



# Test Report: NPP-450-72

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450W 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 (default)	72V± 1.2 V	I/P: 230 VAC O/P: CC=90% LOAD Ta:25°C	72.1V
2	FLOAT CHARGE VOLTAGE (default)	69V± 0.6 V	I/P: 230 VAC O/P:NO LOAD Ta:25°C	69.1V
3	OUTPUT CURRENT	5.5A±0.055 A	I/P: 230 VAC O/P:C.V MODE-1V Ta:25°C	5.515 A
4	MAX. POWER	462W	I/P: 230 VAC O/P:C.V =84V Ta:25°C	463.8W
5	OUTPUT VOLTAGE ADJUST RANGE	54V~100 V	I/P : 230 VAC O/P : CC=90% LOAD Ta : 25°C	51.5V~103.9V
6	CURRENT ADJUSTABLE RANGE	2.75~5.5A	I/P : 230 VAC O/P : C.V MODE-4V Ta : 25°C	2.55A~5.59A

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Constant current Range: 4.95~11.5A 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: 9.33 A PROTECTION TYPE : Constant current limiting, charger will shut down after 5 sec, re-power on to recover
2	OVER VOLTAGE PROTECTION	102V~120V 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	112.0V/ 264VAC 112.0V/ 230VAC 112.0V/ 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
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**CONTROL FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT				
1	FAN SPEED 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~1.8V</u> Charger ON: <u>1.9~13.2V</u> (1) Remote off Pin= <u>2.89V</u> (2) Remote off Vo= <u>0.29V</u>				
3	CHARGE OK SIGNAL	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>5.21 V</u> ; Charger failure or protection = <u>0.035 V</u>				
4	BATTERY FULL SIGNAL	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>5.21 V</u> Charging = <u>0.035 V</u>				
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>12.02 V</u> <u>79 mVp-p</u>				
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>0.55A±0.055A</td> </tr> <tr> <td>I<sub>o</sub></td> <td>0.529A</td> </tr> </table>			Taper Current	0.55A±0.055A	I <sub>o</sub>	0.529A
Taper Current	0.55A±0.055A							
I <sub>o</sub>	0.529A							



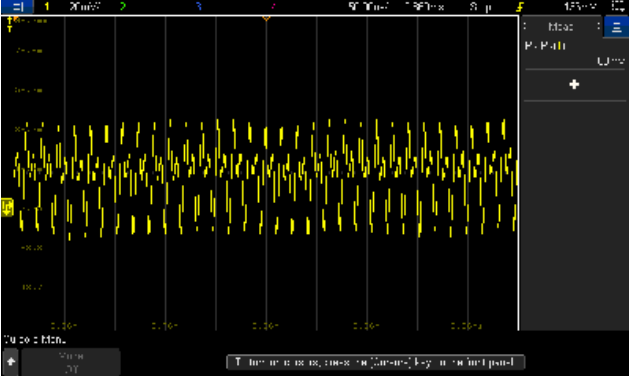
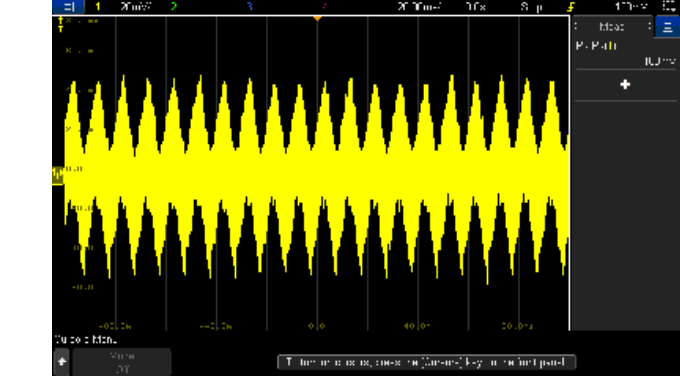
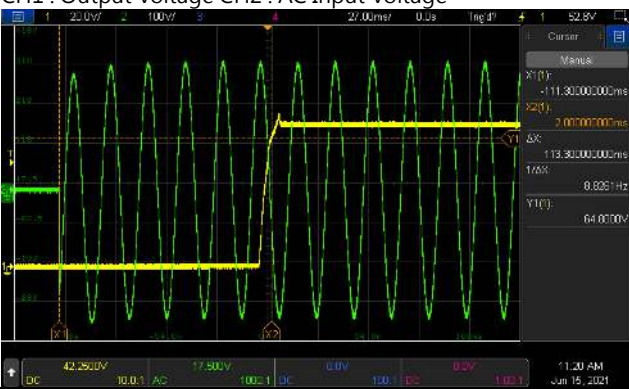

7	LED INDICATOR	LED Indicator	Charger(Default)	Power Supply	TEST : <u>OK</u>
		Green	Float stage(stage 3) or full charged	Normal working	
		Red	Charging(stage 1 or 2)	—	
		NO Light	Abnormal	Abnormal	
		I/P: 230V O/P: TESTING LOAD Ta:25°C			

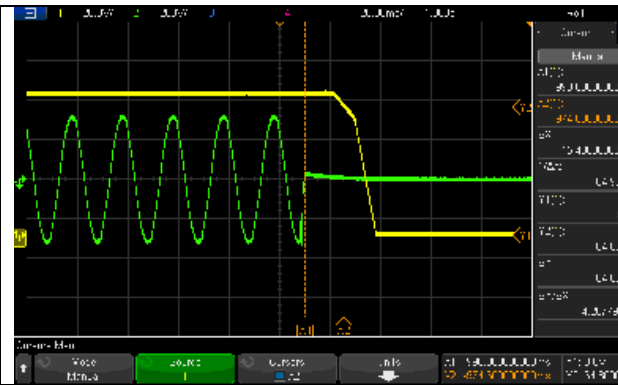
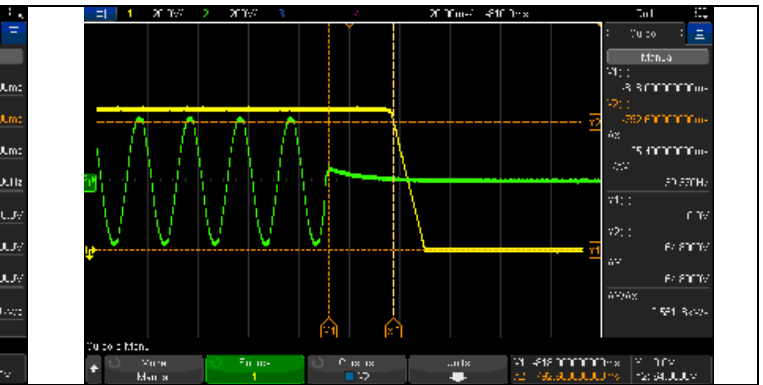
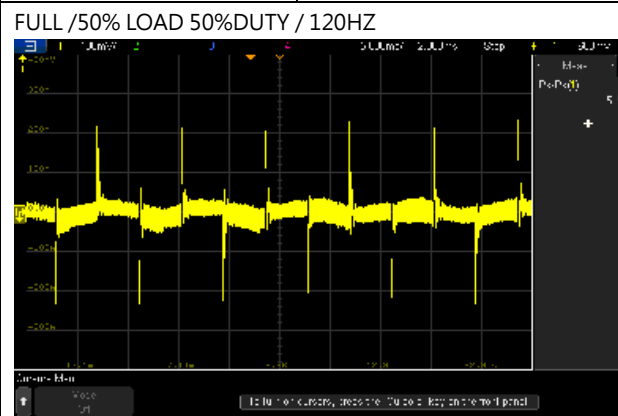
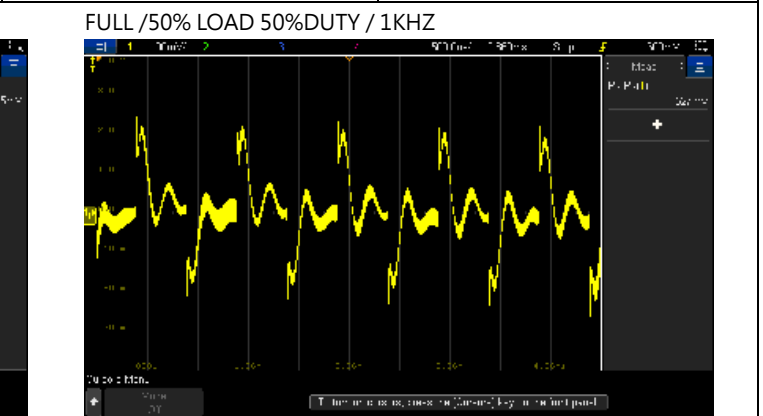
## Power Supply mode

### ■ DESIGN VERIFY TEST

#### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 54 V~ 100 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	51.5V~103.9V/230VAC 51.5V~103.9V /115VAC
2	CURRENT ADJUSTABLE RANGE	2.75~5.5A	I/P : 230 VAC O/P : TEST LOAD Ta : 25°C	2.673A~5.66A
3	OUTPUT VOLTAGE(Max) TOLERANCE	V1: -1.0%~ +1.0 %	I/P: 90VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.01%~ 0.01 %
4	LINE REGULATION (Max)	V1: -0.5%~ +0.5 %	I/P: 90VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: -0.01%~ 0.01%
5	LOAD REGULATION(Max)	V1: -0.5%~ +0.5 %	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.01%~ 0.01%
6	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	3.9%
7	RIPPLE & NOISE(Max)	V1: 600 mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1: 108mVp-p
	high frequency :		low frequency :	

				
8	SET UP TIME(Max)	230VAC/1800ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 113.3ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p> 				
9	RISE TIME (Max)	230VAC/60ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 5.95ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage</p> 				
10	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 / 15.4ms 230VAC/75% LOAD / 25.4ms
<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: 7200 mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	515mVp-p 527mVp-p
				
12	TRANSIENT RECOVERY TIME	V1: 7200 mVp-p	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	438mVp-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	(1) 85.7V~264V (2) 115Vdc~370Vdc/FULL LOAD 115Vdc~370Vdc/50% LOAD (3) 115Vdc~370Vdc/FULL LOAD 115Vdc~370Vdc/50% LOAD

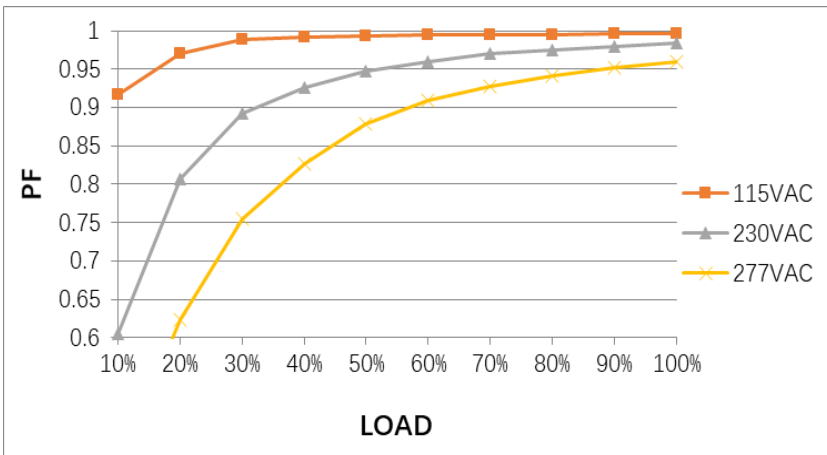


450W High Reliable Ultra Wide Output Range  
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NPP-450 series

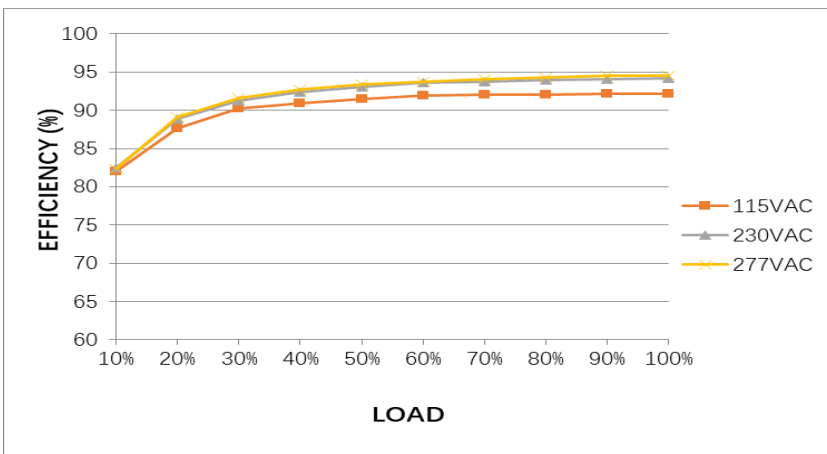
			I/P: LOW-LINE-3V=87 V HIGH-LINE+15%=300 V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST:OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:90 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	INPUT CURRENT (Typ.)	230V/ 2.2 A 115V/ 4.5 A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =2.15A/ 230VAC I =4.41A/ 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=0.988/230VAC PF=0.997/115VAC

P.F vs LOAD



7	EFFICIENCY(Typ.)	93%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	93.57%
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EFFICIENCY vs LOAD



8	INRUSH CURRENT(Typ.) COLD START	230V/50A	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I =46A/ 230VAC T50=1.062 ms/230V
<p>INPUT=230VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH4 : Input current</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	108.2%/ 264VAC 108.2%/ 230VAC 108.2%/100VAC PROTECTION TYPE : Constant current limiting, unit will shut down after 5 sec, re-power on to recover
2	OVER VOLTAGE PROTECTION	102V~120V 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	112.0V/ 264VAC 112.0V/ 230VAC 112.0V/ 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 : 4.95~11.5A 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: _____ 9.34 _____ A PROTECTION TYPE : Constant current limiting, charger will shut down after 5 sec, re-power on to recover



**CONTROL FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	FAN SPEED CONTROL	Depends on internal temperature	I/P: 230 VAC O/P:testing Ta:25°C	TEST: <u>OK</u>
2	REMOTE CONTROL	OPEN : POWER OFF ; SHORT : POWER ON	I/P: 230 VAC O/P:FULL. LOAD Ta:25°C	OPEN/SHORT TEST: <u>OK</u>
3	DC OK	The TTL signal out, DC OK = 4.5 ~ 5.5V; Power supply failure or protection = -0.5 ~ 0.5V	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST: Charger OK = <u>5.195</u> V; Charger failure or protection = <u>0.034</u> V

**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 : 25A/ 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/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C	Q5 VDS: (1) 472V (2) 488V (3) 476V (4) 476V (5) 476V (6) 476V (7) 456V Q6 VDS: (1) 472V (2) 492V (3) 472V (4) 476V (5) 476V (6) 476V (7) 464V
2	P.F.C Transistor ( D to S) or (C to E) Peak Voltage	Q1 Rated : 18A/ 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) 500V (2) 480V (3) 504V (4) 504V (5) 508V (6) 500V (7) 460V



450W High Reliable Ultra Wide Output Range  
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3	AUX MOS	U600 Rate: 725V/ 0.88A	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) 616V (2) 596V (3) 616V (4) 616V (5) 620V (6) 612V (7) 588V
4	P.F.C DIODE	D 19 Rated : 650 V/ 6 A	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) 452V (2) 452V (3) 448V (4) 456V
5	Diode Peak Voltage	Q210 Rated : 20A/300V  Q214 Rated : 20A/300	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 (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	Q210 Vo=Vmax VDS: (1) 236V (2) 230V (3) 238V (4) 238V (5) 240V (6) 242V (7) 232V (8) 226V  Vo=Normal (1) 206V (2) 198V  Q214 Vo=Vmax VDS: (1) 226V (2) 232V (3) 234V (4) 234V (5) 236V (6) 238V (7) 232V (8) 224V  Vo=Normal (1) 211V (2) 209V
6	Input Capacitor Voltage	C5 Rated :220u / 450 V	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) 442V (2) 442V (3) 439V (4) 444V



7	Control IC Voltage Test	PWM IC U3Rated 8.9V~15.5V	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) 13.9V (2) 13.7V (3) 15.1V (4) 13.5V (5) 13.3V	U801 (1) 10.5V (2) 10.3V (3) 10.5V (4) 10.3V (5) 10.3V
		PFC IC U2Rated 11V~26V		U2 (1) 14.1V (2) 13.9V (3) 13.5V (4) 14.1V (5) 14.1V	
		O/P IC U801 Rated 4.5V~36V			

## ■ 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:3.67mA I/P-FG:3.59mA O/P-FG:1.31m A 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: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 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	20 mΩ

### 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 /50%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-450-72 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 23.5 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 50.6 °C		



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Battery Charger & Power Supply 2-in-1

**NPP-450 series**

				ROOM AMBIENT Ta= 23.5 °C	HIGH AMBIENT Ta=50.6°C
		NO	Position		
		1	ZNR1	26.4°C	55.0°C
		2	LF1	28.1°C	57.0°C
		3	RY1	29.6°C	57.8°C
		4	U3	31.3°C	59.0°C
		5	RTH2	29.0°C	57.2°C
		6	LF3	37.9°C	68.9°C
		7	C2	30.5°C	60.4°C
		8	C8	33.6°C	63.0°C
		9	BD1	41.7°C	71.1°C
		10	R24	35.8°C	65.4°C
		11	C5	34.6°C	63.5°C
		12	L1	47.7°C	78.2°C
		13	C60	37.3°C	68.5°C
		14	Q1	37.9°C	68.0°C
		15	TSW1	30.2°C	59.4°C
		16	Q5	31.6°C	61.1°C
		17	T1	56.2°C	91.3°C
		18	T600	27.7°C	55.1°C
		19	U600	36.5°C	65.8°C
		20	RTH5	30.8°C	59.4°C
		21	Q211	35.2°C	63.3°C
		22	Q213	37.0°C	64.5°C
		23	C114	31.6°C	59.2°C
		24	C115	26.5°C	54.4°C
		25	LF100	26.3°C	54.0°C
		26	U150	27.5°C	55.0°C
		27	J102	31.9°C	60.1°C
		28	D651	34.0°C	61.7°C
		29	D19	44.4°C	76.3°C
		30	U2	37.3°C	67.9°C
		31	R210	36.0°C	65.5°C
		32	Q632	30.1°C	58.5°C
		33	U801	29.1°C	55.3°C
		34	C830	26.8°C	54.4°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
4	TEMPERATURE COEFFICIENT	± 0.05%/ (0°C~50°C)		I/P : 230 VAC O/P : FULL LOAD	0.0073 %/°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 C114 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) 1687425HRS (2) 288136.3HRS (3) 379220.2HRS (4) 464041.5HRS
9	MTBF	Conducted by Parts Stress Analysis Prediction 352.3K hrs min. Telcordia SR-332 (Bellcore) ; 118.5K 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

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