



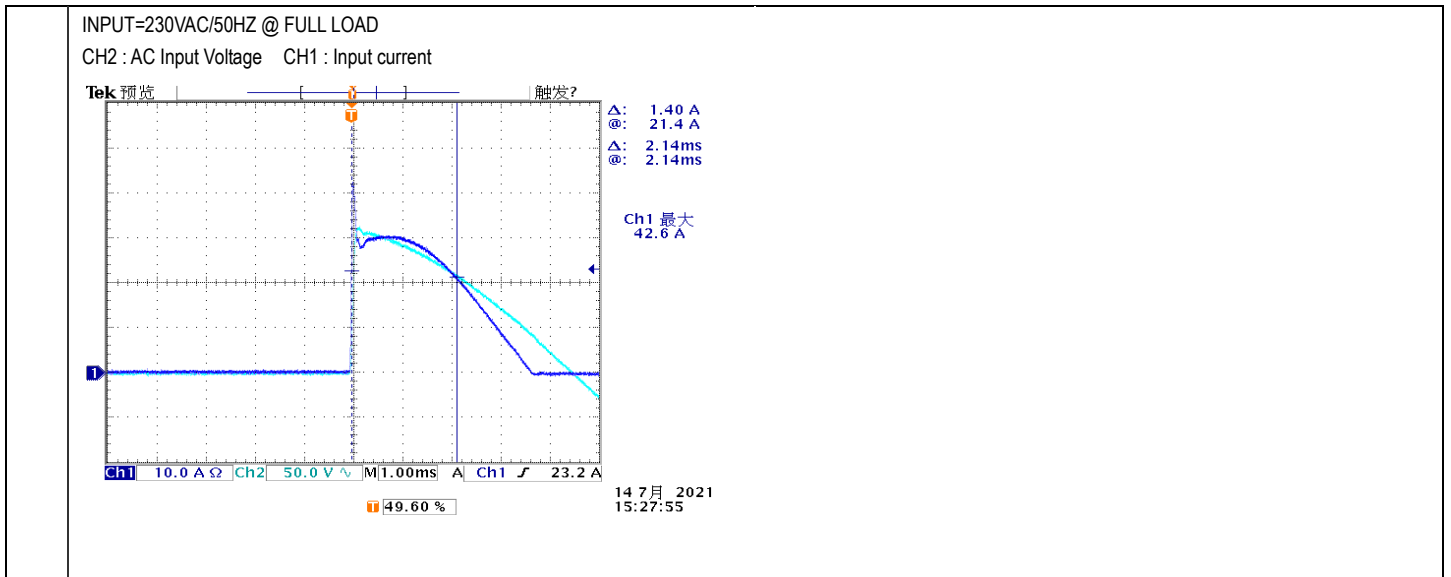
FULL /50% LOAD 50%DUTY / 1KHZ

DSO-X 3014A, M156271052, Sun Sep 26 14:40:36 2021



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	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=6.981A/ 230VAC																															
4	LEAKAGE CURRENT	< 0.75mA / 240 VAC	I/P : 240 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.5710mA N-FG : 0.5761mA																															
5	POWER FACTOR (Typ.)	0.95/ 230VAC	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	PF=0.982/230VAC																															
<p>P.F vs LOAD</p> <table border="1"> <caption>P.F vs LOAD (230VAC)</caption> <thead> <tr> <th>LOAD (%)</th> <th>PF</th> </tr> </thead> <tbody> <tr><td>10%</td><td>0.84</td></tr> <tr><td>20%</td><td>0.91</td></tr> <tr><td>30%</td><td>0.94</td></tr> <tr><td>40%</td><td>0.95</td></tr> <tr><td>50%</td><td>0.96</td></tr> <tr><td>60%</td><td>0.965</td></tr> <tr><td>70%</td><td>0.97</td></tr> <tr><td>80%</td><td>0.975</td></tr> <tr><td>90%</td><td>0.978</td></tr> <tr><td>100%</td><td>0.982</td></tr> </tbody> </table>					LOAD (%)	PF	10%	0.84	20%	0.91	30%	0.94	40%	0.95	50%	0.96	60%	0.965	70%	0.97	80%	0.975	90%	0.978	100%	0.982									
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6	EFFICIENCY(Typ.)	95%	I/P:230 VAC O/P :FULL LOAD Ta:25°C	95.78%																															
			<p>EFFICIENCY vs LOAD</p> <table border="1"> <caption>EFFICIENCY vs LOAD</caption> <thead> <tr> <th>LOAD (%)</th> <th>230V Efficiency (%)</th> <th>115V Efficiency (%)</th> </tr> </thead> <tbody> <tr><td>10%</td><td>87</td><td>88</td></tr> <tr><td>20%</td><td>92</td><td>91</td></tr> <tr><td>30%</td><td>92</td><td>92</td></tr> <tr><td>40%</td><td>93</td><td>93</td></tr> <tr><td>50%</td><td>94</td><td>94</td></tr> <tr><td>60%</td><td>94.5</td><td>92.5</td></tr> <tr><td>70%</td><td>94.5</td><td>92.5</td></tr> <tr><td>80%</td><td>95</td><td></td></tr> <tr><td>90%</td><td>95.5</td><td></td></tr> <tr><td>100%</td><td>96</td><td></td></tr> </tbody> </table>			LOAD (%)	230V Efficiency (%)	115V Efficiency (%)	10%	87	88	20%	92	91	30%	92	92	40%	93	93	50%	94	94	60%	94.5	92.5	70%	94.5	92.5	80%	95		90%	95.5	
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7	INRUSH CURRENT(Typ.)	230VAC/60A COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I=42.6/ 230VAC T50=2.14ms/230V																															

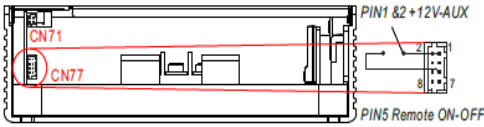


PROTECTION FUNCTION TEST

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 :110.43% 230VAC :110.43% 180VAC :111.96%
2	OVER VOLTAGE PROTECTION	273V~325V	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 :292V 230VAC :292V 90VAC :292V
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="587 443 1423 591"> <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>11.80V/19mV</td> </tr> </tbody> </table>	AUX	TOLERANCE	RIPPLE	TEST RESULT	12V / 0.4A	10.8~13.2 V	150mVp-p	11.80V/19mV				
AUX	TOLERANCE	RIPPLE	TEST RESULT											
12V / 0.4A	10.8~13.2 V	150mVp-p	11.80V/19mV											
2	REMOTE ON/OFF CONTROL	<p>Remote ON-OFF Control 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 990 1513 1097"> <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 1285 1054 1388"> <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>12.13V/ON</td> </tr> <tr> <td>SW OPEN (-0.5 ~ 0.5V)</td> <td>0.20V/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)	12.13V/ON	SW OPEN (-0.5 ~ 0.5V)	0.20V/OFF
Remote ON-OFF	Power Supply Status													
Short circuit	ON													
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Between ON/OFF and +12V-AUX	Power Supply Status													
SW SHORT (10.8 ~ 13.2V)	12.13V/ON													
SW OPEN (-0.5 ~ 0.5V)	0.20V/OFF													

3 OUTPUT VOLTAGE PROGRAMMABLE(PV)

1. Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)
 ※ 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

OUTPUT VOLTAGE (%)

EXTERNAL VOLTAGE (DC)

OUTPUT CURRENT (%)

OUTPUT VOLTAGE

©The rated current should change with the Output Voltage Programming accordingly

I/P: 230 VAC
 O/P: FULL LOAD
 Ta: 25°C

TEST RESULT :

MODEL \	0V (0~0.3V)	1V (0.45~1V)	4.7V	5V
SPEC	216V±5%	108V±5%	260V±5%	263.3V±5%
Vout	216.08V	109.73V	261.71V	264.59V

4 OUTPUT CURRENT PROGRAMMABLE (PC)

2. Constant Current Programming (or, PC / remote current programming / dynamic current trim)
 ※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.

©Covered by over temperature protection auto de-rating function works under operation either in PC mode or under control by communication protocol.
 T₁(Typ.): Maximum ambient temperature of full load.
 T₂(Typ.): T₁+5°C.

OUTPUT CURRENT (%)

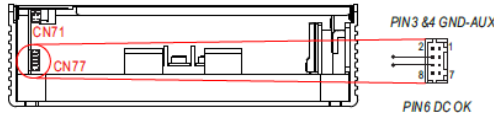
EXTERNAL VOLTAGE (DC)

LOAD (%)

AMBIENT TEMPERATURE (°C)

I/P: 230 VAC
 O/P: TESTING(216V-2V= 214V)
 Ta: 25°C

ADJ V	0V (0~0.3V)	1V (0.45~1V)	4.7V	5V
SPEC	110%±5%	20%±5%	100%±5%	100%±5%
TEST	108.44%	20.52%	100.16%	101.55%

5	DC OK CONTACT RATINGS	<p>4.DC-OK Signal 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" style="float: right; margin-top: 10px;"> <thead> <tr> <th>DC-OK signal</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>"High" >4.4~5.5V</td> <td>ON</td> </tr> <tr> <td>"Low" <-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" style="margin-top: 20px; width: 100%;"> <thead> <tr> <th>DC-OK signal</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>"High" >4.5~5.5V</td> <td><u>5.07V/ ON</u></td> </tr> <tr> <td>"Low" <-0.5~0.5V</td> <td><u>0.016V/OFF</u></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	<u>5.07V/ ON</u>	"Low" <-0.5~0.5V	<u>0.016V/OFF</u>
DC-OK signal	Power Supply Status													
"High" >4.4~5.5V	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 VDS: O/P: (1) Full Load (2) Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (5) 0%→400% Load. (6) NO LOAD (7) 200% Load</p> <p>I/P: Low-Line -3V = 177V O/P: (1) Full Load (2) Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (5) 0%→400% Load. (6) NO LOAD (7) 200% Load</p> <p>Ta:25°C</p>	<p>VDS:</p> <p>(1) 447V (2) 447V (3) 447V (4) 447V (5) 471V (6) 447V (7) 447V</p> <p>VDS:</p> <p>(1) 447V (2) 447V (3) 447V (4) 447V (5) 471V (6) 447V (7) 447V</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)411V (2)399V (3)411V (4)407V (5)411V (6)407V (7)411V (8)407V (9)399V</p> <p>VDS: (1)423V (2)391V (3)419V (4)419V (5)419V (6)419V (7)419V (8)415V (9)391V</p>
3	Diode Peak Voltage	<p>D201 Rated 400V/10A</p> <p>D208 Rated 400V/10A</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) 200% Load</p> <p>Ta:25°C</p>	<p>D201: D208: (1)238V (1)237V (2)4.5V (2)5.3V (3)239V (3)239V (4)239V (4)240V (5)239V (5)239V (6)241V (6)243V (7)237V (7)237V (8)237V (8)237V (9)237V (9)237V (10)4.6V (10)5.5V</p>
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)407V (2)403V (3)415V (4)403V</p>

<p>6</p>	<p>Control IC Voltage Test</p>	<p>PWM IC U800 Rated 8.85 V~ 16V</p> <p>PFC IC U401 Rated 10.6V~ 21 V</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</p> <p>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) 13.0V (2) 13.2V (3) 13.2V (4) 13.0V (5) 13.0V</p> <p>U401:</p> <p>(1) 13.6V (2) 13.4V (3) 13.4V (4) 13.2V (5) 13.6V (6) 13.8V (7) 13.2V</p> <p>U701:</p> <p>(1) 3.34V (2) 3.42V (3) 3.42V (4) 3.34V (5) 3.30V (6) 3.34V (7) 3.30V</p> <p>U450</p> <p>(1) 5.03V (2) 5.07V (3) 5.11V (4) 4.99V (5) 5.03V (6) 5.03V (7) 4.99V</p>
<p>8</p>	<p>TOP SWITCHING STAND BY POWER</p>	<p>U601 Rated 800V</p>	<p>AC ON/OFF</p> <p>I/P:High-Line +3V =267 V</p> <p>O/P: (1)Full Load (2)Remote On/Off</p> <p>I/P:Low-Line -3V =97 V</p> <p>O/P: (1)Full Load (2)Remote On/Off Ta:25°C</p>	<p>U601</p> <p>(1) 525V (2) 525V</p> <p>(1) 525V (2) 529V</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: 0.3uA I/P-FG: 1.4uA O/P-FG: 0.3uA 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: >9999MΩ O/P-FG: >9999 MΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	3mΩ

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-1500-230 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 26.1℃ 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=46.2℃																																																																																																										
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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℃	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 ℃	TEST : OK																																																																																																								
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 45 ℃ NO DAMAGE	I/P : 272C VAC O/P : FULL LOAD Ta= 45 ℃ HUMIDITY= 95 %R.H	TEST : OK																																																																																																								
5	TEMPERATURE COEFFICIENT	±0.03%/℃ (0~50℃)	I/P : 230 VAC O/P : FULL LOAD	±0.002%/℃ (0~50℃)																																																																																																								
6	STORAGE TEMPERATURE TEST	-40~+85℃	1. Thermal shock Temperature : -45℃ +90℃ 2. Temperature change rate : 25℃ / 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) 294709 HRS (2) 95217 HRS (3) 176312 HRS (4) 262349 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