



Test Report: NSP-750-60

750W 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

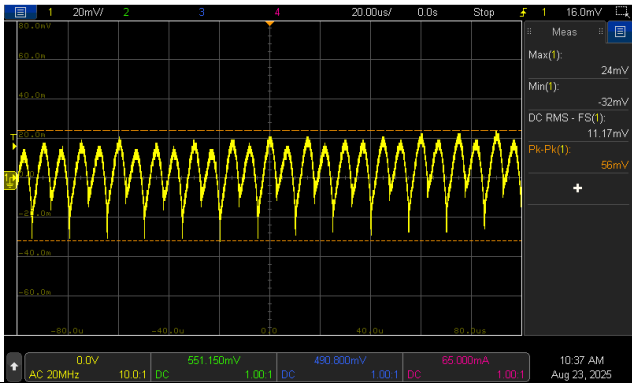
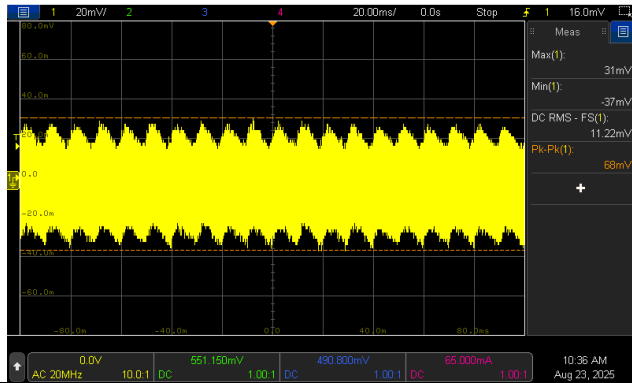
E.M.C. Test

■ RELIABILITY TEST

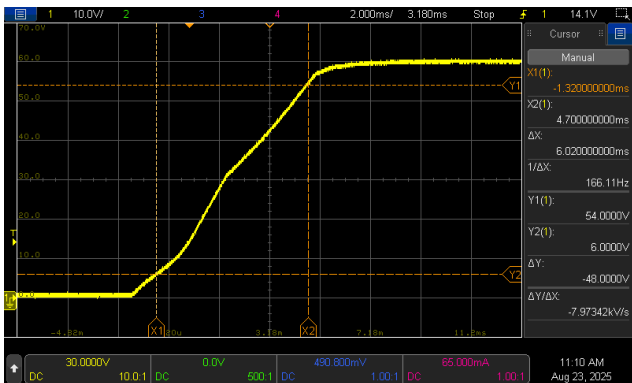
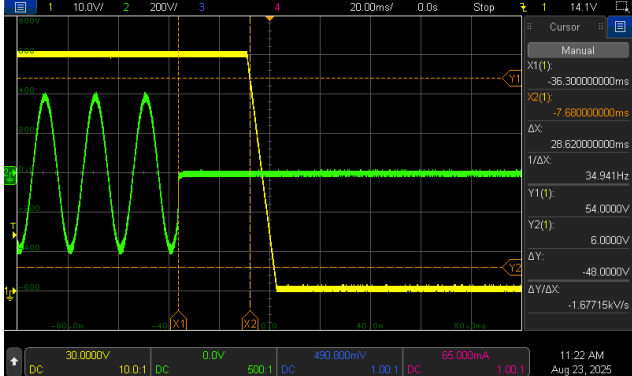
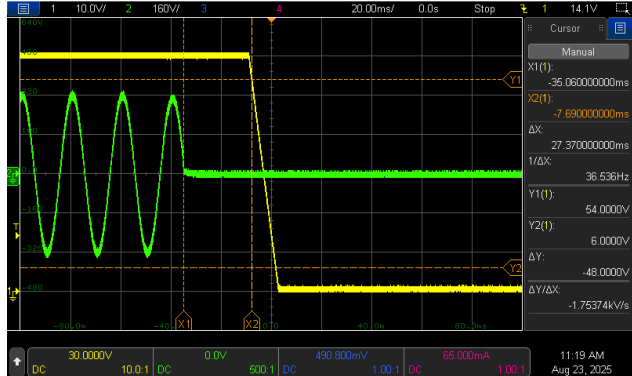
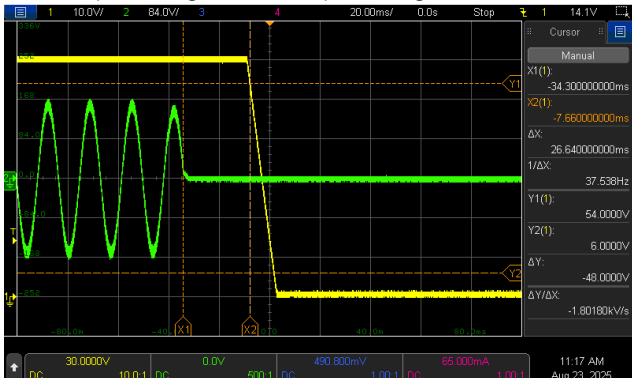
ENVIRONMENT TEST

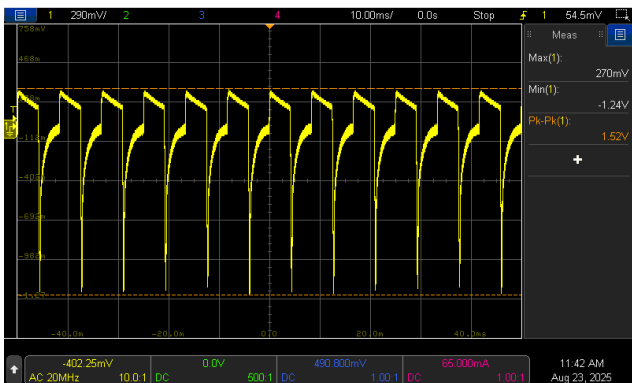
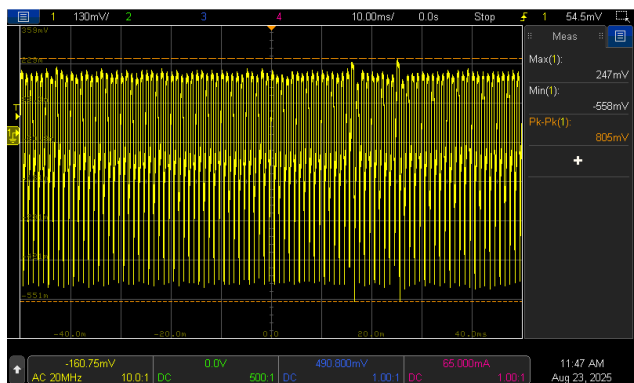
■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

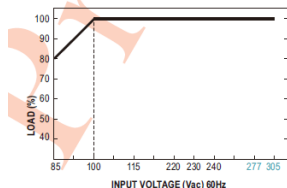
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 54V~72V	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	52.42V~73.48V/277VAC 52.42V~73.49V/230VAC 52.42V~73.49V/115VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1% ~ +1%	I/P: 85VAC~305VAC O/P:FULL~MIN. LOAD Ta:25°C	V1: -0.0167% ~ 0.0167%
3	LINE REGULATION	V1: -0.5% ~ +0.5%	I/P: 85VAC~ 305VAC O/P:FULL LOAD Ta:25°C	V1: 0% ~ 0.01%
4	LOAD REGULATION	V1: -0.5% ~ +0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.0167% ~ 0.0167%
5	OVER/UNDERSHOOT TEST	<± 5%	I/P: 230VAC O/P:FULL LOAD / NO LOAD Ta:25°C	1.66%
6	RIPPLE & NOISE (Max)	V1: 300mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	56mVp-p / high frequency 68mVp-p / low frequency
high frequency :  low frequency : 				
7	SET UP TIME(Max)	277VAC/900ms 230VAC/1000ms 115VAC/1500ms	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/307.18ms 230VAC/377.74ms 115VAC/765.48ms
INPUT=277VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage			INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage	

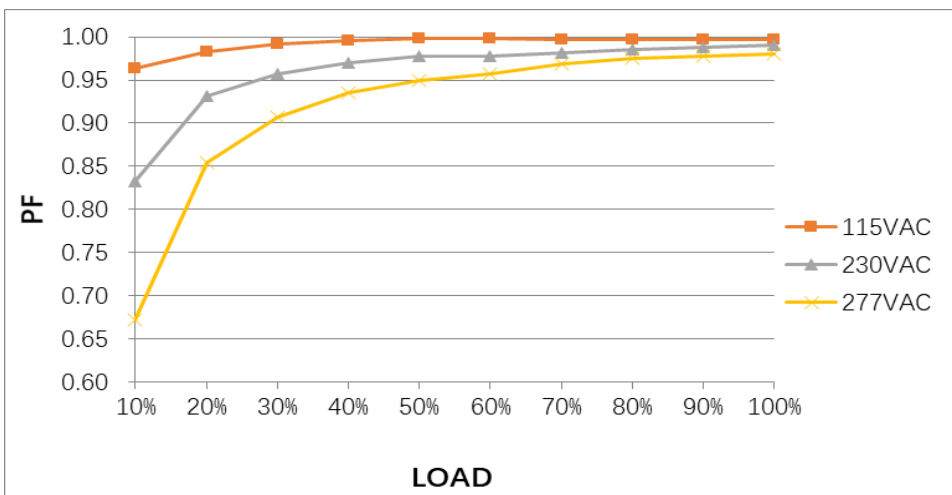
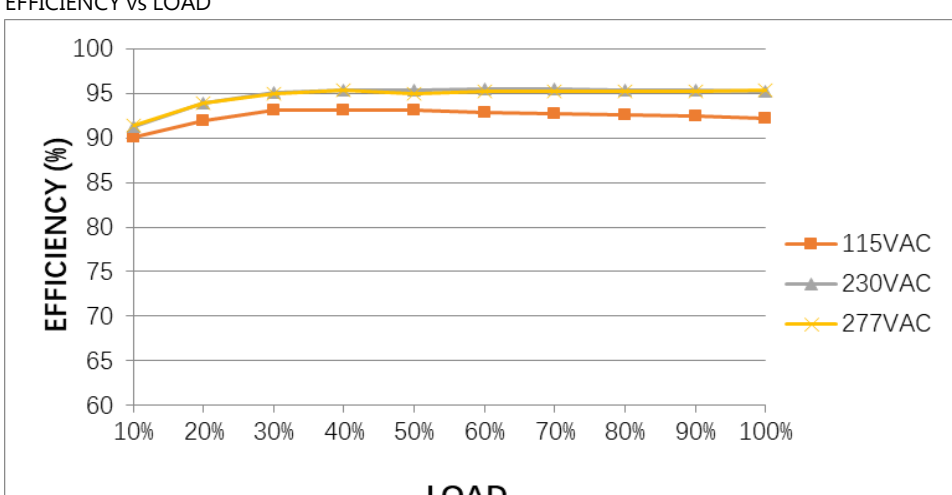
	INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage	
8	RISE TIME (Max) 277VAC/80ms 230VAC/80ms 115VAC/80ms	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C 277VAC/6.02ms 230VAC/6.02ms 115VAC/6.02ms
	INPUT=277VAC/50HZ @ FULL LOAD CH1: Output Voltage INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage	INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage

				
9	HOLD UP TIME (Typ.)	277VAC/16ms 230VAC/16ms 115VAC/16ms	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/28.62ms 230VAC/27.37ms 115VAC/26.64ms
INPUT=277VAC/50HZ @ 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: 6000mVp-p	I/P: 230VAC O/P: (1) FULL/ MIN LOAD 50%DUTY / 120HZ (2) FULL/ MIN LOAD 50%DUTY / 1KHZ Ta:25°C	1520mVp-p 805mVp-p

FULL / MIN LOAD 50%DUTY / 120HZ		FULL / MIN LOAD 50%DUTY / 1KHZ	
			
11	TRANSIENT RECOVERY TIME	V1: 6000mVp-p <500us	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us 280mVp-p

INPUT FUNCTION TEST

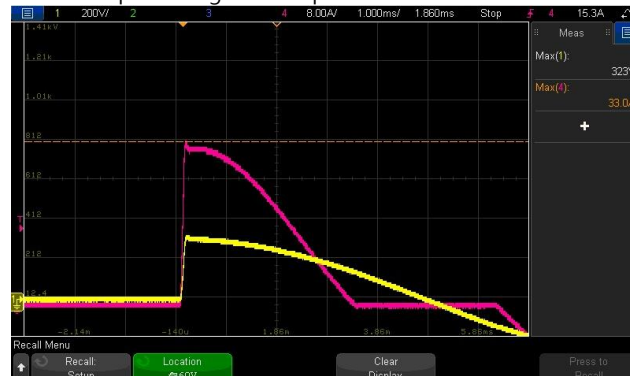
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT			
1	INPUT VOLTAGE RANGE	85VAC~305VAC 120VDC~ 431VDC ■ Output Derating vs Input Voltage 	(1) I/P: TESTING O/P: FULL / 80% LOAD (2) I/P: DC TESTING (L: + N: -) O/P: FULL / 80% LOAD (3) I/P: DC TESTING (L: - N: +) O/P: FULL / 80% LOAD Ta:25°C I/P: HIGH-LINE+10V=315V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	(1) 81 V ~305V/ FULL LOAD 81 V ~305V/ 80% LOAD (2) 112Vdc~431Vdc/FULL LOAD 109Vdc~431Vdc/80% LOAD (3) 112Vdc~431Vdc/FULL LOAD 109Vdc~431Vdc/80% LOAD 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/ 3.2 A 230V/ 3.9 A 115V/ 8.2 A	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =2.91/ 277VAC I =3.52/ 230VAC I =7.05/ 115VAC			
4	LEAKAGE CURRENT	Earth leakage current < 350uA (rms)@277Vac touch current<100uA(rms) @ 277Vac	I/P : 277 VAC/60HZ O/P : Min LOAD Ta : 25°C	For Earth: 201.8uA For touch: 26.9uA			
5	NO LOAD CONSUMPTION	Remote Power OFF: 0.75W/115Vac 0.75W/230Vac	I/P : 115VAC I/P : 230VAC I/P : 277VAC	TEST: <table><tr><td></td><td>Remote Power</td><td>Remote Power</td></tr></table>		Remote Power	Remote Power
	Remote Power	Remote Power					

		1W/277Vac Remote Power ON: 5W/115Vac 5W/230Vac 5W/277Vac	O/P : NO LOAD Ta : 25°C	<table><tr><td></td><td>OFF</td><td>ON</td></tr><tr><td>115VAC</td><td>0.342W</td><td>3.820W</td></tr><tr><td>230VAC</td><td>0.465W</td><td>3.763W</td></tr><tr><td>277VAC</td><td>0.546W</td><td>3.460W</td></tr></table>		OFF	ON	115VAC	0.342W	3.820W	230VAC	0.465W	3.763W	277VAC	0.546W	3.460W																																
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6	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=0.9799/277VAC PF=0.9880/230VAC PF=0.9973/115VAC																																												
P.F vs LOAD  <table><caption>P.F vs LOAD Data (Approximate)</caption><thead><tr><th>LOAD (%)</th><th>115VAC PF</th><th>230VAC PF</th><th>277VAC PF</th></tr></thead><tbody><tr><td>10%</td><td>0.96</td><td>0.83</td><td>0.67</td></tr><tr><td>20%</td><td>0.97</td><td>0.93</td><td>0.85</td></tr><tr><td>30%</td><td>0.98</td><td>0.95</td><td>0.91</td></tr><tr><td>40%</td><td>0.98</td><td>0.96</td><td>0.93</td></tr><tr><td>50%</td><td>0.98</td><td>0.97</td><td>0.95</td></tr><tr><td>60%</td><td>0.98</td><td>0.97</td><td>0.96</td></tr><tr><td>70%</td><td>0.98</td><td>0.97</td><td>0.96</td></tr><tr><td>80%</td><td>0.98</td><td>0.97</td><td>0.96</td></tr><tr><td>90%</td><td>0.98</td><td>0.97</td><td>0.96</td></tr><tr><td>100%</td><td>0.98</td><td>0.97</td><td>0.96</td></tr></tbody></table>					LOAD (%)	115VAC PF	230VAC PF	277VAC PF	10%	0.96	0.83	0.67	20%	0.97	0.93	0.85	30%	0.98	0.95	0.91	40%	0.98	0.96	0.93	50%	0.98	0.97	0.95	60%	0.98	0.97	0.96	70%	0.98	0.97	0.96	80%	0.98	0.97	0.96	90%	0.98	0.97	0.96	100%	0.98	0.97	0.96
LOAD (%)	115VAC PF	230VAC PF	277VAC PF																																													
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80%	0.98	0.97	0.96																																													
90%	0.98	0.97	0.96																																													
100%	0.98	0.97	0.96																																													
7	EFFICIENCY(Typ.)	95%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	95.6%																																												
EFFICIENCY vs LOAD  <table><caption>EFFICIENCY vs LOAD Data (Approximate)</caption><thead><tr><th>LOAD (%)</th><th>115VAC Efficiency (%)</th><th>230VAC Efficiency (%)</th><th>277VAC Efficiency (%)</th></tr></thead><tbody><tr><td>10%</td><td>90</td><td>91</td><td>92</td></tr><tr><td>20%</td><td>92</td><td>94</td><td>94</td></tr><tr><td>30%</td><td>93</td><td>95</td><td>95</td></tr><tr><td>40%</td><td>93</td><td>95</td><td>95</td></tr><tr><td>50%</td><td>93</td><td>95</td><td>95</td></tr><tr><td>60%</td><td>93</td><td>95</td><td>95</td></tr><tr><td>70%</td><td>93</td><td>95</td><td>95</td></tr><tr><td>80%</td><td>93</td><td>95</td><td>95</td></tr><tr><td>90%</td><td>93</td><td>95</td><td>95</td></tr><tr><td>100%</td><td>93</td><td>95</td><td>95</td></tr></tbody></table>					LOAD (%)	115VAC Efficiency (%)	230VAC Efficiency (%)	277VAC Efficiency (%)	10%	90	91	92	20%	92	94	94	30%	93	95	95	40%	93	95	95	50%	93	95	95	60%	93	95	95	70%	93	95	95	80%	93	95	95	90%	93	95	95	100%	93	95	95
LOAD (%)	115VAC Efficiency (%)	230VAC Efficiency (%)	277VAC Efficiency (%)																																													
10%	90	91	92																																													
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80%	93	95	95																																													
90%	93	95	95																																													
100%	93	95	95																																													
8	INRUSH CURRENT(Typ.)	277V/50A 230V/40A 115V/25A COLD START	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =44.7A/ 277VAC I =33.0A/ 230VAC I =17.7A/ 115VAC T50=2100 us/230V																																												

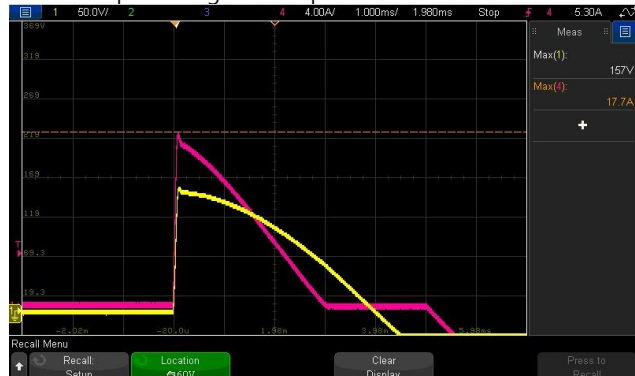
INPUT=277VAC/50HZ @ FULL LOAD
CH1: AC Input Voltage CH4: Input current



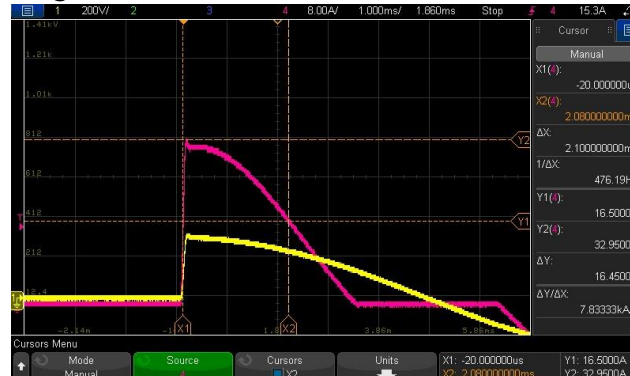
INPUT=230VAC/50HZ @ FULL LOAD
CH1: AC Input Voltage CH4: Input current



INPUT=115VAC/ 60HZ @ FULL LOAD
CH1: AC Input Voltage CH4: Input current



T50@230VAC:



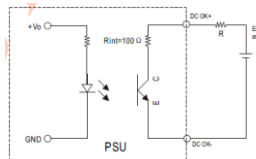
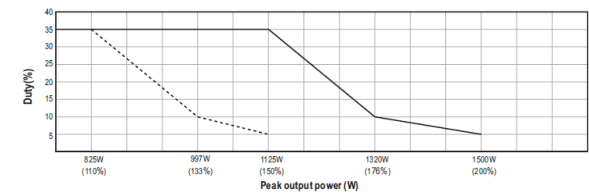
PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	Protection type: Normally works within 105 ~ 200% rated output power for more than 5 seconds and then constant current limiting without shutdown($V_{out}>30\%$), recovers automatically after fault condition is removed, or shut down o/p voltage when $V_{out}<30\%$, AC re-power on to recover. >200% rated power, constant current limiting ($V_{out}>30\%$)with auto-recovery after fault condition is removed, or shut down o/p voltage when $V_{out}<30\%$,AC re-power on to recover.	I/P: 305VAC I/P: 230VAC I/P:180VAC I/P: 100VAC O/P:TESTING Ta:25°C	TEST : 114.3%/305VAC 114.3%/230VAC 114.3%/100VAC, Protection type: Normally works within 105 ~ 200% rated output power for more than 5 seconds and then constant current limiting without shutdown($V_{out}>30\%$), recovers automatically after fault condition is removed, or shut down o/p voltage when $V_{out}<30\%$, AC re-power on to recover. 203.2 %/305VAC 212.7 %/180VAC 203.2 %/100VAC Protection type:

				>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	73V~ 86V Protection type: Shut down o/p voltage, AC re-power on to recover	I/P: 305VAC I/P: 85VAC O/P:MIN LOAD Ta:25°C	79.6V/ 305VAC 79.6V/ 85VAC PROTECTION TYPE : Shut down o/p voltage, AC re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type: Shut down o/p voltage, recovers automatically after fault condition is removed	I/P: 305VAC I/P: 85VAC O/P:FULL LOAD	TEST : <u>OK</u> O.T.P. Active Protection type : Shut down o/p voltage, recovers automatically after fault condition is removed
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR 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 or Hiccup mode, recovery automatically after fault condition is removed. Depends on the user's wire impedance.	I/P: 305VAC I/P: 85VAC O/P:FULL LOAD	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 or Hiccup mode, recovery automatically after fault condition is removed. Depends on the user's wire impedance.

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT									
1	AUXILIARY POWER (AUX)	1. 5Vaux @ 0.2A, Tolerance -15% ~ +15% at main output 20% rated current; 2. 12Vaux @ 0.8A, Tolerance -15% ~ +15% at main output 20% rated current. I/P: 230 VAC O/P:20% LOAD Ta:25°C Test Result : <table><tr><td>AUX</td><td>TOLERANCE</td><td>RIPPLE</td></tr><tr><td>5V / 0.2A</td><td>-0.36% ~ 0%</td><td>19mVp-p</td></tr><tr><td>12V / 0.8A</td><td>-0.27% ~0%</td><td>18mVp-p</td></tr></table>	AUX	TOLERANCE	RIPPLE	5V / 0.2A	-0.36% ~ 0%	19mVp-p	12V / 0.8A	-0.27% ~0%	18mVp-p		
AUX	TOLERANCE	RIPPLE											
5V / 0.2A	-0.36% ~ 0%	19mVp-p											
12V / 0.8A	-0.27% ~0%	18mVp-p											

2	REMOTE CONTROL	Power ON: Short between Pin11 & Pin13 on CN1 Power OFF: open between Pin11 & Pin13 on CN1	I/P:230VAC O/P:FULL LOAD Ta:25°C	TEST: <u>OK</u>
3	REMOTE SENSE	S+ / S- Compensate voltage drop on the load wiring up to 0.3V.	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: <u>OK</u>
4	DC OK SIGNAL	15Vdc/10mA resistive load 	I/P:230VAC O/P:FULL LOAD Ta:25°C	TEST: <u>OK</u>
5	FAN CONTROL	(1)Fan ON/OFF control: RTH3 ≥ 50°C ± 10°C FAN ON RTH3 ≤ 40°C ± 10°C FAN OFF	I/P:230VAC O/P:TESTING	TEST: (1) <u>OK</u> (2) <u>44.7 dB</u> Ta:25°C
6	PEAK Power	I/P: 100/305VAC O/P: 	I/P: 100/305VAC O/P: Ta:25°C	TEST: <u>OK</u>

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q2/Q3 : Rated: 600V/40A	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	Q2 VDS: (1) 499V (2) 518V (3) 497V (4) 497V (5) 497V (6) 497V (7) 517V (8) 497V Q3 VDS: (1) 496V (2) 509V (3) 493V (4) 493V (5) 493V (6) 493V (7) 506V (8) 496V

			(7)0%→400% Load. (8) Peak Load Ta:25°C	
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 : Rated: 650V/46A	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. (8) Peak Load Ta:25°C	Q1 VDS: (1) 548V (2) 552V (3) 548V (4) 548V (5) 548V (6) 548V (7) 552V (8) 548V
3	P.F.C DIODE	D5: Rated: 60A/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 (5) Peak Load Ta:25°C	(1) 456V (2) 453V (3) 456V (4) 456V (5) 456V
4	Diode Peak Voltage	Q100 / Q104: Rated: 200V/74A	AC ON/OFF I/P: High-Line +3V =308 V <u>VO=Vomax</u> 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) Peak Load <u>VO=Vnormal</u> O/P: (1) Full Load Ta:25°C	Q100: <u>VO=Vomax</u> VDS: (1) 164V (2) 161V (3) 164V (4) 165V (5) 165V (6) 166V (7) 160V (8) 159V (9) 164V <u>VO=Vnormal</u> (1) 140.5V Q104: <u>VO=Vomax</u> VDS: (1) 161V (2) 161V (3) 161V (4) 161V (5) 161V (6) 162V (7) 159V (8) 160V (9) 163V <u>VO=Vnormal</u> (1) 135.2V

5	Input Voltage	Capacitor C5 : Rated: 120μ /450V	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 (5) Peak Load on/off (6) Peak Load continue Ta:25°C	(1) 429V (2) 435V (3) 444 V (4) 429V (5) 438V (6) 438V
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■ 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: 2.33 mA I / P - F G : 2.92 mA O / P - F G : 1.75 m A NO DAMAGE
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: 600 VDC I/P-FG: 600 VDC O/P-FG: 600 VDC Ta:25°C	I/P-O/P: 50.00 GΩ I / P - F G : 22.415 GΩ O / P - F G : 13.393 GΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	9 mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN/EN61000-3-2 (IEC61000-3-2) ■ CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	■ PASS
2	CONDUCTION	BS EN/EN55032(CISPR32), CNS 15936 CLASS B BS EN/EN55011 (CISPR11) CLASS B	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 CLASS B BS EN/EN55011 (CISPR11) CLASS B	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	BS EN/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	BS EN/EN61000-4-4 INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A

6	SURGE	BS EN/EN 61000-4-5 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-750-24 1. ROOM AMBIENT BURN-IN : 2HRS I/P : 230VAC O/P : FULL LOAD Ta=26.8°C 2. HIGH AMBIENT BURN-IN : 2HRS I/P : 230VAC O/P : FULL LOAD Ta= 60.1°C																																																																																																						
		<table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta=26.8°C</th><th>HIGH AMBIENT Ta=60.1°C</th></tr><tr><td>1</td><td>ZNR1</td><td>31.0°C</td><td>64.8°C</td></tr><tr><td>2</td><td>LF1</td><td>35.3°C</td><td>69.6°C</td></tr><tr><td>3</td><td>LF2</td><td>36.1°C</td><td>70.3°C</td></tr><tr><td>4</td><td>C2</td><td>33.2°C</td><td>67.1°C</td></tr><tr><td>5</td><td>BD1</td><td>55.4°C</td><td>88.0°C</td></tr><tr><td>6</td><td>C16</td><td>38.4°C</td><td>72.2°C</td></tr><tr><td>7</td><td>RTH1</td><td>36.1°C</td><td>69.5°C</td></tr><tr><td>8</td><td>RY1</td><td>39.4°C</td><td>72.6°C</td></tr><tr><td>9</td><td>RTH4</td><td>45.5°C</td><td>79.0°C</td></tr><tr><td>10</td><td>L1</td><td>50.5°C</td><td>84.0°C</td></tr><tr><td>11</td><td>Q1</td><td>45.9°C</td><td>79.6°C</td></tr><tr><td>12</td><td>D5</td><td>44.4°C</td><td>78.2°C</td></tr><tr><td>13</td><td>C5</td><td>35.4°C</td><td>69.0°C</td></tr><tr><td>14</td><td>ZNR1</td><td>31.0°C</td><td>64.8°C</td></tr><tr><td>15</td><td>LF1</td><td>35.3°C</td><td>69.6°C</td></tr><tr><td>16</td><td>LF2</td><td>36.1°C</td><td>70.3°C</td></tr><tr><td>17</td><td>C2</td><td>33.2°C</td><td>67.1°C</td></tr><tr><td>18</td><td>BD1</td><td>55.4°C</td><td>88.0°C</td></tr><tr><td>19</td><td>C16</td><td>38.4°C</td><td>72.2°C</td></tr><tr><td>20</td><td>RTH1</td><td>36.1°C</td><td>69.5°C</td></tr><tr><td>21</td><td>RY1</td><td>39.4°C</td><td>72.6°C</td></tr><tr><td>22</td><td>RTH4</td><td>45.5°C</td><td>79.0°C</td></tr><tr><td>23</td><td>L1</td><td>50.5°C</td><td>84.0°C</td></tr><tr><td>24</td><td>Q1</td><td>45.9°C</td><td>79.6°C</td></tr></table>			NO	Position	ROOM AMBIENT Ta=26.8°C	HIGH AMBIENT Ta=60.1°C	1	ZNR1	31.0°C	64.8°C	2	LF1	35.3°C	69.6°C	3	LF2	36.1°C	70.3°C	4	C2	33.2°C	67.1°C	5	BD1	55.4°C	88.0°C	6	C16	38.4°C	72.2°C	7	RTH1	36.1°C	69.5°C	8	RY1	39.4°C	72.6°C	9	RTH4	45.5°C	79.0°C	10	L1	50.5°C	84.0°C	11	Q1	45.9°C	79.6°C	12	D5	44.4°C	78.2°C	13	C5	35.4°C	69.0°C	14	ZNR1	31.0°C	64.8°C	15	LF1	35.3°C	69.6°C	16	LF2	36.1°C	70.3°C	17	C2	33.2°C	67.1°C	18	BD1	55.4°C	88.0°C	19	C16	38.4°C	72.2°C	20	RTH1	36.1°C	69.5°C	21	RY1	39.4°C	72.6°C	22	RTH4	45.5°C	79.0°C	23	L1	50.5°C	84.0°C	24	Q1	45.9°C	79.6°C
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			NO	Position	ROOM AMBIENT Ta=26.8℃	HIGH AMBIENT Ta=60.1℃
			25	D5	44.4℃	78.2℃
			26	C5	35.4℃	69.0℃
			27	D6	41.7℃	75.6℃
			28	U1	47.3℃	82.0℃
			29	C7	43.4℃	77.7℃
			30	Q3	46.7℃	81.9℃
			31	Q2	49.2℃	84.4℃
			32	Q4	53.5℃	88.2℃
			33	C42	43.2℃	76.6℃
			34	T1core	56.4℃	87.0℃
			35	T1coil	93.4℃	98.0℃
			36	C108	43.5℃	79.0℃
			37	U9	49.1℃	82.7℃
			38	U2	47.2℃	81.7℃
			39	R7	47.9℃	81.5℃
			40	C92	48.0℃	82.3℃
			41	U5	48.1℃	81.8℃
			42	U101	53.5℃	87.6℃
			43	Q100	54.2℃	88.8℃
			44	Q104	56.2℃	91.1℃
			45	J101	47.6℃	80.7℃
			46	D13	40.2℃	73.9℃
			47	U104	35.9℃	69.1℃
			48	RTH5	54.9℃	89.1℃
			49	C107	45.5℃	80.7℃
			50	C110	43.2℃	76.5℃
			51	C135	38.5℃	70.7℃
			52	U100	45.4℃	80.9℃
			53	U7	41.4℃	75.2℃
			54	RTH3	39.0℃	73.3℃
			55	T2	40.4℃	74.4℃
			56	C158	33.1℃	67.1℃
			57	C201	39.3℃	74.1℃
			58	U111	39.6℃	73.7℃
			59	Q5	41.9℃	75.9℃
			60	U100	42.3℃	76.2℃
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 114%LOAD Ta : 25℃		TEST : OK	
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 305VAC/100VAC O/P : 80%/100%LOAD Ta= -45℃/-35℃		TEST : OK	
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60℃/95 %R.H NO DAMAGE	I/P : 315VAC O/P : FULL LOAD Ta= 60℃ HUMIDITY= 95 %R.H		TEST : OK	

5	TEMPERATURE COEFFICIENT	$\pm 0.05\%/^{\circ}\text{C}(0\sim 60^{\circ}\text{C})$	I/P : 230 VAC O/P : FULL LOAD	$\pm 0.005\%/^{\circ}\text{C}(0\sim 60^{\circ}\text{C})$
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 C107 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta= 60°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) 937548HRS (2) 72642HRS (3) 125350HRS (4) 189547HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 1047.1K hrs min. Telcordia SR-332 (Bellcore) ; 137.4K 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	Yuwei	Liutt	Wangzd

2020.10.1 TAG-QA-009