



Test Report: NSP-150-24

150W AC/DC High Reliable Multi-Industries Enclosed 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 : 230 VAC O/P : MIN LOAD Ta : 25°C	19.9V~27.4V/230VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1%~ +1 %	I/P: 85VAC /305VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.17% +0.29 %
3	LINE REGULATION	V1: -0.5%~ +0.5 %	I/P: 85VAC~ 305VAC O/P:FULL LOAD Ta:25°C	V1: 0.00%~+ 0.04%
4	LOAD REGULATION	V1: -0.5 %~ +0.5 %	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.04 %~ +0.04 %
5	OVER/UNDERSHOOT TEST	<± 5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	0.84 %
6	RIPPLE & NOISE (Max)	V1: 200 mVp-p	I/P: 230 VAC O/P: MIN LOAD—FULL LOAD Ta:25°C	V1: 71 mVp-p / 100% load
high frequency : 		low frequency : 		
7	SET UP TIME(Max)	277VAC/1000ms 230VAC/1000ms 115VAC/1500ms	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/ 468ms 230VAC/ 462ms 115VAC/ 422ms

INPUT=277VAC/60HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage



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

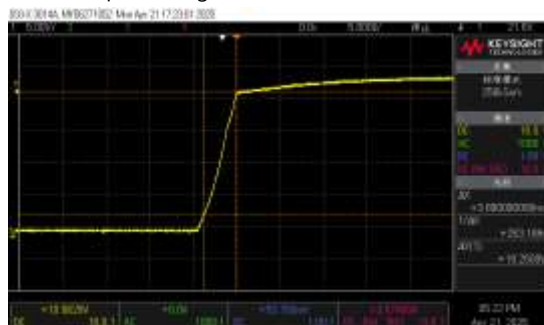


INPUT=115VAC/60HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage



8	RISE TIME (Max)	277VAC/80ms 230VAC/80ms 115VAC/80ms	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/3.8ms 230VAC/ 3.6ms 115VAC/ 3.8ms
---	-----------------	---	--	--

INPUT=277VAC/60HZ @ FULL LOAD
CH1 : Output Voltage

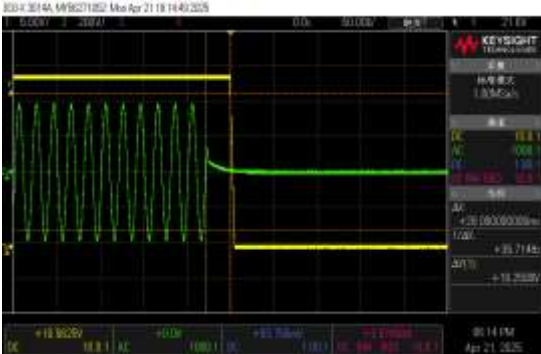
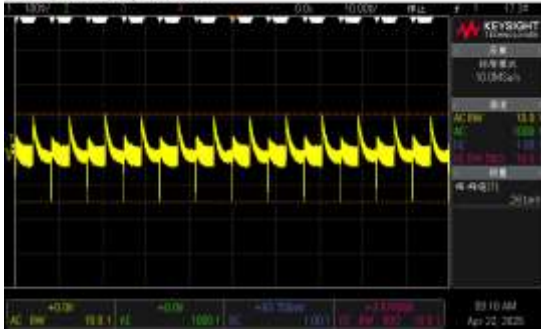
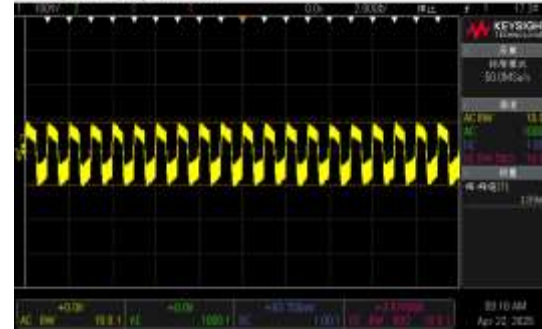


INPUT=230VAC/50HZ @ FULL LOAD
CH1 : Output Voltage



INPUT=115VAC/60HZ @ FULL LOAD
CH1 : Output Voltage

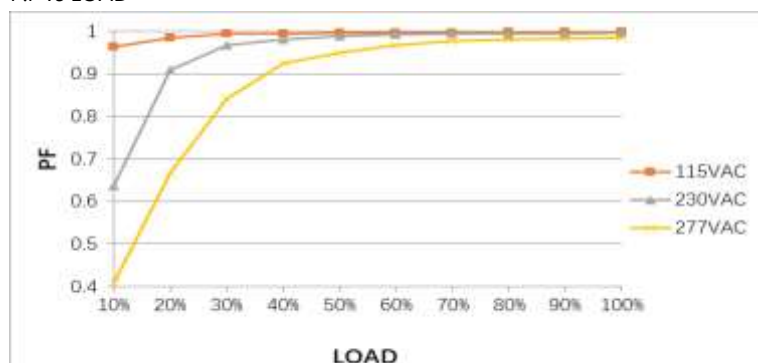


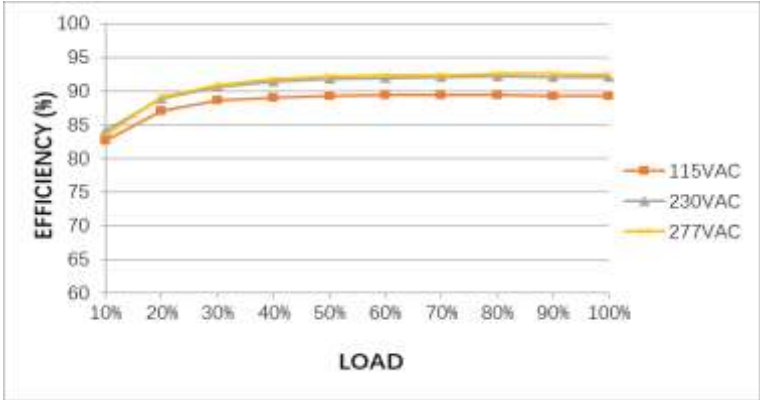
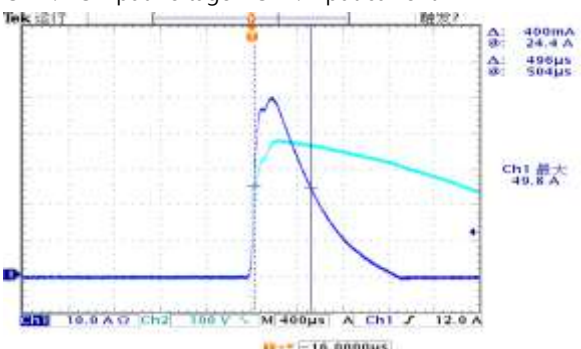
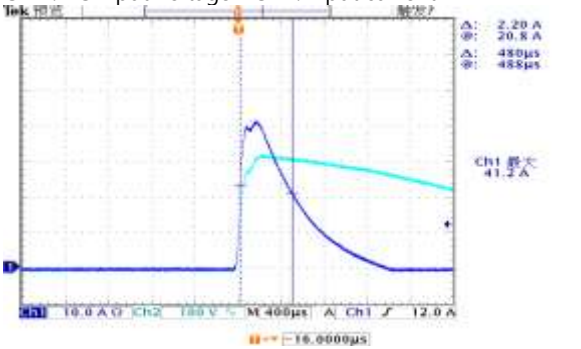
9	HOLD UP TIME (Typ.)	277VAC/16ms 230VAC/16ms 115VAC/16ms	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/ 28ms 230VAC/ 28ms 115VAC/ 29ms
INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage  INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input 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 /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	261mVp-p 189mVp-p
FULL /50% LOAD 50%DUTY / 120HZ  FULL /50% LOAD 50%DUTY / 1KHZ 				

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 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 V~305V (2) 120Vdc~ 431 Vdc/FULL LOAD 120 Vdc~ 431Vdc/50% LOAD (3) 120Vdc~ 431Vdc/FULL LOAD 120Vdc~431 Vdc/50% LOAD
			I/P: LOW-LINE-3V=82 V HIGH-LINE+10V=315 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:85VAC ~305VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	INPUT CURRENT (Typ.)	277V/ 0.63 A 230V/ 0.75 A 115V/ 1.55 A	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =0.59A/ 277VAC I =0.71A/ 230VAC I =1.46A/ 115VAC
4	LEAKAGE CURRENT	Earth leakage current <350μA(rms)@277Vac	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	L-FG : 226μA N-FG : 226μA
		Touch current <100μA(rms)@277Vac	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	L-V+ : 44μA L-V-: 44μA N-V+ : 44μA N-V-: 44μA
5	POWER FACTOR (Typ.)	0.90/277VAC 0.93/ 230VAC 0.98/ 115VAC	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.986/277VAC PF=0.997/230VAC PF=0.999/115VAC

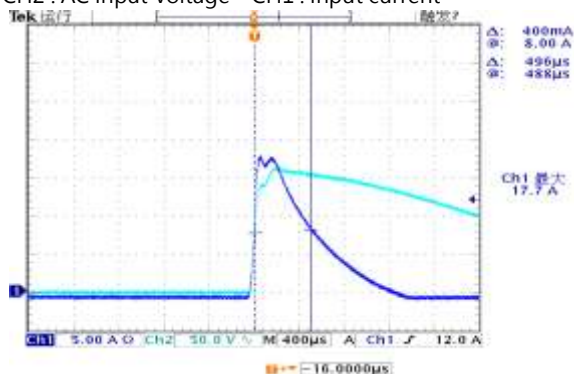
P.F vs LOAD



6	EFFICIENCY(Typ.)	92%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	92.03 %
EFFICIENCY vs LOAD 				
7	NO LOAD POWER CONSUMPTION(Typ.)	Remote Power ON : 3W/277VAC 3W/230VAC 3W/115VAC Remote Power OFF : 0.5W/277VAC 0.5W/230VAC 0.3W/115VAC	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : RC ON/RC OFF Ta : 25°C	Remote Power ON : 1.55W/277VAC 1.53W/230VAC 1.55W/115VAC Remote Power OFF : 0.47W/277VAC 0.36W/230VAC 0.15W/115VAC
8	INRUSH CURRENT(Typ.)	277VAC/55A 230VAC/45A 115VAC/23A COLD START	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =49.8A/ 277VAC T50= 496us/277VAC I =41.2A/ 230VAC T50= 480us/230VAC I =17.7A/ 115VAC T50= 496us/115VAC
INPUT=277VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH1: Input current  INPUT=230VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH1: Input current 				

INPUT=115VAC/50HZ @ FULL LOAD

CH2 : AC Input Voltage CH1 : Input current

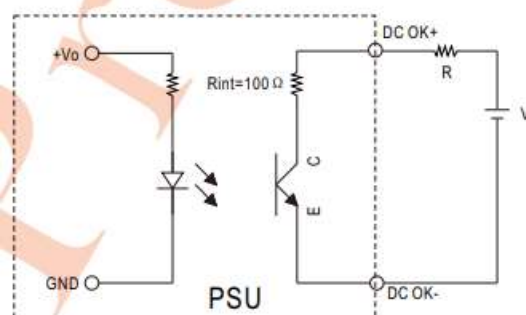


PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~ 200%	I/P: 305VAC I/P: 230VAC I/P: 85VAC O/P: TESTING Ta:25°C	126.98%/ 305VAC 126.98%/ 230VAC 126.98%/85VAC PROTECTION TYPE : 1、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 2、>200% rated power, constant current limiting (Vout>30%)with auto-recovery after fault condition is removed, or shut down o/p voltage when Vout t<30%,AC re-power on to recover
2	OVER VOLTAGE PROTECTION	28V~36V	I/P: 305VAC I/P: 230VAC I/P: 85VAC O/P: MIN LOAD Ta:25°C	30V/ 305VAC 30V/ 230VAC 30V/ 85VAC PROTECTION TYPE : Shut down o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 305VAC I/P: 85VAC O/P: FULL LOAD	O.T.P. Active Protection type : Shut down o/p voltage, re-power on to recover
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 305VAC I/P: 85VAC O/P: FULL LOAD Ta:25°C	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

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT												
1	REMOTE ON/OFF CONTROL	2.Remote Control The PSU can be turned ON/OFF by using the "Remote Control" function with external switch and auxiliary power <table><tr><td>PSU Vo Status</td><td>Between RC-(pin1) and RC+(pin2) on CN1</td></tr><tr><td>POWER ON</td><td>Keep 0~0.8Vdc or open</td></tr><tr><td>POWER OFF</td><td>Keep 3.3~10Vdc by external voltage</td></tr></table> I/P: 230 VAC O/P:FULL LOAD Ta:25°C Test Result : PASS <table><tr><td>Between ON/OFF</td><td>Power Output Status</td></tr><tr><td>POWER OFF (0~0.8V)</td><td>ON</td></tr><tr><td>POWER ON (3.3~10V)</td><td>OFF</td></tr></table>	PSU Vo Status	Between RC-(pin1) and RC+(pin2) on CN1	POWER ON	Keep 0~0.8Vdc or open	POWER OFF	Keep 3.3~10Vdc by external voltage	Between ON/OFF	Power Output Status	POWER OFF (0~0.8V)	ON	POWER ON (3.3~10V)	OFF		
PSU Vo Status	Between RC-(pin1) and RC+(pin2) on CN1															
POWER ON	Keep 0~0.8Vdc or open															
POWER OFF	Keep 3.3~10Vdc by external voltage															
Between ON/OFF	Power Output Status															
POWER OFF (0~0.8V)	ON															
POWER ON (3.3~10V)	OFF															
2	PEAK POWER	1. Peak Power $P_{avg} = \frac{P_{pk} \times t + P_{nps} \times (T-t)}{T} \leq P_{rated}$$Duty = \frac{t}{T} \times 100\% \leq 35\%$$t \leq 5 \text{ sec}$ P_{avg}: Average output power (W) P_{pk}: Peak output power (W) P_{nps}: Non-peak output power (W) P_{rated}: Rated output power (W) t: Peak power width (sec) T: Period (sec) ----- 100Vac (110%) ———— 220Vac For example (24V model): Vin = 200Vac Duty_max = 5% Pnps = Prated = 200W Ppk = 400W t ≤ 5 sec T > 5 sec / 5% > 100sec Pavg = (t * Ppk + (T-t) * Pnps) / T ≤ Prated Ppk ≤ 189W Note: When the output voltage is adjusted to the upper limit, the peak power is 150% rated power I/P: 100/305VAC O/P:PEAK LOAD (1Hour NO DAMAGE) Ta:25°C Test Result: PASS														

3	REMOTE SENSE	The remote sensing compensates voltage drop on the load wiring up to 0.3V	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	> 0.3 V						
4	DC_OK Signal	4.DC_OK signal ※ DC_OK is a collector shorted signal. It is used by an optocoupler in the power supply which indicates the output status of the power supply as exhibited below.  External voltage source(V) and resistor(R) <table><tr><th>PSU Vo Status</th><th>Photo transistor</th></tr><tr><td>POWER ON</td><td>Conduct(Low impedance)</td></tr><tr><td>POWER OFF</td><td>Open(High impedance)</td></tr></table> Optocoupler Rating(max.) 15Vdc/10mA resistive load			PSU Vo Status	Photo transistor	POWER ON	Conduct(Low impedance)	POWER OFF	Open(High impedance)
PSU Vo Status	Photo transistor									
POWER ON	Conduct(Low impedance)									
POWER OFF	Open(High impedance)									
		I/P:230VAC O/P:FULL LOAD Ta:25°C TEST :OK								

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q6 Rated : 650V/11A	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.	VDS: (1) 449V (2) 497V (3) 449V (4) 449V (5) 449V (6) 453V (7) 493V

			I/P:Low-Line -3V = 82V 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) 437V (2) 485V (3) 437V (4) 437V (5) 437V (6) 437V (7) 489V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 650V/15A	I/P:High-Line +3V =308V 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. I/P:Low-Line -3V =82V 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) 453V (2) 553V (3) 453V (4) 457V (5) 453V (6) 457V (7) 553V VDS: (1) 505V (2) 558V (3) 501V (4) 501V (5) 497V (6) 489V (7) 489V
3	P.F.C DIODE	D8 Rated : 4 A/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	(1) 441V (2) 461V (3) 441V (4) 441V

			I/P:Low-Line -3V = 82V 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) 441V (2) 457V (3) 441V (4) 441V
4	Diode Peak Voltage	D101 Rated : 20 A/ 100 V	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 (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD Ta:25°C	D101: VDS: (1) 56.9V (2) 5.00V (3) 58.5V (4) 58.5V (5) 58.5V (6) 58.5V (7) 5.00V (8) 56.9V
5	Input Capacitor Voltage	C5 Rated: 82μ/ 450V Surge voltage: 500V	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 Ta:25°C	(1)441V (2)437V (3)445V (4)437V
6	Control IC Voltage Test	PWM IC U2 Rated 9.6V~ 36V	AC ON/OFF I/P:High-Line +3V =308 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	U2 (1) 19.3V (2) 19.3V (3) 19.5V (4) 19.5V (5) 19.3V

■ 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°C	I/P-O/P: 1.727 mA I/P-FG: 1.618 mA O/P-FG: 1.716 mA
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: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: >9999 MΩ I/P-FG: >9999 MΩ O/P-FG: >9999 MΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	10mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	BS EN/EN55032(CISPR32),CNS 15936 EN/EN55014-1(CISPR14-1) EN/EN55011(CISPR11)	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	BS EN/EN55032(CISPR32),CNS 15936 EN/EN55014-1(CISPR14-1) EN/EN55011(CISPR11)	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 AIR : 15KV / Contact : 8KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	EN61000-4-4 INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
6	SURGE	IEC61000-4-5 L-N : 2KV L,N-PE : 4KV	I/P : 230 VAC/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 : NSP-150-24 1. ROOM AMBIENT BURN-IN : 2HRS I/P : 230VAC O/P : FULL LOAD Ta=26.8 °C 2. HIGH AMBIENT BURN-IN : 2HRS I/P : 230VAC O/P : FULL LOAD Ta=61.1 °C <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta=26.8 °C</th><th>HIGH AMBIENT Ta=61.1 °C</th></tr><tr><td>1</td><td>LF1</td><td>50.7°C</td><td>84.6°C</td></tr><tr><td>2</td><td>C2</td><td>49.2°C</td><td>83.0°C</td></tr><tr><td>3</td><td>RTH1</td><td>75.9°C</td><td>100.3°C</td></tr><tr><td>4</td><td>L1</td><td>70.0°C</td><td>103.9°C</td></tr><tr><td>5</td><td>C10</td><td>58.5°C</td><td>91.6°C</td></tr><tr><td>6</td><td>C5</td><td>58.2°C</td><td>91.2°C</td></tr><tr><td>7</td><td>C36</td><td>62.8°C</td><td>95.5°C</td></tr><tr><td>8</td><td>C14</td><td>66.0°C</td><td>98.7°C</td></tr><tr><td>9</td><td>U2</td><td>67.2°C</td><td>100.1°C</td></tr><tr><td>10</td><td>Q1</td><td>58.2°C</td><td>91.6°C</td></tr><tr><td>11</td><td>Q5</td><td>59.1°C</td><td>93.2°C</td></tr><tr><td>12</td><td>Q6</td><td>58.0°C</td><td>91.7°C</td></tr><tr><td>13</td><td>U4</td><td>59.2°C</td><td>91.7°C</td></tr><tr><td>14</td><td>T1</td><td>85.6°C</td><td>117.9°C</td></tr><tr><td>15</td><td>C200</td><td>58.1°C</td><td>91.1°C</td></tr><tr><td>16</td><td>C106</td><td>66.2°C</td><td>97.9°C</td></tr><tr><td>17</td><td>D100</td><td>73.8°C</td><td>104.7°C</td></tr><tr><td>18</td><td>D101</td><td>76.6°C</td><td>108.2°C</td></tr><tr><td>19</td><td>RTH3</td><td>67.7°C</td><td>100.6°C</td></tr></table>			NO	Position	ROOM AMBIENT Ta=26.8 °C	HIGH AMBIENT Ta=61.1 °C	1	LF1	50.7°C	84.6°C	2	C2	49.2°C	83.0°C	3	RTH1	75.9°C	100.3°C	4	L1	70.0°C	103.9°C	5	C10	58.5°C	91.6°C	6	C5	58.2°C	91.2°C	7	C36	62.8°C	95.5°C	8	C14	66.0°C	98.7°C	9	U2	67.2°C	100.1°C	10	Q1	58.2°C	91.6°C	11	Q5	59.1°C	93.2°C	12	Q6	58.0°C	91.7°C	13	U4	59.2°C	91.7°C	14	T1	85.6°C	117.9°C	15	C200	58.1°C	91.1°C	16	C106	66.2°C	97.9°C	17	D100	73.8°C	104.7°C	18	D101	76.6°C	108.2°C	19	RTH3	67.7°C	100.6°C
NO	Position	ROOM AMBIENT Ta=26.8 °C	HIGH AMBIENT Ta=61.1 °C																																																																																	
1	LF1	50.7°C	84.6°C																																																																																	
2	C2	49.2°C	83.0°C																																																																																	
3	RTH1	75.9°C	100.3°C																																																																																	
4	L1	70.0°C	103.9°C																																																																																	
5	C10	58.5°C	91.6°C																																																																																	
6	C5	58.2°C	91.2°C																																																																																	
7	C36	62.8°C	95.5°C																																																																																	
8	C14	66.0°C	98.7°C																																																																																	
9	U2	67.2°C	100.1°C																																																																																	
10	Q1	58.2°C	91.6°C																																																																																	
11	Q5	59.1°C	93.2°C																																																																																	
12	Q6	58.0°C	91.7°C																																																																																	
13	U4	59.2°C	91.7°C																																																																																	
14	T1	85.6°C	117.9°C																																																																																	
15	C200	58.1°C	91.1°C																																																																																	
16	C106	66.2°C	97.9°C																																																																																	
17	D100	73.8°C	104.7°C																																																																																	
18	D101	76.6°C	108.2°C																																																																																	
19	RTH3	67.7°C	100.6°C																																																																																	
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 127 % LOAD Ta : 25°C	TEST : OK																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 85VAC/305VAC O/P : 75/100 * LOAD Ta=-35/-45 °C	TEST : OK																																																																																
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 °C/95 %R.H NO DAMAGE	I/P : 315 VAC O/P : FULL LOAD Ta=60 °C HUMIDITY= 95 %R.H	TEST : OK																																																																																
5	TEMPERATURE COEFFICIENT	± 0.05 %/°C(0~60°C)	I/P : 230 VAC O/P : FULL LOAD	±0.0012 %/°C(0~60°C)																																																																																

6	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 : 10 CYCLE 5. Input/Output condition : STATIC
7	THERMAL SHOCK TEST	-30~60°C	1. Thermal shock Temperature : -35°C~ +65°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
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°C
9	CAPACITOR LIFE CYCLE	SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta=60 °C LIFE TIME (2) I/P : 230VAC O/P : FULL LOAD Ta=60 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta=60 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta=60 °C LIFE TIME	(1) 224441HRS (2) 23755HRS (3) 44442HRS (4) 73423HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 2159.4K hrs min. Telcordia SR-332 (Bellcore) ; 258.3K hrs min. MIL-HDBK-217F (25°C)	
11	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	WUWQIN/ZHOUBIAO	WENF	WUWQ

2020.10.1 TAG-QA-009