



Test Report: UHP-2500-24

2500W Conduction Cooling with PFC Switching Supply

■ 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

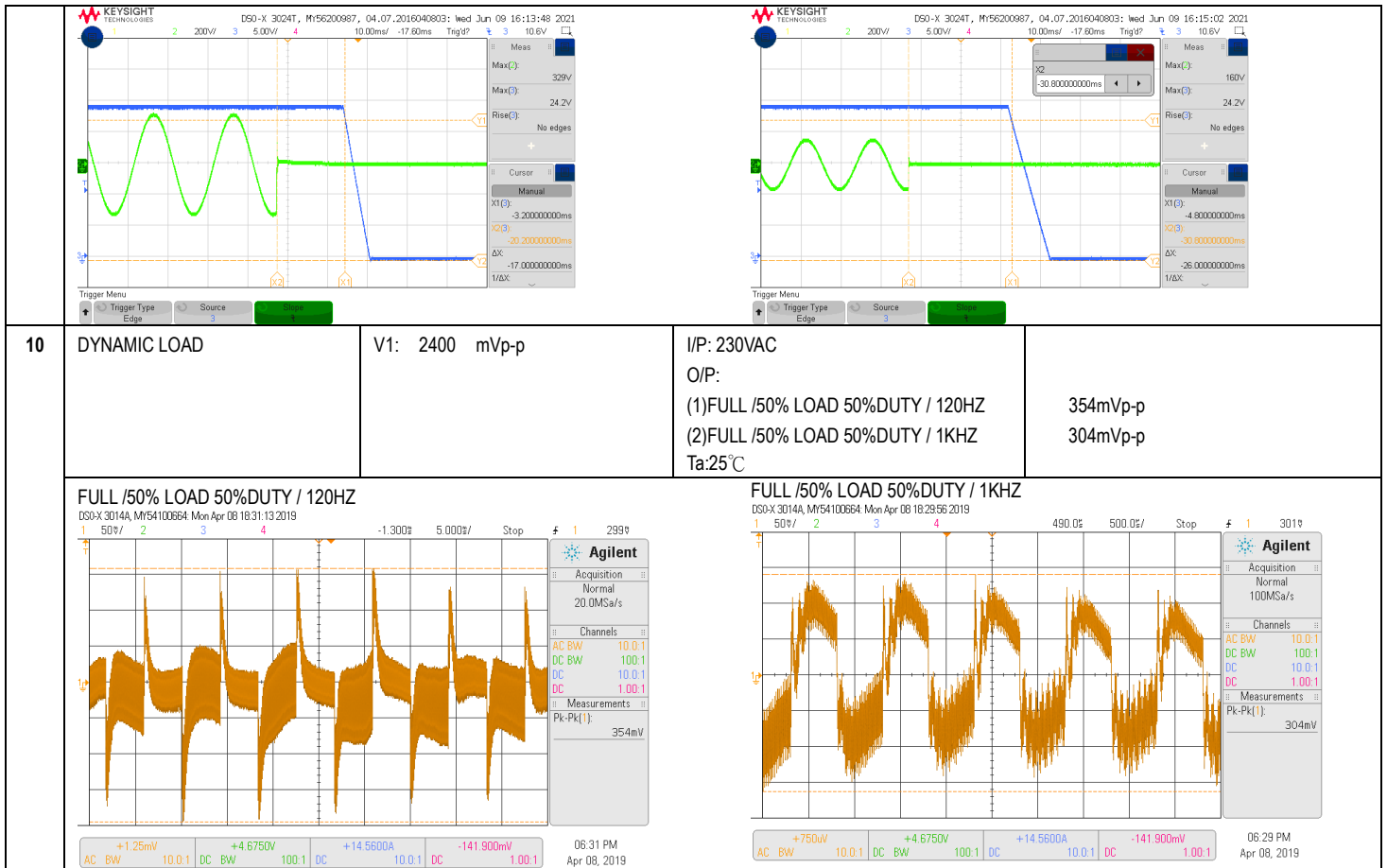
ENVIRONMENT TEST

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

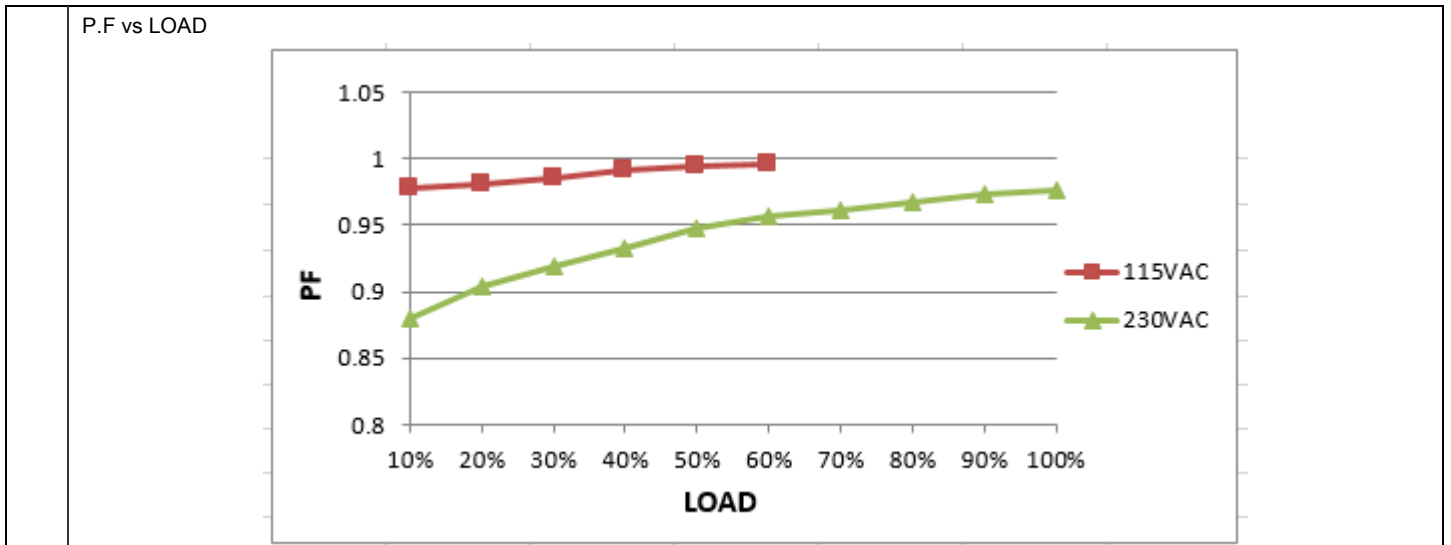
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 24V~ 28.8 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	23.37V~ 29.63V/230VAC 23.37V~ 29.63V /115VAC
2	OUTPUT VOLTAGE(Max) TOLERANCE	V1: 1%~ -1 %	I/P: 180VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: 0.2%~ -0.2 %
3	LINE REGULATION (Max)	V1: 0.5%~-0.5 %	I/P: 180VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0.05%~-0.05 %
4	LOAD REGULATION(Max)	V1: 1%~ -1%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.2%~ -0.2 %
5	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	< 5 %
6	RIPPLE & NOISE(Max)	V1: 300mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1: 155 mVp-p
<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>high frequency :</p> </div> <div style="width: 45%;"> <p>low frequency :</p> </div> </div>				
7	SET UP TIME(Max)	230VAC/1500ms 115VAC/1500ms Derating may be needed under low input voltages. Please check the derating curve and Static characteristics for more details	I/P : 230 VAC O/P : FULL LOAD I/P : 115 VAC O/P : 63.8% LOAD Ta : 25°C	230VAC/ 698ms 115VAC/ 944 ms
INPUT=230VAC/50HZ @ FULL LOAD CH3: Output Voltage CH2 : AC Input Voltage			INPUT=115VAC/60HZ @ 63.8% LOAD CH3 : Output Voltage CH2 : AC Input Voltage	

	<p>8 RISE TIME (Max)</p> <p>230VAC/50ms 115VAC/60ms</p> <p>Derating may be needed under low input voltages. Please check the derating curve and Static characteristics for more details</p>	<p>I/P : 230 VAC O/P : FULL LOAD I/P : 115 VAC O/P : 63.8% LOAD Ta : 25°C</p>	<p>230VAC/ 7.57 ms 115VAC/ 7.21 ms</p>
<p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH3 : Output Voltage</p>	<p>9 HOLD UP TIME (Typ.)</p> <p>230 ~ 115VAC/10ms at full load 230 ~ 115VAC/16ms at 75% load</p> <p>Derating may be needed under low input voltages. Please check the derating curve and Static characteristics for more details</p>	<p>I/P : 230 VAC O/P : FULL LOAD/75% LOAD I/P : 115 VAC O/P : 63.8% LOAD/47.85% LOAD Ta : 25°C</p>	<p>230VAC/ 13.2 ms at full load 230VAC/ 17 ms at 75% load 115VAC/ 19.4 ms at 63.8% load 115VAC/ 26 ms at 47.85% load</p>
<p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH3 : Output Voltage CH2 : AC Input Voltage</p>	<p>INPUT=230VAC/50HZ@75% LOAD</p>	<p>INPUT=115VAC/60HZ @ 63.8% LOAD</p> <p>CH3 : Output Voltage CH2 : AC Input Voltage</p>	<p>INPUT=115VAC/60HZ@47.85% load</p>

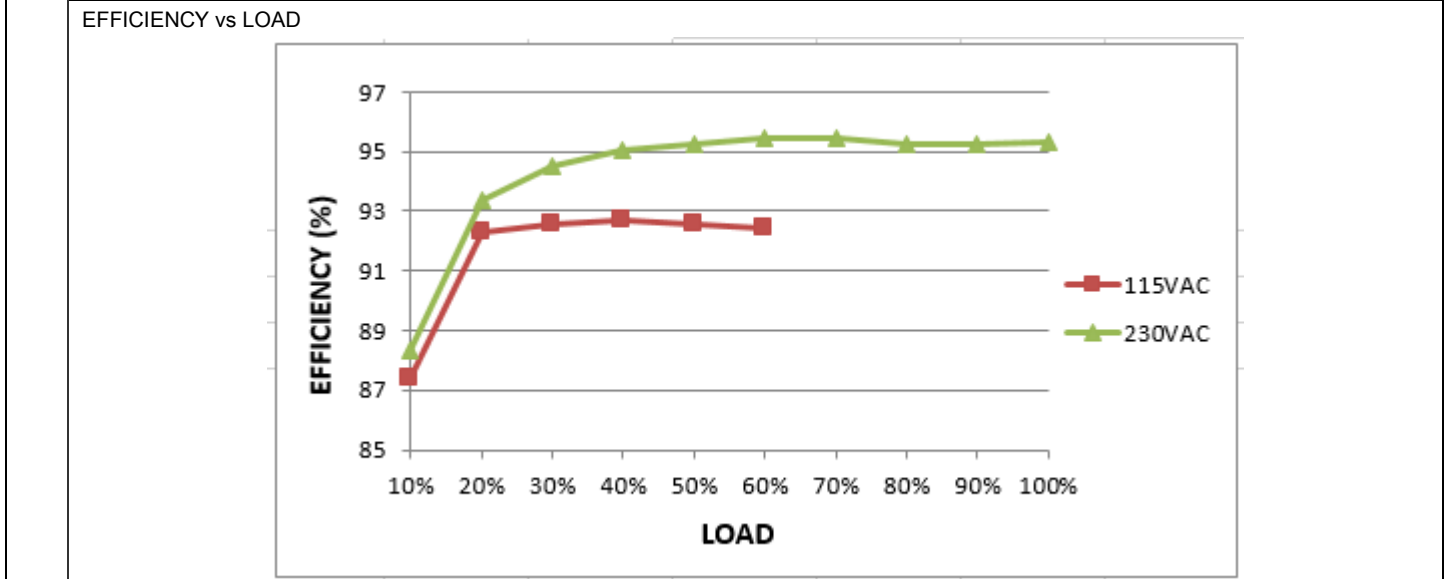


INPUT FUNCTION TEST

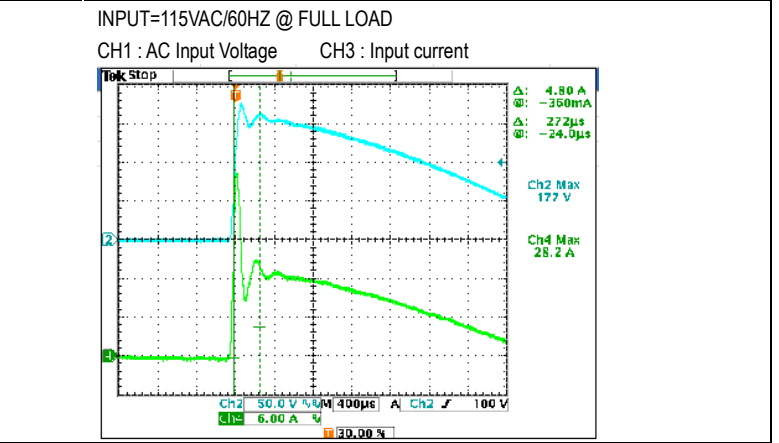
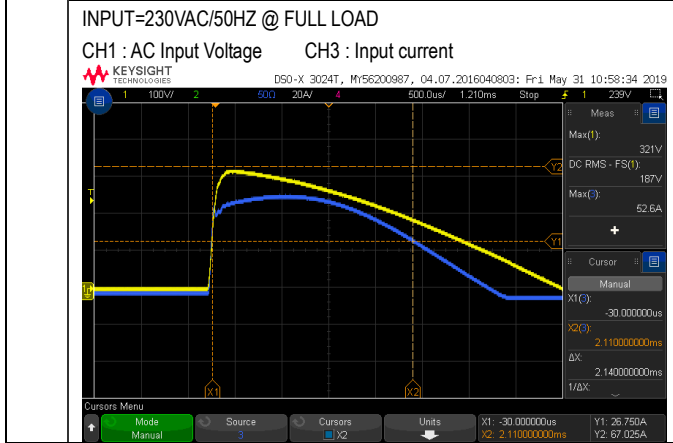
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~264VAC	I/P:TESTING O/P:FULL LOAD/ Derating Load Ta:25°C	167V~264V (100%) 83V~264V (50%)
			I/P: LOW-LINE-3V=177 V HIGH-LINE+15%=300 V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF 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/ 14.3 A	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I=11.95 A/ 230VAC
4	LEAKAGE CURRENT	< 0.75mA / 240 VAC	I/P : 240 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.54mA N-FG : 0.54 mA
5	POWER FACTOR (Typ.)	0.95/ 230VAC	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	PF= 0.978/230VAC



6	EFFICIENCY(Typ.)	95%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	95.3%
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7	INRUSH CURRENT(Typ.)	230V/60A 115V/30A COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I=52.6A / 230VAC T50= 2140 us I=28.2A / 115VAC
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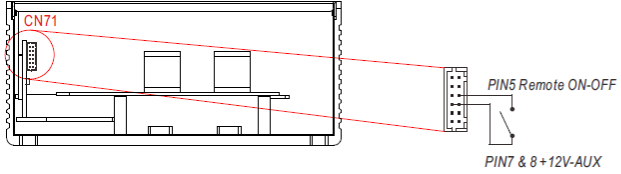
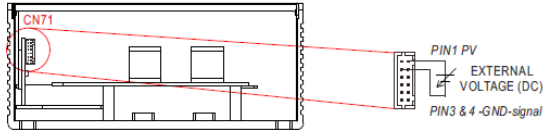
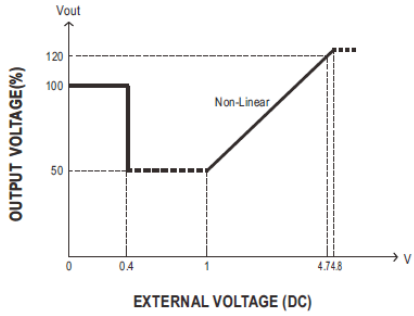
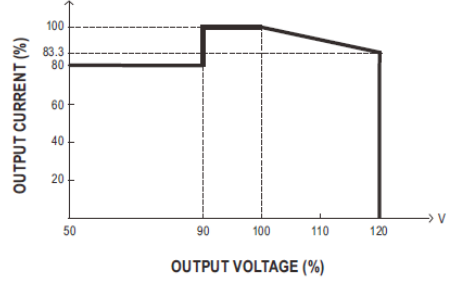
8	NO LOAD CONSUMPTION	---	I/P : 115VAC I/P : 230VAC O/P : NO LOAD Ta : 25°C	10.65 W/115VAC 8.13 W/230VAC
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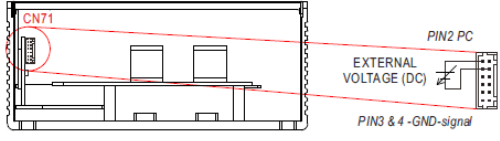
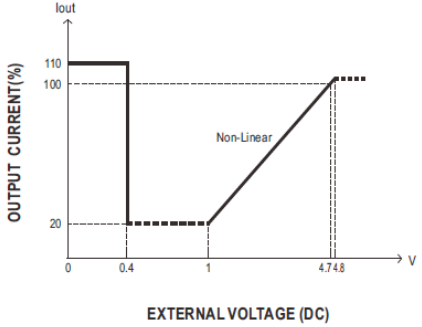
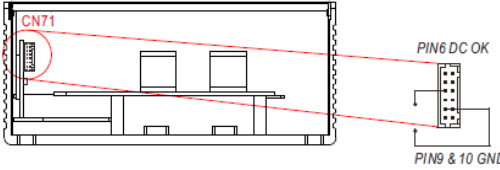
PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~115%(180VAC~264VAC) 52.5%~57.5%(90VAC) Protection type : Constant current limiting, shut down O/P voltage 5 sec. after O/P voltage is down low, re-power on to recover	I/P: 264VAC I/P: 230VAC I/P: 180VAC I/P: 90VAC O/P: TESTING Ta:25°C	109.9%/ 264VAC 109.9%/ 230VAC 109.9%/180VAC 55.8%/90VAC PROTECTION TYPE : Constant current limiting, shut down O/P voltage 5 sec. after O/P voltage is down low, re-power on to recover
2	OVER VOLTAGE PROTECTION	30V~35V Protection type : Shut down O/P voltage, re-power on to recover	I/P: 264VAC I/P: 230VAC I/P: 90VAC O/P: MIN LOAD Ta:25°C	32.4V/ 264VAC 32.4V/ 230VAC 32.35V/ 90VAC PROTECTION TYPE : Shut down O/P voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type : Shut down O/P voltage, recovers automatically after temperature goes down	I/P: 264VAC I/P: 90VAC O/P: FULL LOAD	O.T.P. Active Protection type : Shut down O/P voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Protection type : Constant current limiting, shut down O/P voltage 5 sec. after O/P voltage is down low, re-power on to recover	I/P: 264VAC I/P: 90VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE PROTECTION TYPE : Constant current limiting, shut down O/P voltage 5 sec. after O/P voltage is down low, re-power on to recover

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT								
1	AUXILIARY POWER (AUX)	I/P: 230 VAC O/P: FULL LOAD Ta:25°C Test Result :										
		<table border="1"> <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>11.6V /102mv</td> </tr> </tbody> </table>			AUX	TOLERANCE	RIPPLE	TEST RESULT	12V / 0.4A	10.8~13.2 V	150mVp-p	11.6V /102mv
AUX	TOLERANCE	RIPPLE	TEST RESULT									
12V / 0.4A	10.8~13.2 V	150mVp-p	11.6V /102mv									

<p>2</p>	<p>REMOTE ON/OFF CONTROL</p>	<p>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 309 1528 414"> <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="502 609 1056 712"> <thead> <tr> <th>Between ON/OFF and +5V-AUX</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>SW SHORT</td> <td>ON</td> </tr> <tr> <td>SW OPEN</td> <td>OFF</td> </tr> </tbody> </table>	Remote ON-OFF	Power Supply Status	Short circuit	ON	Open circuit	OFF	Between ON/OFF and +5V-AUX	Power Supply Status	SW SHORT	ON	SW OPEN	OFF			
Remote ON-OFF	Power Supply Status																
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SW OPEN	OFF																
<p>3</p>	<p>OUTPUT VOLTAGE PROGRAMMABLE(PV)</p>	<p>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 by applying EXTERNAL VOLTAGE.</p>  <div style="display: flex; justify-content: space-around;"> <div data-bbox="518 985 933 1299">  <p>OUTPUT VOLTAGE (%)</p> <p>EXTERNAL VOLTAGE (DC)</p> </div> <div data-bbox="1021 1019 1476 1299">  <p>OUTPUT CURRENT (%)</p> <p>OUTPUT VOLTAGE (%)</p> </div> </div> <p>© The rated current should change with the Output Voltage Programming accordingly.</p> <p>I/P: 230 VAC O/P: FULL LOAD Ta: 25°C</p> <p>TEST RESULT :</p> <table border="1" data-bbox="502 1473 1252 1675"> <thead> <tr> <th>MODEL \ PV</th> <th>≤ 0.4V</th> <th>1V</th> <th>4.7V</th> <th>5V</th> </tr> </thead> <tbody> <tr> <td>SPEC</td> <td>24V±5%</td> <td>12V±10%</td> <td>28.8V±5%</td> <td>28.8V±5%</td> </tr> <tr> <td>Vout</td> <td>24.12V</td> <td>11.57V</td> <td>28.79V</td> <td>29.33V</td> </tr> </tbody> </table>	MODEL \ PV	≤ 0.4V	1V	4.7V	5V	SPEC	24V±5%	12V±10%	28.8V±5%	28.8V±5%	Vout	24.12V	11.57V	28.79V	29.33V
MODEL \ PV	≤ 0.4V	1V	4.7V	5V													
SPEC	24V±5%	12V±10%	28.8V±5%	28.8V±5%													
Vout	24.12V	11.57V	28.79V	29.33V													

<p>4</p> <p>OUTPUT CURRENT PROGRAMMABLE (PC)</p>	<p>※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.</p>  <p>I/P: 230 VAC O/P: TESTING Ta:25°C</p> <table border="1" data-bbox="504 741 1505 846"> <tr> <td>ADJ V</td> <td><0.4V</td> <td>1V</td> <td>4.7V</td> <td>5V</td> </tr> <tr> <td>SPEC</td> <td>110%±10%</td> <td>20%±10%</td> <td>100%±10%</td> <td>100%±10%</td> </tr> <tr> <td>iout</td> <td>113.94A/109.34%</td> <td>23.44A/22.49%</td> <td>104.4A/100.2%</td> <td>106.7A/102.4%</td> </tr> </table>	ADJ V	<0.4V	1V	4.7V	5V	SPEC	110%±10%	20%±10%	100%±10%	100%±10%	iout	113.94A/109.34%	23.44A/22.49%	104.4A/100.2%	106.7A/102.4%	
ADJ V	<0.4V	1V	4.7V	5V													
SPEC	110%±10%	20%±10%	100%±10%	100%±10%													
iout	113.94A/109.34%	23.44A/22.49%	104.4A/100.2%	106.7A/102.4%													
<p>5</p> <p>DC OK CONTACT RATINGS</p>	<p>DC-OK signal is a TTL level signal. The maximum sourcing current is 10mA.</p>  <p>I/P: 230 VAC O/P: TESTING Ta:25°C</p> <table border="1" data-bbox="754 1205 1305 1310"> <tr> <td>DC-OK signal</td> <td>Power Supply Status</td> </tr> <tr> <td>"High" >4.5~5.5V</td> <td>ON(5.06v)</td> </tr> <tr> <td>"Low" <-0.5~0.5V</td> <td>OFF(-0.09V)</td> </tr> </table>	DC-OK signal	Power Supply Status	"High" >4.5~5.5V	ON(5.06v)	"Low" <-0.5~0.5V	OFF(-0.09V)	<table border="1" data-bbox="1166 907 1528 1008"> <tr> <td>DC-OK signal</td> <td>Power Supply Status</td> </tr> <tr> <td>"High" >4.5~5.5V</td> <td>ON</td> </tr> <tr> <td>"Low" <-0.5~0.5V</td> <td>OFF</td> </tr> </table>	DC-OK signal	Power Supply Status	"High" >4.5~5.5V	ON	"Low" <-0.5~0.5V	OFF			
DC-OK signal	Power Supply Status																
"High" >4.5~5.5V	ON(5.06v)																
"Low" <-0.5~0.5V	OFF(-0.09V)																
DC-OK signal	Power Supply Status																
"High" >4.5~5.5V	ON																
"Low" <-0.5~0.5V	OFF																

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q903 Rated : 48 A/ 600 V	<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.</p> <p>I/P: Low-Line -3V = 177V</p> <p>O/P: (1) Full Load (2) Output Short (3) Dynamic Load Full Load/</p>	<p>VDS:</p> <p>(1) 519V (2) 523V (3) 507v (4) 507v (5) 502V (6) 438V (7) 478V</p> <p>VDS:</p> <p>(1) 462V (2) 470V (3) 454V</p>

			<p>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. Ta:25°C</p>	<p>(4) 458V (5)462V (6)442V (7)470V</p>
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q 65 Rated 33A/ 600 V VGS: ±20 V	<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.</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. Ta:25°C</p>	<p>VDS: (1) 474V (2) 426V (3) 474V (4) 470V (5) 470V (6) 466V (7) 426V</p> <p>VDS: (1) 478V (2) 410V (3) 478V (4) 478V (5) 478V (6) 458V (7) 434V</p>
3	P.F.C DIODE	D 14 Rated 10 A/650 V	<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/5KHz (4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz</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/5KHz (4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz Ta:25°C</p>	<p>(1) 450V (2) 410V (3) 426V (4) 422V</p> <p>(1) 426V (2) 402V (3) 442V (4) 430V</p>
4	Diode Peak Voltage	Q109 Rated 100 A/100 V	<p>AC ON/OFF</p> <p>I/P:High-Line +3V =267 V</p>	<p>Q109: Q113: VDS: VDS:</p>

		Q113 Rated 100 A/100 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 Ta:25°C	(1)79.6V (2)28.1V (3)78.8V (4)79.6V (5)80.4V (6)78.8V (7)65.9V (8)69.9V (9)65.1	(1)81.2V (2)20.1V (3)81.2V (4) 81.2V (5) 82.8V (6) 81.2V (7)69.1V (8)66.7V (9)69V
5	Input Capacitor Voltage	C5 Rated: : 180μ/450 V Surge Voltage :495V	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 Ta:25°C	(1)400V (2)396V (3)420V (4) 382V	
6	Control IC Voltage Test	PWM IC U800 Rated 8.85 V~ 16V PFC IC U401 Rated 10.6V~ 21 V O/P IC U153Rated 8V~ 24V	AC ON/OFF 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) Ta:25°C	U800: (1) 14.8V(100M) (2) 15.5V (3) 14.6V(100M) (4) 13.7V (5) 14.8V(100M) U401: (1) 15.3V (2) 14.3V (3) 15.5V (4) 14.7V (5) 15V	U153: (1) 12.3V (2) 10.7V (3) 10.7V (4) 7.6V (5) 12V
8	TOP SWITCHING STAND BY POWER	U601 Rated 3.5A/800 V	AC ON/OFF I/P:High-Line +3V =267 V O/P: (1)Full Load (2)Remote On/Off I/P:Low-Line -3V =87 V O/P: (1)Full Load (2)Remote On/Off Ta:25°C	U601 (1) 569V (2) 545V (1) 545 V (2) 548V	

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3.75KVAC/min I/P-FG: 2KVAC/min O/P-FG:1.25KVAC/min	I/P-O/P: 4.125 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG:1.5KVAC/min Ta:25°C	I/P-O/P:9.07mA I/P-FG:8.66mA O/P-FG:5.9mA 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: 23.9GΩ I/P-FG: 19.8GΩ O/P-FG:22.4GΩ NO DAMAGE

3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	23 mΩ
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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	IEC61000-6-2 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-2500-24 (AMBIENT TEMPERATURE WITH FORCED AIR COOLING) 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=25 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 50 °C		

NO	Position	ROOM AMBIENT Ta= 25 °C	HIGH AMBIENT Ta= 50 °C
1	BD1	78.7°C	99.4°C
2	BD2	64.6°C	86.5°C
3	ZNR3	60.5°C	79.7°C
4	C14	62.3°C	82.5°C
5	L1	63.2°C	86.4°C
6	L2	60.3°C	83.7°C
7	L3	71.7°C	91.1°C
8	D10	43.0°C	67.8°C
9	Q52	66.1°C	87.4°C
10	Q66	66.6°C	88.5°C
11	C417	63.6°C	77.1°C
12	Q901	68.6°C	90.8°C
13	Q902	65.2°C	87.4°C
14	Q903	61.1°C	83.3°C
15	LF1	71.1°C	81.4°C
16	LF3	61.1°C	83.3°C
17	T1 WIRE	72.5°C	96.4°C
18	T1 CORE	59.5°C	82.8°C
19	T2 WIRE	69.9°C	92.5°C
20	T2 CORE	59.7°C	80.9°C
21	RT21	70.9°C	92.2°C
22	C10	62.8°C	79.7°C
23	T51	67.3°C	83.1°C
24	T52	67.9°C	82.6°C
25	C968	61.2°C	77.6°C
26	C962	63.4°C	79.6°C
27	D14	84.5°C	107.8°C
28	Q907	63.6°C	81.8°C
29	Q916	61.2°C	76.2°C
30	D985	55.9°C	72.0°C
31	Q105	62.9°C	86.2°C
32	Q101	62.1°C	85.2°C
33	Q113	62.0°C	85.3°C
34	Q109	58.7°C	82.3°C
35	U151	62.3°C	82.9°C
36	U153	65.9°C	89.1°C
37	U401	68.8°C	85.4°C
38	T601	60.3°C	81.8°C
39	RG61	53.3°C	76.4°C
40	C652	59.2°C	81.1°C
41	C632	47.9°C	72.9°C
41	RG65	64.2°C	85.8°C
42	U701	40.1°C	65.2°C
43	U601	61.1°C	82.8°C
44	RG52	71.3°C	94.1°C
45	C116	52.4°C	71.5°C
46	C117	52.7°C	75.5°C
47	C112	55.3°C	77.8°C
48	C120	55.1°C	73.5°C
49	RY1	61.3°C	75.2°C



2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 110 % LOAD Ta : 25°C	TEST : OK
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/180VAC O/P : 100 % LOAD Ta= -35°C /-30°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	± 0.011 %/°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, 2G 10min./1cycle, 60min. 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 : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C	
9	CAPACITOR LIFE CYCLE	SUPPOSE C116 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) 294503HRS (2) 82261HRS (3) 127692HRS (4) 185079HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 493.9K hrs min. Telcordia SR-332 (Bellcore) ; 48.9K 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	DANIEL GAO	SANFORD SU	VINCENT TSENG

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