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参考資料

TEST DATA OF SNDBS700B12

Regulated DC Power Supply
July 18, 2012

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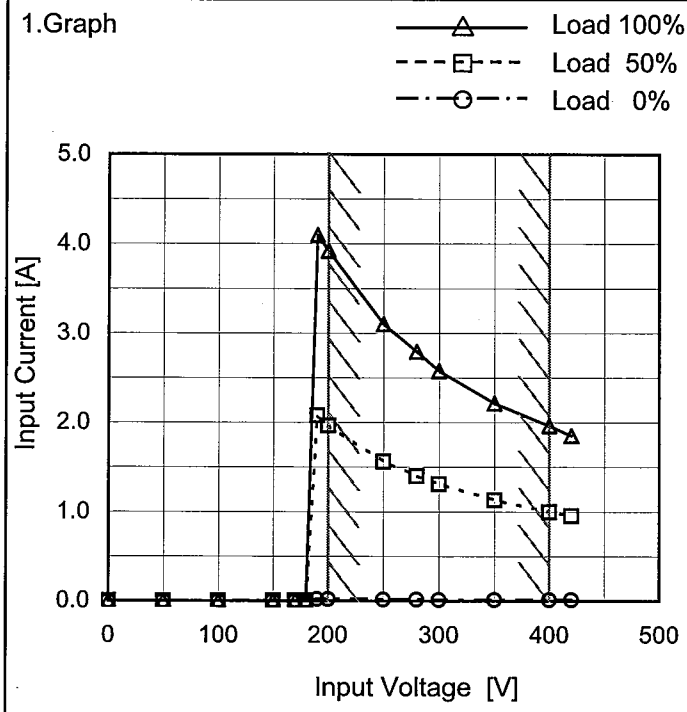
COSEL

Model	SNDBS700B12
Item	Input Current (by Input Voltage)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

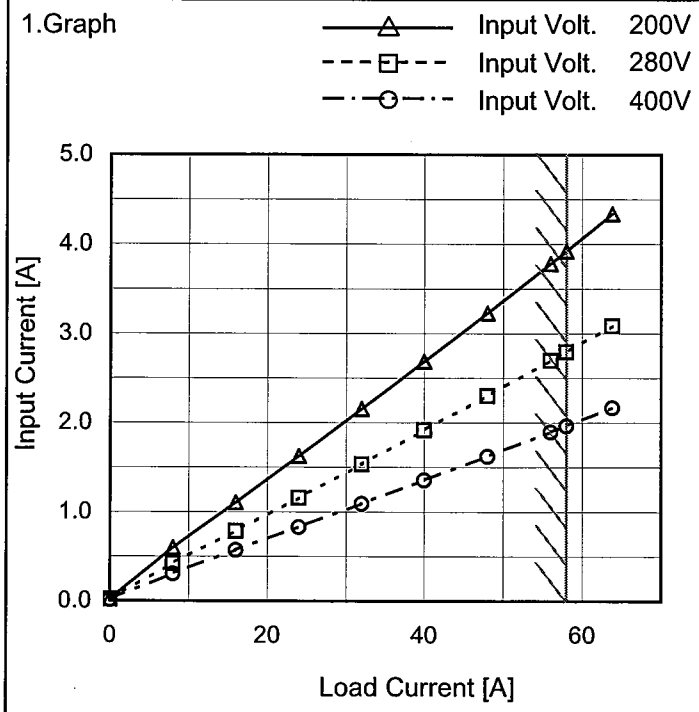
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
50	0.000	0.000	0.000
100	0.000	0.000	0.000
150	0.003	0.003	0.003
170	0.003	0.003	0.003
180	0.003	0.003	0.003
190	0.021	2.078	4.100
200	0.020	1.966	3.924
250	0.017	1.562	3.102
280	0.017	1.400	2.796
300	0.015	1.310	2.579
350	0.014	1.132	2.215
400	0.014	0.999	1.966
420	0.014	0.955	1.852
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SNDBS700B12
Item	Input Current (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

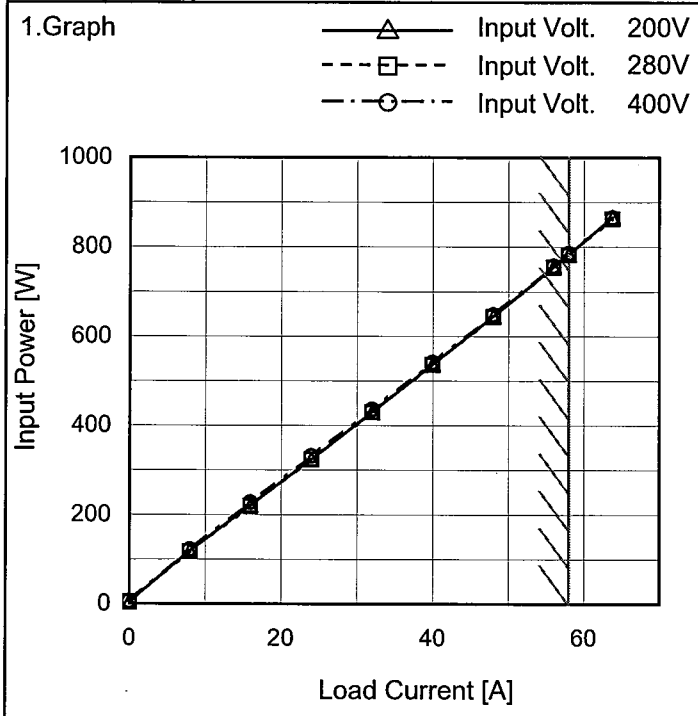
Load Current [A]	Input Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	0.020	0.017	0.014
8.0	0.599	0.419	0.306
16.0	1.107	0.784	0.570
24.0	1.627	1.158	0.830
32.0	2.154	1.534	1.092
40.0	2.688	1.918	1.357
48.0	3.230	2.304	1.625
56.0	3.784	2.696	1.898
58.0	3.924	2.796	1.966
63.8	4.340	3.084	2.168
--	-	-	-

COSEL

Model	SNDBS700B12
Item	Input Power (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	4.0	4.6	5.4
8.0	119.6	117.2	122.4
16.0	221.0	219.2	227.8
24.0	325.0	324.0	331.9
32.0	430.0	429.4	436.0
40.0	537.0	536.0	542.0
48.0	645.0	644.0	649.0
56.0	756.0	754.0	758.0
58.0	784.0	782.0	786.0
63.8	867.0	863.0	866.0
--	-	-	-

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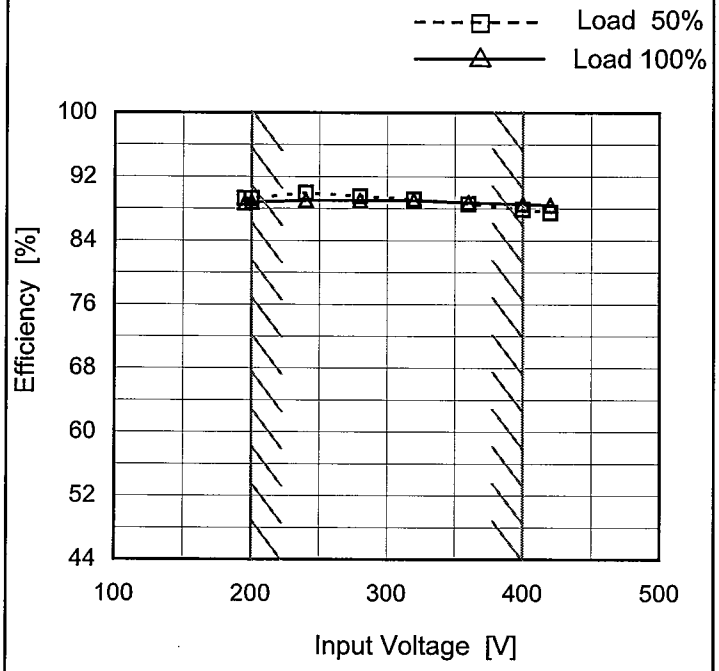
Model	SNDBS700B12
Item	Efficiency (by Input Voltage)
Object	――――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

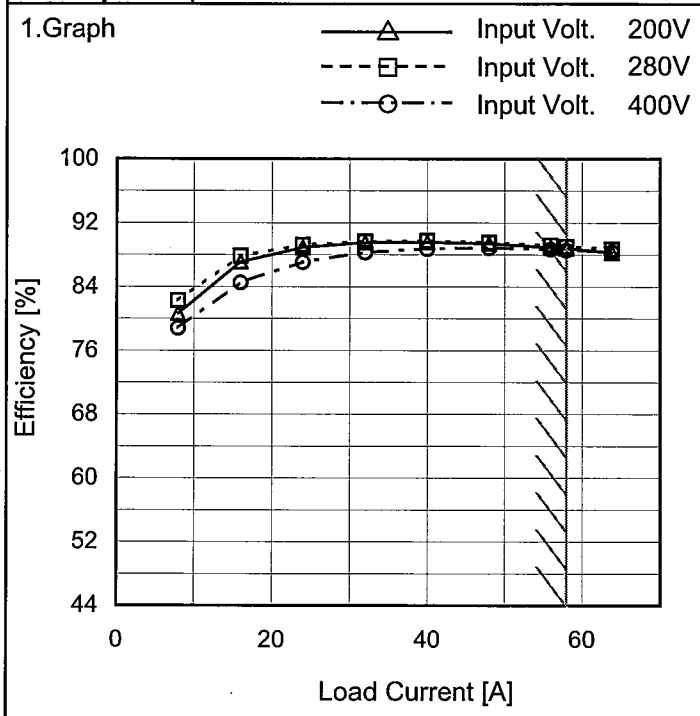
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
195	89.3	88.7
200	89.3	88.8
240	90.0	89.0
280	89.5	89.0
320	89.1	89.0
360	88.6	88.8
400	87.9	88.6
420	87.5	88.5
--	-	-

COSEL

Model	SNDBS700B12
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	-	-	-
8.0	80.6	82.3	78.8
16.0	87.1	87.8	84.5
24.0	88.9	89.2	87.1
32.0	89.5	89.7	88.3
40.0	89.6	89.7	88.7
48.0	89.4	89.6	88.9
56.0	88.9	89.2	88.7
58.0	88.8	89.0	88.6
63.8	88.3	88.7	88.4
--	-	-	-

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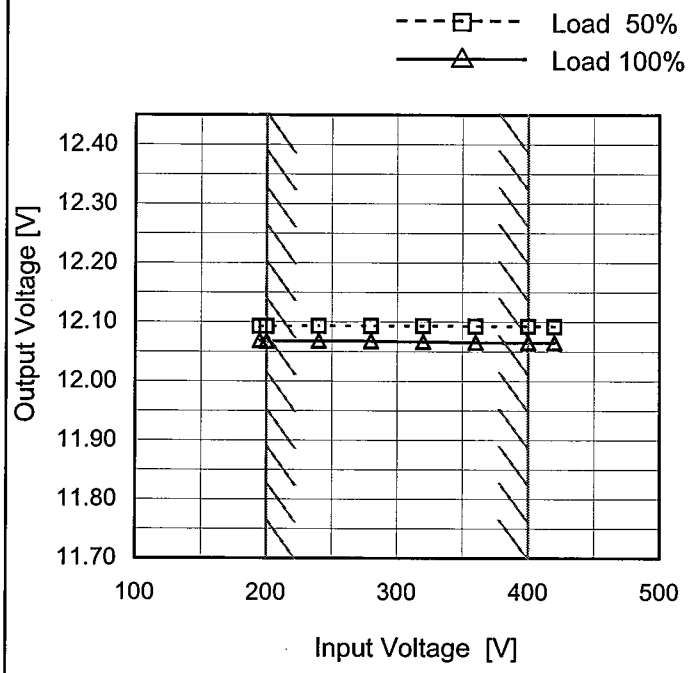
Model	SNDBS700B12
Item	Line Regulation
Object	+12V58A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

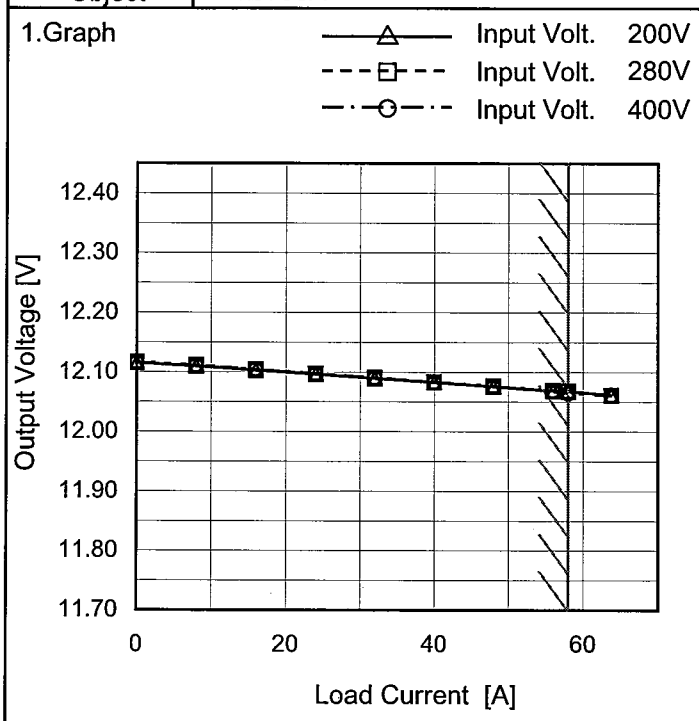
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
195	12.093	12.069
200	12.093	12.068
240	12.093	12.068
280	12.093	12.068
320	12.093	12.066
360	12.093	12.066
400	12.093	12.065
420	12.092	12.065
--	-	-

COSEL

Model	SNDBS700B12
Item	Load Regulation
Object	+12V58A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	12.116	12.116	12.115
8.0	12.110	12.111	12.111
16.0	12.103	12.104	12.104
24.0	12.097	12.097	12.097
32.0	12.090	12.090	12.090
40.0	12.083	12.083	12.083
48.0	12.076	12.076	12.075
56.0	12.069	12.069	12.068
58.0	12.068	12.068	12.065
63.8	12.062	12.061	12.060
--	-	-	-

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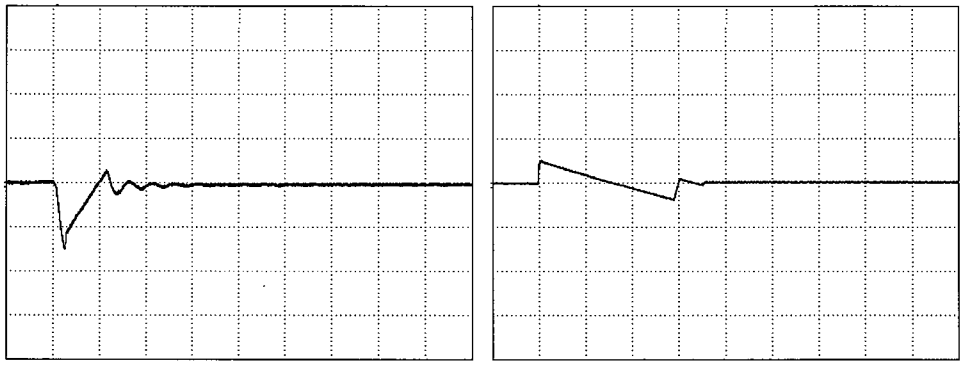
Model	SNDBS700B12		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+12V58A		

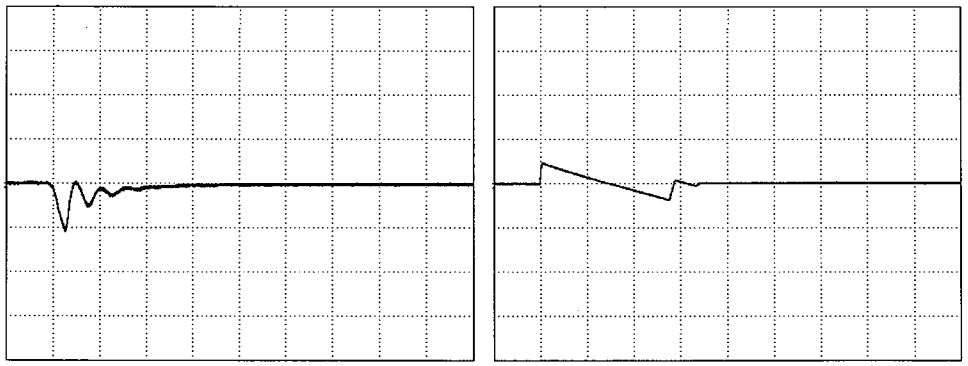
Input Volt. 280 V
Cycle 1000 ms

Load Current
58A/50μs

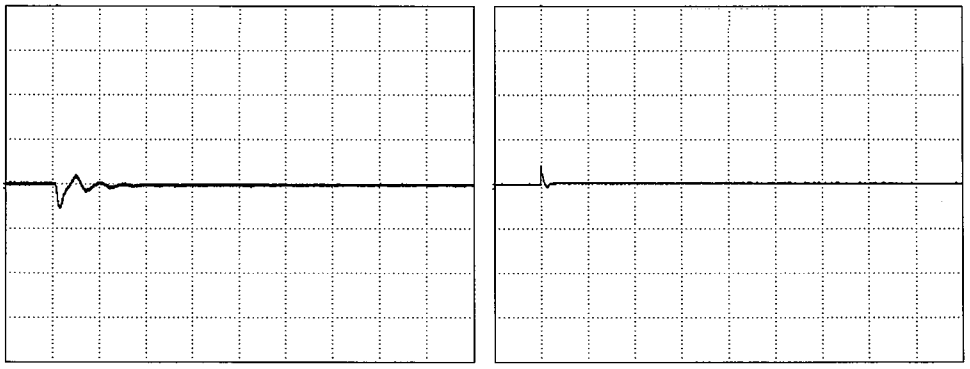
Min. Load (0A) ⟷
Load 100% (58A)



Min. Load (0A) ⟷
Load 50% (29A)



Load 10% (5.8A) ⟷
Load 100% (58A)



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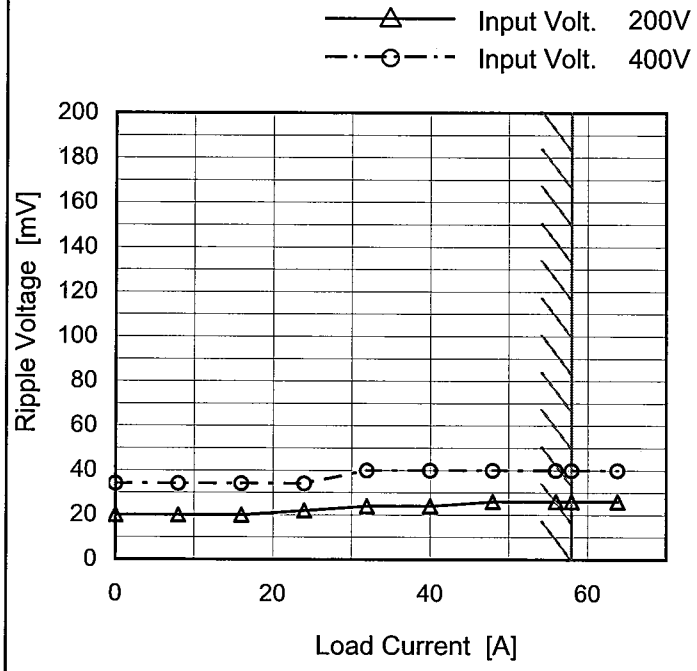
Model	SNDBS700B12
Item	Ripple Voltage (by Load Current)
Object	+12V58A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Measured by 100 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

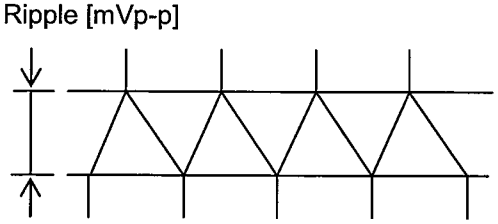


Fig.Complex Ripple Wave Form

2.Values

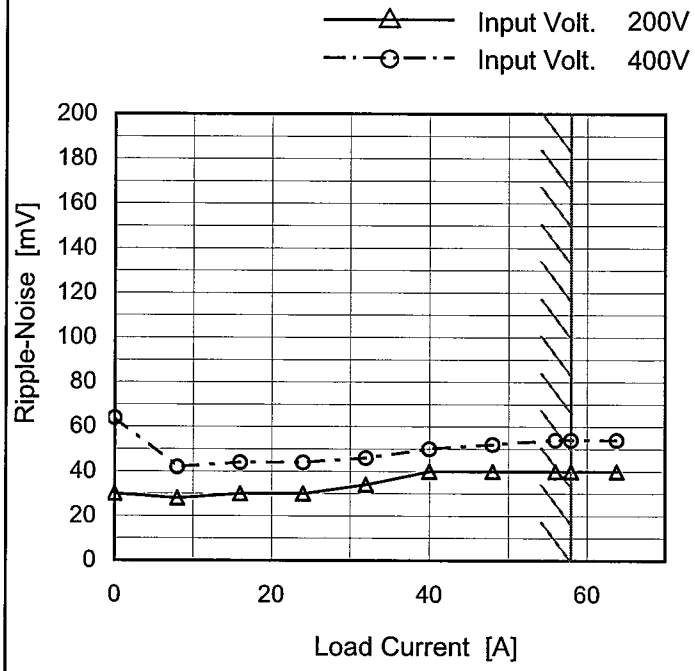
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0.0	20	34
8.0	20	34
16.0	20	34
24.0	22	34
32.0	24	40
40.0	24	40
48.0	26	40
56.0	26	40
58.0	26	40
63.8	26	40
--	-	-

COSEL

Model	SNDBS700B12
Item	Ripple-Noise
Object	+12V58A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Measured by 100 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

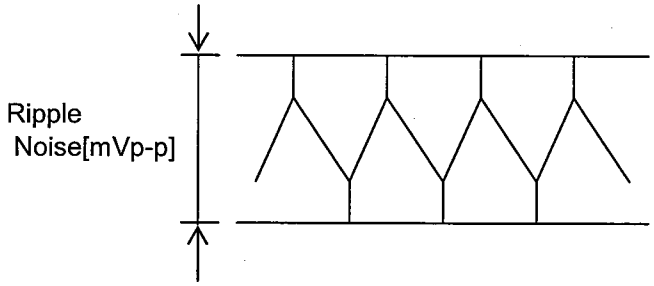


Fig.Complex Ripple Noise Wave Form

2.Values

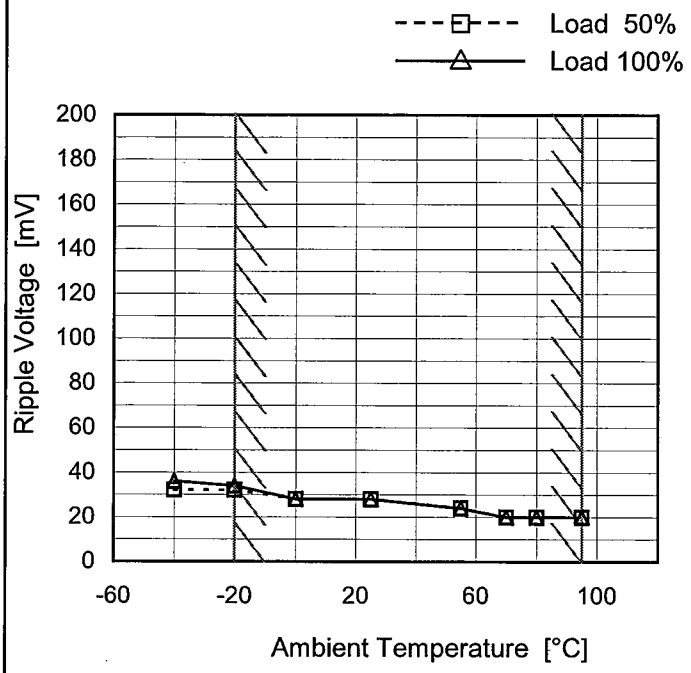
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0.0	30	64
8.0	28	42
16.0	30	44
24.0	30	44
32.0	34	46
40.0	40	50
48.0	40	52
56.0	40	54
58.0	40	54
63.8	40	54
--	-	-

COSEL

Model	SNDBS700B12
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V58A

Testing Circuitry Figure B

1.Graph



Input Volt. 280V

Measured by 100 MHz Oscilloscope.

Note: Slanted line shows the range of the rated ambient temperature.

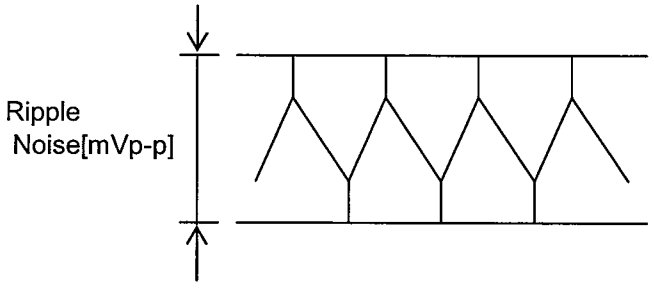


Fig.Complex Ripple Noise Wave Form

2.Values

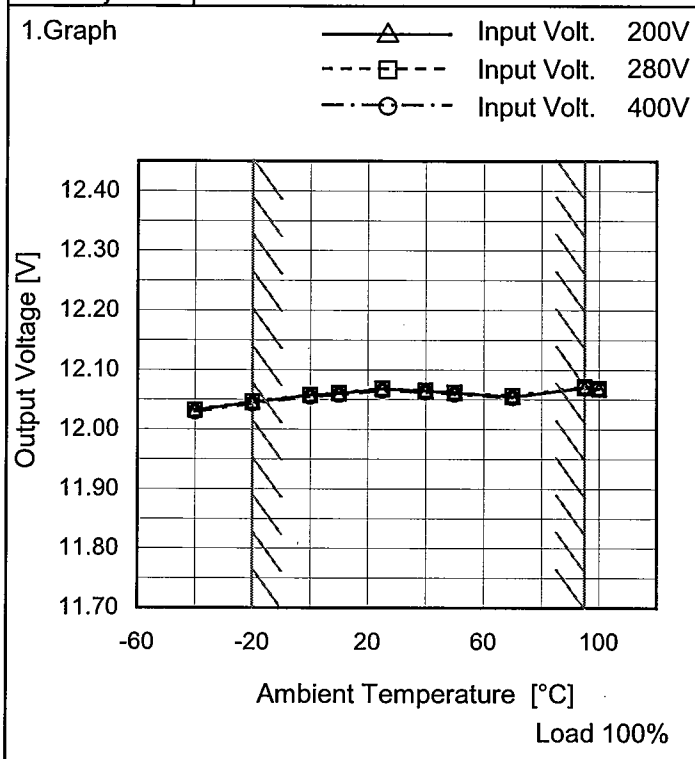
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	32	36
-20	32	34
0	28	28
25	28	28
55	24	24
70	20	20
80	20	20
95	20	20
--	-	-
--	-	-
--	-	-

COSEL

Model	SNDBS700B12
Item	Ambient Temperature Drift
Object	+12V58A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
-40	12.032	12.033	12.029
-20	12.046	12.046	12.043
0	12.058	12.058	12.055
10	12.060	12.061	12.058
25	12.068	12.068	12.065
40	12.065	12.065	12.062
50	12.061	12.062	12.059
70	12.055	12.057	12.053
95	12.070	12.072	12.071
100	12.068	12.069	12.069
--	-	-	-

COSEL

Model	SNDBS700B12	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V58A	

1.Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -20 - 95°C
Input Voltage : 200 - 400V
Load Current : 0 - 58A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2.Values

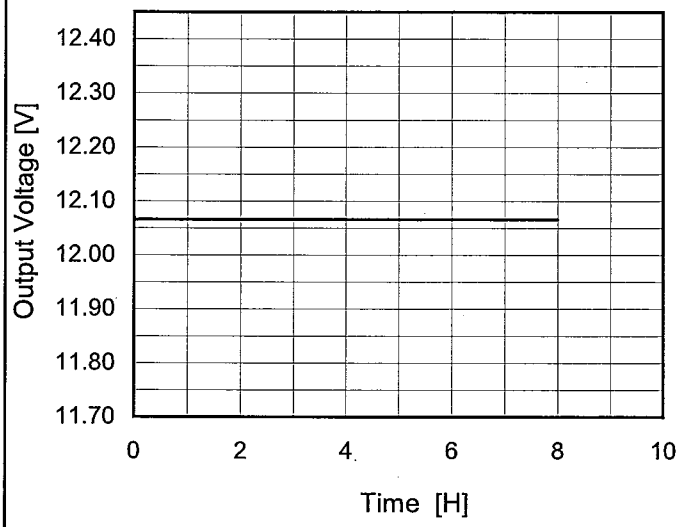
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	95	400	0	12.142	±44	±0.4
Minimum Voltage	-20	400	58	12.054		

COSEL

Model	SNDBS700B12
Item	Time Lapse Drift
Object	+12V58A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 280V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	12.072
0.5	12.066
1.0	12.066
2.0	12.066
3.0	12.066
4.0	12.066
5.0	12.066
6.0	12.066
7.0	12.066
8.0	12.066

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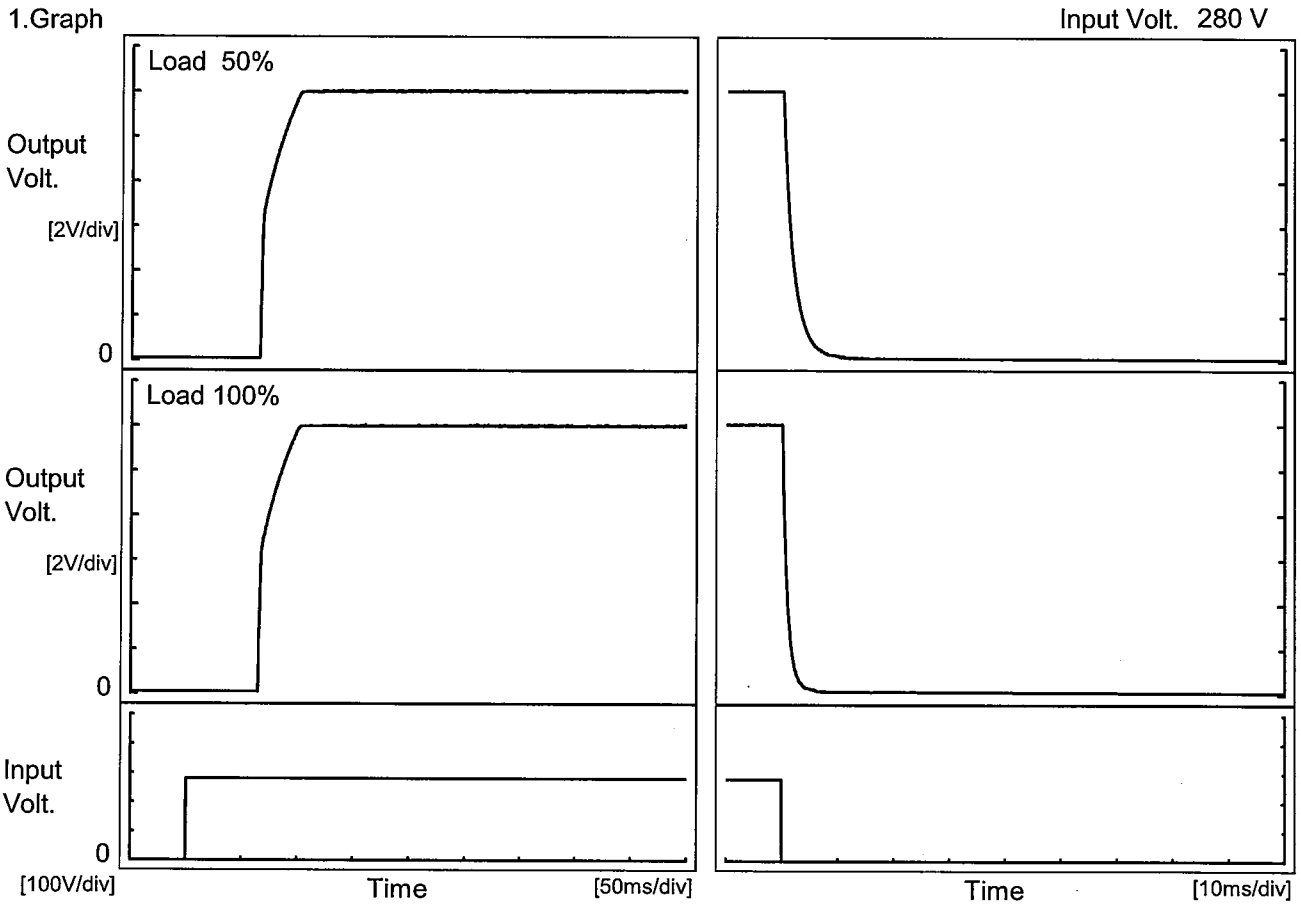
Model	SNDBS700B12		
Item	Rise and Fall Time	Temperature	25°C
Object	+12V58A	Testing Circuitry	Figure A

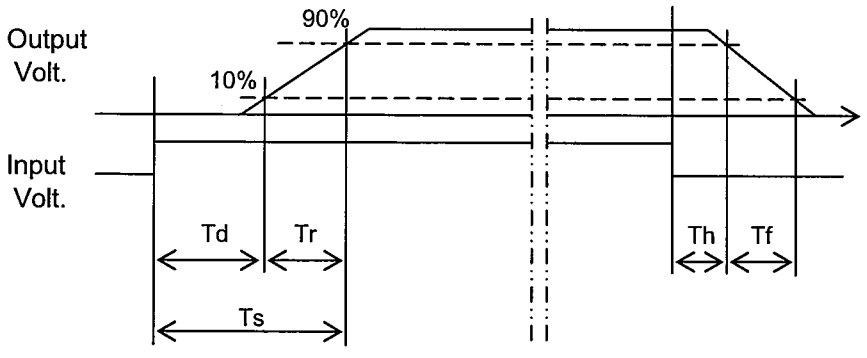
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	66.3	26.8	93.1	0.2	4.1
100 %	65.0	27.5	92.5	0.2	2.0



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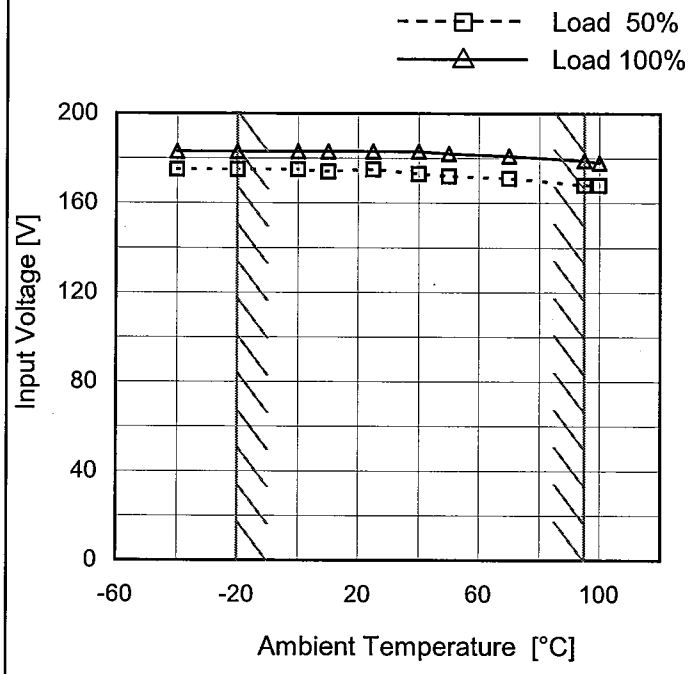
Model	SNDBS700B12
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V58A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

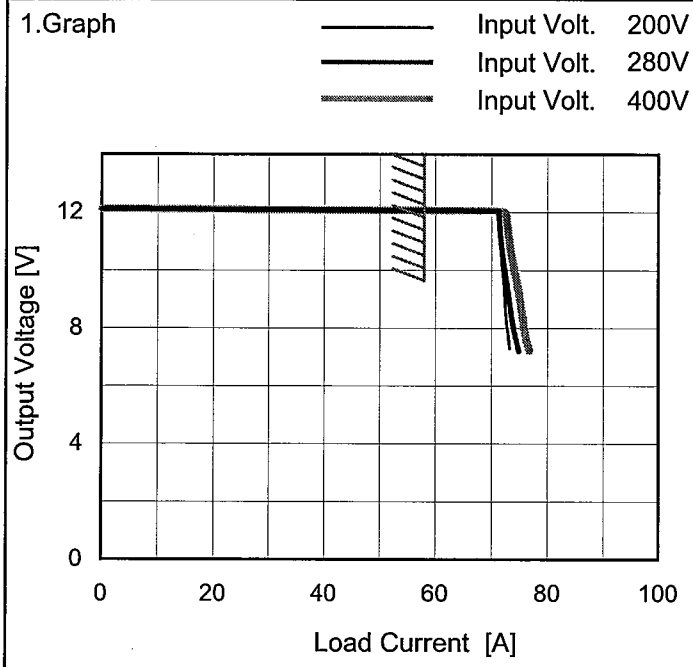
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	175	183
-20	175	183
0	175	183
10	174	183
25	175	183
40	173	183
50	172	182
70	171	181
95	168	179
100	168	178
--	-	-

COSEL

Model	SNDBS700B12
Item	Overcurrent Protection
Object	+12V58A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

Intermittent operation occurs when the output voltage is from 7.2V to 0V.

2.Values

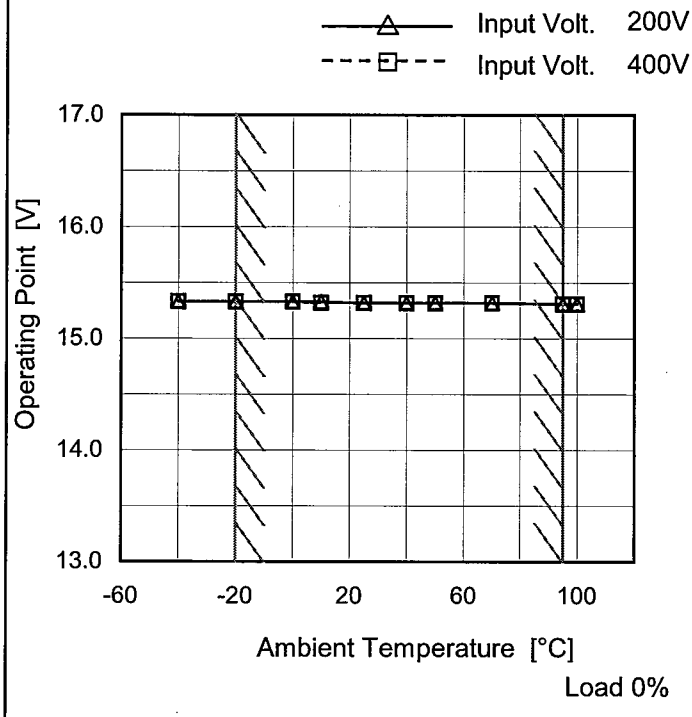
Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
11.4	71.50	71.51	72.92
10.8	71.64	71.75	73.31
9.6	72.17	72.64	74.41
8.4	72.56	73.51	75.54
7.2	73.28	74.86	76.76
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SNDBS700B12
Item	Overvoltage Protection
Object	+12V58A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 200[V]	Input Volt. 400[V]
-40	15.33	15.33
-20	15.33	15.33
0	15.33	15.33
10	15.33	15.32
25	15.32	15.32
40	15.32	15.32
50	15.32	15.32
70	15.32	15.32
95	15.31	15.31
100	15.31	15.31
--	-	-

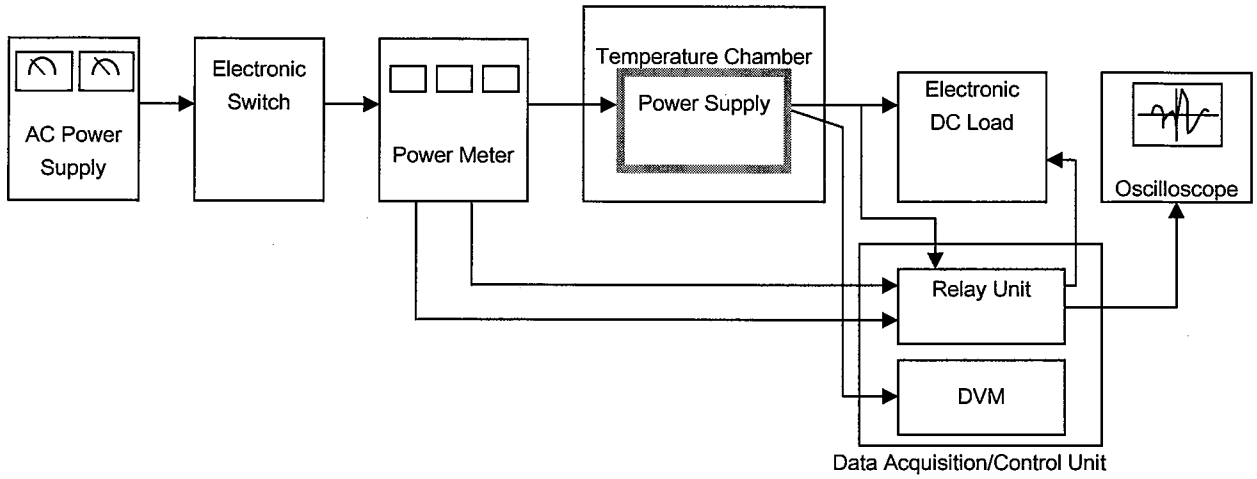


Figure A

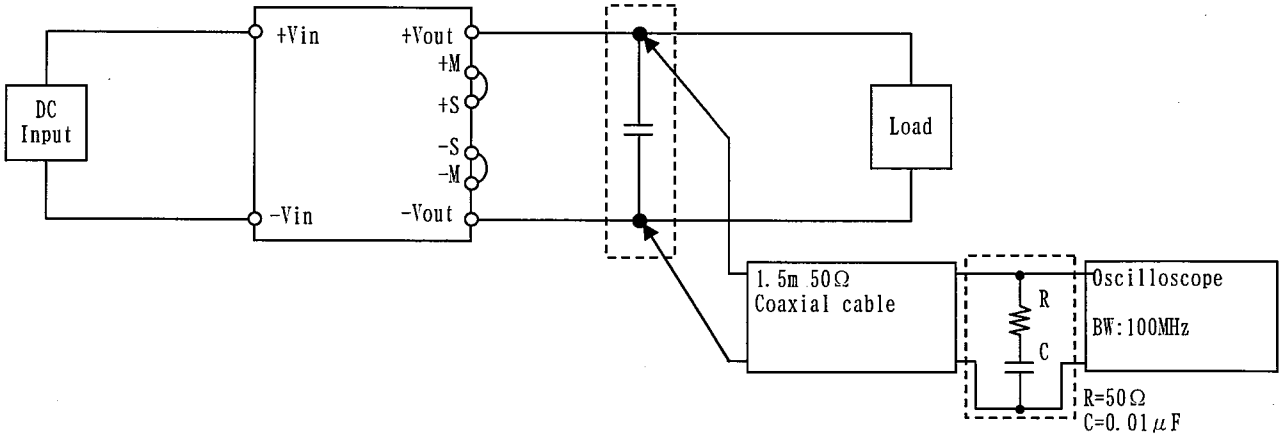


Figure B (Ripple and Ripple noise Characteristic)