



Test Report: NSP-200-15

200W 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

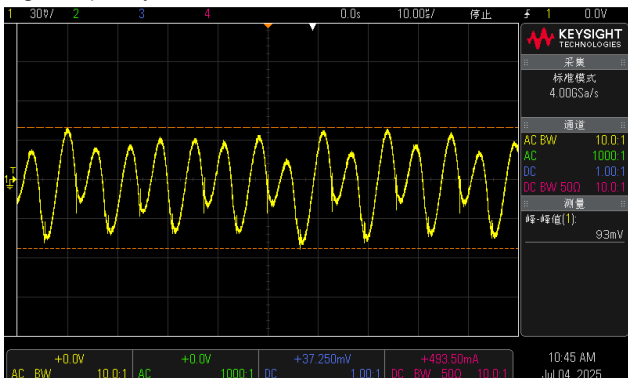
E.M.C. Test

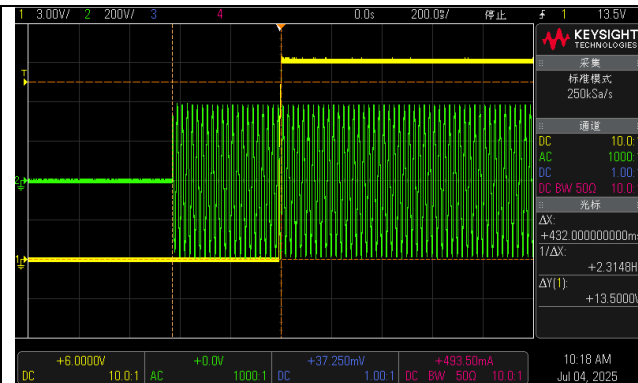
■ RELIABILITY TEST

ENVIRONMENT TEST

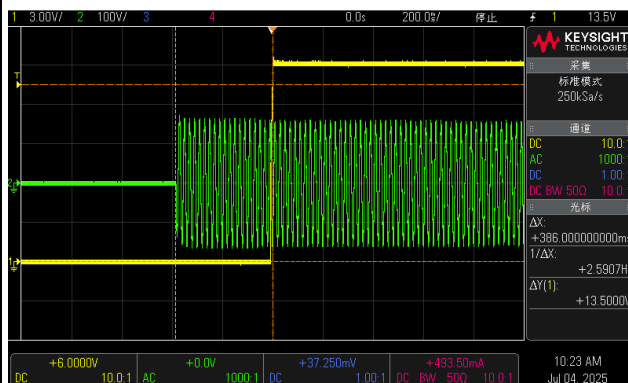
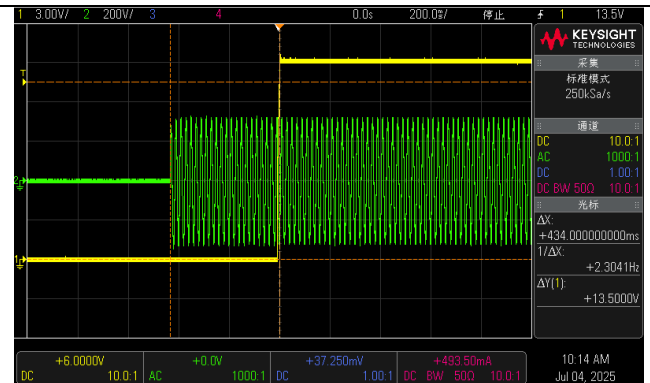
DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 15 V ~ 19 V	I/P : 230 VAC O/P : MIN LOAD Ta : 25°C	CH1 : 14.3 V ~ 19.8 V/ 230 VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -2.0 % ~ +2.0 %	I/P: 85VAC /305VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: - 0.13 % ~ + 0.20 %
3	LINE REGULATION	V1: -0.5 % ~ +0.5 %	I/P: 85VAC ~ 305VAC O/P:FULL LOAD Ta:25°C	V1: -0.07 % ~ + 0.00 %
4	LOAD REGULATION	V1: -0.5 % ~ +0.5 %	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.20 % ~ + 0.13 %
5	OVER/UNDERSHOOT TEST	< ± 5 %	I/P: 230VAC O/P:FULL LOAD Ta:25°C	V1 : 2.67 %
6	RIPPLE & NOISE (Max)	V1: 200 mVp-p	I/P: 230 VAC O/P: FULL LOAD Ta:25°C	V1: 131 mVp-p
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 : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/ 432 ms 230VAC/ 434 ms 115VAC/ 386 ms
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)

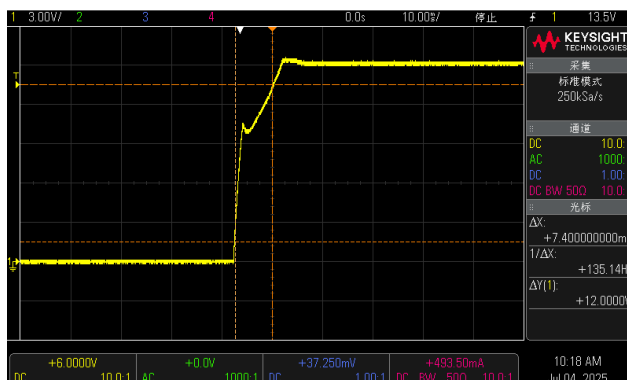
277VAC/80ms
230VAC/80ms
115VAC/80ms

I/P : 277 VAC
I/P : 230 VAC
I/P : 115VAC
O/P : FULL LOAD
Ta : 25°C

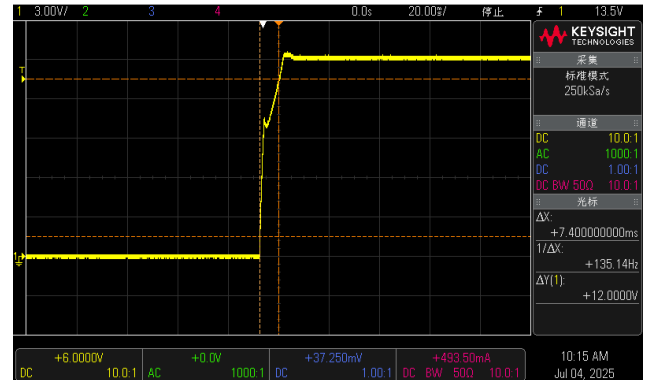
277VAC/ 7.4 ms
230VAC/ 7.4 ms
115VAC/ 7.4 ms

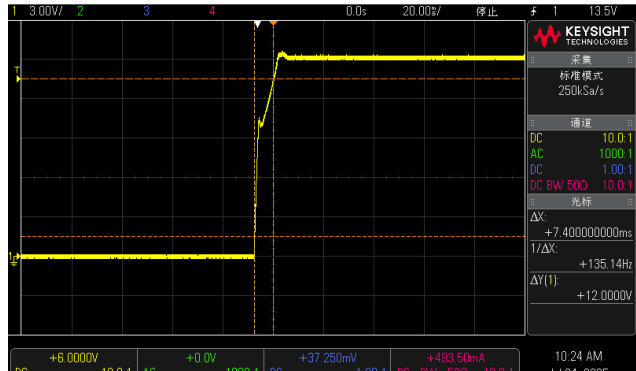
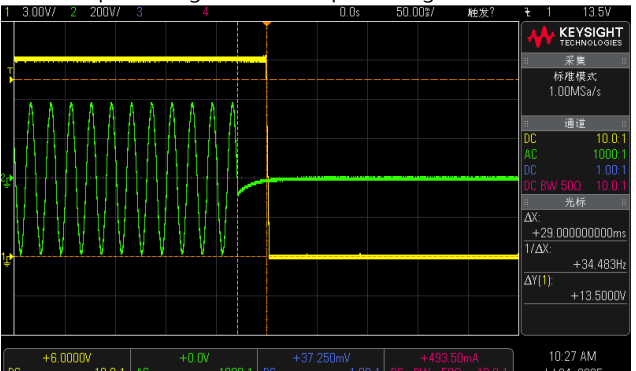
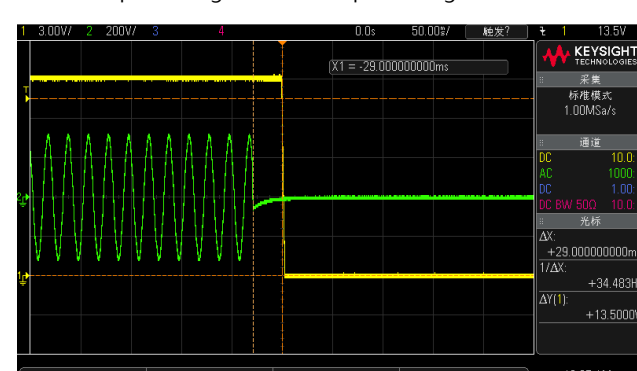
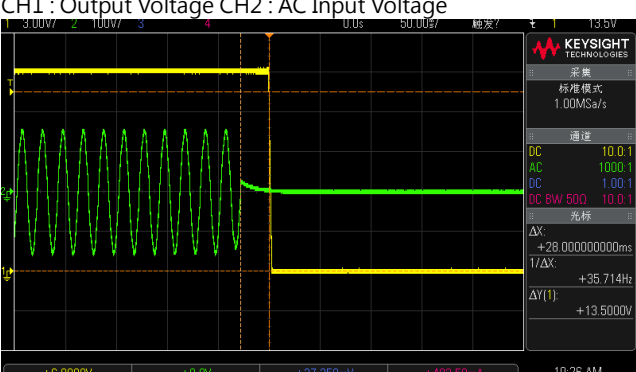
INPUT=277VAC/60HZ @ FULL LOAD
CH1 : Output Voltage

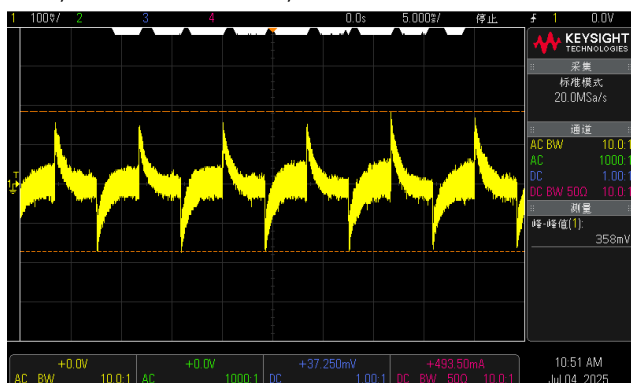
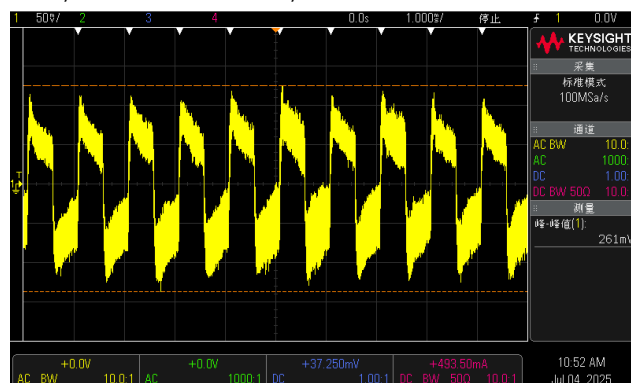
INPUT=230VAC/50HZ @ FULL LOAD
CH1 : Output Voltage



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

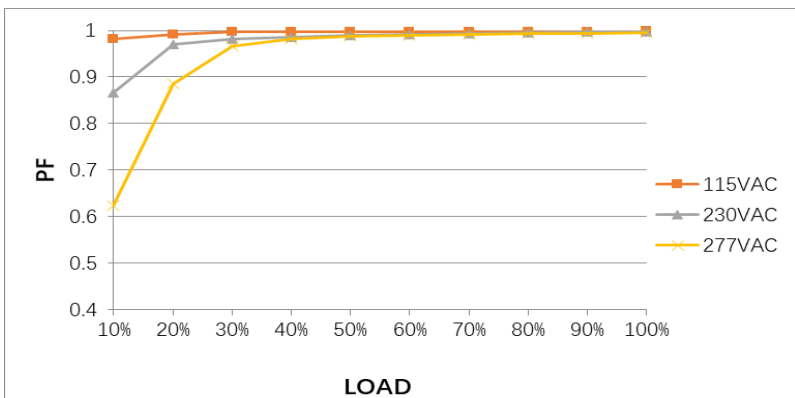
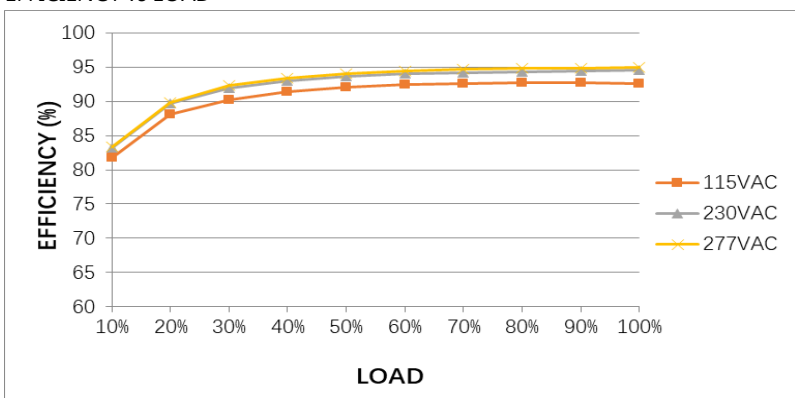


	
9	HOLD UP TIME (Typ.) 277VAC/16ms 230VAC/16ms 115VAC/16ms I/P : 277VAC I/P : 230 VAC I/P : 115VAC O/P : FULL LOAD Ta : 25°C 277VAC/ 29 ms 230VAC/ 29 ms 115VAC/ 28 ms
	INPUT=277VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage  INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage  INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage 
10	DYNAMIC LOAD V1: 1500 mVp-p I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD1 50%DUTY / 1KHZ Ta:25°C 358 mVp-p 261 mVp-p

FULL /50% LOAD 50%DUTY / 120HZ  FULL /50% LOAD 50%DUTY / 1KHZ 				
11	TRANSIENT RECOVERY TIME	V1: 1500 mVp-p <500us	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	310 mVp-p 400 us

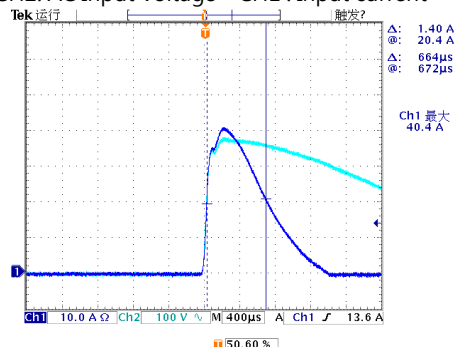
INPUT FUNCTION TEST

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 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)	(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 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.)	277VAC/ 0.80 A 230VAC/ 1.00 A 115VAC/ 2.00 A	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I = 0.76 A/ 277VAC I = 0.91 A/ 230VAC I = 1.87 A/ 115VAC
4	LEAKAGE CURRENT	<350μA / 277 VAC touch current<100μA (Peak)/ 277 VAC	I/P : 277 VAC O/P : Min LOAD Ta : 25°C	160μA for Earth 58μA for touch
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	PF=0.995 / 277VAC PF=0.997 / 230VAC PF=0.999 / 115VAC

			O/P : FULL LOAD Ta : 25°C																																													
	P.F vs LOAD5																																															
	 <table><caption>P.F vs LOAD5 Data</caption><thead><tr><th>LOAD</th><th>115VAC</th><th>230VAC</th><th>277VAC</th></tr></thead><tbody><tr><td>10%</td><td>0.98</td><td>0.88</td><td>0.62</td></tr><tr><td>20%</td><td>0.99</td><td>0.98</td><td>0.88</td></tr><tr><td>30%</td><td>1.00</td><td>1.00</td><td>0.98</td></tr><tr><td>40%</td><td>1.00</td><td>1.00</td><td>0.99</td></tr><tr><td>50%</td><td>1.00</td><td>1.00</td><td>1.00</td></tr><tr><td>60%</td><td>1.00</td><td>1.00</td><td>1.00</td></tr><tr><td>70%</td><td>1.00</td><td>1.00</td><td>1.00</td></tr><tr><td>80%</td><td>1.00</td><td>1.00</td><td>1.00</td></tr><tr><td>90%</td><td>1.00</td><td>1.00</td><td>1.00</td></tr><tr><td>100%</td><td>1.00</td><td>1.00</td><td>1.00</td></tr></tbody></table>				LOAD	115VAC	230VAC	277VAC	10%	0.98	0.88	0.62	20%	0.99	0.98	0.88	30%	1.00	1.00	0.98	40%	1.00	1.00	0.99	50%	1.00	1.00	1.00	60%	1.00	1.00	1.00	70%	1.00	1.00	1.00	80%	1.00	1.00	1.00	90%	1.00	1.00	1.00	100%	1.00	1.00	1.00
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6	EFFICIENCY(Typ.)	94.0 %	I/P:230 VAC O/P:FULL LOAD Ta:25°C	94.5 %																																												
	EFFICIENCY vs LOAD																																															
	 <table><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>82</td><td>83</td><td>84</td></tr><tr><td>20%</td><td>88</td><td>89</td><td>90</td></tr><tr><td>30%</td><td>90</td><td>91</td><td>92</td></tr><tr><td>40%</td><td>91</td><td>92</td><td>93</td></tr><tr><td>50%</td><td>92</td><td>93</td><td>94</td></tr><tr><td>60%</td><td>92</td><td>93</td><td>94</td></tr><tr><td>70%</td><td>93</td><td>94</td><td>94</td></tr><tr><td>80%</td><td>93</td><td>94</td><td>94</td></tr><tr><td>90%</td><td>93</td><td>94</td><td>94</td></tr><tr><td>100%</td><td>93</td><td>94</td><td>94</td></tr></tbody></table>				LOAD	115VAC	230VAC	277VAC	10%	82	83	84	20%	88	89	90	30%	90	91	92	40%	91	92	93	50%	92	93	94	60%	92	93	94	70%	93	94	94	80%	93	94	94	90%	93	94	94	100%	93	94	94
LOAD	115VAC	230VAC	277VAC																																													
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100%	93	94	94																																													
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 : 1.257 W/ 277VAC 1.268 W/ 230VAC 1.339 W/ 115VAC Remote Power OFF : 0.371 W/ 277VAC 0.294 W/ 230VAC 0.126 W/ 115VAC																																												
8	INRUSH CURRENT(Typ.)	277V/50A 230V/40A 115V/23A COLD START	I/P : 277VAC I/P : 230 VAC I/P : 115VAC O/P : FULL LOAD Ta : 25°C	I =40.4A/ 277VAC T50=664us/277V I =31.4A/ 230VAC T50=704us/230V I =12.3A/ 115VAC T50=648us/115V																																												

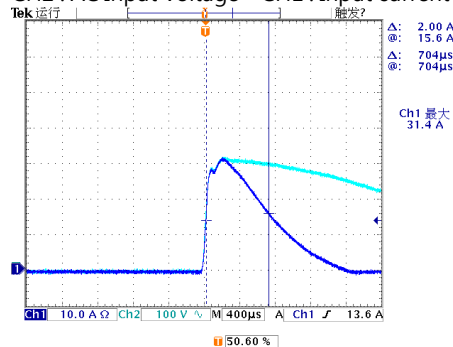
INPUT=277VAC/60HZ @ FULL LOAD

CH2: AC Input Voltage CH1 : Input current



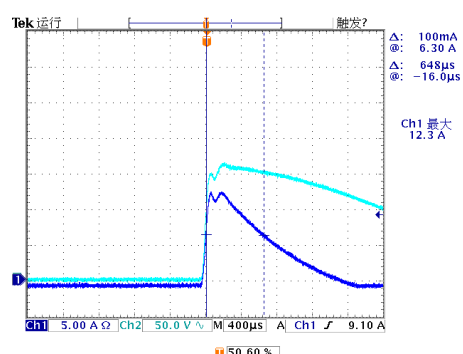
INPUT=230VAC/50HZ @ FULL LOAD

CH2: AC Input Voltage CH1 : Input current



INPUT=115VAC/60HZ @ FULL LOAD

CH2: AC Input Voltage CH1 : Input current

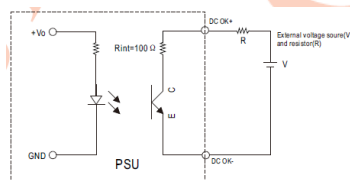
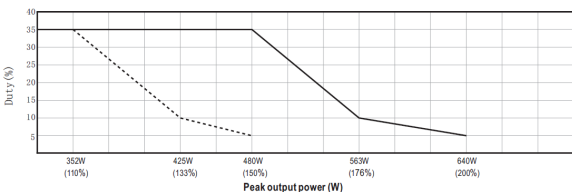


PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~ 200% 1、Normally works within 105 ~ 200% rated output power for more than 5 seconds and then constant current limiting without shutdown($V_{out}>30\%$), recovers automatically after fault condition is removed, or shut down o/p voltage when $V_{out}<30\%$, AC re-power on to recover 2、>200% rated power, constant current limiting ($V_{out}>30\%$) with auto-recovery after fault condition is removed,	I/P: 305VAC I/P: 230VAC I/P: 85VAC O/P: TESTING Ta:25°C	113.43 %/ 305VAC 113.43 %/ 230VAC 113.43 %/ 85VAC PROTECTION TYPE : 1、Normally works within 105 ~ 200% rated output power for more than 5 seconds and then constant current limiting without shutdown($V_{out}>30\%$), recovers automatically after fault condition is removed, or shut down o/p voltage when $V_{out}<30\%$, AC re-power on to recover 2、>200% rated power, constant current limiting ($V_{out}>30\%$) with auto-recovery after fault condition is removed,
2	OVER VOLTAGE PROTECTION	20 V ~ 25 V	I/P: 305VAC I/P: 230VAC I/P: 85VAC O/P: MIN LOAD	22.9 V / 305 VAC 22.9 V / 230 VAC/ 40 23.1 V / 85 VAC PROTECTION TYPE : Shut down o/p

			Ta:25°C	voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type : Shut down o/p voltage, re-power on to recover	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 a/p voltage, AC re-power on to recover

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT						
1	REMOTE CONTROL	Power ON: Pin5 and Pin6 open or keep 0~0.8Vdc Power OFF: Pin5 and Pin6 keep 3.3~10Vdc	I/P:230VAC O/P:FULL LOAD Ta:25℃	TEST: <u>OK</u>						
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: <u>OK</u>						
3	DC OK SIGNAL	15Vdc/10mA resistive load <table border="1"><tr><td>PSU Vo Status</td><td>Photo transistor</td></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)	I/P:230VAC O/P:FULL LOAD Ta:25℃	TEST: <u>OK</u>
PSU Vo Status	Photo transistor									
POWER ON	Conduct(Low impedance)									
POWER OFF	Open(High impedance)									
4	PEAK Power	I/P: 100/305VAC O/P:  -----100VAC ————200VAC		TEST: <u>OK</u>						

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q6 Rated : 15 A/ 650V	AC ON/OFF I/P:High-Line +3V =308V VDS: O/P: (1)Full Load (2)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (3)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (4)0%→400% Load. Ta:25°C	VDS: (1) 468 V (2) 468 V (3) 476 V (4) 488 V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated : 20A /600V	I/P:High-Line +3V =308V AC ON/OFF O/P: (1)Full Load (2)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (3)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (4)0%→400% Load. Ta:25°C	VDS: (1) 520 V (2) 516 V (3) 512 V (4) 528 V
3	Diode Peak Voltage	Q102 Rated : 80A/60V	AC ON/OFF I/P:High-Line +3V =308 V O/P: (1)Full Load (2) Dynamic Load 100% Load/ Min. Load 90%Duty/5KHz (3)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (4)0%→400% Load. Ta:25°C	Q101: VDS: (1) 45.6 V (2) 45.2 V (3) 45.2 V (4) 45.6 V
4	Control IC Voltage Test	PWM IC U2 Rated 9.6V~ 36V O/P IC U100 Rated : 4.2V~ 35V	AC ON/OFF I/P:High-Line +3V =308 V O/P(1)FULL LOAD (2) Output Short (3)O.L.P (4)NO LOAD VRmin(LOW LINE) Ta:25°C	U2 (1) 19.0 V (2) 19.0 V (3) 19.0 V (4) 14.6 V U100 (1) 11.6 V (2) 11.6 V (3) 11.6 V (4) 11.2 V

■ 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: 1.88 mA I / P - F G : 2.22 mA O / P - F G : 1.57 m A NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P: 500 VDC>100MΩ I / P - F G : 500 VDC>100MΩ O/P-FG: 500 VDC >100MΩ	I/P-O/P: 500 VDC I / P - F G : 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P - O/P: >9999 MΩ I / P - F G : >9999 MΩ O / P - F G : >9999 MΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	7mΩ

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-200-12 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 29.7 °C 2. HIGH AMBIENT BURN-IN : HRS I/P : 230VAC O/P : FULL LOAD Ta= 63 °C <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta= 29.7 °C</th><th>HIGH AMBIENT Ta=63 °C</th></tr><tr><td>1</td><td>ZNR1</td><td>52.0℃</td><td>85.9℃</td></tr><tr><td>2</td><td>LF1</td><td>54.2℃</td><td>88.2℃</td></tr><tr><td>3</td><td>C2</td><td>54.1℃</td><td>87.8℃</td></tr><tr><td>4</td><td>LF2</td><td>58.4℃</td><td>91.8℃</td></tr><tr><td>5</td><td>RY1</td><td>66.9℃</td><td>100.4℃</td></tr><tr><td>6</td><td>RTH1</td><td>57.1℃</td><td>90.5℃</td></tr><tr><td>7</td><td>C10</td><td>63.3℃</td><td>96.7℃</td></tr><tr><td>8</td><td>L1</td><td>77.1℃</td><td>111.9℃</td></tr><tr><td>9</td><td>Q1</td><td>60.1℃</td><td>94.4℃</td></tr><tr><td>10</td><td>D8</td><td>57.9℃</td><td>92.1℃</td></tr><tr><td>11</td><td>C5</td><td>59.5℃</td><td>92.5℃</td></tr><tr><td>12</td><td>C14</td><td>59.2℃</td><td>93.6℃</td></tr><tr><td>13</td><td>Q5</td><td>58.1℃</td><td>93.2℃</td></tr><tr><td>14</td><td>U2</td><td>63.4℃</td><td>97.8℃</td></tr><tr><td>15</td><td>C36</td><td>51.9℃</td><td>86.2℃</td></tr><tr><td>16</td><td>T1 次</td><td>68.5℃</td><td>102.3℃</td></tr><tr><td>17</td><td>C105</td><td>62.1℃</td><td>95.8℃</td></tr><tr><td>18</td><td>U101</td><td>59.9℃</td><td>93.8℃</td></tr><tr><td>19</td><td>U121</td><td>60.4℃</td><td>94.0℃</td></tr><tr><td>20</td><td>C200</td><td>58.8℃</td><td>93.1℃</td></tr><tr><td>21</td><td>BD2</td><td>62.3℃</td><td>96.3℃</td></tr><tr><td>22</td><td>U100</td><td>64.3℃</td><td>98.5℃</td></tr><tr><td>23</td><td>Q102</td><td>63.5℃</td><td>98.3℃</td></tr><tr><td>24</td><td>U3</td><td>57.6℃</td><td>91.7℃</td></tr><tr><td>25</td><td>RTH3</td><td>61.8℃</td><td>95.6℃</td></tr><tr><td>26</td><td>TC(Q1)</td><td>52.5℃</td><td>86.6℃</td></tr></table>			NO	Position	ROOM AMBIENT Ta= 29.7 °C	HIGH AMBIENT Ta=63 °C	1	ZNR1	52.0℃	85.9℃	2	LF1	54.2℃	88.2℃	3	C2	54.1℃	87.8℃	4	LF2	58.4℃	91.8℃	5	RY1	66.9℃	100.4℃	6	RTH1	57.1℃	90.5℃	7	C10	63.3℃	96.7℃	8	L1	77.1℃	111.9℃	9	Q1	60.1℃	94.4℃	10	D8	57.9℃	92.1℃	11	C5	59.5℃	92.5℃	12	C14	59.2℃	93.6℃	13	Q5	58.1℃	93.2℃	14	U2	63.4℃	97.8℃	15	C36	51.9℃	86.2℃	16	T1 次	68.5℃	102.3℃	17	C105	62.1℃	95.8℃	18	U101	59.9℃	93.8℃	19	U121	60.4℃	94.0℃	20	C200	58.8℃	93.1℃	21	BD2	62.3℃	96.3℃	22	U100	64.3℃	98.5℃	23	Q102	63.5℃	98.3℃	24	U3	57.6℃	91.7℃	25	RTH3	61.8℃	95.6℃	26	TC(Q1)	52.5℃	86.6℃
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 113 %LOAD Ta : 25℃	TEST : OK																																																																																																												
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 305VAC/100VAC O/P : 100 %LOAD Ta= -35℃	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	± 0.01%/°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= 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) 259996.9 HRS (2) 22352.3HRS (3) 50601.7HRS (4) 91262.6HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 1775.2K hrs min. Telcordia SR-332 (Bellcore) ; 244.0K 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	HANXR	LIUTT	WANGZD

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