



# Test Report: NPP-450-48

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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)	57.6V± 0.96 V	I/P: 230 VAC O/P: CC=90% LOAD Ta:25°C	57.77 V
2	FLOAT CHARGE VOLTAGE (default)	55.2V± 0.48 V	I/P: 230 VAC O/P:NO LOAD Ta:25°C	55.41 V
3	MAX. OUTPUT CURRENT	6.8A±0.068 A	I/P: 230 VAC O/P:C.V MODE-3V Ta:25°C	6.808 A
4	MAX. POWER	456.96W	I/P: 230 VAC O/P:C.V =67.2V Ta:25°C	457.6W
5	OUTPUT VOLTAGE ADJUST RANGE	42 V~ 80 V	I/P : 230 VAC O/P : CC=90% LOAD Ta : 25°C	40.57V~81.95
6	CURRENT ADJUSTABLE RANGE	3.4~6.8A	I/P : 230 VAC O/P : C.V MODE-3V Ta : 25°C	3.274 A~7.106 A

#### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Constant current Range: 6.12A~10.88A 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: 6.92 A PROTECTION TYPE : Constant current limiting, charger will shut down after 5 sec, re-power on to recover
2	OVER VOLTAGE PROTECTION	82V~100V 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	94.9V/ 264VAC 94.9V/ 230VAC 94.9V/ 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~1.7V</u> Charger ON: <u>1.8~13.2V</u> (1) Remote off Pin=3.07W (2) Remote off Vo= <u>0.26V</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>5.19</u> V; Charger failure or protection = <u>0.036</u> V				
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>5.190</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>12.029</u> V <u>32</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>0.68A±0.068A</td> </tr> <tr> <td>Io</td> <td>0.636A</td> </tr> </table>			Taper Current	0.68A±0.068A	Io	0.636A
Taper Current	0.68A±0.068A							
Io	0.636A							



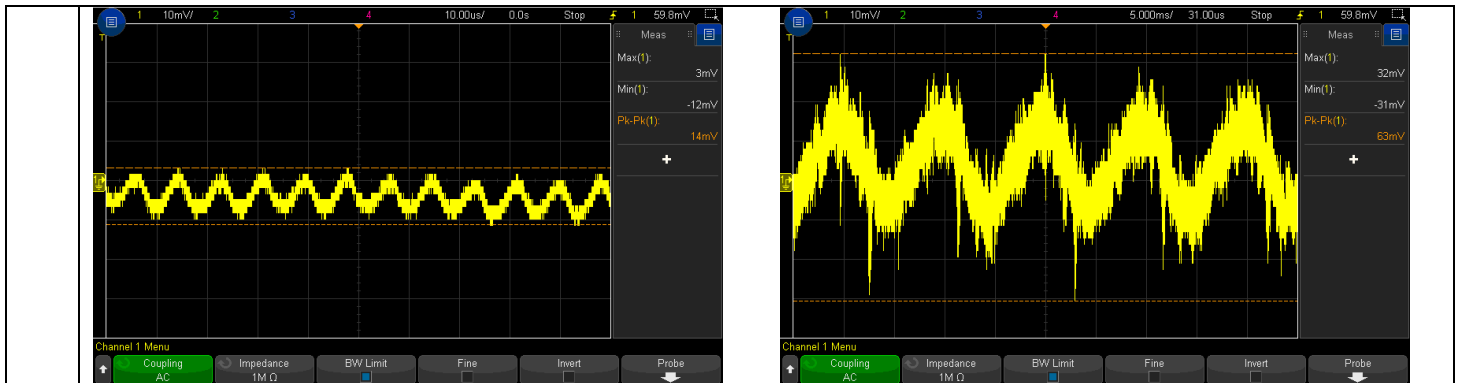
7	LED INDICATOR	LED Indicator	Charger(Default)	Power Supply	TEST : <u>OK</u>
		Green	Float stage(stage 3) or full charged	Normal working	
		Red	Charging(stage 1 or 2)	—	
		NO Light	Abnormal	Abnormal	
		I/P: 230V O/P: TESTING LOAD Ta:25°C			

## Power Supply mode

### ■ DESIGN VERIFY TEST

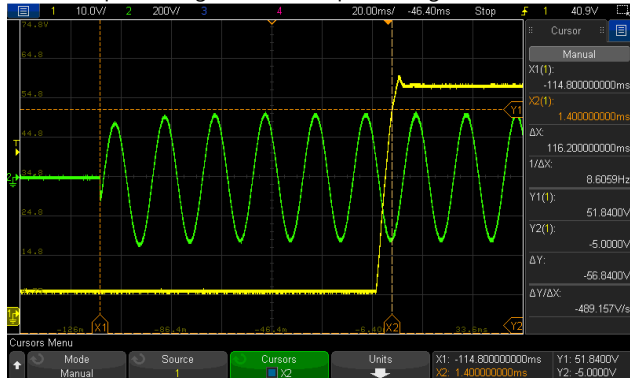
#### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 42 V~ 80 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	40.57V~81.95V/230VAC 40.57V~81.95V/115VAC
2	CURRENT ADJUSTABLE RANGE	3.4~6.8A	I/P : 230 VAC O/P : TEST LOAD Ta : 25°C	3.32A~6.93A
3	OUTPUT VOLTAGE(Max) TOLERANCE	V1: -1.0%~ +1.0 %	I/P: 90VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.015%~ 0.015 %
4	LINE REGULATION (Max)	V1: -0.5%~ +0.5 %	I/P: 90VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: -0.015%~ 0.015 %
5	LOAD REGULATION(Max)	V1: -0.5%~ +0.5 %	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.00%~ 0.015 %
6	OVER/UNDERSHOOT TEST	< +5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	3.0%
7	RIPPLE & NOISE(Max)	V1: 480 mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1: 63 mVp-p
	high frequency :		low frequency :	



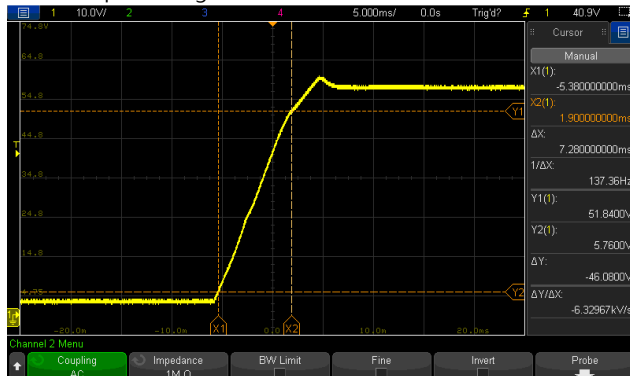
8	SET UP TIME(Max)	230VAC/1800ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 116.2 ms
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INPUT=230VAC/50HZ @ FULL LOAD  
CH1 : Output Voltage CH2 : AC Input Voltage



9	RISE TIME (Max)	230VAC/60ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 7.28 ms
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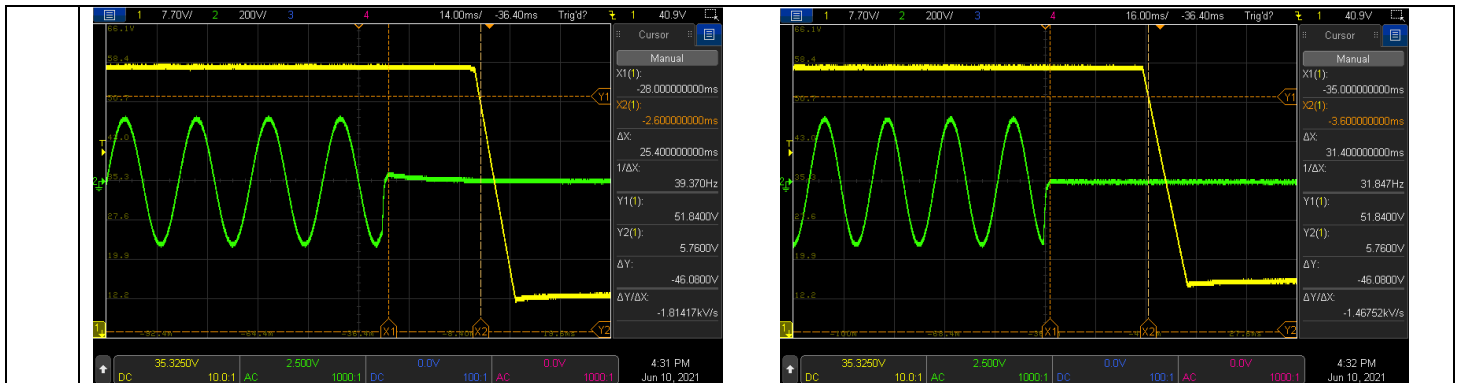
INPUT=230VAC/50HZ @ FULL LOAD  
CH1 : Output Voltage



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 /25.4ms 230VAC/75% LOAD /31.4ms
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INPUT=230VAC/50HZ @ FULL LOAD  
CH1 : Output Voltage CH2 : AC Input Voltage

INPUT=230VAC/50HZ @ 75% LOAD  
CH1 : Output Voltage CH2 : AC Input Voltage

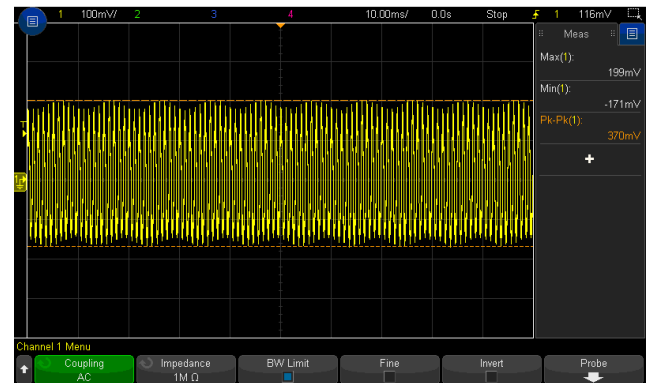


11	DYNAMIC LOAD	V1: 6720 mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	362 mVp-p 370 mVp-p
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FULL /50% LOAD 50%DUTY / 120HZ



FULL /50% LOAD 50%DUTY / 1KHZ



12	TRANSIENT RECOVERY TIME	V1: 6720 mVp-p	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	314 mVp-p
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### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~264VAC 127VDC~ 370VDC	(1) I/P:TESTING O/P:MAX LOAD (2) I/P:DC TESTING(L:+ N:-) O/P: MAX / 50% LOAD (3) I/P:DC TESTING(L:- N:+) O/P: MAX / 50% LOAD Ta:25°C	(1) 85.6 V~264V (2) 115 Vdc~370Vdc/FULL LOAD 115Vdc~370Vdc/50% LOAD (3) 115Vdc~370Vdc/FULL LOAD 115Vdc~370Vdc/50% LOAD

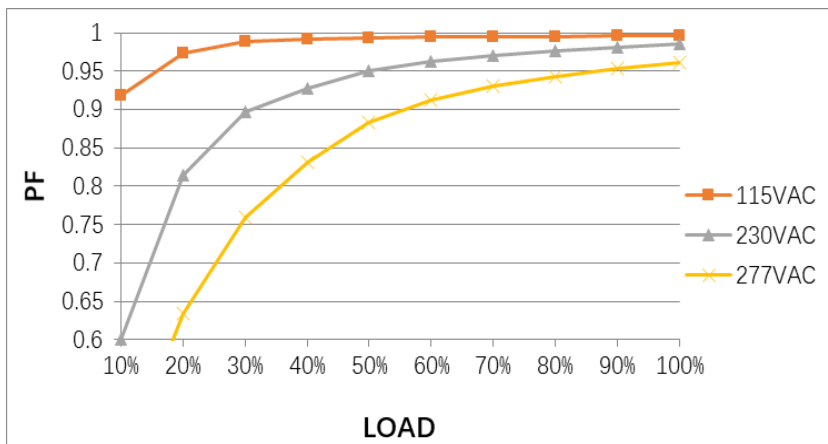


450W High Reliable Ultra Wide Output Range  
Battery Charger & Power Supply 2-in-1

NPP-450 series

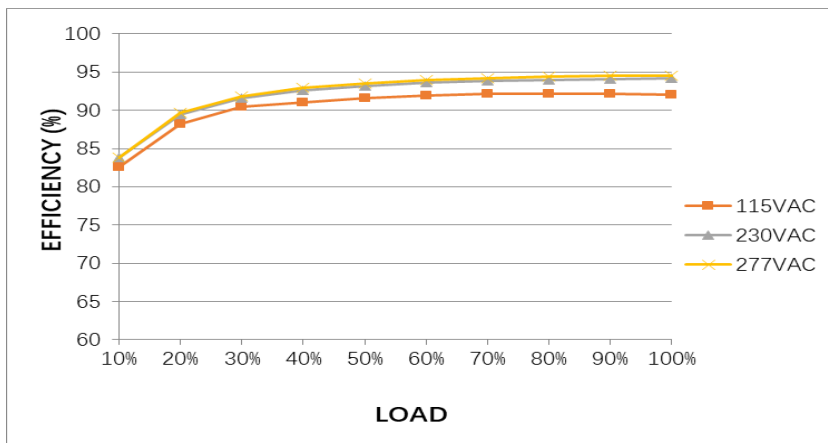
			I/P: LOW-LINE-3V=87 V HIGH-LINE+15%=300 V O/P: MAX /MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN ( POWER ON/OFF NO DAMAGE )	TEST:OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:90 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	INPUT CURRENT (Typ.)	230V/ 2.2 A 115V/ 4.5 A	I/P : 230 VAC I/P : 115 VAC O/P : MAX LOAD Ta : 25°C	I =2.123A/ 230VAC I =4.358A/ 115VAC
6	POWER FACTOR (Typ.)	0.95/ 230VAC 0.98/115VAC	I/P : 230 VAC I/P : 115 VAC O/P : MAX LOAD Ta : 25°C	PF=0.9886/230VAC PF=0.9975/115VAC

P.F vs LOAD



7	EFFICIENCY(Typ.)	93%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	94.02 %
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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 =43.5A/ 230VAC T50= 1.124ms/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	111.18%/ 264VAC 111.18%/ 230VAC 111.18%/100VAC PROTECTION TYPE : Constant current limiting, unit will shut down after 5 sec, re-power on to recover
2	OVER VOLTAGE PROTECTION	82V~100V 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	94.9V/ 264VAC 94.9V/ 230VAC 94.9V/ 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: 6.12~10.88A 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: _____ 6.95 _____ 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>5.187</u> V; Charger failure or protection = <u>0.035</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) 489V (2) 505V (3) 489V (4) 493V (5) 493V (6) 493V (7) 477V  Q6 VDS: (1) 488V (2) 505V (3) 492V (4) 488V (5) 492V (6) 492V (7) 464V
2	P.F.C Transistor ( D to S) or (C to E) Peak Voltage	Q1 Rated : 18A/ 600V	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) 508V (2) 492V (3) 516V (4) 516V (5) 516V (6) 516V (7) 464V



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

3	AUX MOS	U600 Rate : 0.88A/ 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) 645V (2) 621V (3) 643V (4) 637V (5) 641V (6) 637V (7) 613V
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) 468V (2) 464V (3) 468V (4) 468V
5	Diode Peak Voltage	Q210 / Q213 Rated : 20A/200V	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                      Q213 Vo=Vmax                Vo=Vmax VDS:                      VDS: (1) 175V                (1) 174V (2) 173V                (2) 172V (3) 175V                (3) 174V (4) 175V                (4) 174V (5) 173V                (5) 174V (6) 177V                (6) 180V (7) 173V                (7) 174V (8) 171V                (8) 172V  Vo=Normal              Vo=Normal (1) 137V                (1) 133.8V (2) 125.8V              (2) 129.8V
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) 440V (2) 432V (3) 445V (4) 440V



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	U801
		PFC IC U2Rated 11V~26V		(1) 13.78V	(1) 10.41V
		O/P IC U801 Rated 4.5V~36V		(2) 14.02V	(2) 10.41V
				(3) 13.86V	(3) 10.33V
				(4) 13.94V	(4) 10.41V
				(5) 13.86V	(5) 10.40V
				U2	
				(1) 14.10V	
				(2) 14.02V	
				(3) 14.35V	
				(4) 14.51V	
				(5) 14.43V	

## ■ 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:3.69mA I/P-FG:3.58mA O/P-FG:1.29m 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	17 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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				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)



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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 1056.9K 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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