



Test Report: NPP-750-24

750W High Reliable Ultra Wide Output Range Battery
Charger & Power Supply 2-in-1

■ 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

Battery Charger mode

■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	BOOST CHARGE VOLTAGE	28.8V± 0.48 V	I/P: 230 VAC O/P: CC=90% LOAD Ta:25°C	28.73V
2	FLOAT CHARGE VOLTAGE	27.6V± 0.24 V	I/P: 230 VAC O/P:NO LOAD Ta:25°C	27.61V
3	MAX. OUTPUT CURRENT	22.5A±0.225 A	I/P: 230 VAC O/P:C.V MODE-2V Ta:25°C	22.52A
4	MAX. POWER	756W	I/P: 230 VAC O/P:C.V =33.6V Ta:25°C	757.3W
5	OUTPUT VOLTAGE ADJUST RANGE	21 V~ 42 V	I/P : 230 VAC O/P : CC=90% LOAD Ta : 25°C	19.827V~43.52V
6	CURRENT ADJUSTABLE RANGE	11.25~22.5A	I/P : 230 VAC O/P : C.V MODE-2V Ta : 25°C	11.05A~24.17A

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Constant current Range: 22.5A±10% PROTECTION TYPE : Constant current limiting, charger will shut down after 5 sec, re-power on to recover	I/P: 264 VAC O/P: BAT. LOAD Ta:25°C	NO DAMAGE Constant current Range: 24.16 A PROTECTION TYPE : Constant current limiting, charger will shut down after 5 sec, re-power on to recover
2	OVER VOLTAGE PROTECTION	43V~52V PROTECTION TYPE : Shut down and latch off o/p voltage, re-power on to recover	I/P: 264VAC I/P: 230VAC I/P: 90VAC O/P:MIN LOAD Ta:25°C	49.2V/ 264VAC 49.2V/ 230VAC 49.2V/ 90VAC PROTECTION TYPE : Shut down and latch off o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type : Shut down O/P voltage, recovers automatically after	I/P: 264VAC I/P: 90VAC O/P:FULL LOAD	O.T.P. Active PROTECTION TYPE : Shut down O/P voltage,



		temperature goes down		recovers automatically after temperature goes down
--	--	-----------------------	--	--

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT				
1	FAN CONTROL	Depends on internal temperature	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST: <u>OK</u>				
2	REMOTE CONTROL	Rc+ / Rc- OPEN(-0.5V~0.5V) : Charger OFF ; SHORT(10.8V~13.2V):Charger ON	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	OPEN/SHORT TEST: <u>OK</u> Charger OFF: <u>-0.5V~1.76V</u> Charger ON: <u>1.78V~13.2V</u> (1) Remote off Pin=2.38W (2) Remote off Vo= <u>0.16V</u>				
3	CHARGE OK	The TTL signal out, Charger OK = 4.5 ~ 5.5V; Charger failure or protection = -0.5 ~ 0.5V	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST: Charger OK = <u>5.19</u> V; Charger failure or protection = <u>0.033</u> V				
4	BATTERY OK	The TTL signal out, Battery full = 4.5 ~ 5.5V Charging = -0.5 ~ 0.5V	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST: Battery full = <u>5.19</u> V Charging = <u>0.034</u> V				
5	AUX POWER	OUTPUT VOLTAGE RANGE : 10.8~13.2V OUTPUT RIPPLE&NOISE: 240mVp-p	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST: <u>11.83</u> V <u>49</u> mVp-p				
6	CHARGING CURVE	<p>I/P:230Vac O/P:TESTING Ta:25°C</p> <p>☉ 3 stage charging curve (Default)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Taper Current</td> <td>2.25A±0.225A</td> </tr> <tr> <td>Io</td> <td>2.24A</td> </tr> </table>			Taper Current	2.25A±0.225A	Io	2.24A
Taper Current	2.25A±0.225A							
Io	2.24A							



7	LED INDICATOR	LED Indicator	Charger(Default)	Power Supply	TEST : <u>OK</u>
		Green	Float stage(stage 3) or full charged	Normal working	
		Red	Charging(stage 1 or 2)	—	
		NO Light	Abnormal	Abnormal	
I/P: 230V O/P: TESTING LOAD Ta: 25°C					

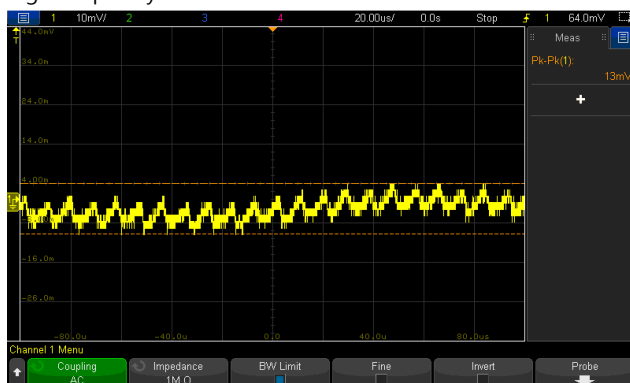
Power Supply mode

■ DESIGN VERIFY TEST

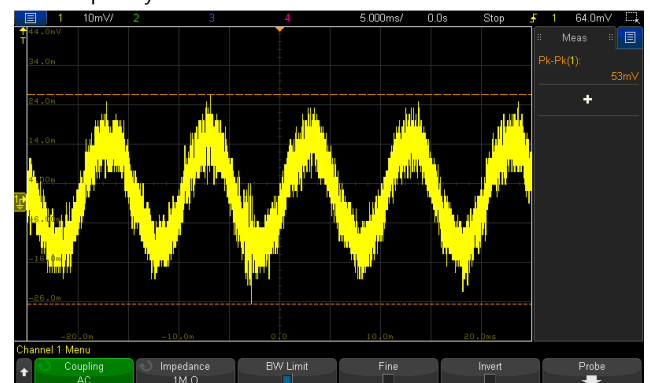
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 21V ~ 42V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	19.94V~43.58V/230VAC 19.94V~43.58V/115VAC
2	OUTPUT VOLTAGE(Max) TOLERANCE	V1: -1.0% ~ +1.0%	I/P: 90VAC / 264VAC O/P: FULL / MIN. LOAD Ta: 25°C	V1: -0.12% ~ 0.11%
3	LINE REGULATION (Max)	V1: -0.5% ~ +0.5%	I/P: 90VAC ~ 264VAC O/P: FULL LOAD Ta: 25°C	V1: -0.08% ~ 0.02%
4	LOAD REGULATION (Max)	V1: -1.0% ~ +1.0%	I/P: 230VAC O/P: FULL ~ MIN LOAD Ta: 25°C	V1: -0.12% ~ 0.11%
5	OVER/UNDERSHOOT TEST	< +5%	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	3.89%
6	RIPPLE & NOISE (Max)	V1: 300 mVp-p	I/P: 230VAC O/P: FULL LOAD Ta: 25°C	V1: 53mVp-p

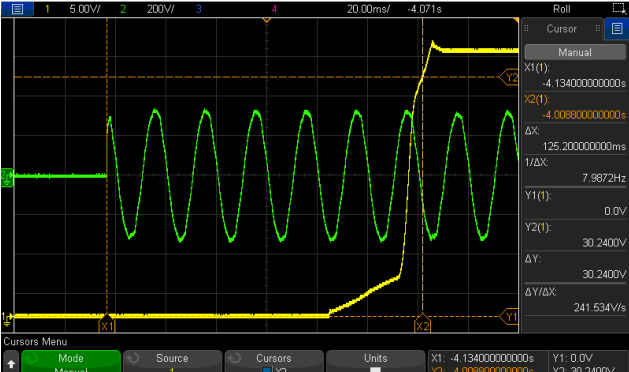
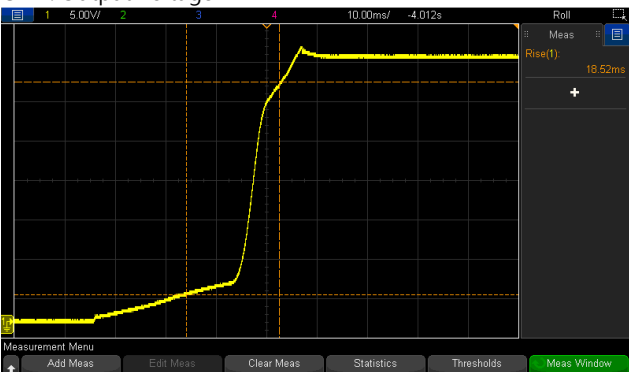
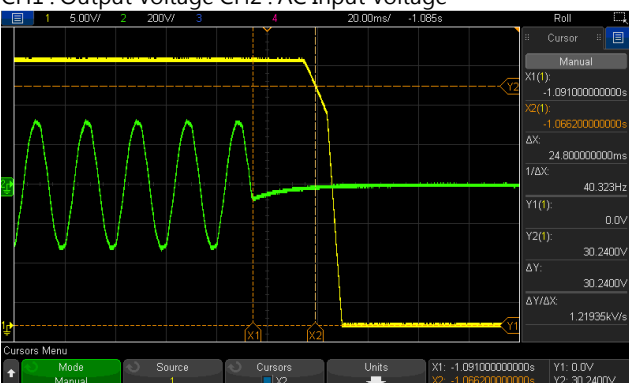
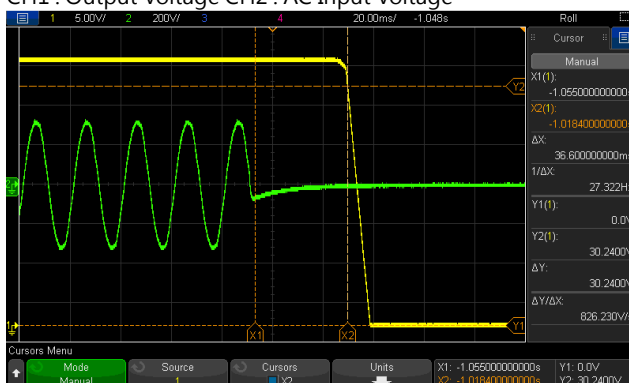
high frequency :



low frequency :





7	SET UP TIME(Max)	230VAC/1800ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 125.2 ms
<p>INPUT=230VAC/50HZ @ FULL LOAD 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/ 18.5 ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage</p> 				
9	HOLD UP TIME (Typ.)	230VAC/FULL LOAD /10ms 230VAC/75% LOAD /16ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/FULL LOAD / 24.8ms 230VAC/75% LOAD /36.6 ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p>  <p>INPUT=230VAC/50HZ @ 75% LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p> 				
11	DYNAMIC LOAD	V1: 3360 mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ	667mVp-p 631mVp-p



			(2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	
12	TRANSIENT RECOVERY TIME	V1: 3360 mVp-p	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	543mVp-p

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~264VAC 127VDC~ 370VDC	(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 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)	(1) 85.6 V~264V (2) 120Vdc~370Vdc/FULL LOAD 110Vdc~370Vdc/50% LOAD (3) 120Vdc~370Vdc/FULL LOAD 110Vdc~370Vdc/50% LOAD TEST: OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:90 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	INPUT CURRENT (Typ.)	230V/ 4 A 115V/ 8.7A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =3.52A/ 230VAC I =7.36A/ 115VAC
6	POWER FACTOR (Typ.)	0.95/ 230VAC 0.98/115VAC	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.993/230VAC PF=0.997/115VAC



	<p>P.F vs LOAD</p> <table border="1"> <caption>P.F 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>0.70</td><td>0.65</td></tr> <tr><td>20</td><td>0.97</td><td>0.85</td><td>0.75</td></tr> <tr><td>30</td><td>0.98</td><td>0.92</td><td>0.85</td></tr> <tr><td>40</td><td>0.98</td><td>0.95</td><td>0.90</td></tr> <tr><td>50</td><td>0.98</td><td>0.96</td><td>0.93</td></tr> <tr><td>60</td><td>0.98</td><td>0.97</td><td>0.94</td></tr> <tr><td>70</td><td>0.98</td><td>0.97</td><td>0.95</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	230VAC	277VAC	10	0.95	0.70	0.65	20	0.97	0.85	0.75	30	0.98	0.92	0.85	40	0.98	0.95	0.90	50	0.98	0.96	0.93	60	0.98	0.97	0.94	70	0.98	0.97	0.95	80	0.98	0.97	0.96	90	0.98	0.97	0.96	100	0.98	0.97	0.96	
LOAD (%)	115VAC	230VAC	277VAC																																													
10	0.95	0.70	0.65																																													
20	0.97	0.85	0.75																																													
30	0.98	0.92	0.85																																													
40	0.98	0.95	0.90																																													
50	0.98	0.96	0.93																																													
60	0.98	0.97	0.94																																													
70	0.98	0.97	0.95																																													
80	0.98	0.97	0.96																																													
90	0.98	0.97	0.96																																													
100	0.98	0.97	0.96																																													
7	EFFICIENCY(Typ.)	93%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	93.8 %																																												
	<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>85</td><td>85</td><td>85</td></tr> <tr><td>20</td><td>91</td><td>91</td><td>91</td></tr> <tr><td>30</td><td>92</td><td>92</td><td>92</td></tr> <tr><td>40</td><td>93</td><td>93</td><td>93</td></tr> <tr><td>50</td><td>93</td><td>93</td><td>93</td></tr> <tr><td>60</td><td>93</td><td>93</td><td>93</td></tr> <tr><td>70</td><td>93</td><td>93</td><td>93</td></tr> <tr><td>80</td><td>93</td><td>93</td><td>93</td></tr> <tr><td>90</td><td>93</td><td>93</td><td>93</td></tr> <tr><td>100</td><td>93</td><td>93</td><td>93</td></tr> </tbody> </table>				LOAD (%)	115VAC	230VAC	277VAC	10	85	85	85	20	91	91	91	30	92	92	92	40	93	93	93	50	93	93	93	60	93	93	93	70	93	93	93	80	93	93	93	90	93	93	93	100	93	93	93
LOAD (%)	115VAC	230VAC	277VAC																																													
10	85	85	85																																													
20	91	91	91																																													
30	92	92	92																																													
40	93	93	93																																													
50	93	93	93																																													
60	93	93	93																																													
70	93	93	93																																													
80	93	93	93																																													
90	93	93	93																																													
100	93	93	93																																													
8	INRUSH CURRENT(Typ.)	230V/50A COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I =32.2A/ 230VAC T50=2.02ms/230V																																												
	<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : AC Input Voltage CH4 : Input current</p> <p>Cursor Menu: X1: 0.0s, X2: 2.020000000ms, Y1: 32.2000A, Y2: 16.1000A</p>																																															

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105 %~ 115 % PROTECTION TYPE : Constant current limiting, unit will shut down after 5 sec, re-power on to recover	I/P: 264VAC I/P: 230VAC I/P: 100VAC O/P:TESTING Ta:25°C	112.2%/ 264VAC 112.2%/ 230VAC 112.2%/100VAC PROTECTION TYPE : Constant current limiting, unit will shut down after 5 sec, re-power on to recover
2	OVER VOLTAGE PROTECTION	43V~52V PROTECTION TYPE : Shut down and latch off o/p voltage, re-power on to recover	I/P: 264VAC I/P: 230VAC I/P: 90VAC O/P:MIN LOAD Ta:25°C	49.2V/ 264VAC 49.2V/ 230VAC 49.2V/ 90VAC PROTECTION TYPE : Shut down and latch off o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type : Shut down O/P voltage, recovers automatically after temperature goes down	I/P: 264VAC I/P: 90VAC O/P:FULL LOAD	O.T.P. Active PROTECTION TYPE : Shut down O/P voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Constant current Range: 20.25A~24.75A PROTECTION TYPE : Constant current limiting, charger will shut down after 5 sec, re-power on to recover	I/P: 264 VAC O/P: BAT. LOAD Ta:25°C	NO DAMAGE Constant current Range: 24.65 A PROTECTION TYPE : Constant current limiting, charger will shut down after 5 sec, re-power on to recover

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q 5/Q6 Rated : 31A/ 600 V	AC ON/OFF I/P: High-Line +3V =267V 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/	Q5 Q6 VDS: VDS: (1) 469V (1) 493V (2) 489V (2) 513V (3) 469V (3) 497V (4) 469V (4) 493V (5) 469V (5) 493V (6) 465V (6) 497V (7) 469V (7) 489V



750W High Reliable Ultra Wide Output Range
Battery Charger & Power Supply 2-in-1

NPP-750 series

			Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C	
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated : 31A/ 600 V	I/P: High-Line +3V =267 V AC ON/OFF O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C	VDS: (1) 469V (2) 457V (3) 453V (4) 453V (5) 453V (6) 453V (7) 457V
3	AUX MOS	U600 Rate: 725V	I/P: High-Line +3V =267 V AC ON/OFF O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C	VDS: (1) 630V (2) 638V (3) 630V (4) 638V (5) 630V (6) 630V (7) 622V
4	P.F.C DIODE	D 19 Rated : 6 A/ 650 V	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) 443V (2) 460V (3) 447V (4) 451V
5	Diode Peak Voltage	Q210 Rated : 100A/120V Q214 Rated : 100A/120V	AC ON/OFF I/P:High-Line +3V =267 V Vo=Vmax 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	Q210 Vo=Vmax VDS: (1) 97.3V (2) 94.9V (3) 97.3V (4) 97.3V (5) 97.3V (6) 97.3V Q214 Vo=Vmax VDS: (1) 98.1V (2) 98.1V (3) 98.1V (4) 97.3V (5) 98.8V (6) 97.3V



			(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 Vo=Normal O/P: (1)Full Load (2)Before Burst Mode Ta:25°C	(7) 95.7V (8) 89.2V Vo=Normal (1) 88.4V (2) 80.4V	(7) 95.7V (8) 88.4V Vo=Normal (1) 89.8V (2) 82.6V
6	Input Capacitor Voltage	C5 Rated: 220u / 450 V 105 °C/ Series	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) 448V (2) 448V (3) 448V (4) 440V	
7	Control IC Voltage Test	PWM IC U3Rated 8.9V~15.5V PFC IC U2Rated 11V~26V O/P IC U801 Rated 4.5V~36V U100 Rated 6.5V~35V	AC ON/OFF I/P:High-Line +3V =267 V O/P(1)FULL LOAD (2) Output Short (3)O.L.P (4)O.V.P. (5)NO LOAD VRmin(LOW LINE) Ta:25°C	U3 (1) 13.7V (2) 12.9V (3) 13.5V (4) 13.5V (5) 13.5V U2 (1) 13.9V (2) 14.3V (3) 14.1V (4) 13.9V (5) 13.5V	U801 (1) 10.24V (2) 10.08V (3) 10.16V (4) 10.00V (5) 9.68V U100 (1) 12.33V (2) 12.33V (3) 12.17V (4) 12.25V (5) 12.25V

■ SAFETY& E.M.C. TEST

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:0.5KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG:0.6 KVAC/min Ta:25°C	I/P-O/P:3.158mA I/P-FG:2.751mA O/P-FG:3.451mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P: 600 VDC I/P-FG: 600 VDC O/P-FG: 600 VDC Ta:25°C	I/P-O/P: 9999MΩ I/P-FG: 9999MΩ O/P-FG: 9999MΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	18mΩ



E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN/EN61000-3-2 CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	BS EN/EN 55032 (CISPR32), BS EN / EN55014-1 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab
3	RADIATION	BS EN/EN 55032 (CISPR32), BS EN / EN55014-1 CLASS B	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab
4	E.S.D	BS EN/EN61000-4-2 AIR : 8KV / Contact : 4KV	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
5	E.F.T	BS EN/EN61000-4-4 INPUT: 1KV	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
6	SURGE	BS EN/EN 61000-4-5 L-N :1KV L,N-PE:2KV	I/P:230VAC/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 : NPP-750-48 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 25.2 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 51.3 °C		



750W High Reliable Ultra Wide Output Range
Battery Charger & Power Supply 2-in-1

NPP-750 series

				NO	Position	ROOM AMBIENT Ta= 25.2 °C	HIGH AMBIENT Ta=51.3°C
				1	T600	33.1°C	60.7°C
				2	ZNR1	27.9°C	55.3°C
				3	LF1	30.3°C	57.9°C
				4	C2	30.2°C	57.8°C
				5	LF3	33.2°C	61.0°C
				6	BD1	46.5°C	73.2°C
				7	R18	36.5°C	63.8°C
				8	RTH1	36.3°C	63.6°C
				9	RY1	35.0°C	62.2°C
				10	C8	34.7°C	62.1°C
				11	L1	34.6°C	62.3°C
				12	Q1	43.6°C	70.9°C
				13	Q210	40.1°C	67.7°C
				14	C24	34.3°C	61.7°C
				15	C41	29.4°C	57.2°C
				16	TSW1	33.4°C	61.0°C
				17	C5	34.8°C	61.4°C
				18	U600	42.0°C	71.1°C
				19	Q6	46.1°C	74.9°C
				20	U3	34.9°C	62.1°C
				21	L3	48.6°C	75.4°C
				22	U150	29.0°C	56.1°C
				23	RTH5	35.0°C	63.2°C
				24	Q215	43.5°C	70.4°C
				25	C115	30.8°C	58.6°C
				26	T1	38.6°C	66.5°C
				27	C114	30.4°C	58.6°C
				38	Q150	28.4°C	56.6°C
				29	LF100	30.2°C	58.6°C
				30	C106	24.9°C	52.7°C
				31	U804	29.4°C	56.4°C
				32	J103	36.9°C	64.9°C
				33	RG5	35.9°C	63.1°C
				34	D19	51.0°C	77.9°C
				35	U2	36.3°C	63.8°C
				36	D651	34.9°C	62.7°C
				37	R228	37.3°C	65.6°C
				38	D9	39.2°C	67.4°C
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR		I/P : 230VAC/100VAC O/P : 100 %LOAD Ta= -35°C		TEST : OK	
3	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= 50.1 °C HUMIDITY= 95 %R.H		TEST : OK	



750W High Reliable Ultra Wide Output Range
Battery Charger & Power Supply 2-in-1

NPP-750 series

4	TEMPERATURE COEFFICIENT	± 0.05%/ (0°C~50°C)	I/P : 230 VAC O/P : FULL LOAD	0.0081 %/°C(0~50°C)
5	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 : 10CYCLE 5. Input/Output condition : STATIC	
6	THERMAL SHOCK TEST	-30~50°C	1. Thermal shock Temperature : -35°C~ +55°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test	
7	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	
8	CAPACITOR LIFE CYCLE	SUPPOSE C111 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) 2499746.4HRS (2) 392776.8HRS (3) 441888.2HRS (4) 509056.97HRS
9	MTBF	Conducted by Parts Stress Analysis Prediction 883.5K hrs min. Telcordia SR-332 (Bellcore) ; 95.7K hrs min. MIL-HDBK-217F (25°C)		
10	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 30,000 hours		

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	LIUTT		Wangdz

2020.10.1 TAG-QA-009