Test Report: NSP-500-24

500W AC/DC High Reliable Multi-Industries Encolsed 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

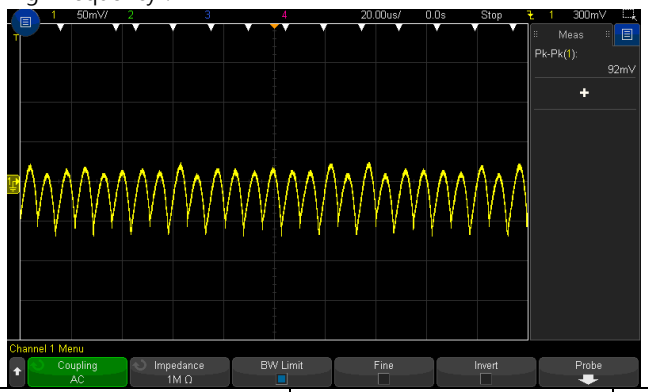
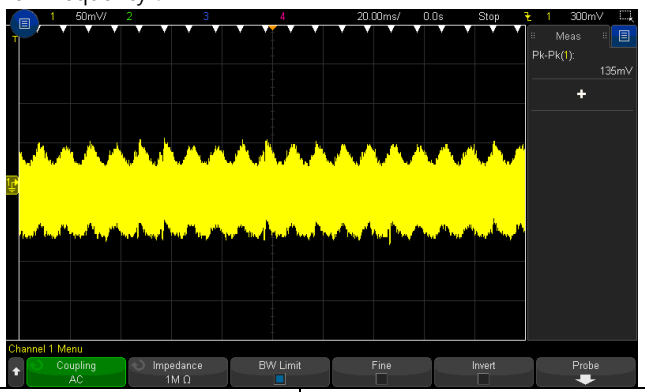
Safety Test
E.M.C. Test

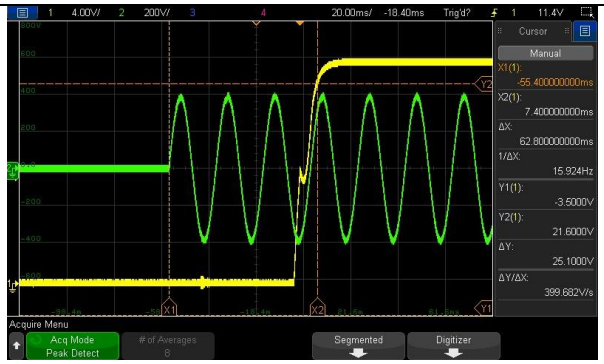
■ RELIABILITY TEST

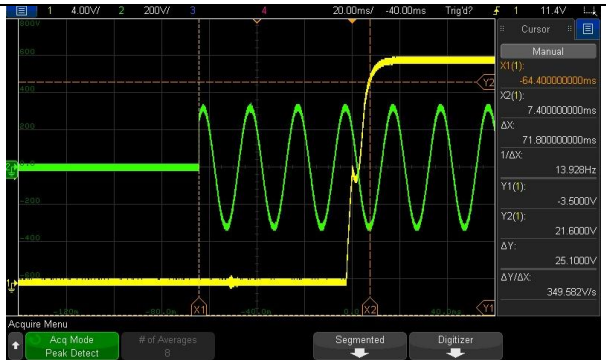
ENVIRONMENT TEST

■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

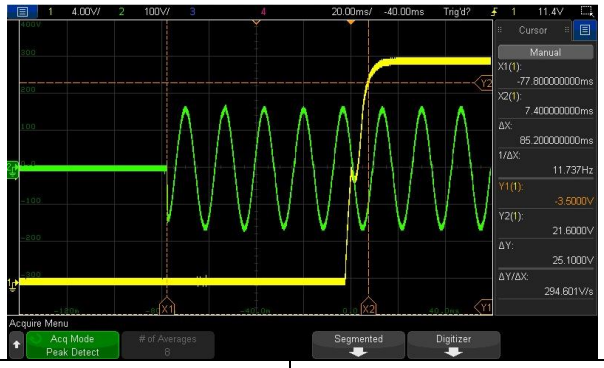
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 21V~26V	I/P： 277 VAC I/P： 230 VAC I/P： 115 VAC O/P：MIN LOAD Ta：25℃	20.387V~26.602V/277VAC 20.387V~26.602V/230VAC 20.387V~26.602V/115VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1% ~ +1%	I/P: 85VAC~305VAC O/P:FULL~MIN. LOAD Ta:25℃	V1: -0.02% ~0.11 %
3	LINE REGULATION	V1: -0.5% ~ +0.5%	I/P: 85VAC~ 305VAC O/P:FULL LOAD Ta:25℃	V1: -0.02% ~0.004 %
4	LOAD REGULATION	V1: -0.5% ~ +0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: -0.02% ~0.11 %
5	OVER/UNDERSHOOT TEST	<± 5%	I/P: 230VAC O/P:FULL LOAD / NO LOADTa:25℃	3.36%
6	RIPPLE & NOISE (Max)	V1: 240mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25℃	92mVp-p / high frequency 135mVp-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℃	277VAC/62.8ms 230VAC/71.8ms 115VAC/85.2ms
	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

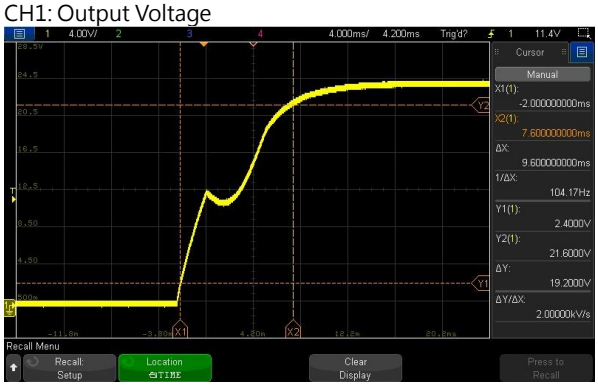
CH1: Output Voltage CH2: AC Input Voltage



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℃	277VAC/9.6ms 230VAC/9.6ms 115VAC/9.6ms

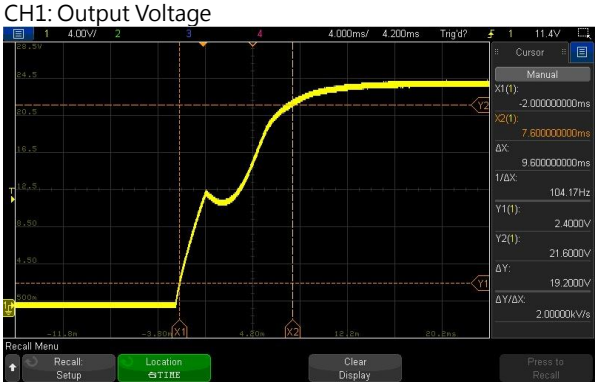
INPUT=277VAC/50HZ @ FULL LOAD

CH1: Output Voltage



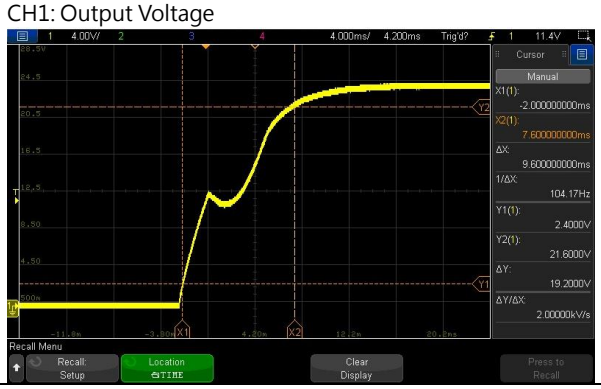
INPUT=230VAC/50HZ @ FULL LOAD

CH1: Output Voltage



INPUT=115VAC/60HZ @ FULL LOAD

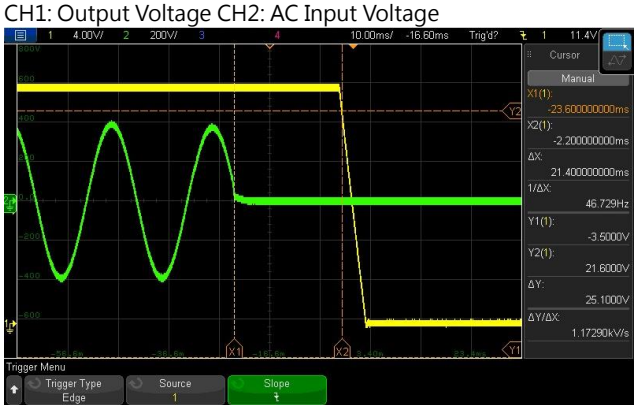
CH1: Output Voltage



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℃	277VAC/21.4ms 230VAC/20.6ms 115VAC/20.6ms

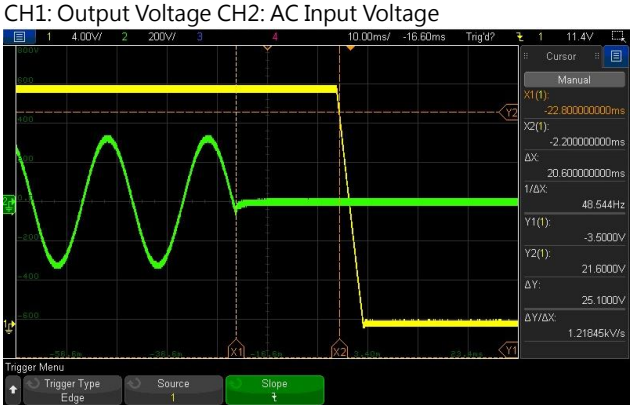
INPUT=277VAC/50HZ @ FULL LOAD

CH1: Output Voltage CH2: AC Input Voltage



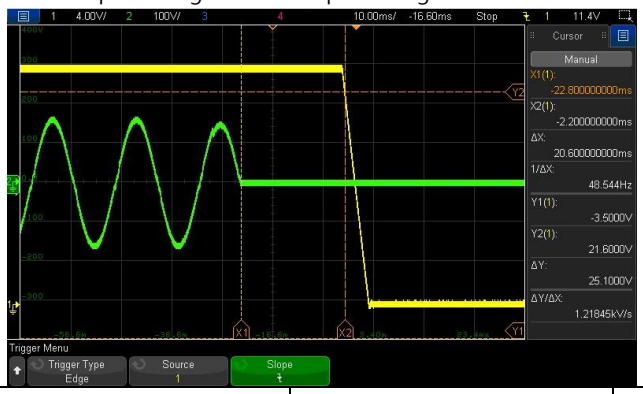
INPUT=230VAC/50HZ @ FULL LOAD

CH1: Output Voltage CH2: AC Input Voltage



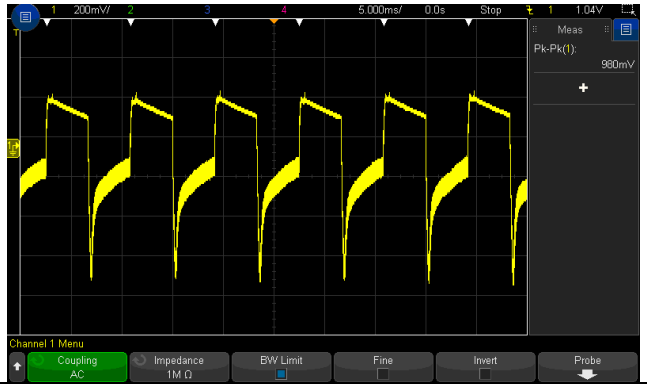
INPUT=115VAC/60HZ @ FULL LOAD

CH1: Output Voltage CH2: AC Input Voltage

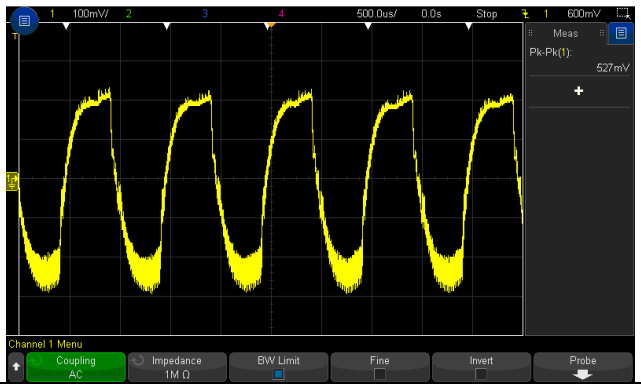


10	DYNAMIC LOAD	V1: 2400mVp-p	I/P: 230VAC O/P: (1) FULL/ MIN LOAD 50%DUTY / 120HZ (2) FULL/ MIN LOAD 50%DUTY / 1KHZ Ta:25℃	980mVp-p 527mVp-p

FULL / MIN LOAD 50%DUTY / 120HZ

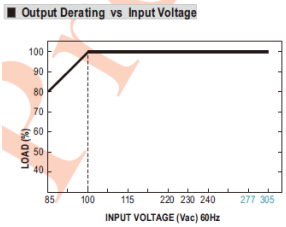


FULL / MIN LOAD 50%DUTY / 1KHZ

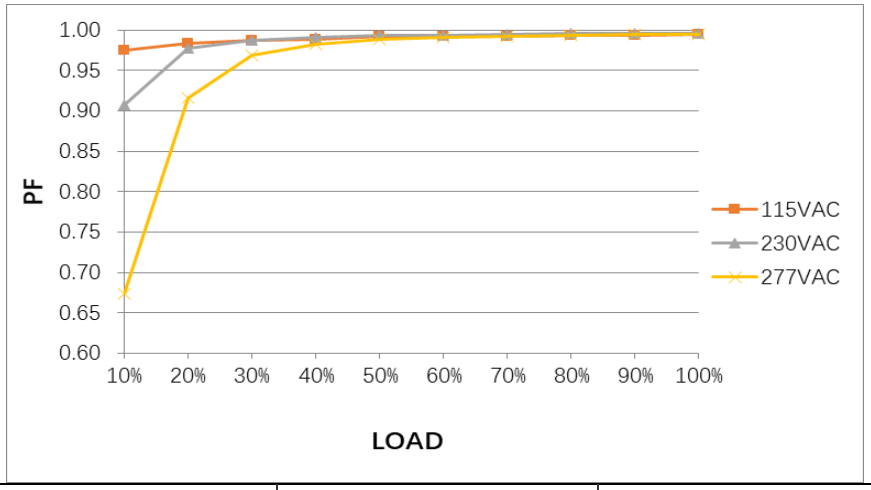


11	TRANSIENT RECOVERY TIME	V1: 2400mVp-p <500us	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	583mVp-p

INPUT FUNCTION TEST

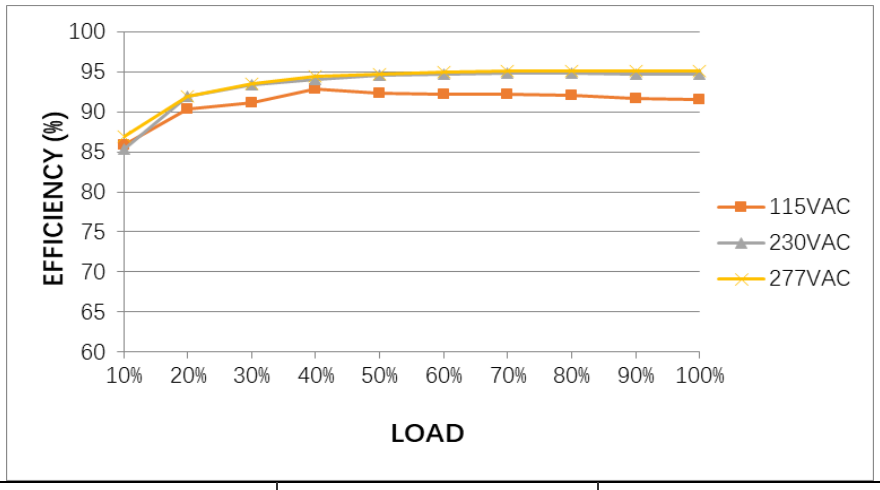
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	85VAC~305VAC 120VDC~ 431VDC 	(1) I/P: TESTING O/P: FULL / 80% LOAD (2) I/P: DC TESTING (L: + N: -) O/P: FULL / 80% LOAD (3) I/P: DC TESTING (L: - N: +) O/P: FULL / 80% LOAD Ta:25℃	(1) 74V~305V/ FULL LOAD 73V~305V/ 80% LOAD (2) 106Vdc~431Vdc/FULL LOAD 106Vdc~431Vdc/80% LOAD (3) 106Vdc~431Vdc/FULL LOAD 106Vdc~431Vdc/80% LOAD
			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)	TEST: OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 85VAC~ 305VAC O/P:FULL~MIN LOAD Ta:25℃	TEST: OK
3	INPUT CURRENT (Typ.)	277V/ 2.2A 230V/ 2.6A 115V/ 5.3A	I/P： 277 VAC I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	I =1.924A/ 277VAC I =2.325A/ 230VAC I =4.799A/ 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℃	306.2 uA for Earth 28.9 uA for Touch
5	NO LOAD CONSUMPTION	Remote Power OFF: 0.75W/115Vac 0.75W/230Vac 0.75W/277Vac Remote Power ON: 3.3W/115Vac 3W/230Vac 3W/277Vac	I/P：115VAC I/P：230VAC I/P：277VAC O/P：NO LOAD Ta：25℃	TEST： Remote Power OFF / Remote Power ON 115VAC 0.471W 2.789W 230VAC 0.528W 2.364W 277VAC 0.567W 2.268W
6	POWER FACTOR (Typ.)	0.9/ 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℃	PF=0.9956/277VAC PF=0.9954/230VAC PF=0.9949/115VAC

P.F vs LOAD



7	EFFICIENCY(Typ.)	94%	I/P:230 VAC O/P:FULL LOAD Ta:25℃	94.74 %

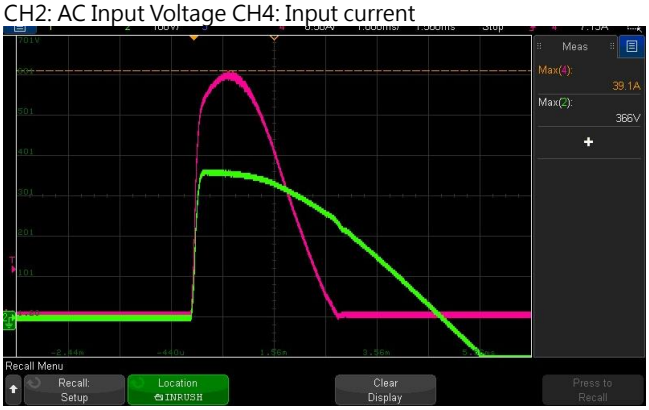
EFFICIENCY vs LOAD



8	INRUSH CURRENT(Typ.)	277V/50A 230V/40A 115V/20A COLD START	I/P： 277 VAC I/P： 230 VAC I/P： 115 VAC O/P：FULL LOAD Ta：25℃	I =39.1A/ 277VAC I =28.7A/ 230VAC I =13.1A/ 115VAC T50= 1860us/230V

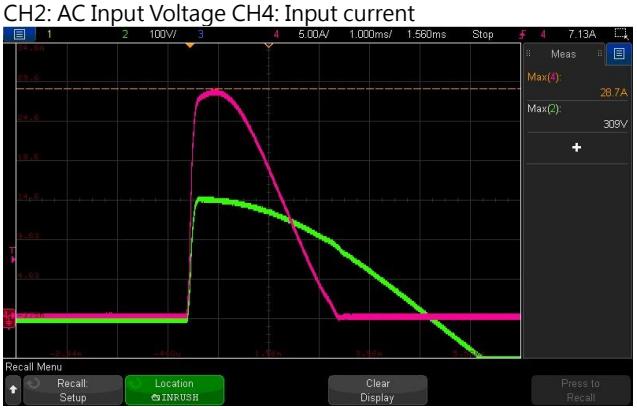
INPUT=277VAC/50HZ @ FULL LOAD

CH2: AC Input Voltage CH4: Input current



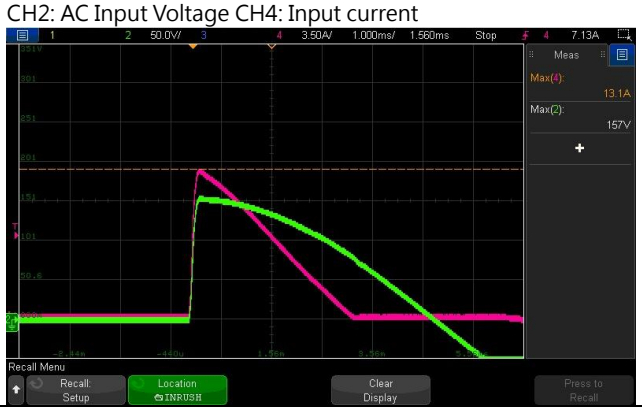
INPUT=230VAC/50HZ @ FULL LOAD

CH2: AC Input Voltage CH4: Input current



INPUT=115VAC/ 60HZ @ FULL LOAD

CH2: AC Input Voltage CH4: Input current



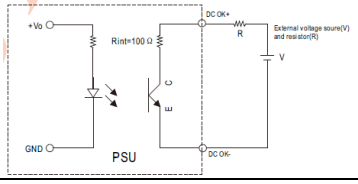
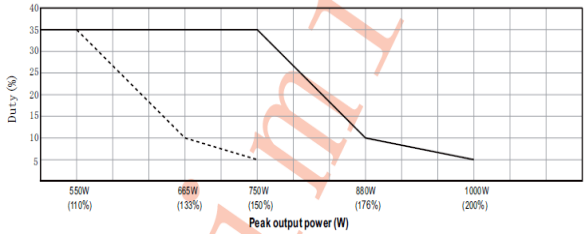
T50@230VAC:

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(Vout>30%), recovers automatically after fault condition is removed, or shut down o/p voltage when Vout<30%, AC re-power on to recover. Protection type: >200%(150%@100VAC) 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.	I/P: 305VAC I/P: 230VAC I/P: 100VAC O/P:TESTING Ta:25℃	TEST : 132.09%/305VAC, 132.14%/230VAC, 132.19%/100VAC, Protection type: Normally works within 105 ~ 200% rated output power for more than 5 seconds and then constant current limiting without shutdown(Vout>30%), recovers automatically after fault condition is removed, or shut down o/p voltage when Vout<30%, AC re-power on to recover. 232.8 %/305VAC 234.7 %/230VAC 183.33 %/100VAC Protection type: 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	28V~ 36V 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℃	29.5V / 305VAC 29.5V/ 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, AC re-power on to recover	I/P: 305VAC I/P: 85VAC O/P:FULL LOAD	TEST: OK O.T.P. Active Protection type : Shut down o/p voltage, AC re-power on to recover

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 conditon 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 conditon is removed. Depends on the user's wire impedance

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	REMOTE CONTROL	Power ON: RC+~RC- : 0~0.8Vdc or open Power OFF: RC+~RC- : 3.3~10Vdc	I/P:230VAC O/P:FULL LOAD Ta:25℃	TEST: OK
2	REMOTE SENSE	S+ / S- The remote sensing compensates voltage drop on the load wiring up to 0.3V	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: OK
3	DC OK SIGNAL	15Vdc/10mA resistive load 	I/P:230VAC O/P:FULL LOAD Ta:25℃	TEST: OK
4	FAN CONTROL＆NOISE	(1)Fan ON/OFF control: RTH4≥ 50℃±10℃ FAN ON RTH4≤ 40℃±10℃ FAN OFF (2)Fan＆NOISE:＜45dB	I/P:230VAC O/P:TESTING	TEST: (1) OK (2) 44.9 dB Ta:25℃
5	PEAK Power	I/P: 100/305VAC O/P:  ------100VAC ——200VAC		TEST: OK

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: 24A/ 650V	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℃	Q2 VDS: (1) 541V (2) 517V (3) 545V (4) 541V (5) 541V (6) 541V (7) 509V (8) 541V Q3 VDS: (1) 501V (2) 505V (3) 497V (4) 497V (5) 497V (6) 493V (7) 501V (8) 509V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 : Rated: 34A /650V	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℃	Q1 VDS: (1) 469V (2) 469V (3) 469V (4) 465V (5) 469V (6) 469V (7) 469V (8) 485V
3	P.F.C DIODE	D5 : Rated: 10A/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℃	(1) 446V (2) 446V (3) 446V (4) 446V (5) 462V
4	Diode Peak Voltage	Q100 / Q104: Rated: 86A /120V	AC ON/OFF I/P: High-Line +3V =308 V VO=Vomax	Q100: VO=Vomax VDS: Q104: VO=Vomax 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).NO LOAD (9) Peak Load VO=Vnormal O/P: (1) Full Load Ta:25℃	(1) 71.4V (2) 70.8V (3) 70.8V (4) 70.8V (5) 70.8V (6) 73.8V (7) 74.4V (8) 64.8V (9) 79.3V VO=Vnormal (1) 70.2V	(1) 70.8V (2) 71.4V (3) 71.4V (4) 70.8V (5) 70.8V (6) 74.4V (7) 81.1V (8) 72.6V (9) 82.9V VO=Vnormal (1) 67.8V
5	AUX Transistor (D to S) or (C to E) Peak Voltage	: U7 : Rated: 654mA /725 V	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℃	VDS: (1) 573V (2) 544V (3) 573V (4) 569V (5) 573V (6) 573V (7) 548V (8) 564V	
6	AUX Clamp Diode Peak Voltage	D 46 : Rated : 1A/ 1KV	AC ON/OFF I/P : High-Line +3V = 308V O/P : (1) Dynamic Load 90%Duty/1KHz (2) Full load continue Ta:25℃	(1) 552V (2) 548V	
7	AUX Diode Peak Voltage	D108 : Rated : 1A/200 V D101 : Rated : 1A/ 200V D30 : Rated : 1A/ 200V	AC ON/OFF I/P: High-Line +3V =308 V 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	D108: VDS: (1) 97.5V (2) 102.3V (3) 97.5V (4) 103.9V (5) 106.3V (6) 107.1V (7) 96.7V (8) 107.9V	D101: VDS: (1) 133V (2) 132V (3) 132V (4) 129V (5) 132V (6) 132V (7) 130V (8) 126V

			(6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD (9) Peak Load Ta:25℃	(9) 99.1V (9) 130V D30: VDS: (1) 117V (2) 114V (3) 115V (4) 114V (5) 115V (6) 116V (7) 116V (8) 111V (9) 113V
8	Input Capacitor Voltage	C6 : Rated: 100 μ /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℃	(1) 440V (2) 436V (3) 440V (4) 440V (5) 449V (6) 446V
9	Control IC Voltage Test	PFC/PWM IC U1 : Rated : 12.5V~ 27.9V IC U2 : Rated : 4.5V~18V O/P IC U101 : Rated : 4.75V~38V IC U103 : Rated : 3~30 V IC U104 : Rated : 3V ~30V AUX IC U6 : Rated : 5.65~9V	AC ON/OFF I/P: High-Line +3V =308V O/P: (1) Full Load (2) Output Short (3) O.L.P (4) O.V.P. (5) No Load VR min (Low Line) Ta:25℃	U1/U2 (1) 13.6V (2) 14.0V (3) 14.2V (4) 13.8V (5) 13.8V U101 (1) 15.4V (2) 16.0V (3) 15.4V (4) 15.4V (5) 15.4V U103/U104 (1) 13.6V (2) 13.8V (3) 12.8V (4) 12.8V (5) 13.6V U6 (1) 6.03V (2) 6.03V (3) 6.03V (4) 5.98V (5) 5.98V

■ 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℃	I/P-O/P: 2.40 mA I/P-FG: 3.34 mA O/P-FG: 1.689 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℃	I/P-O/P: 12224 MΩ I/P-FG: 19567 MΩ O/P-FG: 8232 MΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25℃	4mΩ

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℃	■ PASS □ FAIL
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℃	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℃	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℃	CRITERIA A
5	E.F.T	BS EN/EN61000-4-4 INPUT： 2KV	I/P：230 VAC/50HZ O/P：FULL LOAD Ta：25℃	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℃	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-500-24 1. ROOM AMBIENT BURN-IN：2 HRS I/P： 230VAC O/P： FULL LOAD Ta= 26.5℃ 2. HIGH AMBIENT BURN-IN：2 HRS I/P： 230VAC O/P： FULL LOAD Ta= 60.1 ℃		

NO	Position	ROOM AMBIENT Ta=26.5℃	HIGH AMBIENT Ta=60.1℃
1	ZNR1	32.6℃	65.7℃
2	LF1	34.9℃	67.1℃
3	LF2	37.8℃	69.7℃
4	C2	36.1℃	68.8℃
5	LF3	42.6℃	75.0℃
6	RTH1	41.5℃	71.8℃
7	BD1	53.9℃	86.9℃
8	C8	47.3℃	77.0℃
9	Q1	55.9℃	86.7℃
10	RY1	52.9℃	80.6℃
11	C109	44.3℃	75.4℃
12	C116	41.0℃	72.1℃
13	C108	43.6℃	75.3℃
14	U103	38.5℃	71.4℃
15	RTH5	48.4℃	78.8℃
16	L3	52.8℃	77.3℃
17	C42	44.1℃	74.8℃
18	C7	43.8℃	73.3℃
19	C45	44.1℃	74.9℃
20	D5	53.7℃	85.2℃
21	VR1	36.4℃	68.2℃
22	C180	35.3℃	66.4℃
23	U104	36.9℃	67.6℃
24	T2	39.0℃	72.4℃
25	U6	58.7℃	83.3℃
26	U1	54.1℃	84.3℃
27	C92	45.1℃	78.3℃
28	Q2	49.1℃	82.7℃
29	C6	43.6℃	74.4℃
30	Q3	48.6℃	81.7℃
31	T1coil	64.0℃	95.5℃
32	T1core	54.3℃	85.6℃

			NO	Position	ROOM AMBIENT Ta=26.5 ℃ / HIGH AMBIENT Ta=60.1℃
			33	D6	46.2℃ / 76.3℃
			34	Q102	48.6℃ / 81.2℃
			35	U101	50.5℃ / 81.5℃
			36	Q104	48.2℃ / 81.2℃
			37	U5	47.8℃ / 80.0℃
			38	R5	46.4℃ / 78.6℃
			39	J102	47.6℃ / 79.7℃
			40	RTH4	45.2℃ / 76.7℃
			41	D108	38.3℃ / 70.3℃
			42	D101	43.0℃ / 70.2℃
			43	D30	48.1℃ / 75.9℃
			44	RTH3	38.7℃ / 67.4℃
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P： 230 VAC O/P：126%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： 315 VAC O/P：FULL LOAD Ta= 60℃ HUMIDITY= 95 %R.H	TEST：OK	
5	TEMPERATURE COEFFICIENT	± 0.05%/℃(0~60℃)	I/P： 230 VAC O/P：FULL LOAD	± 0.006%/℃(0~60℃)	
6	STORAGE TEMPERATURE TEST	-40~85℃	1. Thermal shock Temperature： -45℃~ +90℃ 2. Temperature change rate ：25℃ / 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℃	1. Thermal shock Temperature： -35℃~ +65℃ 2. Temperature change rate ：25℃ / 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℃		
9	CAPACITOR LIFE CYCLE	SUPPOSE C109 IS THE MOST CRITICAL COMPONENT (1) I/P： 230VAC O/P：FULL LOAD Ta= 25 ℃ LIFE TIME (2) I/P： 230VAC O/P：FULL LOAD Ta=60 ℃ LIFE TIME (3) I/P： 230VAC O/P：75% LOAD Ta= 60 ℃ LIFE TIME (4) I/P： 230VAC O/P：50% LOAD Ta= 60 ℃ LIFE TIME		(1) 1024704.7HRS (2) 107708.8HRS (3) 150198.4HRS (4) 198847.5HRS	

10	MTBF	Conducted by Parts Stress Analysis Prediction 1213.4K hrs min. Telcordia SR-332 (Bellcore) ; 212.1K hrs min. MIL-HDBK-217F (25℃)
11	Ongoing Reliability Test	I/P：230VAC O/P：FULL LOAD TA=50℃ Demonstration Mean Time Between Failure : 50,000 hours

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Yuwei	Liutt	Wangzd

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