



Test Report: NPP-1700-48

1700W 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

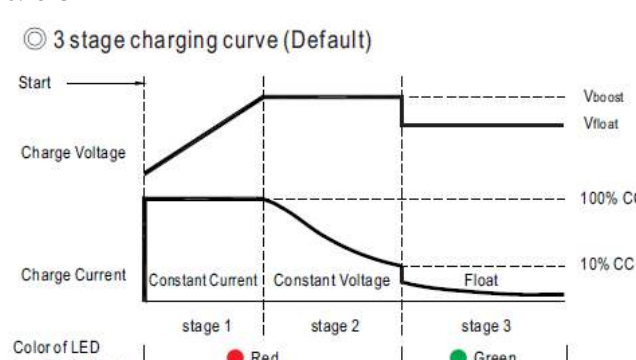
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	BOOST CHARGE VOLTAGE (default)	57.6V± 0.48V	I/P: 230 VAC O/P: CC=90% LOAD Ta:25°C	57.61V
2	FLOAT CHARGE VOLTAGE (default)	55.2V±0.48 V	I/P: 230 VAC O/P:NO LOAD Ta:25°C	55.28V
3	OUTPUT VOLTAGE ADJUST RANGE	CH1: 42V~ 80 V	I/P : 230 VAC O/P : CC=90% LOAD Ta : 25°C	39.761V~82.01V
4	CURRENT ADJUSTABLE RANGE	12.5~25A	I/P : 230 VAC O/P : C.V MODE-3V Ta : 25°C	10.261A ~ 25.465 A
5	MAX POWER	1680W	I/P: 230 VAC O/P:BAT. LOAD(CV=67.2V) Ta:25°C	1681.2W
6	MAX. OUTPUT CURRENT	25±0.25A	I/P : 230 VAC O/P : C.V MODE-3V Ta : 25°C	25.011A

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Constant current Range: 23.75~26.25A PROTECTION TYPE : Constant current limiting, charger will shut down, re-power on to recover	I/P: 264 VAC O/P: BAT. LOAD Ta:25°C	NO DAMAGE Constant current Range: 24.968 A PROTECTION TYPE : Constant current limiting, charger will shut down, 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	91.9V/ 264VAC 91.9V/ 230VAC 91.9V/ 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 OK PROTECTION TYPE : Shut down O/P voltage,

		temperature goes down		recovers automatically after temperature goes down
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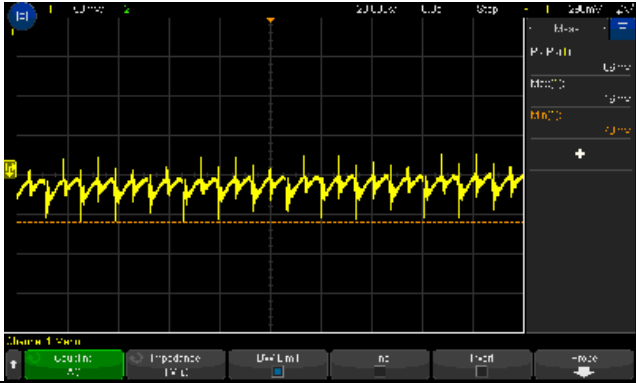
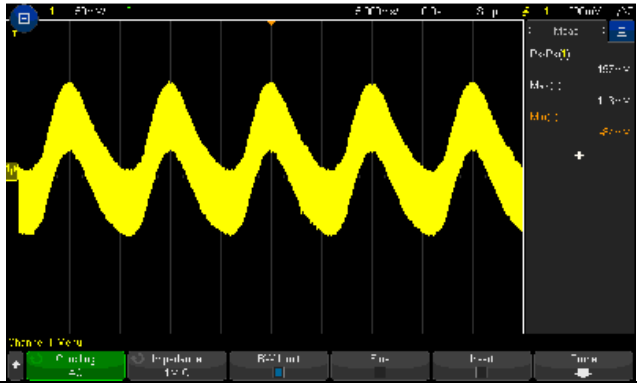
CONTROL FUNCTION TEST

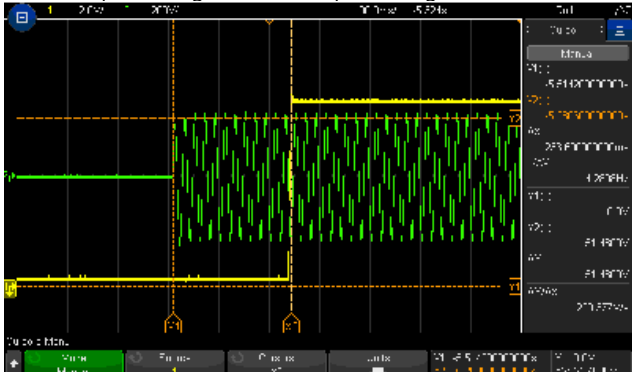
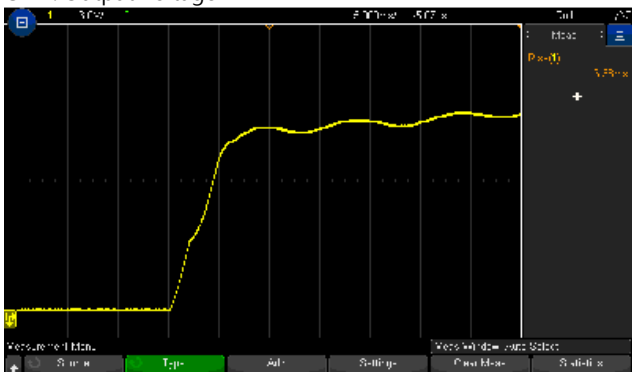
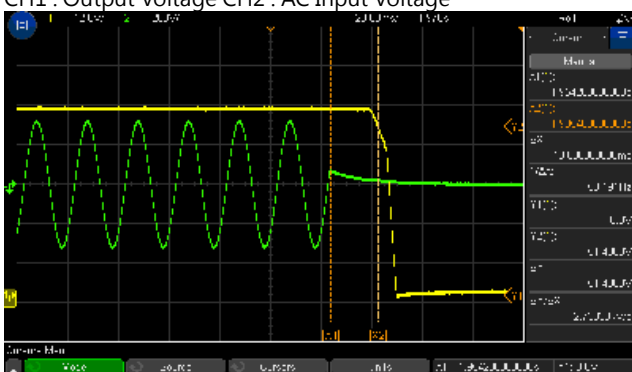
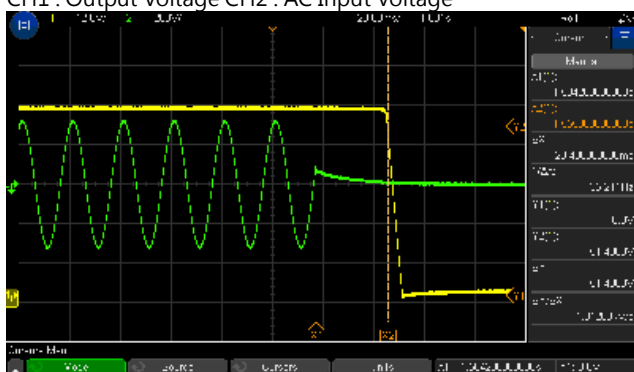
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT											
1	FAN SPEED CONTROL	Depends on internal temperature	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST: <u>OK</u>											
2	REMOTE CONTROL	Rc+ / Rc- OPEN(-0.5V~0.5V) : Charger OFF ; SHORT(10.8V~13.2V) :Charger ON	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	OPEN /SHORT TEST: <u>OK</u> Charger OFF: <u>-0.5~7.0V</u> Charger ON: <u>7.1~13.2V</u> (1) Remote off Pin= <u>6.26W</u> (2) Remote off Vo= <u>0.168 V</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>5.168 V</u> ; Charger failure or protection = <u>12.56 mV</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>5.170 V</u> Charging = <u>12.52 mV</u>											
5	AUX POWER	OUTPUT VOLTAGE RANGE : 10.8~13.2V	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST: <u>11.991 V</u>											
6	CHARGING CURVE	I/P:230Vac O/P:TESTING Ta:25°C Ⓒ 3 stage charging curve (Default)  <table><tr><td>Taper Current</td><td>2.5A±0.25A</td></tr><tr><td>Io</td><td>2.36A</td></tr></table>			Taper Current	2.5A±0.25A	Io	2.36A							
Taper Current	2.5A±0.25A														
Io	2.36A														
7	LED INDICATOR	<table><tr><th>LED Indicator</th><th>Charger(Default)</th><th>Power Supply</th></tr><tr><td>Green</td><td>Float stage(stage 3) or full charged</td><td>Normal working</td></tr><tr><td>Red</td><td>Charging(stage 1 or 2)</td><td>——</td></tr><tr><td>NO Light</td><td>Abnormal</td><td>Abnormal</td></tr></table> I/P: 230V O/P:TESTING LOAD Ta:25°C	LED Indicator	Charger(Default)	Power Supply	Green	Float stage(stage 3) or full charged	Normal working	Red	Charging(stage 1 or 2)	——	NO Light	Abnormal	Abnormal	TEST : <u>OK</u>
LED Indicator	Charger(Default)	Power Supply													
Green	Float stage(stage 3) or full charged	Normal working													
Red	Charging(stage 1 or 2)	——													
NO Light	Abnormal	Abnormal													

Power Supply mode

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

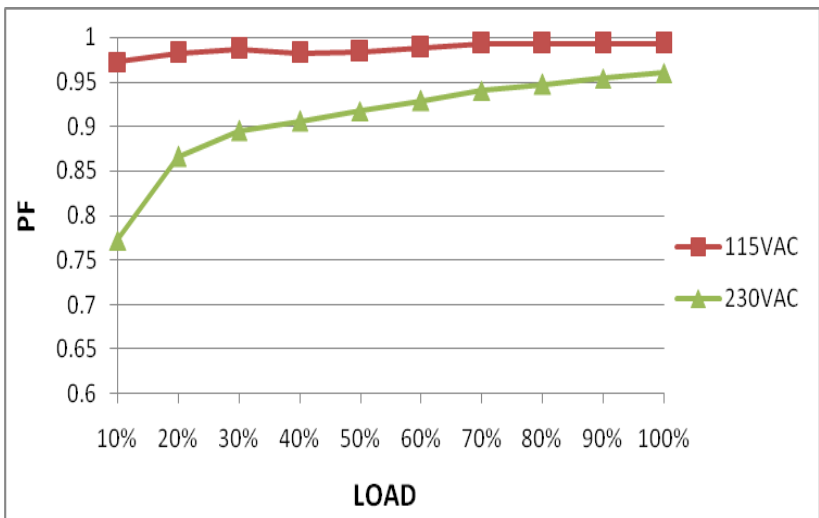
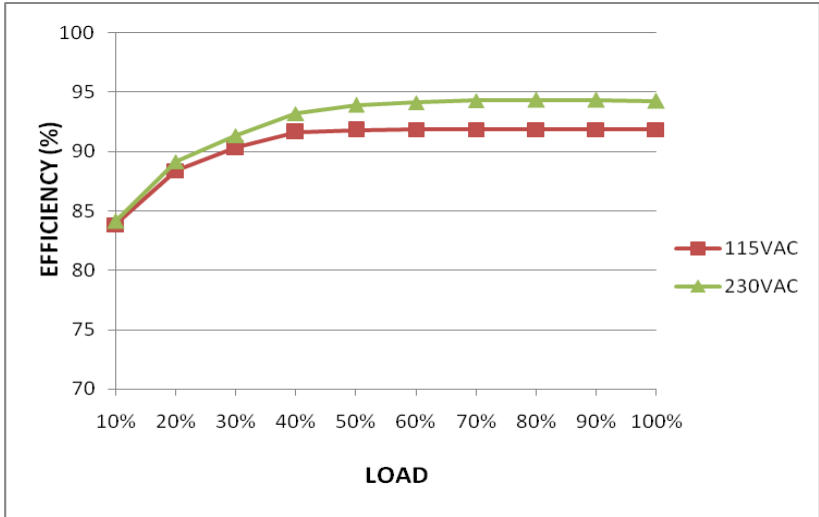
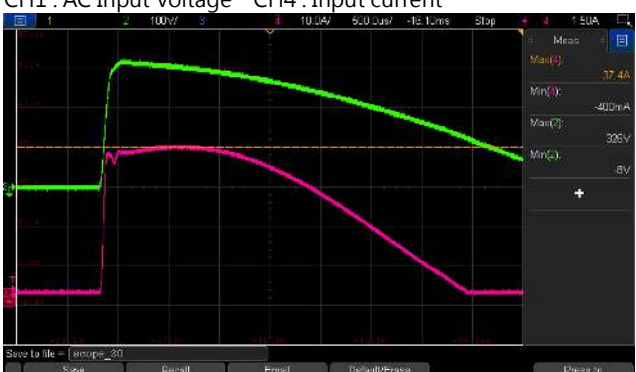
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 42 V~ 80V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	39.842V~82.121V/230VAC 39.841V~82.132V/115VAC
2	CURRENT ADJUSTABLE RANGE	12.5~25A	I/P : 230 VAC O/P : TEST LOAD Ta : 25°C	12.25A~25.55A
3	OUTPUT VOLTAGE(Max) TOLERANCE	V1: -1.0 %~ +1.0 %	I/P: 90VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.05%~0.03%
4	LINE REGULATION (Max)	V1: -0.5 %~ +0.5 %	I/P: 90VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0.02%~0.03%
5	LOAD REGULATION(Max)	V1: -0.5%~ +0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.02%~0.03%
6	OVER/UNDERSHOOT TEST	< +5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	3.1%
7	RIPPLE & NOISE(Max)	V1: 480 mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1: 197mVp-p
high frequency :  low frequency : 				
8	SET UP TIME(Max)	230VAC/1800ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/233.6ms

	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/6.38ms
	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 /18.8ms 230VAC/75% LOAD / 28.4ms
	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: 5760 mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	1280mVp-p 750mVp-p

FULL /50% LOAD 50%DUTY / 120HZ		FULL /50% LOAD 50%DUTY / 1KHZ		
				
12	TRANSIENT RECOVERY TIME	V1: 5760 mVp-p	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	3220mVp-p

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~264VAC 250VDC~ 370VDC	(1) I/P:TESTING O/P: RATED POWER (2) I/P:DC TESTING(L:+ N:-) O/P: RATED POWER (3) I/P:DC TESTING(L:- N:+) O/P: RATED POWER Ta:25°C I/P: LOW-LINE-3V=87 V HIGH-LINE+15%=300 V O/P: RATED POWER /MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN	(1) 83.4V ~264V/70%load 169.8V~264V/FULL LOAD (2) 190Vdc~370Vdc/FULLLOAD 160Vdc~370Vdc/70% LOAD (3) 190Vdc~370Vdc/FULL LOAD 160Vdc~370Vdc/70% 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/ 9.3 A 115V/ 14.8A	I/P : 230 VAC I/P : 115 VAC O/P : RATED POWER (Vo=67.2V) Ta : 25°C	I =7.985A/ 230VAC I =11.16A/ 115VAC
4	LEAKAGE CURRENT	Charger /Power: 0.75mA/240VAC (60335-1/2-29), 1.5mAPeak/240VAC (62368-1)	I/P: 240 VAC O/P:Min LOAD Ta:25°C	Charger/ Power 60335: 0.087mA 62368: 1.39 mA
5	POWER FACTOR (Typ.)	0.95/ 230VAC 0.98/115VAC	I/P : 230 VAC I/P : 115 VAC O/P : RATED POWER (Vo=67.2V) Ta : 25°C	PF=0.968/230VAC PF=0.994/115VAC

	P.F vs LOAD 			
6	EFFICIENCY(Typ.)	94%	I/P:230 VAC O/P: RATED POWER (Vo=67.2V) Ta:25°C	94.43%
	EFFICIENCY vs LOAD 			
7	INRUSH CURRENT(Typ.)	230V/50A COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I =37.4A/ 230VAC T50=2.570ms/230V
	INPUT=230VAC/50HZ @ FULL LOAD CH1 : AC Input Voltage CH4 : Input current 			

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: 180VAC O/P: TESTING Ta: 25°C	107.84%/ 264VAC 107.84%/ 230VAC 107.84%/180VAC 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	91.9V/ 264VAC 91.9V/ 230VAC 91.9V/ 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 OK PROTECTION TYPE : Shut down O/P voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE PROTECTION TYPE : Constant current limiting, charger will shut down, re-power on to recover	I/P: 264 VAC O/P: FULL LOAD Ta: 25°C	NO DAMAGE PROTECTION TYPE : Constant current limiting, charger will shut down, 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>5.181</u> V; Charger failure or protection = <u>0.037</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 901/Q903 Rated : 600V/ 34A	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	Q901 VDS: (1) 438V (2) 427V (3) 446V (4) 438V (5) 438V (6) 434V (7) 458V	Q903 VDS: (1) 451V (2) 455V (3) 459V (4) 447V (5) 451V (6) 443V (7) 467V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1/Q3 Rated: 600V /34 A	I/P: High-Line +3V =267 V AC ON/OFF 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	Q1 VDS: (1) 476V (2) 459V (3) 472V (4) 472V (5) 467V (6) 455V (7) 463V	Q3 VDS: (1) 500V (2) 484V (3) 492V (4) 492V (5) 492V (6) 472V (7) 480V
3	AUX MOS	U600 Rated: 800V /4.9 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/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	U600 VDS: (1) 568V (2) 552V (3) 560V (4) 552V (5) 556V (6) 544V (7) 576V	

4	P.F.C DIODE	D 17/D13 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	D13 (1) 508V (2) 500V (3) 500V (4) 500V	D17 (1) 516V (2) 512V (3) 516V (4) 512V
5	Diode Peak Voltage	Q210 / Q214/ Q218/ Q222 Rated:200V 36A	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) 176V (2) 176V (3) 178V (4) 178V (5) 178V (6) 178V (7) 176V (8) 176V Vo=Normal (1) 167V (2) 158V Q214 Vo=Vmax VDS: (1) 178V (2) 178V (3) 180V (4) 180V (5) 180V (6) 180V (7) 178V (8) 178V Vo=Normal (1) 169V (2) 158V	Q218 Vo=Vmax VDS: (1) 178V (2) 178V (3) 180V (4) 178V (5) 178V (6) 180V (7) 180V (8) 178V Vo=Normal (1) 168V (2) 156V Q222 Vo=Vmax VDS: (1) 178V (2) 178V (3) 178V (4) 178V (5) 178V (6) 180V (7) 178V (8) 174V Vo=Normal (1) 170V (2) 160V
6	Input Capacitor Voltage	C 5 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) 403V (2) 419V (3) 419V (4) 403V	
7	Control IC Voltage Test	PWM IC U800Rated 8.9V~15.5V PFC IC U401Rated 10.6V~22V	AC ON/OFF I/P:High-Line +3V =267 V O/P(1)FULL LOAD (2) Output Short (3)O.L.P	U800 (1) 13.03V (2) 12.55V (3) 12.63V (4) 13.03V	U250 (1) 13.37V (2) 15.14V (3) 13.13V (4) 13.05V



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

NPP-1700 series

		U250 Rated -0.3V~37V	(4)O.V.P. (5)NO LOAD VRmin(LOW LINE) Ta:25°C	(5) 12.55V U401 (1) 13.35V (2) 13.03V (3) 12.95V (4) 13.03V (5) 13.35V	(5) 13.35V U801 (1) 12.24V (2) 12.08V (3) 12.16V (4) 12.00V (5) 12.24V
		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: 6.78mA I/P-FG: 6.35mA O/P-FG: 4.13 m 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	8 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 A	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
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■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	TEMPERATURE RISE TEST	MODEL : NPP-1700-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 25.1 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 52.2 °C		

			NO	Position	ROOM AMBIENT Ta= 25.1 °C	HIGH AMBIENT Ta=52.2°C
			1	ZNR1	35.4°C	59.4°C
			2	LF1	44.4°C	65.1°C
			3	Q903	43.0°C	69.3°C
			4	Q902	50.7°C	66.6°C
			5	C1	36.6°C	58.6°C
			6	RY1	48.3°C	63.9°C
			7	L2	60.8°C	75.4°C
			8	RTH1	47.4°C	65.1°C
			9	C2	42.4°C	62.7°C
			10	LF3	50.0°C	68.4°C
			11	C11	48.4°C	65.0°C
			12	T52	50.7°C	65.5°C
			13	BD2	67.2°C	83.2°C
			14	BD1	64.5°C	81.4°C
			15	Q1	62.2°C	82.3°C
			16	Q3	62.2°C	81.2°C
			17	U401	49.7°C	63.5°C
			18	C920	41.9°C	62.0°C
			19	RTH3	45.2°C	62.6°C
			20	C7	47.1°C	64.1°C
			21	L3	60.7°C	79.4°C
			22	C620	48.2°C	61.6°C
			23	T2coil	69.4°C	84.7°C
			24	T2core	47.4°C	62.2°C
			25	C122	51.1°C	64.1°C
			26	T601	55.3°C	71.3°C
			27	U800	42.8°C	59.0°C
			28	C128	27.5°C	51.5°C
			29	T1 coil	68.2°C	82.0°C
			30	T1 core	47.9°C	63.2°C
			31	C116	50.4°C	64.3°C
			32	LF10	42.1°C	55.9°C
			33	D651	44.1°C	81.7°C
			34	Q215	49.5°C	70.8°C
			35	J103	62.2°C	73.3°C
			36	U270	52.6°C	74.3°C
			37	Q221	49.7°C	70.6°C
			38	U600	59.6°C	77.6°C
			39	D14	58.5°C	79.3°C
			40	U150	36.9°C	56.8°C
			41	RG5	45.7°C	62.5°C
			42	RG51	41.7°C	59.2°C
			43	RTH5	48.3°C	69.6°C
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 230VAC/180VAC 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= 49 °C HUMIDITY= 95 %R.H	TEST : OK		
4	TEMPERATURE COEFFICIENT	± 0.05%/ (0°C~50°C)	I/P : 230 VAC O/P : FULL LOAD	0.0096 %/°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 C113 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) 555347.7HRS (2) 260880.9HRS (3) 389632.6HRS (4) 498140.3HRS
9	MTBF	Conducted by Parts Stress Analysis Prediction 192.5K hrs min. Telcordia SR-332 (Bellcore) ; 58.5K 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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