



Test Report: NSP-100-15

100W 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

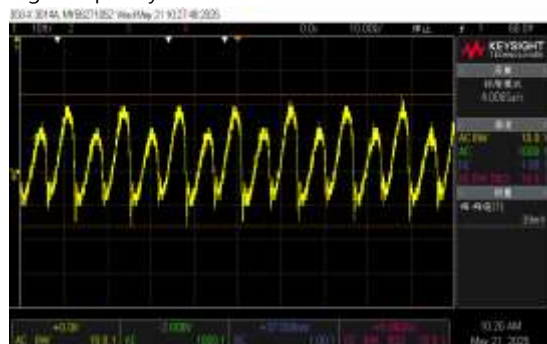
ENVIRONMENT TEST

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

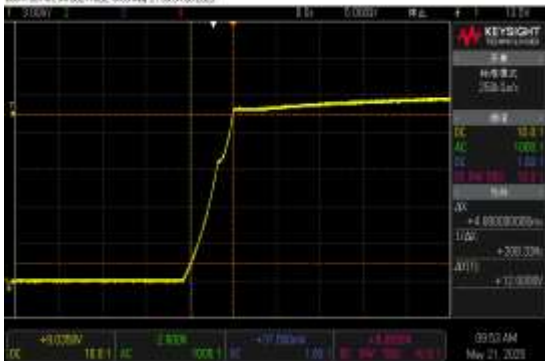
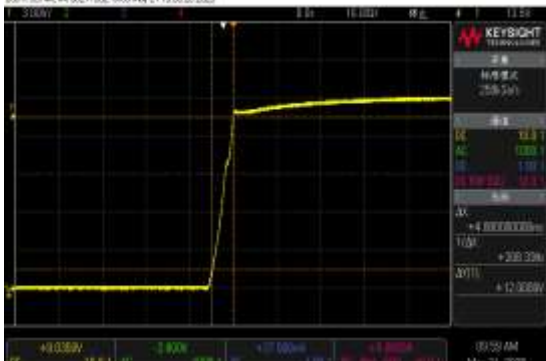
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 15V~ 19V	I/P : 230 VAC O/P : MIN LOAD Ta : 25°C	14.19V~20.0V/230VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -2%~ +2%	I/P: 85VAC /305VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.33% +0.60%
3	LINE REGULATION	V1: -0.5%~ +0.5%	I/P: 85VAC~ 305VAC O/P:FULL LOAD Ta:25°C	V1: -0.00%~ +0.07%
4	LOAD REGULATION	V1: -0.5%~ +0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.07%~ +0.20%
5	OVER/UNDERSHOOT TEST	<± 5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	2.47%
6	RIPPLE & NOISE (Max)	V1: 150mVp-p	I/P: 230 VAC O/P: MIN LOAD—FULL LOAD Ta:25°C	V1: 43mVp-p / 100% load

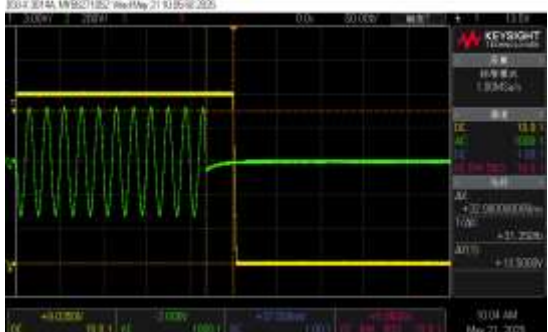
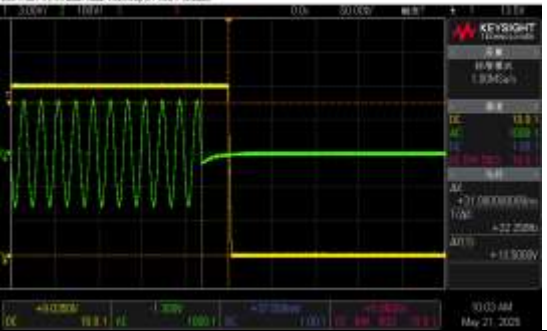
high frequency :



low frequency :



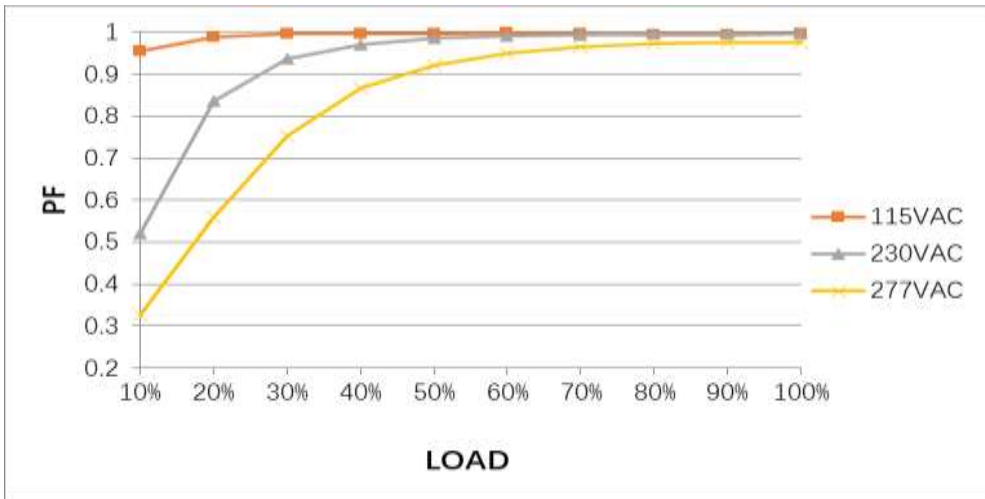
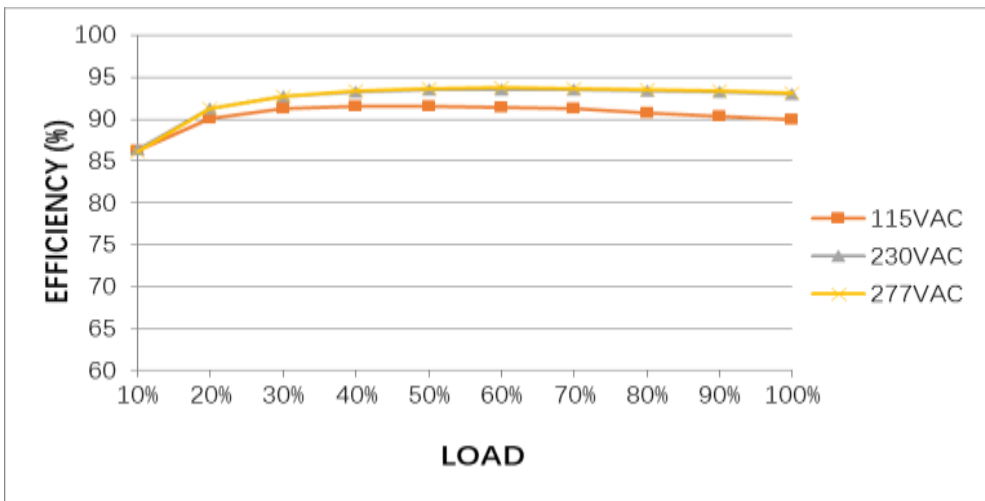
7	SET UP TIME(Max)	277VAC/1000ms 230VAC/1000ms 115VAC/1500ms	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/416ms 230VAC/414ms 115VAC/380ms
INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage  INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC 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/4.8ms 230VAC/4.8ms 115VAC/4.8ms
INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage  INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage 				

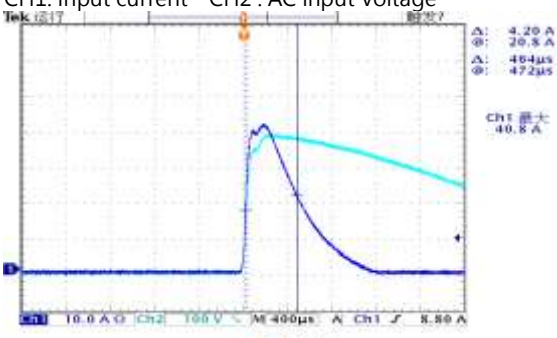
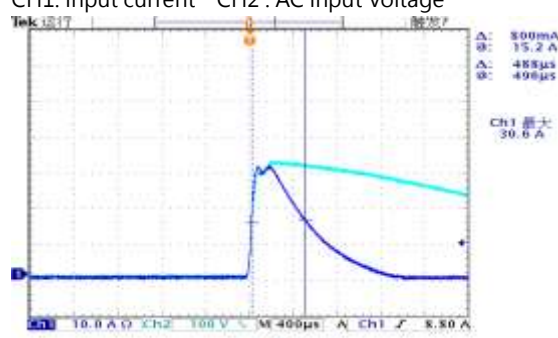
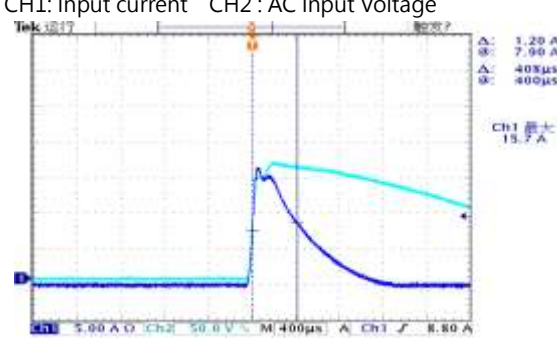
	INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage 			
9	HOLD UP TIME (Typ.)	277VAC/16ms 230VAC/16ms 115VAC/16ms	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/32ms 230VAC/32ms 115VAC/31ms
	INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage  INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage 			
	INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage 			
10	DYNAMIC LOAD	V1: 1500mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	209mVp-p 159mVp-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/ 0.45A 230V/ 0.52A 115V/ 1.1 A	I/P : 277 VAC I/P : 230 VAC I/P : 115VAC O/P : FULL LOAD Ta : 25°C	I =0.40A/ 277VAC I =0.47A/ 230VAC I =0.97A/ 115VAC
4	LEAKAGE CURRENT	Earth leakage current <350μA(rms)@277Vac	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	L-FG : 207μA N-FG : 210μA
		Touch current <100μA(rms)@277Vac	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	L-V+ : 52 μA L-V- : 53 μA N-V+ : 52 μA N-V- : 53 μA

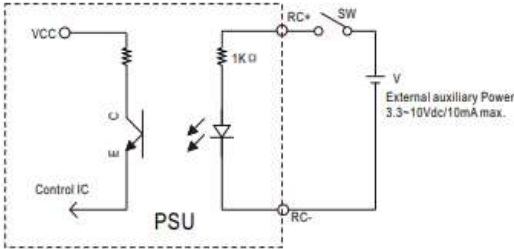
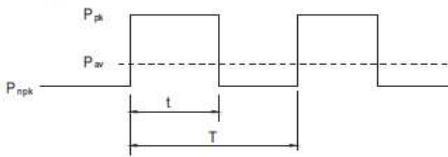
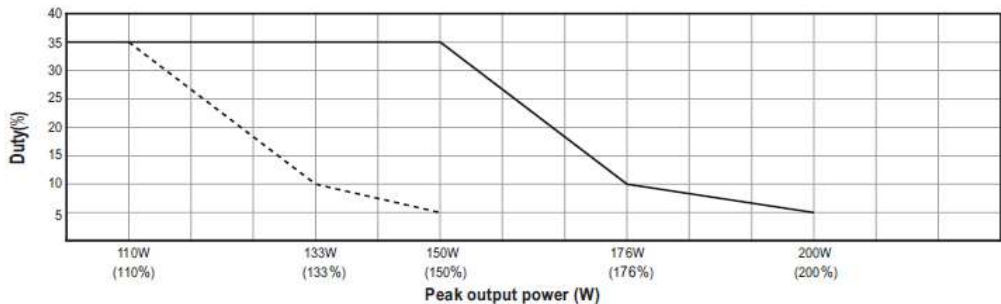
5	POWER FACTOR (Typ.)	0.90/277VAC 0.93/ 230VAC 0.98/ 115VAC	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.975/277VAC PF=0.996/230VAC PF=0.995/115VAC																																												
P.F vs LOAD																																																
 <table><caption>Approximate Power Factor (PF) 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>0.95</td><td>0.50</td><td>0.30</td></tr><tr><td>20%</td><td>0.98</td><td>0.85</td><td>0.55</td></tr><tr><td>30%</td><td>0.99</td><td>0.95</td><td>0.75</td></tr><tr><td>40%</td><td>0.99</td><td>0.98</td><td>0.85</td></tr><tr><td>50%</td><td>0.99</td><td>0.99</td><td>0.92</td></tr><tr><td>60%</td><td>0.99</td><td>0.99</td><td>0.95</td></tr><tr><td>70%</td><td>0.99</td><td>0.99</td><td>0.97</td></tr><tr><td>80%</td><td>0.99</td><td>0.99</td><td>0.98</td></tr><tr><td>90%</td><td>0.99</td><td>0.99</td><td>0.98</td></tr><tr><td>100%</td><td>0.99</td><td>0.99</td><td>0.98</td></tr></tbody></table>					LOAD	115VAC	230VAC	277VAC	10%	0.95	0.50	0.30	20%	0.98	0.85	0.55	30%	0.99	0.95	0.75	40%	0.99	0.98	0.85	50%	0.99	0.99	0.92	60%	0.99	0.99	0.95	70%	0.99	0.99	0.97	80%	0.99	0.99	0.98	90%	0.99	0.99	0.98	100%	0.99	0.99	0.98
LOAD	115VAC	230VAC	277VAC																																													
10%	0.95	0.50	0.30																																													
20%	0.98	0.85	0.55																																													
30%	0.99	0.95	0.75																																													
40%	0.99	0.98	0.85																																													
50%	0.99	0.99	0.92																																													
60%	0.99	0.99	0.95																																													
70%	0.99	0.99	0.97																																													
80%	0.99	0.99	0.98																																													
90%	0.99	0.99	0.98																																													
100%	0.99	0.99	0.98																																													
6	EFFICIENCY(Typ.)	92%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	92.9%																																												
EFFICIENCY vs LOAD																																																
 <table><caption>Approximate 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>86</td><td>86</td><td>86</td></tr><tr><td>20%</td><td>90</td><td>91</td><td>91</td></tr><tr><td>30%</td><td>91</td><td>92</td><td>92</td></tr><tr><td>40%</td><td>91</td><td>92</td><td>93</td></tr><tr><td>50%</td><td>91</td><td>92</td><td>93</td></tr><tr><td>60%</td><td>91</td><td>92</td><td>93</td></tr><tr><td>70%</td><td>91</td><td>92</td><td>93</td></tr><tr><td>80%</td><td>90</td><td>92</td><td>93</td></tr><tr><td>90%</td><td>90</td><td>92</td><td>93</td></tr><tr><td>100%</td><td>90</td><td>92</td><td>93</td></tr></tbody></table>					LOAD	115VAC	230VAC	277VAC	10%	86	86	86	20%	90	91	91	30%	91	92	92	40%	91	92	93	50%	91	92	93	60%	91	92	93	70%	91	92	93	80%	90	92	93	90%	90	92	93	100%	90	92	93
LOAD	115VAC	230VAC	277VAC																																													
10%	86	86	86																																													
20%	90	91	91																																													
30%	91	92	92																																													
40%	91	92	93																																													
50%	91	92	93																																													
60%	91	92	93																																													
70%	91	92	93																																													
80%	90	92	93																																													
90%	90	92	93																																													
100%	90	92	93																																													
7	NO LOAD POWER CONSUMPTION(Typ.)	Remote Power ON : 2W/277VAC 2W/230VAC 2W/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 : 0.527W/277VAC 0.507W/230VAC 0.477W/115VAC Remote Power OFF : 0.398W/277VAC 0.308W/230VAC 0.125W/115VAC																																												

8	INRUSH CURRENT(Typ.)	277V/45A 230V/35A 115V/20A COLD START	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : RC ON/RC OFF Ta : 25°C	I =40.8A/ 277VAC T50=464us/277V I =30.6A/ 230VAC T50= 488us/230V I =15.7A/ 115VAC T50= 408us/115V
INPUT=277VAC/60HZ @ FULL LOAD CH1: Input current CH2: AC Input Voltage  INPUT=230VAC/50HZ @ FULL LOAD CH1: Input current CH2: AC Input Voltage  INPUT=115VAC/60HZ @ FULL LOAD CH1: Input current CH2: AC Input Voltage 				

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	140.29 % / 305 VAC 140.29 % / 230 VAC 140.29 % / 85 VAC 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<30%, AC re-power on to recover
2	OVER VOLTAGE PROTECTION	20V~25V	I/P: 305VAC I/P: 230VAC I/P: 85VAC O/P: MIN LOAD Ta: 25°C	22.8 V / 305VAC 22.8 V / 230VAC 22.8 V / 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 a/p voltage, AC re-power on to recover

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT												
1	REMOTE ON/OFF CONTROL	2.Remote Control The PSU can be turned ON/OFF by using the "Remote Control" function with external switch and auxiliary power <table><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>  I/P: 230 VAC O/P:FULL LOAD Ta:25°C Test Result : <table><tr><td>Between ON/OFF</td><td>Power Output Status</td></tr><tr><td>SW OFF (0~0.8V)</td><td>ON</td></tr><tr><td>SW ON (3.3~10V)</td><td>OFF</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	Between ON/OFF	Power Output Status	SW OFF (0~0.8V)	ON	SW ON (3.3~10V)	OFF		
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															
Between ON/OFF	Power Output Status															
SW OFF (0~0.8V)	ON															
SW ON (3.3~10V)	OFF															
2	PEAK POWER	1. Peak Power $P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} \leq P_{rated}$$Duty = \frac{t}{T} \times 100\% \leq 35\%$$t \leq 5 \text{ sec}$   P_{av}: Average output power (W) P_{pk}: Peak output power (W) P_{npk}: Non-peak output power (W) P_{rated}: Rated output power (W) t: Peak power width (sec) T: Period (sec) For example (24V model) : $V_{in} = 200V_{ac}$ $Duty_max = 5\%$ $P_{av} = P_{rated} = 100W$ $P_{pk} = 200W$ $t \leq 5 \text{ sec}$ $T \geq \frac{5 \text{ sec}}{5\%} \geq 100 \text{ sec}$ $P_{pk} \leq \frac{TP_{av} - tP_{pk}}{T-t}$ $P_{pk} \leq 94.7W$ Note:When the output voltage is adjusted to the upper limit, the peak power is 150% rated power I/P: 100/305VAC O/P:PEAK LOAD (1Hour NO DAMAGE) Ta:25°C Test Result: PASS														

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q6 650 V/11 A	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. 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	VDS: (1) 442V (2) 490V (3) 442V (4) 442V (5) 442V (6) 442V (7) 486 VDS: (1) 438V (2) 482V (3) 438V (4) 438V (5) 438V (6) 434V (7) 482V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 650 V/15A	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.	VDS: (1) 519V (2) 439V (3) 487V (4) 452V (5) 456V (6) 483V (7) 419V

			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	VDS: (1) 491V (2) 447V (3) 487V (4) 460V (5) 464V (6) 463V (7) 451V
3	P.F.C DIODE	D8 Rated 4 A/650V	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 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/5KHz (4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz Ta:25°C	(1) 438V (2) 418V (3) 430V (4) 438V (1) 450V (2) 442V (3) 450V (4) 454V
4	Diode Peak Voltage	Q101: 160A/60V	AC ON/OFF I/P:High-Line +3V =308 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 Ta:25°C	Q101: VDS: (1) 42.5V (2) 8.50V (3) 42.5V (4) 42.9V (5) 42.9V (6) 42.5V (7) 8.60V (8) 41.7V

5	Input Voltage	Capacitor C5 Rated: 82μ/ 450V Surge voltage: 500V	I/P:High-Line +3V =308V 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)442V (2)438V (3)446V (4)430V
6	Control IC Voltage Test	PWM IC U2 Rated 9.6V~ 36V O/P IC U100 Rated 3V~30V	AC ON/OFF I/P:High-Line +3V =308 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	U2 (1) 19.0V (2) 19.0V (3) 19.2V (4) 19.2V (5) 19.2V U100 (1) 11.5V (2) 11.7V (3) 11.5V (4) 11.5V (5) 11.3V

■ 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: 1.886 mA I/P-FG: 1.913 mA O/P-FG: 1.553 mA
2	ISOLATION RESISTANCE	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: >9999 MΩ I/P-FG: >9999 MΩ O/P-FG: >9999 MΩ
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 : 8KV / Contact : 4KV	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-100-12 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=28.7 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=63 °C <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta=28.7 °C</th><th>HIGH AMBIENT Ta=63 °C</th></tr><tr><td>1</td><td>L1</td><td>59.0°C</td><td>89.2°C</td></tr><tr><td>2</td><td>C10</td><td>54.7°C</td><td>87.7°C</td></tr><tr><td>3</td><td>Q1</td><td>57.7°C</td><td>90.9°C</td></tr><tr><td>4</td><td>C5</td><td>55.7°C</td><td>87.8°C</td></tr><tr><td>5</td><td>C14</td><td>59.2°C</td><td>92.8°C</td></tr><tr><td>6</td><td>U2</td><td>70.9°C</td><td>103.4°C</td></tr><tr><td>7</td><td>U4</td><td>59.9°C</td><td>93.5°C</td></tr><tr><td>8</td><td>BD1</td><td>59.1°C</td><td>90.5°C</td></tr><tr><td>9</td><td>Q6</td><td>63.9°C</td><td>97.2°C</td></tr><tr><td>10</td><td>T1</td><td>85.0°C</td><td>117.8°C</td></tr><tr><td>11</td><td>C105</td><td>58.4°C</td><td>91.9°C</td></tr><tr><td>12</td><td>U121</td><td>56.5°C</td><td>90.2°C</td></tr><tr><td>13</td><td>Q100</td><td>59.0°C</td><td>93.0°C</td></tr><tr><td>14</td><td>U101</td><td>59.4°C</td><td>93.1°C</td></tr><tr><td>15</td><td>RTH3</td><td>59.5°C</td><td>94.1°C</td></tr><tr><td>16</td><td>LF1</td><td>55.5°C</td><td>87.4°C</td></tr><tr><td>17</td><td>C200</td><td>62.7°C</td><td>96.0°C</td></tr><tr><td>18</td><td>C36</td><td>65.7°C</td><td>98.7°C</td></tr><tr><td>19</td><td>TC</td><td>50.4°C</td><td>83.0°C</td></tr></table>			NO	Position	ROOM AMBIENT Ta=28.7 °C	HIGH AMBIENT Ta=63 °C	1	L1	59.0°C	89.2°C	2	C10	54.7°C	87.7°C	3	Q1	57.7°C	90.9°C	4	C5	55.7°C	87.8°C	5	C14	59.2°C	92.8°C	6	U2	70.9°C	103.4°C	7	U4	59.9°C	93.5°C	8	BD1	59.1°C	90.5°C	9	Q6	63.9°C	97.2°C	10	T1	85.0°C	117.8°C	11	C105	58.4°C	91.9°C	12	U121	56.5°C	90.2°C	13	Q100	59.0°C	93.0°C	14	U101	59.4°C	93.1°C	15	RTH3	59.5°C	94.1°C	16	LF1	55.5°C	87.4°C	17	C200	62.7°C	96.0°C	18	C36	65.7°C	98.7°C	19	TC	50.4°C	83.0°C
NO	Position	ROOM AMBIENT Ta=28.7 °C	HIGH AMBIENT Ta=63 °C																																																																																	
1	L1	59.0°C	89.2°C																																																																																	
2	C10	54.7°C	87.7°C																																																																																	
3	Q1	57.7°C	90.9°C																																																																																	
4	C5	55.7°C	87.8°C																																																																																	
5	C14	59.2°C	92.8°C																																																																																	
6	U2	70.9°C	103.4°C																																																																																	
7	U4	59.9°C	93.5°C																																																																																	
8	BD1	59.1°C	90.5°C																																																																																	
9	Q6	63.9°C	97.2°C																																																																																	
10	T1	85.0°C	117.8°C																																																																																	
11	C105	58.4°C	91.9°C																																																																																	
12	U121	56.5°C	90.2°C																																																																																	
13	Q100	59.0°C	93.0°C																																																																																	
14	U101	59.4°C	93.1°C																																																																																	
15	RTH3	59.5°C	94.1°C																																																																																	
16	LF1	55.5°C	87.4°C																																																																																	
17	C200	62.7°C	96.0°C																																																																																	
18	C36	65.7°C	98.7°C																																																																																	
19	TC	50.4°C	83.0°C																																																																																	
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 140 % LOAD Ta : 25°C	TEST : OK																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 85VAC/305VAC O/P : 80/100 % LOAD Ta=-35/-45 °C	TEST : OK																																																																																
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C/95 %R.H NO DAMAGE	I/P : 315 VAC O/P : FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK																																																																																
5	TEMPERATURE COEFFICIENT	± 0.05 %/°C(0~60°C)	I/P : 230 VAC O/P : FULL LOAD	± 0.002 %/°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) 332160HRS (2) 29156HRS (3) 61309HRS (4) 100891HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 2163.5K hrs min. Telcordia SR-332 (Bellcore) ; 250.4K 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