



# Test Report: NSP-150-36

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150W AC/DC High Reliable Multi-Industries Enclosed Type Power 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

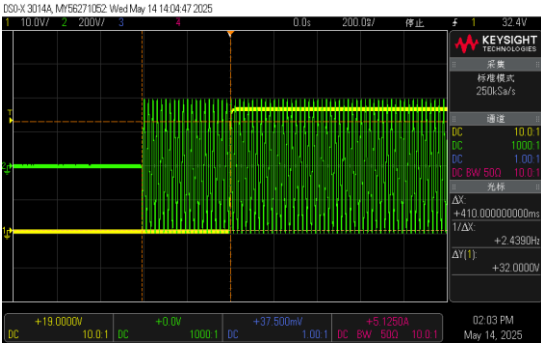
ENVIRONMENT TEST

## ■ DESIGN VERIFY TEST

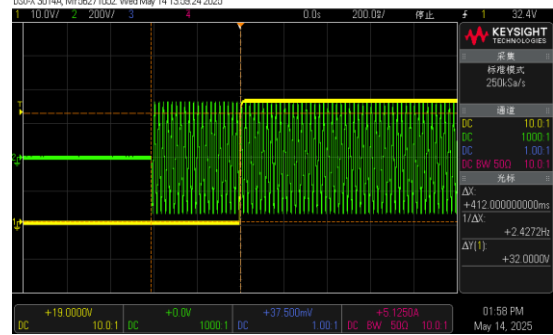
### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 32V~ 43V	I/P : 230 VAC O/P : MIN LOAD Ta : 25°C	30.5V~45.6V/230VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1%~ +1%	I/P: 85VAC /305VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.42% +0.47%
3	LINE REGULATION	V1: -0.5%~ +0.5%	I/P: 85VAC~ 305VAC O/P:FULL LOAD Ta:25°C	V1: -0.00%~ +0.00 %
4	LOAD REGULATION	V1: -0.5%~ +0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.03%~ +0.00%
5	OVER/UNDERSHOOT TEST	< ± 5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	1.42%
6	RIPPLE & NOISE (Max )	V1: 240mVp-p	I/P: 230 VAC O/P: MIN LOAD—FULL LOAD Ta:25°C	V1: 87mVp-p / 100% load
		high frequency :	low frequency :	
7	SET UP TIME(Max)	277VAC/1000ms 230VAC/1000ms 115VAC/1500ms	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/410ms 230VAC/ 412ms 115VAC/378 ms

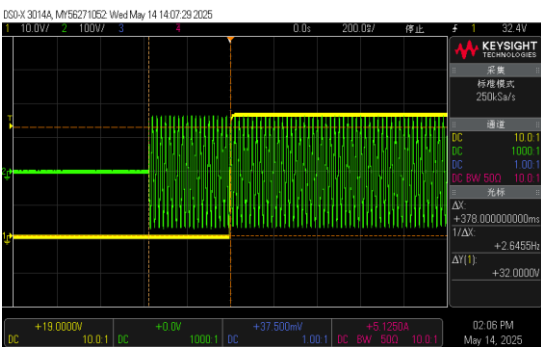
INPUT=277VAC/60HZ @ FULL LOAD  
CH1 : Output Voltage CH2 : AC Input Vltage



INPUT=230VAC/50HZ @ FULL LOAD  
CH1 : Output Voltage CH2 : AC Input Voltage



INPUT=115VAC/60HZ @ FULL LOAD  
CH1 : Output Voltage CH2 : AC Input Voltage



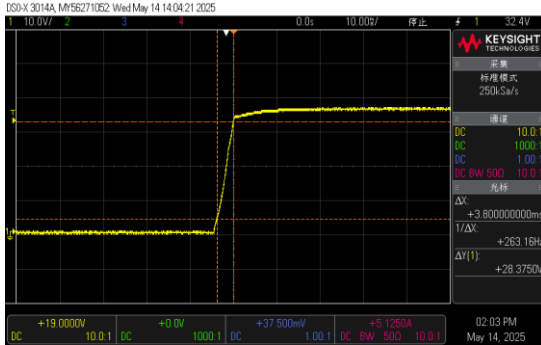
8 RISE TIME (Max)

277VAC/80ms  
230VAC/80ms  
115VAC/80ms

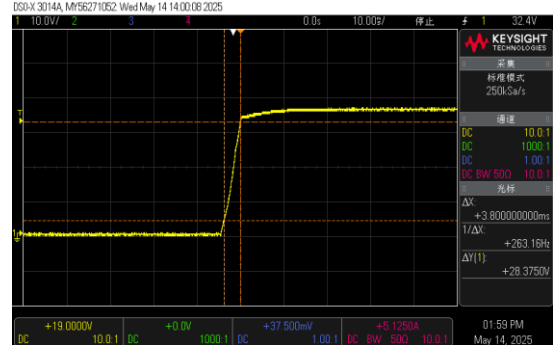
I/P : 277VAC  
I/P : 230 VAC  
I/P : 115 VAC  
O/P : FULL LOAD  
Ta : 25°C

277VAC/3.8ms  
230VAC/3.8ms  
115VAC/3.8ms

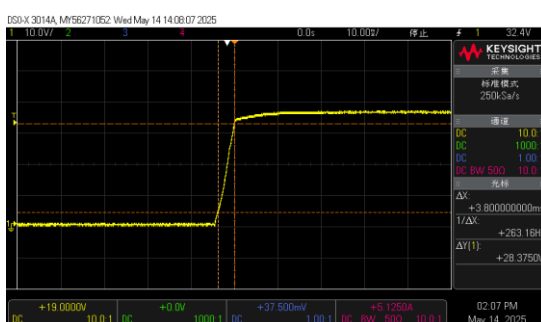
INPUT=277VAC/60HZ @ FULL LOAD  
CH1 : Output Voltage

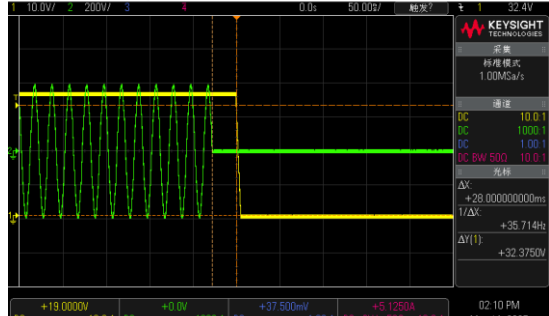
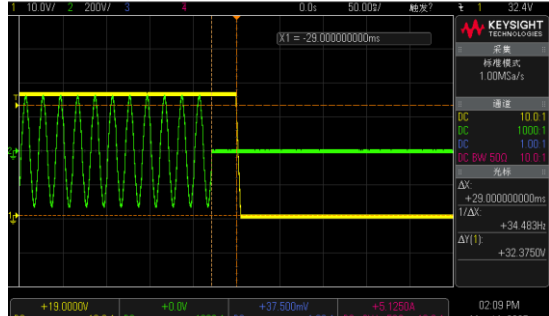

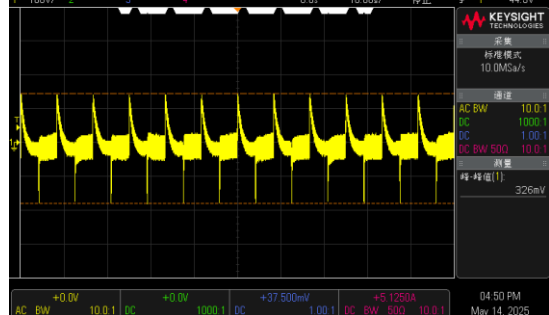
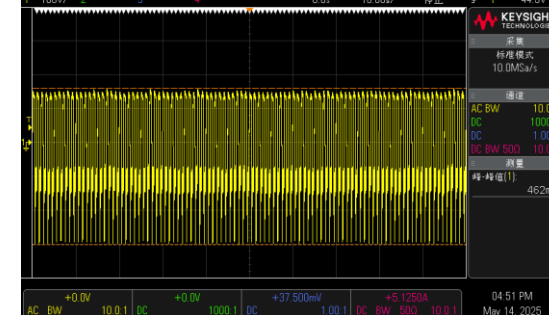


INPUT=230VAC/50HZ @ FULL LOAD  
CH1 : Output Voltage



INPUT=115VAC/60HZ @ FULL LOAD  
CH1 : Output Voltage CH2 : AC Input Voltage

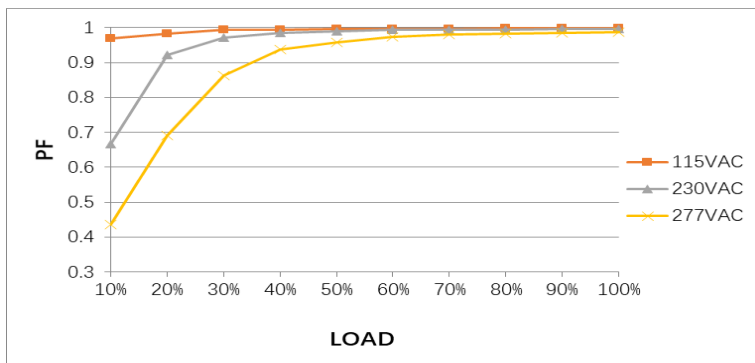


9	HOLD UP TIME (Typ.)	277VAC/16ms 230VAC/16ms 115VAC/16ms	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/28ms 230VAC/29ms 115VAC/27ms
<p>INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p>		<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p>		
				
<p>INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p>				
				
10	DYNAMIC LOAD	V1: 3600mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	326mVp-p  462mVp-p
<p>FULL /50% LOAD 50%DUTY / 120HZ</p>		<p>FULL /50% LOAD 50%DUTY / 1KHZ</p>		
				

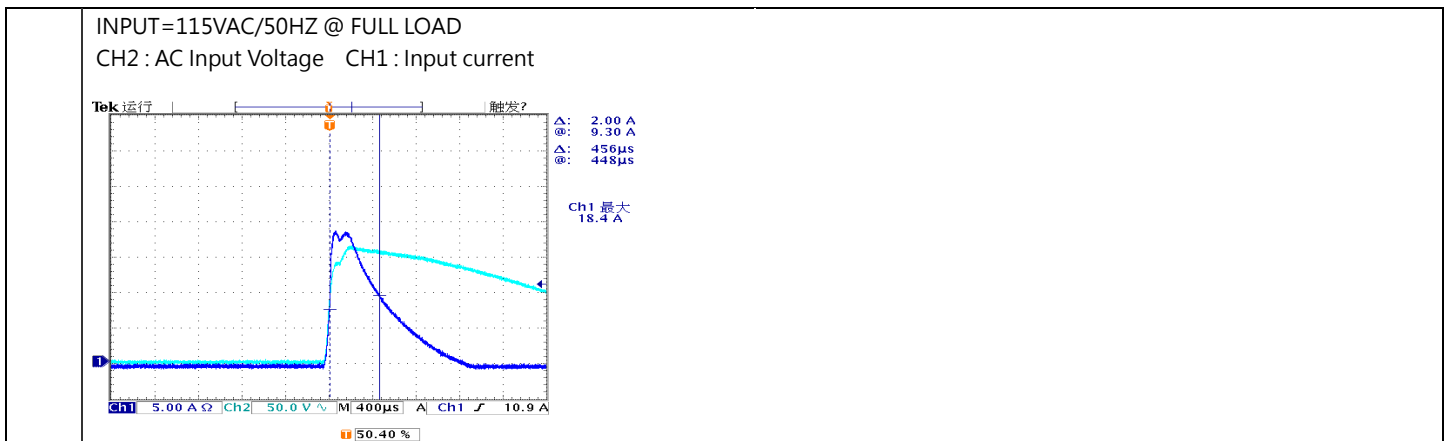
### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	85VAC~305VAC 120VDC~ 431VDC	(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 Ta:25°C	(1) 85 V~305V (2) 120Vdc~ 431 Vdc/FULL LOAD 120 Vdc~ 431Vdc/50% LOAD (3) 120Vdc~ 431Vdc/FULL LOAD 120Vdc~431 Vdc/50% LOAD
			I/P: LOW-LINE-3V=82 V HIGH-LINE+10V=315 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:85VAC ~305VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	INPUT CURRENT (Typ.)	277V/ 0.63 A 230V/ 0.75 A 115V/ 1.55 A	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =0.59A/ 277VAC I =0.71A/ 230VAC I =1.45A/ 115VAC
4	LEAKAGE CURRENT	Earth leakage current <350μA(rms)@277Vac	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	L-FG : 201μA N-FG : 219μA
		Touch current <100μA(rms)@277Vac	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	L-V+ : 44μA L-V- : 44μA N-V+ : 44μA N-V- : 44μA
5	POWER FACTOR (Typ.)	0.90/277VAC 0.93/ 230VAC 0.98/ 115VAC	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.987/277VAC PF=0.996/230VAC PF=0.998/115VAC

P.F vs LOAD



6	EFFICIENCY(Typ.)	92.5%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	92.8%																																												
<p>EFFICIENCY vs LOAD</p> <table border="1"> <caption>Efficiency vs Load Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>115VAC (%)</th> <th>230VAC (%)</th> <th>277VAC (%)</th> </tr> </thead> <tbody> <tr><td>10%</td><td>82</td><td>82</td><td>82</td></tr> <tr><td>20%</td><td>88</td><td>88</td><td>88</td></tr> <tr><td>30%</td><td>89</td><td>89</td><td>90</td></tr> <tr><td>40%</td><td>89</td><td>89</td><td>91</td></tr> <tr><td>50%</td><td>89</td><td>89</td><td>91</td></tr> <tr><td>60%</td><td>89</td><td>89</td><td>91</td></tr> <tr><td>70%</td><td>89</td><td>89</td><td>91</td></tr> <tr><td>80%</td><td>89</td><td>89</td><td>91</td></tr> <tr><td>90%</td><td>89</td><td>89</td><td>91</td></tr> <tr><td>100%</td><td>89</td><td>89</td><td>91</td></tr> </tbody> </table>					LOAD (%)	115VAC (%)	230VAC (%)	277VAC (%)	10%	82	82	82	20%	88	88	88	30%	89	89	90	40%	89	89	91	50%	89	89	91	60%	89	89	91	70%	89	89	91	80%	89	89	91	90%	89	89	91	100%	89	89	91
LOAD (%)	115VAC (%)	230VAC (%)	277VAC (%)																																													
10%	82	82	82																																													
20%	88	88	88																																													
30%	89	89	90																																													
40%	89	89	91																																													
50%	89	89	91																																													
60%	89	89	91																																													
70%	89	89	91																																													
80%	89	89	91																																													
90%	89	89	91																																													
100%	89	89	91																																													
7	NO LOAD POWER CONSUMPTION(Typ.)	Remote Power ON : 3W/277VAC 3W/230VAC 3W/115VAC  Remote Power OFF : 0.5W/277VAC 0.5W/230VAC 0.3W/115VAC	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : RC ON/RC OFF Ta : 25°C	Remote Power ON : 1.04W/277VAC 1.09W/230VAC 1.11W/115VAC  Remote Power OFF : 0.39W/277VAC 0.31W/230VAC 0.13W/115VAC																																												
8	INRUSH CURRENT(Typ.)	277VAC/55A 230VAC/45A 115VAC/23A COLD START	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =49.8A/ 277VAC T50=464us/277VAC  I =40.2A/ 230VAC T50= 488us/230VAC  I =18.4A/ 115VAC T50= 456us/115VAC																																												
<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>INPUT=277VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH1: Input current</p> <p>Ch1 最大 49.8 A</p> </div> <div style="width: 45%;"> <p>INPUT=230VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH1: Input current</p> <p>Ch1 最大 40.2 A</p> </div> </div>																																																

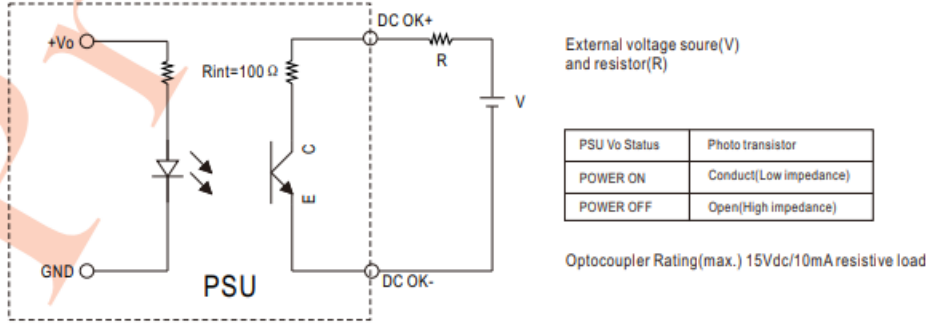


### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~ 200%	I/P: 305VAC I/P: 230VAC I/P: 85VAC O/P:TESTING Ta:25°C	129.76%/ 305VAC 129.76%/ 230VAC 129.76%/85VAC Protection type : 1、Normally works within 105 ~ 200% rated output power for more than 5 seconds and then constant current limiting without shutdown(Vout>30%), recovers automatically after fault condition is removed, or shut down o/p voltage when Vout<30%,AC re-power on to recover 2、>200% rated power, constant current limiting (Vout>30%)with auto-recovery after fault condition is removed, or shut down o/p voltage when Vout t<30%,AC re-power on to recover
2	OVER VOLTAGE PROTECTION	44V~54V	I/P: 305VAC I/P: 230VAC I/P: 85VAC O/P:MIN LOAD Ta:25°C	49.3V/ 305VAC 49.3V/ 230VAC 49.3V/ 85VAC Protection type : Shut down o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 305VAC I/P: 85VAC O/P:FULL LOAD	O.T.P. Active Protection type : Shut down o/p voltage, re-power on to recover
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 305VAC I/P: 85VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE Protection type : Constant current limiting for more than 5 seconds (Vout<30% ) and then shut down o/p voltage, AC re-power on to recover

### CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT						
1	REMOTE ON/OFF CONTROL	<p><b>2.Remote Control</b> The PSU can be turned ON/OFF by using the "Remote Control" function with external switch and auxiliary power</p> <table border="1"> <tr> <td>PSU Vo Status</td> <td>Between RC-(pin1) and RC+(pin2) on CN1</td> </tr> <tr> <td>POWER ON</td> <td>Keep 0~0.8Vdc or open</td> </tr> <tr> <td>POWER OFF</td> <td>Keep 3.3~10Vdc by external voltage</td> </tr> </table>	PSU Vo Status	Between RC-(pin1) and RC+(pin2) on CN1	POWER ON	Keep 0~0.8Vdc or open	POWER OFF	Keep 3.3~10Vdc by external voltage		
PSU Vo Status	Between RC-(pin1) and RC+(pin2) on CN1									
POWER ON	Keep 0~0.8Vdc or open									
POWER OFF	Keep 3.3~10Vdc by external voltage									
		<p>I/P: 230 VAC O/P:FULL LOAD Ta:25°C Test Result : PASS</p> <table border="1"> <thead> <tr> <th>Between ON/OFF</th> <th>Power Output Status</th> </tr> </thead> <tbody> <tr> <td>POWER OFF (0~0.8V)</td> <td>ON</td> </tr> <tr> <td>POWER ON (3.3~10V)</td> <td>OFF</td> </tr> </tbody> </table>	Between ON/OFF	Power Output Status	POWER OFF (0~0.8V)	ON	POWER ON (3.3~10V)	OFF		
Between ON/OFF	Power Output Status									
POWER OFF (0~0.8V)	ON									
POWER ON (3.3~10V)	OFF									
2	PEAK POWER	<p><b>1. Peak Power</b></p> $P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} \leq P_{rated}$ $Duty = \frac{t}{T} \times 100\% \leq 35\%$ <p><math>t \leq 5 \text{ sec}</math></p> <p> <math>P_{av}</math>: Average output power (W)  <math>P_{pk}</math>: Peak output power (W)  <math>P_{nkp}</math>: Non-peak output power (W)  <math>P_{rated}</math>: Rated output power (W)  <math>t</math>: Peak power width (sec)  <math>T</math>: Period (sec)         </p> <p> <b>For example (24V model):</b>  <math>V_{in} = 200\text{Vac}</math>    <math>Duty\_max = 5\%</math>  <math>P_{av} = P_{rated} = 200\text{W}</math>  <math>P_{pk} = 400\text{W}</math>  <math>t \leq 5 \text{ sec}</math>  <math>T \geq \frac{5 \text{ sec}}{5\%} \geq 100\text{sec}</math>  <math>P_{nkp} \leq \frac{T \cdot P_{av} - t \cdot P_{pk}}{T-t}</math>  <math>P_{nkp} \leq 189\text{W}</math> </p> <p>Note:When the output voltage is adjusted to the upper limit, the peak power is 150% rated power</p>								
		<p>I/P: 100/305VAC O/P:PEAK LOAD (1Hour NO DAMAGE) Ta:25°C Test Result: PASS</p>								

3	REMOTE SENSE	The remote sensing compensates voltage drop on the load wiring up to 0.3V.	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	> 0.3 V
4	DC_OK Signal	<p><b>4.DC_OK signal</b></p> <p>※ DC_OK is a collector shorted signal. It is used by an optocoupler in the power supply which indicates the output status of the power supply as exhibited below.</p>  <p>I/P:230VAC O/P:FULL LOAD Ta:25°C TEST :OK</p>		

### COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor ( D to S) or (C to E) Peak Voltage	Q6 Rated : 650V/11A	AC ON/OFF I/P:High-Line +3V =308V 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.	VDS: (1) 455V (2) 499V (3) 451V (4) 451V (5) 451V (6) 451V (7) 499V



			<p>I/P:Low-Line -3V = 82V  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) 435V  (2) 495V  (3) 435V  (4) 435V  (5) 435V  (6) 435V  (7) 483V</p>
2	P.F.C Transistor ( D to S) or (C to E) Peak Voltage	Q1 Rated : 650V/15A	<p>I/P:High-Line +3V =308V  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 =82V  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) 453V  (2) 553V  (3) 453V  (4) 457V  (5) 453V  (6) 457V  (7) 553V</p> <p>VDS:  (1) 505V  (2) 558V  (3) 501V  (4) 501V  (5) 497V  (6) 489V  (7) 489V</p>
3	P.F.C DIODE	D8 Rated : 4 A/650V	<p>I/P:High-Line +3V =308 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>(1) 441V  (2) 461V  (3) 441V  (4) 441V</p>

			<p>I/P:Low-Line -3V = 82V  AC ON/OFF  O/P: (1)Full Load (1) 441V  (2)Output Short (2) 457V  (3)Dynamic Load Full Load/  Min. Load 90%Duty/5KHz (3) 441V  (4)Dynamic Load 100% Load/  Min. Load 50%Duty/120Hz (4) 441V  Ta:25°C</p>	
4	Diode Peak Voltage	D101 : 20A/150V	<p>AC ON/OFF  I/P:High-Line +3V =308 V  O/P: (1)Full Load (1) 96.2V  (2)Output Short (2) 32.4V  (3)Dynamic Load Full Load/  Min. Load 90%Duty/1KHz (3) 96.2V  (4)Dynamic Load Full Load/  Min. Load 90%Duty/3KHz (4) 95.4V  (5)Dynamic Load Full Load/  Min. Load 90%Duty/5KHz (5) 95.4V  (6)Dynamic Load 100% Load/  Min. Load 50%Duty/120Hz (6) 97.8V  (7)0%→400% Load. (7) 99.4V  (8).NO LOAD (8) 92.2V  Ta:25°C</p>	D101: VDS: (1) 96.2V (2) 32.4V (3) 96.2V (4) 95.4V (5) 95.4V (6) 97.8V (7) 99.4V (8) 92.2V
5	Input Capacitor Voltage	C5 Rated: 82μ/ 450V Surge voltage: 500V	<p>I/P:High-Line +3V =308V  O/P: (1)Full Load input on/off (1)435V  (2) Min load input on /Off (2)431V  (3)Full Load /Min load Change (3)447V  (4)Full load continue (4)431V  Ta:25°C</p>	
6	Control IC Voltage Test	PWM IC U2 Rated 9.6V~ 36V	<p>AC ON/OFF  I/P:High-Line +3V =308 V  O/P(1)FULL LOAD (1) 19.0V  (2) Output Short (2) 19.0V  (3)O.L.P (3) 19.0V  (4)O.V.P. (4) 19.0V  (5)NO LOAD VRmin(Low LINE) (5) 19.0V  Ta:25°C</p>	U2 (1) 19.0V (2) 19.0V (3) 19.0V (4) 19.0V (5) 19.0V

## ■ SAFETY & E.M.C. TEST

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4.2 K VAC/min I/P-FG : 2.1 K VAC/min O/P-FG: 1.5 KVAC/min	I/P-O/P: 4.62 KVAC/min I/P-FG: 2.52 KVAC/min O/P-FG: 1.8 KVAC/min Ta:25°C	I/P-O/P: 1.708 mA I/P-FG: 1.59 mA O/P-FG: 1.733 mA
2	ISOLATION RESISTANCE	I/P-O/P: 500 VDC>100MΩ I/P-FG: 500 VDC>100MΩ O/P-FG: 500 VDC >100MΩ	I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: >9999 MΩ 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	10mΩ

### 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	BS EN/EN55032(CISPR32),CNS 15936 EN/EN55014-1(CISPR14-1) EN/EN55011(CISPR11)	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	BS EN/EN55032(CISPR32),CNS 15936 EN/EN55014-1(CISPR14-1) EN/EN55011(CISPR11)	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 AIR : 15KV / Contact : 8KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	EN61000-4-4 INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
6	SURGE	IEC61000-4-5 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-150-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=26.8 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=61.1 °C																																																																																		
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta=26.8 °C</th> <th>HIGH AMBIENT Ta=61.1 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>LF1</td><td>50.7°C</td><td>84.6°C</td></tr> <tr><td>2</td><td>C2</td><td>49.2°C</td><td>83.0°C</td></tr> <tr><td>3</td><td>RTH1</td><td>75.9°C</td><td>100.3°C</td></tr> <tr><td>4</td><td>L1</td><td>70.0°C</td><td>103.9°C</td></tr> <tr><td>5</td><td>C10</td><td>58.5°C</td><td>91.6°C</td></tr> <tr><td>6</td><td>C5</td><td>58.2°C</td><td>91.2°C</td></tr> <tr><td>7</td><td>C36</td><td>62.8°C</td><td>95.5°C</td></tr> <tr><td>8</td><td>C14</td><td>66.0°C</td><td>98.7°C</td></tr> <tr><td>9</td><td>U2</td><td>67.2°C</td><td>100.1°C</td></tr> <tr><td>10</td><td>Q1</td><td>58.2°C</td><td>91.6°C</td></tr> <tr><td>11</td><td>Q5</td><td>59.1°C</td><td>93.2°C</td></tr> <tr><td>12</td><td>Q6</td><td>58.0°C</td><td>91.7°C</td></tr> <tr><td>13</td><td>U4</td><td>59.2°C</td><td>91.7°C</td></tr> <tr><td>14</td><td>T1</td><td>85.6°C</td><td>117.9°C</td></tr> <tr><td>15</td><td>C200</td><td>58.1°C</td><td>91.1°C</td></tr> <tr><td>16</td><td>C106</td><td>66.2°C</td><td>97.9°C</td></tr> <tr><td>17</td><td>D100</td><td>73.8°C</td><td>104.7°C</td></tr> <tr><td>18</td><td>D101</td><td>76.6°C</td><td>108.2°C</td></tr> <tr><td>19</td><td>RTH3</td><td>67.7°C</td><td>100.6°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta=26.8 °C	HIGH AMBIENT Ta=61.1 °C	1	LF1	50.7°C	84.6°C	2	C2	49.2°C	83.0°C	3	RTH1	75.9°C	100.3°C	4	L1	70.0°C	103.9°C	5	C10	58.5°C	91.6°C	6	C5	58.2°C	91.2°C	7	C36	62.8°C	95.5°C	8	C14	66.0°C	98.7°C	9	U2	67.2°C	100.1°C	10	Q1	58.2°C	91.6°C	11	Q5	59.1°C	93.2°C	12	Q6	58.0°C	91.7°C	13	U4	59.2°C	91.7°C	14	T1	85.6°C	117.9°C	15	C200	58.1°C	91.1°C	16	C106	66.2°C	97.9°C	17	D100	73.8°C	104.7°C	18	D101	76.6°C	108.2°C	19	RTH3	67.7°C	100.6°C
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P : 230 VAC O/P : 127 % LOAD Ta : 25°C	TEST : OK																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 85VAC/305VAC O/P : 75/100 % LOAD Ta=-35/-45 °C	TEST : OK																																																																																
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 °C/95 %R.H NO DAMAGE	I/P : 315 VAC O/P : FULL LOAD Ta=60 °C HUMIDITY= 95 %R.H	TEST : OK																																																																																
5	TEMPERATURE COEFFICIENT	± 0.05 %/°C(0~60°C)	I/P : 230 VAC O/P : FULL LOAD	±0.0012 %/°C(0~60°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	-30~60°C	1. Thermal shock Temperature : -35°C~ +65°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 C105 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=60 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta=60 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta=60 °C LIFE TIME	(1) 224441HRS (2) 23755HRS (3) 44442HRS (4) 73423HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 2159.4K hrs min. Telcordia SR-332 (Bellcore) ; 258.3K 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	WUWQIN/ZHOUBIAO	WENF	WUWQ

2020.10.1 TAG-QA-009