



Test Report: NSP-100-36

100W 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

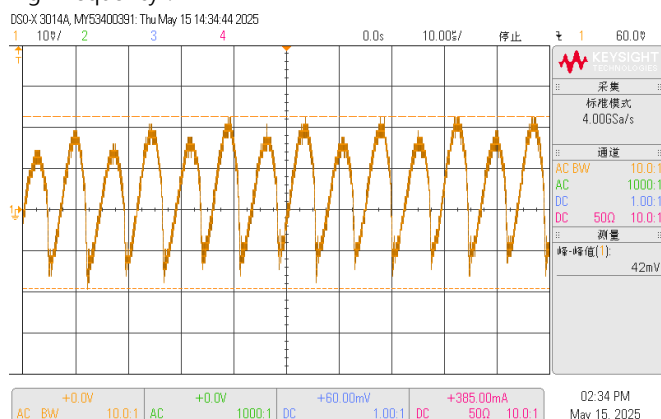
ENVIRONMENT TEST

DESIGN VERIFY TEST

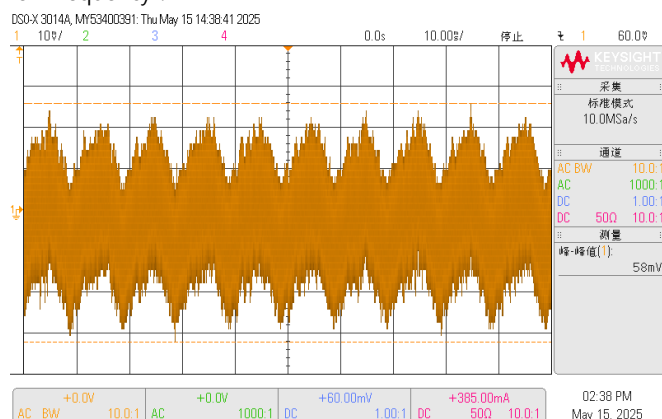
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 32 V~43V	I/P : 230 VAC O/P : MIN LOAD Ta : 25°C	30.81V~44.95V/230VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1 %~ 1%	I/P: 85VAC /305VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: 0.22 %~ 0.25%
3	LINE REGULATION	V1: -0.5%~ 0.5 %	I/P: 85VAC~ 305VAC O/P:FULL LOAD Ta:25°C	V1: -0.06%~0.06%
4	LOAD REGULATION	V1: -0.5%~ 0.5%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0%~0.03%
5	OVER/UNDERSHOOT TEST	< ± 5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	2.7 %
6	RIPPLE & NOISE (Max)	V1: 240mVp-p	I/P: 230 VAC O/P: MIN LOAD—FULL LOAD Ta:25°C	V1: 58mVp-p / 100% load

high frequency :

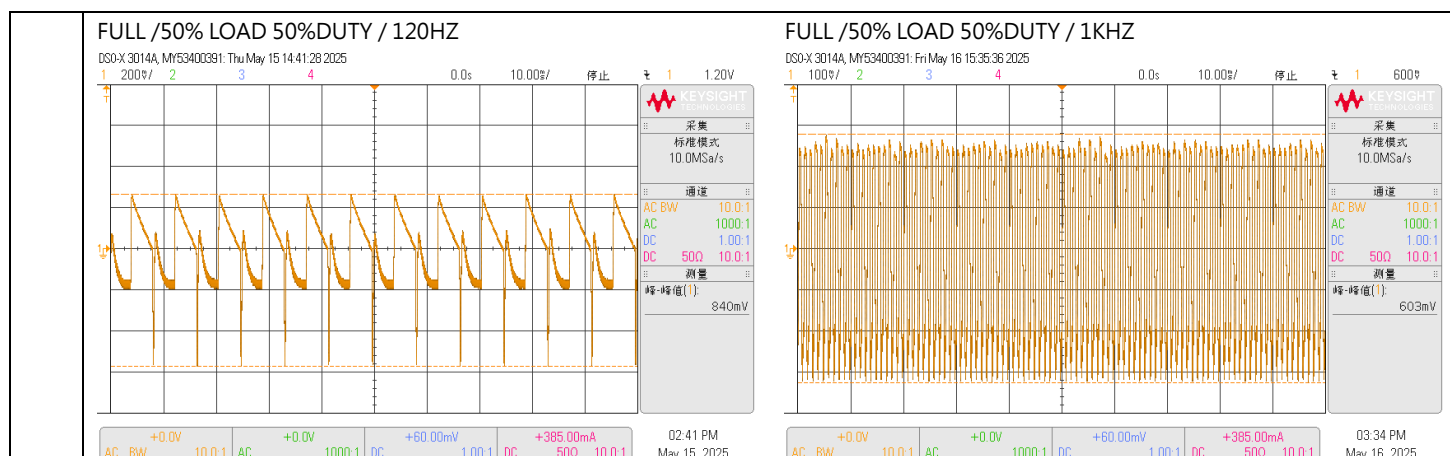


low frequency :



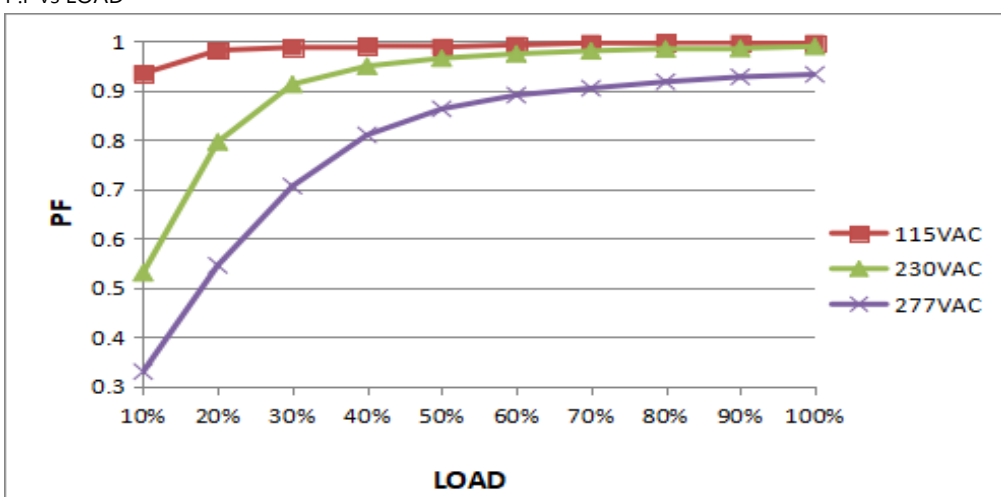
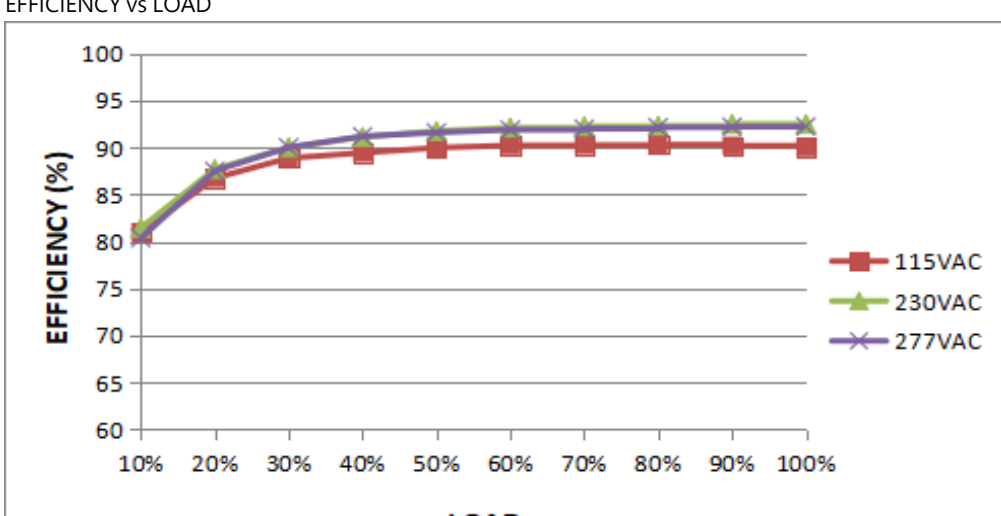
7	SET UP TIME(Max)	277VAC/1000ms 230VAC/1000ms 115VAC/1500ms	I/P : 277 VAC I/P : 230 VAC I/P : 115VAC O/P : FULL LOAD Ta : 25°C	277VAC/452 ms 230VAC/446ms 115VAC/406 ms
INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage DSO-X 3014A, MY53400391, Fri May 16 14:04:32 2025 02:03 PM May 16, 2025 INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage DSO-X 3014A, MY53400391, Fri May 16 14:11:35 2025 02:10 PM May 16, 2025				
INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage DSO-X 3014A, MY53400391, Fri May 16 14:16:55 2025 02:16 PM May 16, 2025				
8	RISE TIME (Max)	277VAC/80ms 230VAC/80ms 115VAC/80ms	I/P : 277 VAC I/P : 230 VAC I/P : 115VAC O/P : FULL LOAD Ta : 25°C	277VAC/ 11 ms 230VAC/9.3ms 115VAC/11ms
INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage DSO-X 3014A, MY53400391, Fri May 16 14:08:52 2025 02:08 PM May 16, 2025 INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage DSO-X 3014A, MY53400391, Fri May 16 14:20:58 2025 02:20 PM May 16, 2025				

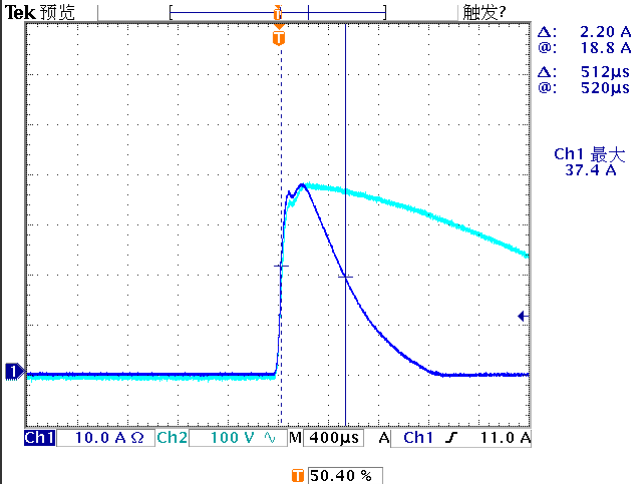
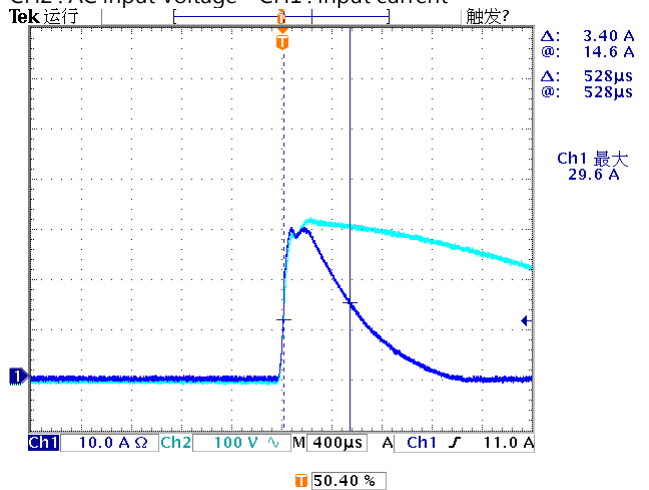
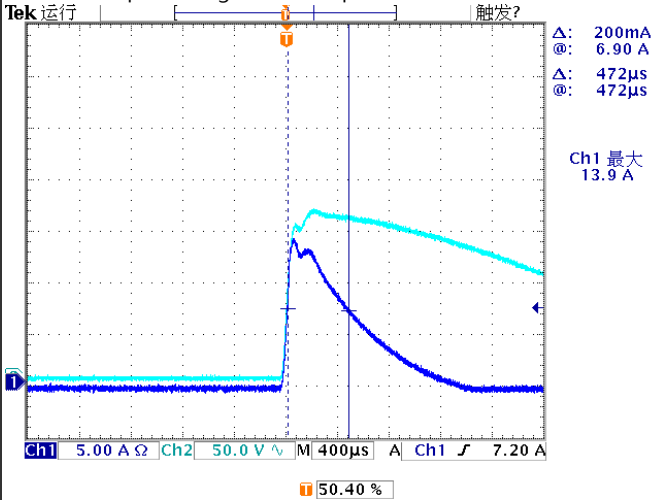
	INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage DSO-X 3014A, MY53400391: Fri May 16 14:19:12 2025 1 10.0V/ 2 10.0:1 3 1000:1 4 500:1 -6.592s 10.00%/ 停止 滚动 KEYSIGHT 采集 标准模式 100kSa/s 通道 DC 10.0:1 AC 1000:1 DC 1.00:1 DC 500 10.0:1 光标 ΔX: +11.000000000ms 1/ΔX: +90.909Hz ΔY(1): +29.0000V 02:18 PM May 16, 2025			
9	HOLD UP TIME (Typ.)	277VAC/16ms 230VAC/16ms 115VAC/16ms	I/P : 277 VAC I/P : 230 VAC I/P : 115VAC O/P : FULL LOAD Ta : 25°C	277VAC/31.2 ms 230VAC/31 ms 115VAC/31ms
	INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage DSO-X 3014A, MY53400391: Fri May 16 14:05:08 2025 1 10.0V/ 2 200V/ 3 1000:1 4 500:1 -3.450s 20.00%/ 停止 滚动 KEYSIGHT 采集 标准模式 50.0kSa/s 通道 DC 10.0:1 AC 1000:1 DC 1.00:1 DC 500 10.0:1 光标 ΔX: +31.200000000ms 1/ΔX: +32.051Hz ΔY(1): +32.3750V 02:04 PM May 16, 2025		INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage DSO-X 3014A, MY53400391: Fri May 16 14:12:00 2025 1 10.0V/ 2 200V/ 3 1000:1 4 500:1 -1.804s 20.00%/ 停止 滚动 KEYSIGHT 采集 标准模式 100kSa/s 通道 DC 10.0:1 AC 1000:1 DC 1.00:1 DC 500 10.0:1 光标 ΔX: +31.000000000ms 1/ΔX: +32.258Hz ΔY(1): +29.0000V 02:11 PM May 16, 2025	
	INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage DSO-X 3014A, MY53400391: Fri May 16 14:18:00 2025 1 10.0V/ 2 100V/ 3 1000:1 4 500:1 -1.767s 20.00%/ 停止 滚动 KEYSIGHT 采集 标准模式 100kSa/s 通道 DC 10.0:1 AC 1000:1 DC 1.00:1 DC 500 10.0:1 光标 ΔX: +31.000000000ms 1/ΔX: +32.258Hz ΔY(1): +29.0000V 02:17 PM May 16, 2025			
10	DYNAMIC LOAD	V1: 3600mVp-p	I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	840mVp-p 603mVp-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 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) 82V~308V (2) 115 Vdc~434Vdc/FULL LOAD 115Vdc~ 434Vdc/50% LOAD (3) 115Vdc~434 Vdc/FULL LOAD 115 Vdc~434Vdc/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/ 0.45 A 230V/ 0.52 A 115V/ 1.1 A	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =0.42A/ 277VAC I =0.48A/ 230VAC I =0.97A/ 115VAC
4	LEAKAGE CURRENT	Earth leakage current <350μA(rms)@277Vac	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	L-FG : 221μA N-FG : 218μA
		Touch current <100μA(rms)@277Vac	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	L-V+ : 52 μA L-V- : 51 μA N-V+ : 52 μA N-V- : 51 μA

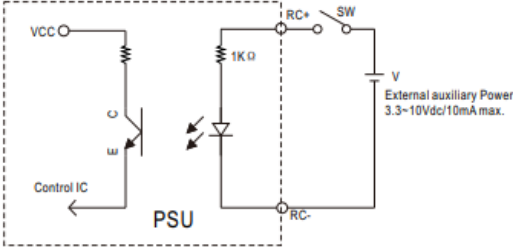
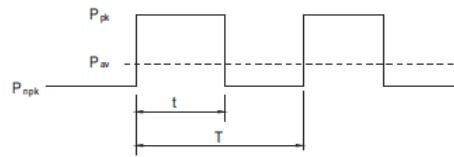
5	POWER FACTOR (Typ.)	0.90/277VAC 0.93/ 230VAC 0.98/ 115VAC	I/P : 277VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.933/277VAC PF=0.990/230VAC PF=0.997/115VAC																																												
P.F vs LOAD																																																
 <table border="1"><caption>Power Factor (PF) vs Load Data</caption><thead><tr><th>LOAD (%)</th><th>115VAC</th><th>230VAC</th><th>277VAC</th></tr></thead><tbody><tr><td>10%</td><td>0.93</td><td>0.53</td><td>0.33</td></tr><tr><td>20%</td><td>0.98</td><td>0.80</td><td>0.55</td></tr><tr><td>30%</td><td>0.99</td><td>0.92</td><td>0.70</td></tr><tr><td>40%</td><td>0.99</td><td>0.95</td><td>0.82</td></tr><tr><td>50%</td><td>0.99</td><td>0.97</td><td>0.88</td></tr><tr><td>60%</td><td>0.99</td><td>0.98</td><td>0.90</td></tr><tr><td>70%</td><td>0.99</td><td>0.98</td><td>0.91</td></tr><tr><td>80%</td><td>0.99</td><td>0.99</td><td>0.92</td></tr><tr><td>90%</td><td>0.99</td><td>0.99</td><td>0.93</td></tr><tr><td>100%</td><td>0.99</td><td>0.99</td><td>0.94</td></tr></tbody></table>					LOAD (%)	115VAC	230VAC	277VAC	10%	0.93	0.53	0.33	20%	0.98	0.80	0.55	30%	0.99	0.92	0.70	40%	0.99	0.95	0.82	50%	0.99	0.97	0.88	60%	0.99	0.98	0.90	70%	0.99	0.98	0.91	80%	0.99	0.99	0.92	90%	0.99	0.99	0.93	100%	0.99	0.99	0.94
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6	EFFICIENCY(Typ.)	91.5%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	92.51%																																												
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 <table border="1"><caption>Efficiency (%) vs Load Data</caption><thead><tr><th>LOAD (%)</th><th>115VAC</th><th>230VAC</th><th>277VAC</th></tr></thead><tbody><tr><td>10%</td><td>80.5</td><td>81.5</td><td>81.0</td></tr><tr><td>20%</td><td>86.5</td><td>88.0</td><td>87.5</td></tr><tr><td>30%</td><td>89.0</td><td>90.0</td><td>90.0</td></tr><tr><td>40%</td><td>89.5</td><td>91.0</td><td>91.0</td></tr><tr><td>50%</td><td>90.0</td><td>91.5</td><td>91.5</td></tr><tr><td>60%</td><td>90.5</td><td>92.0</td><td>92.0</td></tr><tr><td>70%</td><td>90.5</td><td>92.0</td><td>92.0</td></tr><tr><td>80%</td><td>90.5</td><td>92.0</td><td>92.0</td></tr><tr><td>90%</td><td>90.5</td><td>92.0</td><td>92.0</td></tr><tr><td>100%</td><td>90.5</td><td>92.5</td><td>92.5</td></tr></tbody></table>					LOAD (%)	115VAC	230VAC	277VAC	10%	80.5	81.5	81.0	20%	86.5	88.0	87.5	30%	89.0	90.0	90.0	40%	89.5	91.0	91.0	50%	90.0	91.5	91.5	60%	90.5	92.0	92.0	70%	90.5	92.0	92.0	80%	90.5	92.0	92.0	90%	90.5	92.0	92.0	100%	90.5	92.5	92.5
LOAD (%)	115VAC	230VAC	277VAC																																													
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90%	90.5	92.0	92.0																																													
100%	90.5	92.5	92.5																																													
7	NO LOAD POWER CONSUMPTION(Typ.)	Remote Power ON : 2W/277VAC 2W/230VAC 2W/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 : 1.632W/277VAC 1.692W/230VAC 1.734W/115VAC Remote Power OFF : 0.387W/277VAC 0.286W/230VAC 0.122W/115VAC																																												

8	INRUSH CURRENT(Typ.)	277V/45A 230V/35A 115V/20A COLD START	I/P : 277 VAC I/P : 230 VAC I/P : 115VAC O/P : FULL LOAD Ta : 25°C	I =37.4A/ 277VAC T50=512 us/277V I =29.6A/ 230VAC T50=528us/230V I =13.9A/ 115VAC T50=472us/115V
INPUT=277VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH1 : Input current  Ch1 最大 37.4 A △: 2.20 A @: 18.8 A △: 512μs @: 520μs 50.40 % INPUT=230VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH1 : Input current  Ch1 最大 29.6 A △: 3.40 A @: 14.6 A △: 528μs @: 528μs 50.40 % INPUT=115VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH1 : Input current  Ch1 最大 13.9 A △: 200mA @: 6.90 A △: 472μs @: 472μs 50.40 %				

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105 ~ 200%	I/P: 85VAC I/P: 230VAC I/P: 305VAC O/P: TESTING Ta: 25°C	132.1%/ 305VAC 131.8%/ 230VAC 131.9%/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<30%,AC re-power on to recover
2	OVER VOLTAGE PROTECTION	44V~54V	I/P: 85VAC I/P: 230VAC I/P: 305VAC O/P: MIN LOAD Ta: 25°C	48.8V/ 305VAC 48.8V/ 230VAC 48.4V/ 85VAC Protection type : Shut down o/p voltage, AC re-power on to recover
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 85VAC I/P: 305VAC O/P: FULL LOAD	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	I/P: 85VAC I/P: 305VAC 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 a/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 :<table><tr><td>Between ON/OFF</td><td>Power Output Status</td></tr><tr><td>SW ON (0~0.8V)</td><td>ON</td></tr><tr><td>SW OFF (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	SW ON (0~0.8V)	ON	SW OFF (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															
SW ON (0~0.8V)	ON															
SW OFF (3.3~10V)	OFF															
2	PEAK POWER	1. Peak Power $P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} \leq P_{rated}$$Duty = \frac{t}{T} \times 100\% \leq 35\%$$t \leq 5 \text{ sec}$ 														

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q6 Rated 650 V/11 A	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. 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) 478V (2) 462V (3) 466V (4) 466V (5) 466V (6) 462V (7) 482V VDS: (1) 432V (2) 452V (3) 432V (4) 432V (5) 432V (6) 436V (7) 477V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 650 V/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.	VDS: (1) 472V (2) 459V (3) 447V (4) 452V (5) 456V (6) 459V (7) 459V

			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) 500V (2) 472V (3) 492V (4) 468V (5) 460V (6) 492V (7) 484V
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 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) 434V (2) 430V (3) 430V (4) 438V (1) 442V (2) 434V (3) 442V (4) 438V
4	Diode Peak Voltage	D101 Rated 20A/150V	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: (1) 99.3V (2) 13.4V (3) 99.1V (4) 99.9V (5) 100.7V (6) 100.7V (7) 101.5V (8) 90.3V

5	Input Voltage	Capacitor C5 Rated: 68μ/ 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)429V (2)429V (3)437V (4)425 V
6	Control IC Voltage Test	PWM IC U2 Rated -0.4 V~ 30 V	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) 18.9V (2) 18.7V (3) 18.9V (4) 18.9V (5) 12.0V

■ 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: 1.941 mA I/P-FG: 1.957 mA O/P-FG: 1.569 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	9 mΩ

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-100-48 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=33.2 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=63.8 °C <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta=33.2 °C</th><th>HIGH AMBIENT Ta=63.8 °C</th></tr><tr><td>1</td><td>L1</td><td>60.4°C</td><td>86.8°C</td></tr><tr><td>2</td><td>C10</td><td>57.7°C</td><td>85.7°C</td></tr><tr><td>3</td><td>Q1</td><td>62.0°C</td><td>90.7°C</td></tr><tr><td>4</td><td>C5</td><td>58.4°C</td><td>86.2°C</td></tr><tr><td>5</td><td>C14</td><td>61.6°C</td><td>90.6°C</td></tr><tr><td>6</td><td>U2</td><td>73.4°C</td><td>101.4°C</td></tr><tr><td>7</td><td>U4</td><td>63.8°C</td><td>92.2°C</td></tr><tr><td>8</td><td>BD1</td><td>61.7°C</td><td>88.6°C</td></tr><tr><td>9</td><td>Q6</td><td>65.3°C</td><td>93.8°C</td></tr><tr><td>10</td><td>T1</td><td>86.5°C</td><td>114.3°C</td></tr><tr><td>11</td><td>C105</td><td>60.3°C</td><td>88.9°C</td></tr><tr><td>12</td><td>U121</td><td>60.3°C</td><td>89.5°C</td></tr><tr><td>13</td><td>D101</td><td>63.0°C</td><td>91.1°C</td></tr><tr><td>14</td><td>U101</td><td>63.9°C</td><td>92.3°C</td></tr><tr><td>15</td><td>RTH3</td><td>62.6°C</td><td>92.6°C</td></tr><tr><td>16</td><td>LF1</td><td>57.5°C</td><td>85.6°C</td></tr><tr><td>17</td><td>C200</td><td>67.0°C</td><td>95.7°C</td></tr><tr><td>18</td><td>C36</td><td>66.6°C</td><td>94.9°C</td></tr><tr><td>19</td><td>TC</td><td>52.6°C</td><td>81.5°C</td></tr></table>			NO	Position	ROOM AMBIENT Ta=33.2 °C	HIGH AMBIENT Ta=63.8 °C	1	L1	60.4°C	86.8°C	2	C10	57.7°C	85.7°C	3	Q1	62.0°C	90.7°C	4	C5	58.4°C	86.2°C	5	C14	61.6°C	90.6°C	6	U2	73.4°C	101.4°C	7	U4	63.8°C	92.2°C	8	BD1	61.7°C	88.6°C	9	Q6	65.3°C	93.8°C	10	T1	86.5°C	114.3°C	11	C105	60.3°C	88.9°C	12	U121	60.3°C	89.5°C	13	D101	63.0°C	91.1°C	14	U101	63.9°C	92.3°C	15	RTH3	62.6°C	92.6°C	16	LF1	57.5°C	85.6°C	17	C200	67.0°C	95.7°C	18	C36	66.6°C	94.9°C	19	TC	52.6°C	81.5°C
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 129 % LOAD Ta : 25°C	TEST : OK																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 85VAC/305VAC O/P : 80/100 % LOAD Ta=-35/-45 °C	TEST : OK																																																																																
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C/95 %R.H NO DAMAGE	I/P : 315 VAC O/P : FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H	TEST : OK																																																																																
5	TEMPERATURE COEFFICIENT	± 0.05 %/°C(0~60°C)	I/P : 230 VAC O/P : FULL LOAD	± 0.007 %/°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	-40~60°C	1. Thermal shock Temperature : -45°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=25 °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) 573989HRS (2) 54753HRS (3) 80916HRS (4) 114472HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 2163.5K hrs min. Telcordia SR-332 (Bellcore) ; 250.4K 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