



Test Report: NSP-3200-24

3200W Power Supply with Single 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

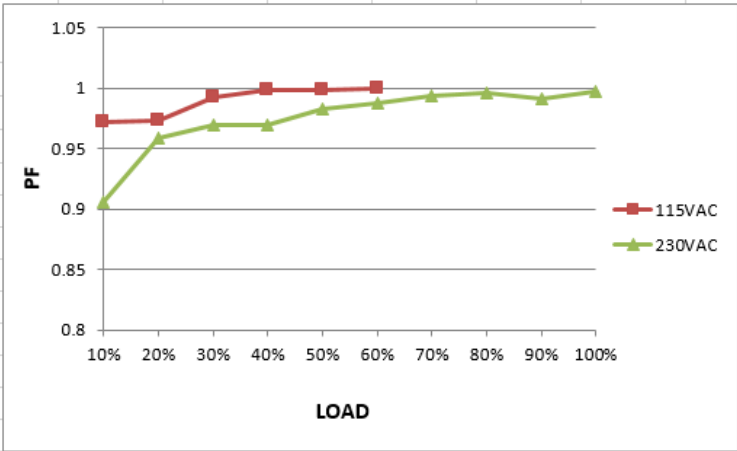
DESIGN VERIFY TEST

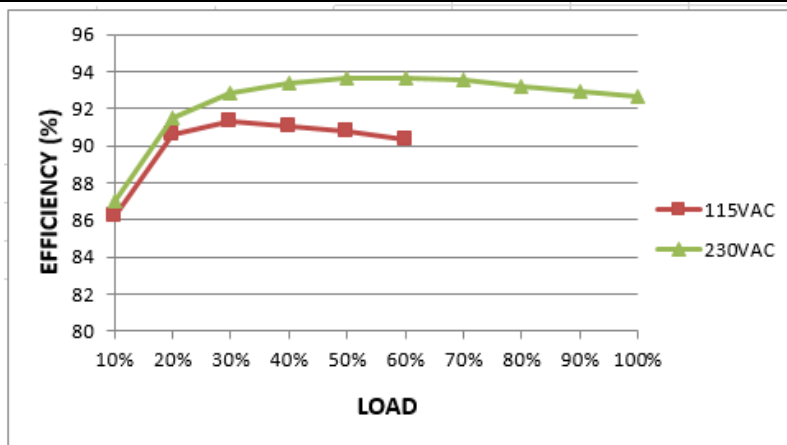
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 23.5 V~ 30V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	22.86V~30.99V/230VAC 22.86V~30.99V/115VAC
2	OUTPUT VOLTAGE(Max) TOLERANCE	V1: 1%~ -1%	I/P: 180VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: 0.33%~0.33%
3	LINE REGULATION (Max)	V1: 0.5%~ -0.5%	I/P: 180VAC~264VAC O/P:FULL LOAD Ta:25°C	V1:0.13%~-0.13%
4	LOAD REGULATION(Max)	V1: 0.5%~ -0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.33%~0.33%
5	OVER/UNDERSHOOT TEST	±10%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	<10%
6	RIPPLE & NOISE(Max)	V1: 300mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1 152 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	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 1160 ms
		<p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH1 : Output Voltage CH2 : AC Input Voltage</p>		

8 RISE TIME (Max)	230VAC/60ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 38.6ms
<p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH1 : Output Voltage</p> <p> Δ: 1.40 V @: 14.6 V Δ: 38.6ms @: 0.00 s </p>			
9 HOLD UP TIME (Typ.)	230VAC 70%/ 16ms 230VAC 100%/8ms	I/P : 230 VAC O/P : 70% LOAD O/P : 100% LOAD Ta : 25°C	17.2ms (70% load) 9.4ms (100% load)
<p>INPUT=230VAC/50HZ @70% LOAD</p> <p>CH1 : Output Voltage CH2 : AC Input Voltage</p> <p> ΔX: +17.200000000ms $1/\Delta$X: +58.140Hz ΔY(1): +14.0625V </p>		<p>INPUT=230VAC/50HZ @100% LOAD</p> <p>CH2 : Output Voltage CH1 : AC Input Voltage</p> <p> Δ: 258 V @: 264 V Δ: 9.40ms @: -23.4ms </p>	
10 DYNAMIC LOAD	V1: 2400 mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	1010mVp-p(120HZ) 1130mVp-p(1KHZ)
<p>FULL /50% LOAD 50%DUTY / 120HZ</p> <p> Pk-Pk(3): 1.01V </p>		<p>FULL /50% LOAD 50%DUTY / 1KHZ</p> <p> Pk-Pk(3): 1.13V </p>	

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																	
1	INPUT VOLTAGE RANGE	90VAC~264VAC 127VDC~400VDC	(1) I/P:TESTING O/P:FULL LOAD (2) I/P:DC TESTING(L:+ N:-) O/P: FULL / 50% LOAD (3) I/P:DC TESTING(L:- N:+) O/P: FULL / 50% LOAD (PLEASE CHECK DERATING CURVE) Ta:25°C	(1)168Vac~264Vac/FULL LOAD 85Vac~264Vac/50%LOAD (2)242Vdc~400Vdc/FULL LOAD 108Vdc~400Vdc/50% LOAD (3) 242Vdc~400Vdc/FULL LOAD 107Vdc~400Vdc/50% 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:180 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK																																	
3	INPUT CURRENT (Typ.)	230V/ 17 A	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I =15.32 A/ 230VAC																																	
4	LEAKAGE CURRENT	<2 mA / 230 VAC	I/P : 230 VAC O/P : Min LOAD Ta : 25°C	L-FG : 0.85 mA N-FG : 0.85 mA																																	
5	POWER FACTOR (Typ.)	0.97 / 230VAC	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	PF= 0.996/230VAC																																	
P.F vs LOAD  <table border="1"> <caption>Power Factor vs Load Data</caption> <thead> <tr> <th>Load (%)</th> <th>115VAC PF</th> <th>230VAC PF</th> </tr> </thead> <tbody> <tr><td>10%</td><td>0.97</td><td>0.90</td></tr> <tr><td>20%</td><td>0.97</td><td>0.96</td></tr> <tr><td>30%</td><td>0.99</td><td>0.97</td></tr> <tr><td>40%</td><td>1.00</td><td>0.97</td></tr> <tr><td>50%</td><td>1.00</td><td>0.98</td></tr> <tr><td>60%</td><td>1.00</td><td>0.99</td></tr> <tr><td>70%</td><td>1.00</td><td>0.99</td></tr> <tr><td>80%</td><td>1.00</td><td>0.99</td></tr> <tr><td>90%</td><td>1.00</td><td>0.99</td></tr> <tr><td>100%</td><td>1.00</td><td>1.00</td></tr> </tbody> </table>					Load (%)	115VAC PF	230VAC PF	10%	0.97	0.90	20%	0.97	0.96	30%	0.99	0.97	40%	1.00	0.97	50%	1.00	0.98	60%	1.00	0.99	70%	1.00	0.99	80%	1.00	0.99	90%	1.00	0.99	100%	1.00	1.00
Load (%)	115VAC PF	230VAC PF																																			
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30%	0.99	0.97																																			
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100%	1.00	1.00																																			
6	EFFICIENCY(Typ.)	93.5% / (75%LOAD)	I/P:230 VAC O/P:75%LOAD Ta:25°C	93.74%																																	
EFFICIENCY vs LOAD																																					



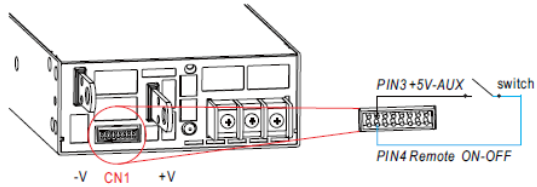
7	INRUSH CURRENT(Typ.)	230V/55 A COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I=46A/ 230VAC T50=1562 us/230V
<p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH4 : Input current CH3: input voltage</p> <p>DS0-X3014A, MY51330359 Fri Jan 14 11:03:15 2022</p>				

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105 %~ 115 % 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 O/P: TESTING Ta:25°C	110.45%/ 264VAC 110.45%/ 230VAC 110.22%/180VAC 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	31.5 V~ 37.5 V 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	33.35V/ 264VAC 33.33V/ 230VAC 33.35V/ 90VAC PROTECTION TYPE : Shut down o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	NO DAMAGE PROTECTION TYPE : Shut down o/p voltage, recovers automatically after temperature goes down	I/P: 264VAC I/P: 180VAC O/P: FULL LOAD	O.T.P. Active ROTECTION 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	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

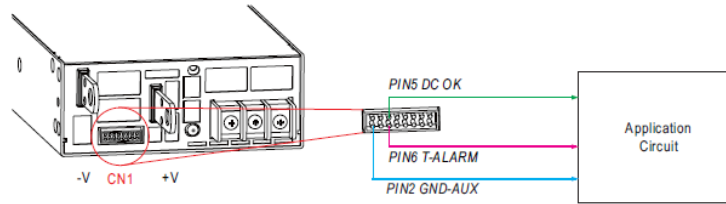
		O/P voltage 5 sec. after O/P voltage is down low, re-power on to recover	
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CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT												
1	AUXILIARY POWER (AUX)	<p>Auxiliary voltage output, 10.6~13.2V, referenced to GND-AUX (pin2). The maximum load current is 0.8A. This output has the built-in "Oring diodes" and is not controlled by "Remote ON-OFF". I/P: 230 VAC O/P:FULL LOAD Ta:25°C</p> <p>Test Result :</p> <table border="1"> <thead> <tr> <th>AUX</th> <th>TOLERANCE</th> <th>RIPPLE</th> <th>TEST RESULT</th> </tr> </thead> <tbody> <tr> <td>12V / 0.8A</td> <td>10.8~13.2 V</td> <td>450mVp-p</td> <td>11.73V /0.8A 226 mVp-p</td> </tr> </tbody> </table>	AUX	TOLERANCE	RIPPLE	TEST RESULT	12V / 0.8A	10.8~13.2 V	450mVp-p	11.73V /0.8A 226 mVp-p						
AUX	TOLERANCE	RIPPLE	TEST RESULT													
12V / 0.8A	10.8~13.2 V	450mVp-p	11.73V /0.8A 226 mVp-p													
2	REMOTE CONTROL ON/OFF	<p>3. Remote ON-OFF Control ※ The power supply can be turned ON/OFF individually or along with other units by using the "Remote ON-OFF" function.</p>  <table border="1"> <thead> <tr> <th>Between Remote ON-OFF and +5V-AUX</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>Switch Short</td> <td>ON</td> </tr> <tr> <td>Switch Open</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"> <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>	Between Remote ON-OFF and +5V-AUX	Power Supply Status	Switch Short	ON	Switch Open	OFF	Between ON/OFF and +5V-AUX	Power Supply Status	SW SHORT	ON	SW OPEN	OFF		
Between Remote ON-OFF and +5V-AUX	Power Supply Status															
Switch Short	ON															
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Between ON/OFF and +5V-AUX	Power Supply Status															
SW SHORT	ON															
SW OPEN	OFF															
3	REMOTE SENSE	<p>S+ / S- 0.3V~0.5V Compensate voltage drop on the load wiring up to 0.5V.</p>	<p>I/P: 230 VAC O/P:FULL LOAD Ta:25°C</p>	0.3V~0.5V												

4 ALARM SIGNAL

※ There are 2 alarm signals, DC OK and T-ALARM, in TTL signal form, on CN1. These signals are isolated from output. The maximum sink current is 10mA.



DC OK Fail signal	Power Supply Status
"High" > 3.5~5.5V	Vout ≒ 77%±5%
"Low" < -0.5~0.5V	Vout ≒ 80%±5%

T-ALARM	Power Supply Status
"High" > 3.5~5.5V	OFF (OTP or Fan Fail)
"Low" < -0.5~0.5V	ON (Normal Work)

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

Test Result :

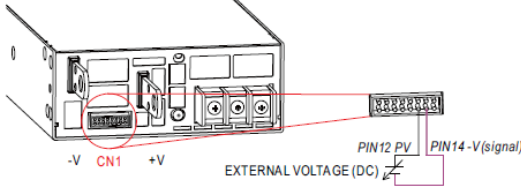
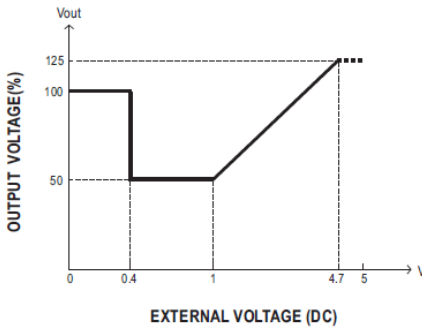
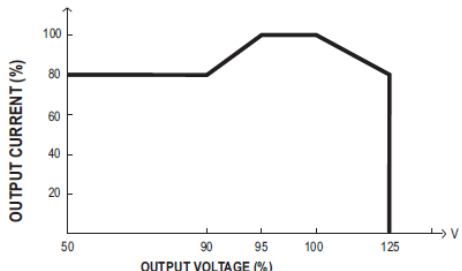
Vout	DC OK SIGNAL
Vout ≤ 72%	4.9612V
Vout ≥ 85%	0.0081v

T-ALARM
 High (3.5 ~ 5.5V) : When the internal temperature exceeds the limit of temperature alarm, or when Fan fails.
 Low (-0.5 ~ 0.5V) : When the internal temperature is normal, and when Fan works normally.
 The maximum sourcing current is 10mA and only for output(Note.2)

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

Test Result :

P.SU STATUS	Vo	T-ALARM SPEC	T-ALARM TEST
NORMAL	100%±2%	-0.5 ~0.5V	0.0081v
OTP	0V	3.5~5.5V	4.961V
FAN LOCK	0V	3.5~5.5V	4.961V

<p>5</p>	<p>OUTPUT VOLTAGE PROGRAMMABLE (PV)</p>	<p>2. 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 50~125% of the nominal voltage by applying EXTERNAL VOLTAGE.</p>  <p>◎ For Remote Sense / Local Sense, please refer to "Voltage Drop Compensation" section.</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="446 627 869 952">  </div> <div data-bbox="965 638 1428 907">  </div> </div> <p>◎ The rated current should change with the Output Voltage Programming accordingly. ◎ For Remote Sense / Local Sense, please refer to "Voltage Drop Compensation" section.</p> <p>I/P: 230 VAC O/P: FULL LOAD Ta: 25°C TEST RESULT :</p> <table border="1" data-bbox="427 1160 1321 1370"> <thead> <tr> <th style="text-align: center;">PV</th> <th style="text-align: center;"><0.3V</th> <th style="text-align: center;">1V</th> <th style="text-align: center;">3.435V</th> <th style="text-align: center;">4.7V</th> <th style="text-align: center;">5V</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">MODEL</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">SPEC</td> <td style="text-align: center;">24V±5%</td> <td style="text-align: center;">12V±5%</td> <td style="text-align: center;">24V±5%</td> <td style="text-align: center;">30V±5%</td> <td style="text-align: center;">30V±5%</td> </tr> <tr> <td style="text-align: center;">Vout</td> <td style="text-align: center;">24.03V</td> <td style="text-align: center;">12.063V</td> <td style="text-align: center;">24.068V</td> <td style="text-align: center;">30.47V</td> <td style="text-align: center;">30.99V</td> </tr> </tbody> </table>	PV	<0.3V	1V	3.435V	4.7V	5V	MODEL						SPEC	24V±5%	12V±5%	24V±5%	30V±5%	30V±5%	Vout	24.03V	12.063V	24.068V	30.47V	30.99V
PV	<0.3V	1V	3.435V	4.7V	5V																					
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SPEC	24V±5%	12V±5%	24V±5%	30V±5%	30V±5%																					
Vout	24.03V	12.063V	24.068V	30.47V	30.99V																					

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 52A/600V Q3 Rated 52A/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	Q1: Q3 VDS: VDS: (1)477 V (1)493 V (2)481 V (2)501 V (3)489V (3) 493V (4)493V (4)497V (5)497V (5)501V (6)493V (6)493V (7)501V (7)493V

			(5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. PV=1V (8)100% LOAD (9)50% LOAD (10)10% LOAD	(8)477 V (9)469V (10)433V	(8)497 V (9) 493V (10)413 V	
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q 900 Rated 52 A/600V Q 902 Rated 52 A/600V	I/P:High-Line +3V =267 V 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 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load.	Q900: VDS: (1)505V (2)505V (3)505V (4)501V (5)503V (6)473V (7)477V	Q902: VDS: (1)493V (2)493V (3)491V (4)493V (5)497V (6)477V (7)457V	
3	P.F.C DIODE	D8 Rated 16 A/600V	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 Ta:25°C	(1) 441V (2) 449V (3) 421V (4) 421V		
4	Diode Peak Voltage	Q101 Rated 100 A/100 V Q104 Rated 100 A/100 V Q107 Rated 100 A/100 V Q110 Rated 100 A/100 V	I/P:High-Line +3V =267 V 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 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD (9) burst mode	Q101: VDS: (1)85.7V (2)95V (3)68.8V (4)68.8V (5)68.8V (6)68V (7)67.2V (8)68V (9)58.3	Q104: VDS: (1)72.1V (2)83.4V (3)64.9V (4)64.1V (5)64.9V (6)62.5V (7)64.1V (8)71.3V (9)60.3V Q107: VDS: (1)77.7V (2)96.2V (3)66.5V (4)68.1V (5)68.6V (6)69.4V (7)68.6V (8)69.4V (9)71V	Q110: VDS: (1)80.2V (2)93.1V (3)74.6V (4)73.4V (5)68.2V (6)69.8V (7)70.5V (8)61.8V (9)65.8V

5	Input Capacitor Voltage	C5 Rated: 330 μ 450V 105 °C	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)432V (2)424V (3)448V (4) 432V
6	Control IC Voltage Test	PWM IC U201 Rated 6.5 V~30V PFC IC U900 Rated 4.5V~20 V	I/P:High-Line +3V =267 V AC ON/OFF 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	U201 U900 (1) 14.9V (1) 13.9V (2) 15.1V (2)14.5V (3) 15.1 (3)14.9V (4) 12.7V (4)13.5V (5) 13.3V (5)12.7V
7	TOP SWITCHING STAND BY POWER	U71 Rate 20 A/ 800V	I/P:High-Line +3V =267 V AC ON/OFF O/P: (1)Full Load (2)Remote On/Off Ta:25°C	(1) 645V (2) 645V

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3KVAC/min I/P-FG :2KVAC/min O/P-FG:1.5KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG:1.8 KVAC/min Ta:25°C	I/P-O/P: 12.04 mA I/P-FG: 10.73mA O/P-FG: 23 mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100M Ω I/P-FG: 500VDC>100M Ω O/P-FG:500VDC>100M Ω	I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: 13 G Ω I/P-FG: 2.86G Ω O/P-FG: 5 G Ω NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 m Ω	40A / 2min Ta:25°C	25m Ω

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P:230VAC/50HZ O/P:100% LOAD Ta:25°C	Test by certified Lab
2	CONDUCTION	EN55022 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	Test by certified Lab
3	RADIATION	EN55022 CLASS A	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	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 : NSP-3200-24 1. ROOM AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD 2. HIGH AMBIENT BURN-IN : 1 HRS I/P : 230VAC O/P : FULL LOAD																																																																														
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 25°C</th> <th>HIGH AMBIENT Ta= 50°C</th> </tr> </thead> <tbody> <tr><td>1</td><td>BD1</td><td>55.8°C</td><td>83.9°C</td></tr> <tr><td>2</td><td>Q3</td><td>63.1°C</td><td>100.8°C</td></tr> <tr><td>3</td><td>D7</td><td>62.9°C</td><td>96.0°C</td></tr> <tr><td>4</td><td>Q902</td><td>57.9°C</td><td>92.4°C</td></tr> <tr><td>5</td><td>Q109</td><td>56.2°C</td><td>93.1°C</td></tr> <tr><td>6</td><td>Q104</td><td>52.6°C</td><td>87.3°C</td></tr> <tr><td>7</td><td>C5</td><td>45.3°C</td><td>77.7°C</td></tr> <tr><td>8</td><td>T1-2</td><td>44.2°C</td><td>78.3°C</td></tr> <tr><td>9</td><td>T1-1</td><td>57.8°C</td><td>90.8°C</td></tr> <tr><td>10</td><td>T2-2</td><td>59.4°C</td><td>93.4°C</td></tr> <tr><td>11</td><td>T2-1</td><td>64.4°C</td><td>99.1°C</td></tr> <tr><td>12</td><td>L3</td><td>62.4°C</td><td>97.6°C</td></tr> <tr><td>13</td><td>T301</td><td>51.7°C</td><td>83.3°C</td></tr> <tr><td>14</td><td>U71</td><td>58.4°C</td><td>91.2°C</td></tr> <tr><td>15</td><td>C121</td><td>36.3°C</td><td>68.9°C</td></tr> <tr><td>16</td><td>RT90</td><td>52.7°C</td><td>86.6°C</td></tr> <tr><td>17</td><td>RT52</td><td>25.0°C</td><td>53.6°C</td></tr> <tr><td>18</td><td>U110</td><td>37.9°C</td><td>71.6°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 25°C	HIGH AMBIENT Ta= 50°C	1	BD1	55.8°C	83.9°C	2	Q3	63.1°C	100.8°C	3	D7	62.9°C	96.0°C	4	Q902	57.9°C	92.4°C	5	Q109	56.2°C	93.1°C	6	Q104	52.6°C	87.3°C	7	C5	45.3°C	77.7°C	8	T1-2	44.2°C	78.3°C	9	T1-1	57.8°C	90.8°C	10	T2-2	59.4°C	93.4°C	11	T2-1	64.4°C	99.1°C	12	L3	62.4°C	97.6°C	13	T301	51.7°C	83.3°C	14	U71	58.4°C	91.2°C	15	C121	36.3°C	68.9°C	16	RT90	52.7°C	86.6°C	17	RT52	25.0°C	53.6°C	18	U110	37.9°C	71.6°C
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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 : 230VAC /180VAC O/P : 100 % LOAD Ta= -25°C	TEST : OK																																																																												
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C 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	± 0.002 %/°C (0-50°C)																																																																												



6	STORAGE TEMPERATURE TEST	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	OK
7	THERMAL SHOCK TEST	1. Thermal shock Temperature : -25°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	OK
8	VIBRATION TEST	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 2G (5) Test Time : 60min in each axis (X.Y.Z) (6) Ta : 25°C	TEST : OK
9	CAPACITOR LIFE CYCLE	SUPPOSE C121 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) 413789HRS (2) 43196HRS (3) 159061HRS (4) 427594HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 637.4K hrs min. Telcordia SR-332 (Bellcore) ; 63.7K 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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