COSEL

参考資料

TEST DATA OF SNDHS100B15

Regulated DC Power Supply
June 30, 2011

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Tadasi Arai Design Engineer

COSEL CO.,LTD.

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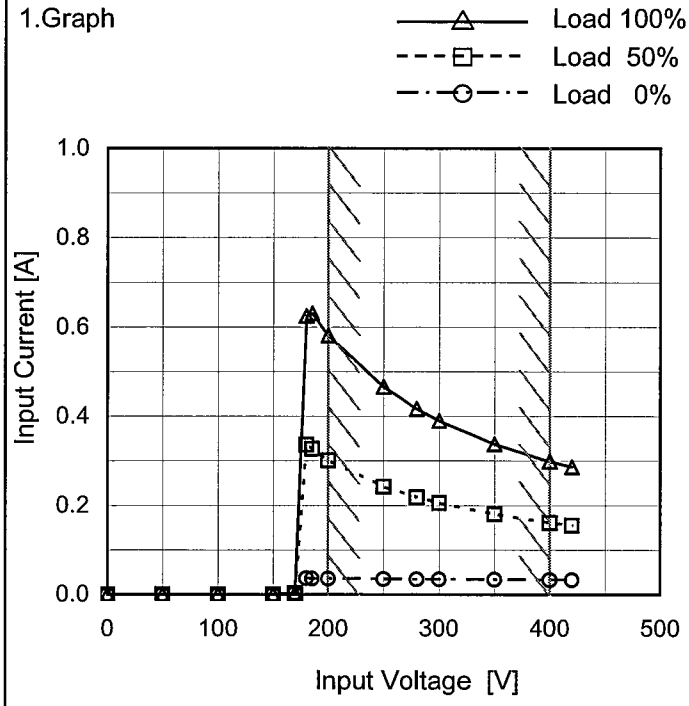
Model	SNDHS100B15
Item	Input Current (by Input Voltage)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

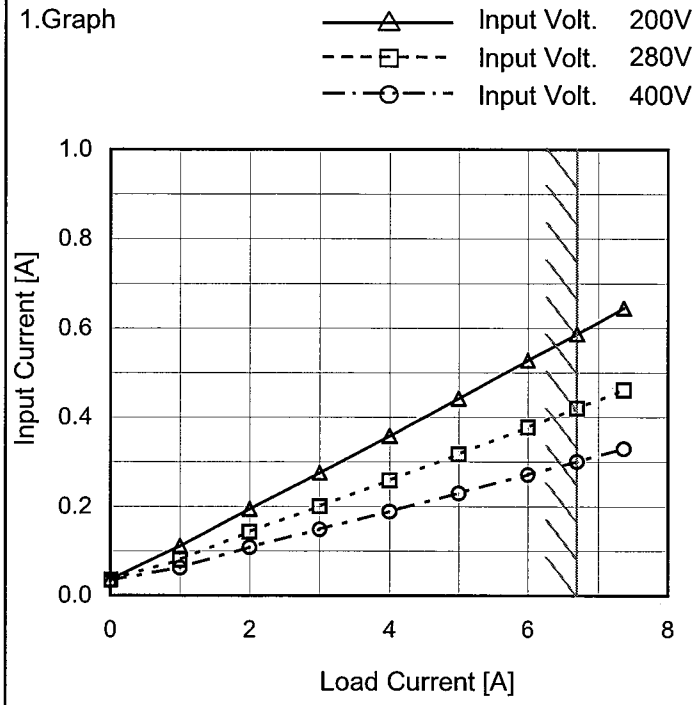
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
50	0.000	0.000	0.000
100	0.000	0.000	0.000
150	0.000	0.000	0.000
170	0.003	0.003	0.003
180	0.036	0.336	0.625
185	0.036	0.327	0.631
200	0.036	0.301	0.581
250	0.035	0.242	0.466
280	0.035	0.218	0.417
300	0.034	0.205	0.390
350	0.034	0.180	0.338
400	0.033	0.161	0.299
420	0.033	0.155	0.286
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS100B15
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]
0.00	0.036	0.035	0.034
1.00	0.111	0.080	0.062
2.00	0.195	0.143	0.108
3.00	0.276	0.200	0.149
4.00	0.359	0.258	0.189
5.00	0.443	0.318	0.230
6.00	0.528	0.378	0.271
6.70	0.587	0.420	0.301
7.37	0.645	0.461	0.330
--	-	-	-
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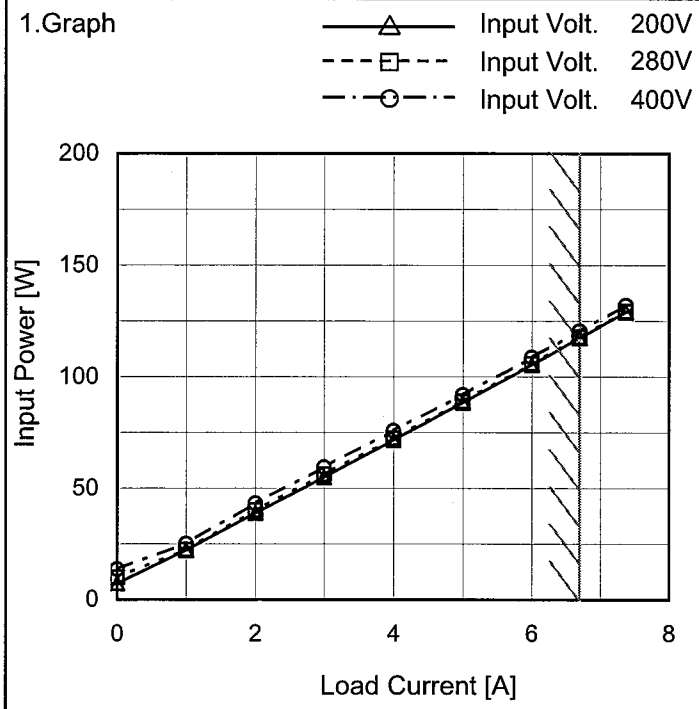
Model	SNDHS100B15
Item	Input Power (by Load Current)
Object	————————

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]
0.00	7.3	9.9	13.7
1.00	22.3	22.4	25.1
2.00	39.0	40.1	43.3
3.00	55.1	56.2	59.5
4.00	71.7	72.4	75.8
5.00	88.5	89.0	92.0
6.00	105.5	105.9	108.7
6.70	117.5	117.8	120.6
7.37	129.0	129.3	132.1
--	-	-	-
--	-	-	-

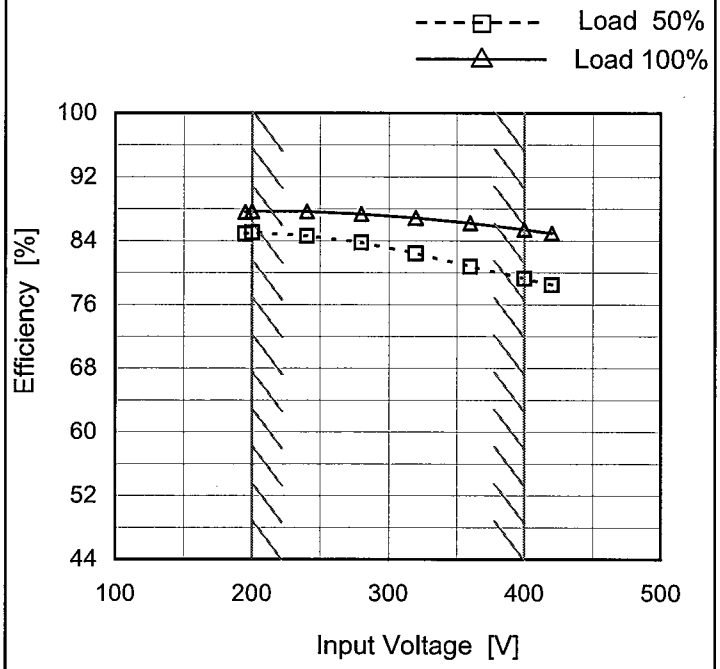
BC-10588

COSEL

Model	SNDHS100B15
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	84.9	87.6
200	85.0	87.7
240	84.6	87.7
280	83.8	87.4
320	82.4	86.9
360	80.8	86.2
400	79.3	85.4
420	78.5	84.9
--	-	-

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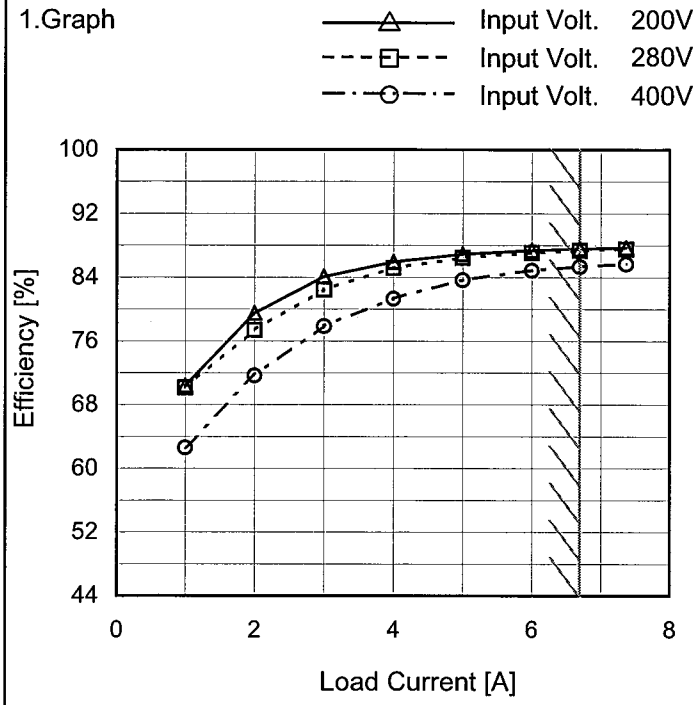
Model	SNDHS100B15
Item	Efficiency (by Load Current)
Object	————————

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]
0.00	-	-	-
1.00	70.4	70.1	62.6
2.00	79.5	77.4	71.7
3.00	84.1	82.5	77.9
4.00	86.0	85.2	81.3
5.00	86.9	86.5	83.6
6.00	87.4	87.1	84.9
6.70	87.6	87.4	85.4
7.37	87.7	87.5	85.7
--	-	-	-
--	-	-	-

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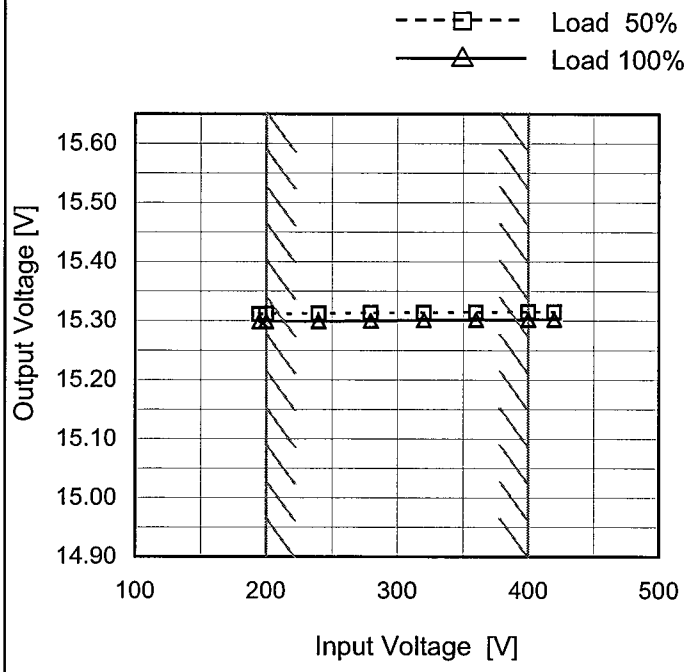
Model	SNDHS100B15
Item	Line Regulation
Object	+15V6.7A

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	15.311	15.299
200	15.312	15.299
240	15.312	15.299
280	15.313	15.301
320	15.314	15.301
360	15.314	15.302
400	15.315	15.302
420	15.315	15.302
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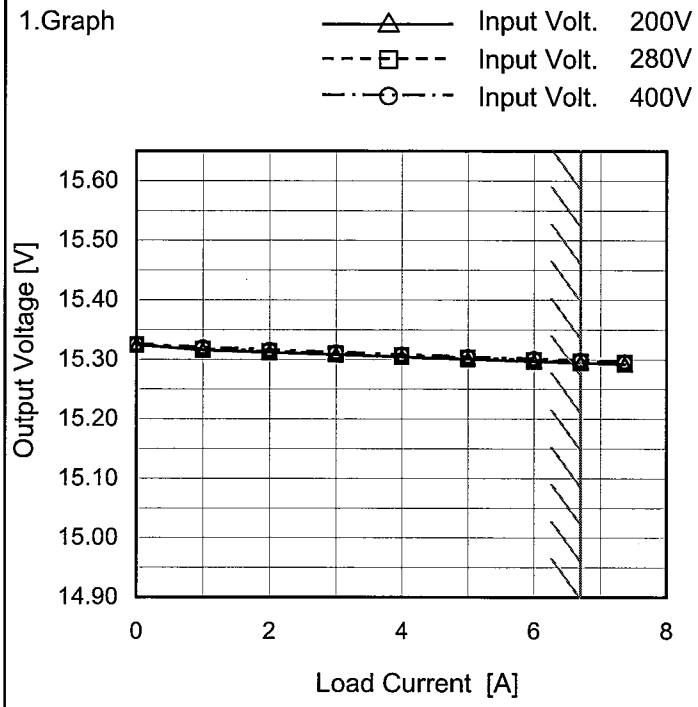
COSEL

Model	SNDHS100B15
Item	Load Regulation
Object	+15V6.7A

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]
0.00	15.325	15.325	15.326
1.00	15.316	15.318	15.320
2.00	15.312	15.314	15.316
3.00	15.308	15.310	15.312
4.00	15.304	15.307	15.309
5.00	15.301	15.303	15.305
6.00	15.297	15.299	15.301
6.70	15.295	15.297	15.299
7.37	15.292	15.295	15.296
--	-	-	-
--	-	-	-

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COSEL

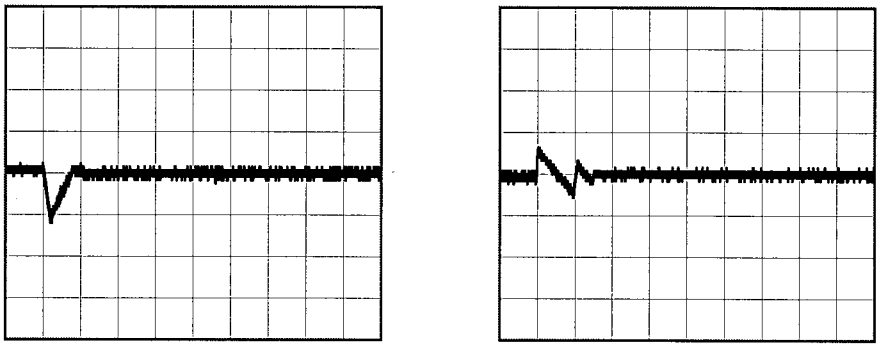
Model	SNDHS100B15
Item	Dynamic Load Response
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 280 V
Cycle 1000 ms

Load Current
6.7A/50 μ s

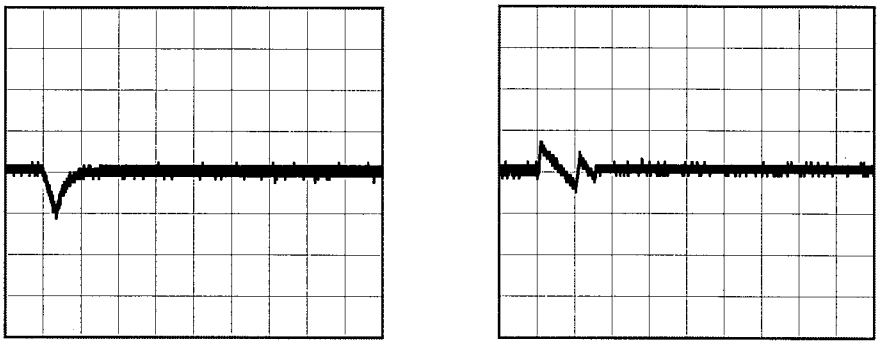
Min. Load (0A) ⟷
Load 100% (6.7A)



0.5 V/div

1ms/div 20ms/div

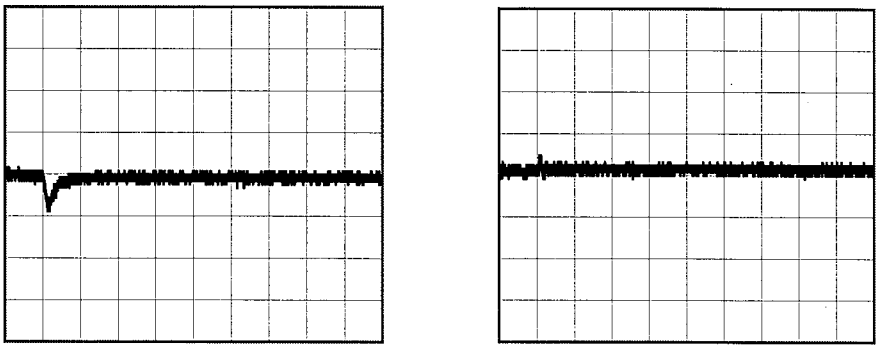
Min. Load (0A) ⟷
Load 50% (3.35A)



0.5 V/div

1ms/div 20ms/div

Load 10% (0.67A) ⟷
Load 100% (6.7A)



0.5 V/div

1ms/div 20ms/div

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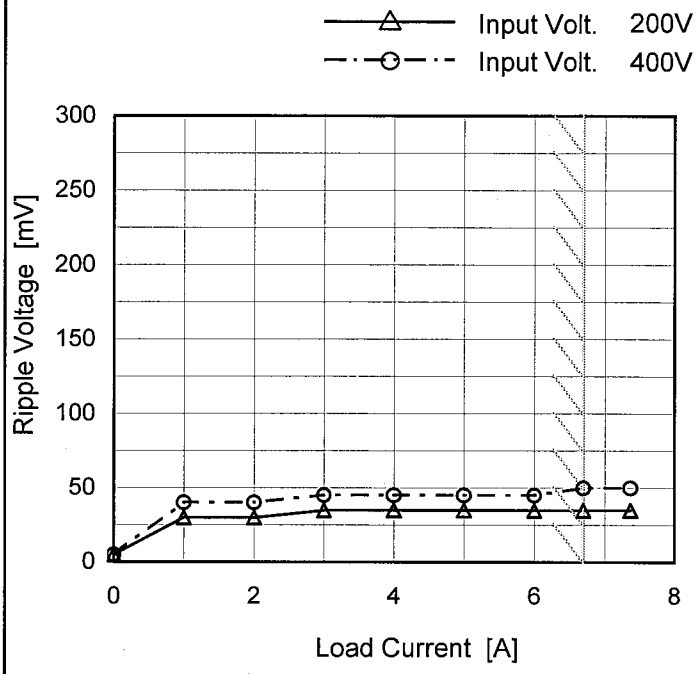
Model	SNDHS100B15
Item	Ripple Voltage (by Load Current)
Object	+15V6.7A

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.

Ripple [mVp-p]

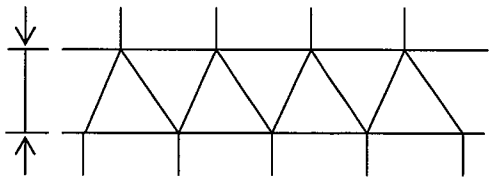


Fig.Complex Ripple Wave Form

2.Values

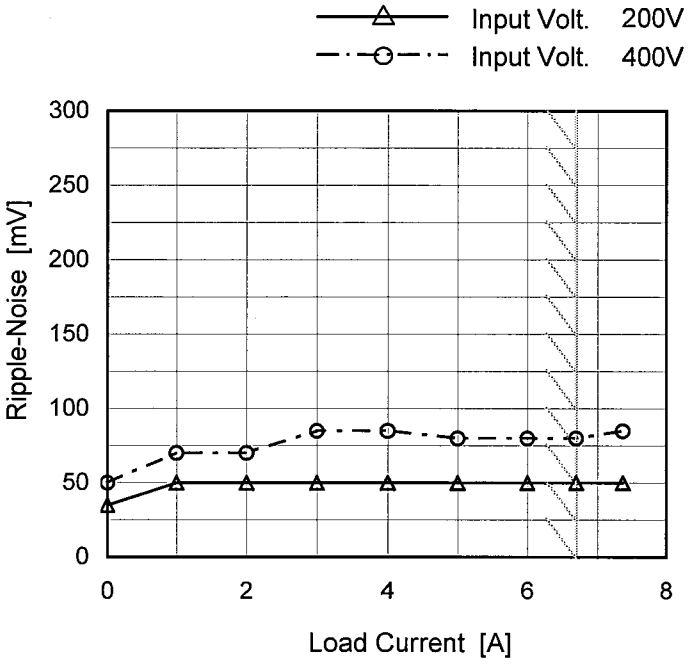
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0.00	5	5
1.00	30	40
2.00	30	40
3.00	35	45
4.00	35	45
5.00	35	45
6.00	35	45
6.70	35	50
7.37	35	50
--	-	-
--	-	-

COSEL

Model	SNDHS100B15
Item	Ripple-Noise
Object	+15V6.7A

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.

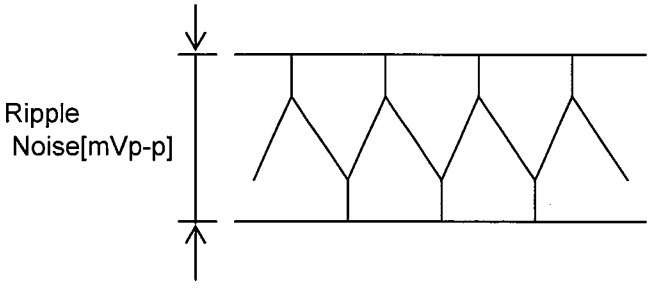


Fig.Complex Ripple Noise Wave Form

2.Values

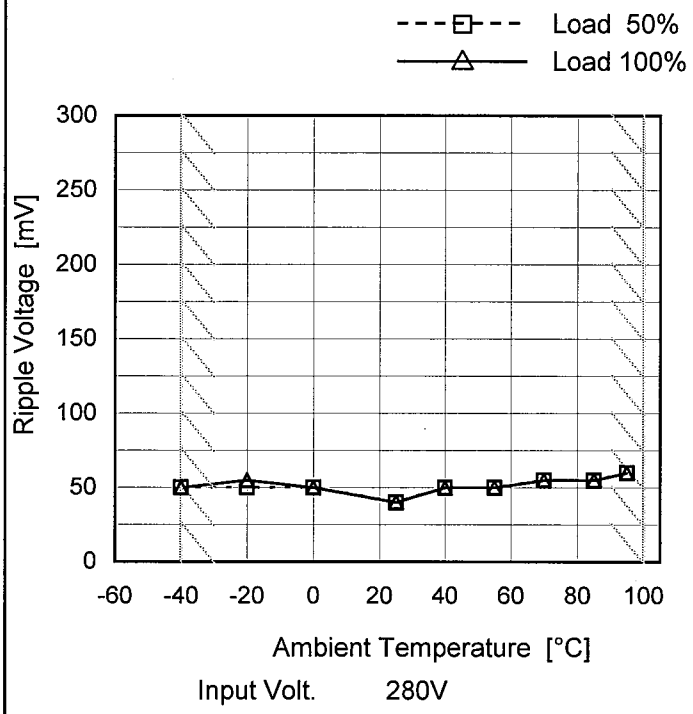
Load Current [A]	Ripple-Noise [mV] Input Volt. 200 [V]	Ripple-Noise [mV] Input Volt. 400 [V]
0.00	35	50
1.00	50	70
2.00	50	70
3.00	50	85
4.00	50	85
5.00	50	80
6.00	50	80
6.70	50	80
7.37	50	85
--	-	-
--	-	-

COSEL

Model	SNDHS100B15
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V6.7A

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.

2.Values

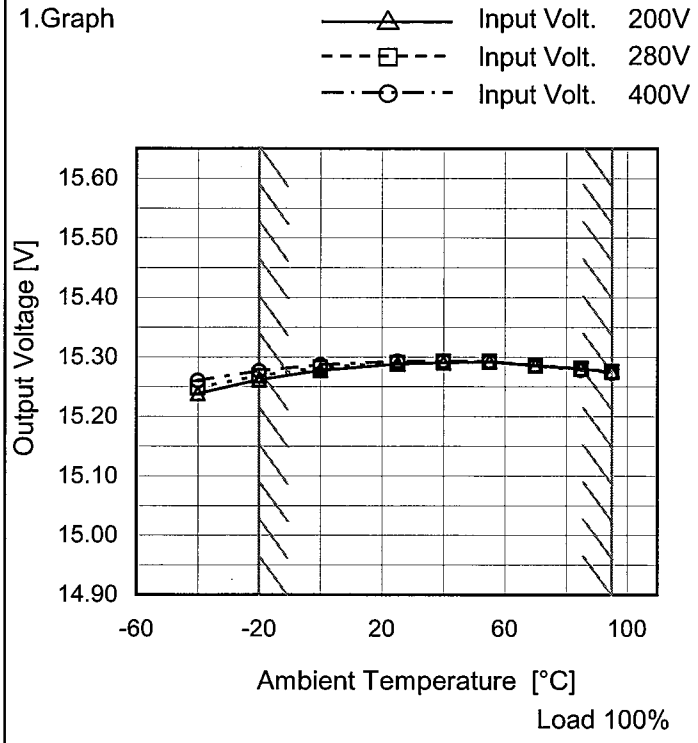
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	50	50
-20	50	55
0	50	50
25	40	40
40	50	50
55	50	50
70	55	55
85	55	55
95	60	60
--	-	-
--	-	-

COSEL

Model	SNDHS100B15
Item	Ambient Temperature Drift
Object	+15V6.7A

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	15.239	15.249	15.260
-20	15.262	15.268	15.277
0	15.278	15.282	15.287
25	15.289	15.290	15.293
40	15.291	15.292	15.293
55	15.292	15.293	15.293
70	15.286	15.286	15.285
85	15.280	15.280	15.278
95	15.275	15.275	15.273
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS100B15	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V6.7A	

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 - 6.7A

* 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

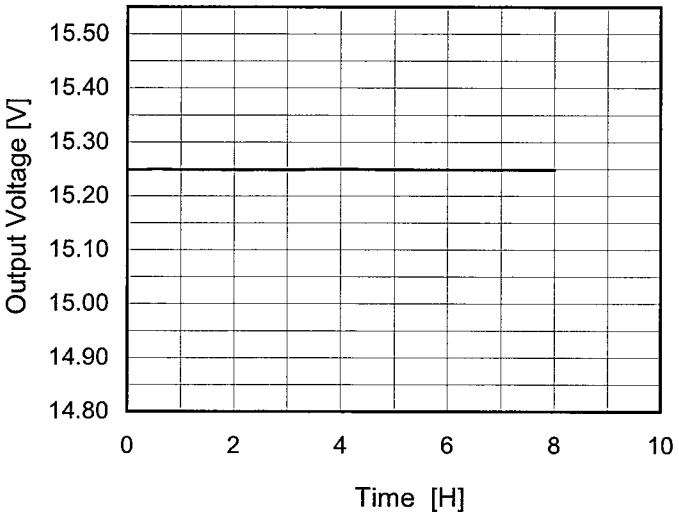
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	400	0	15.326	±32	±0.2
Minimum Voltage	-20	200	6.7	15.262		

COSEL

Model	SNDHS100B15
Item	Time Lapse Drift
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 280V
Load 100%

2.Values

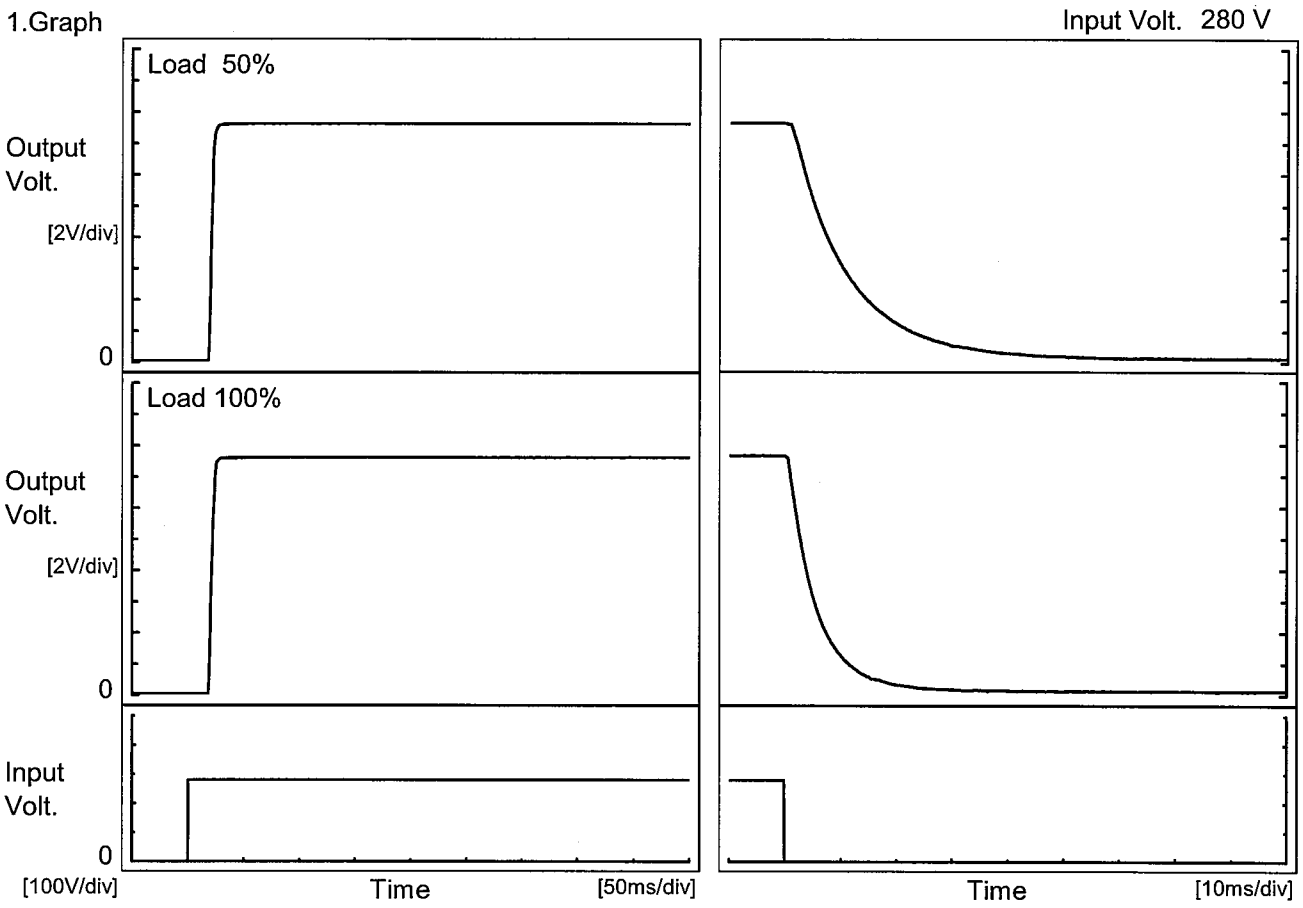
Time since start [H]	Output Voltage [V]
0.0	15.249
0.5	15.250
1.0	15.249
2.0	15.249
3.0	15.249
4.0	15.250
5.0	15.249
6.0	15.249
7.0	15.249
8.0	15.249

COSEL

Model	SNDHS100B15
Item	Rise and Fall Time
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

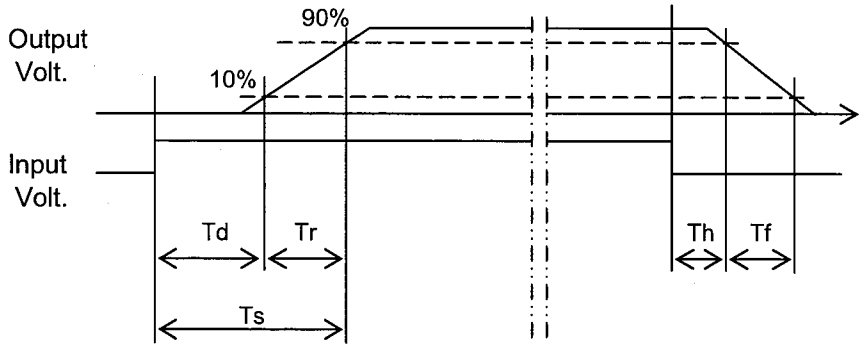
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	19.0	3.8	22.8	2.4	23.0
100 %	19.3	5.0	24.3	1.2	11.9



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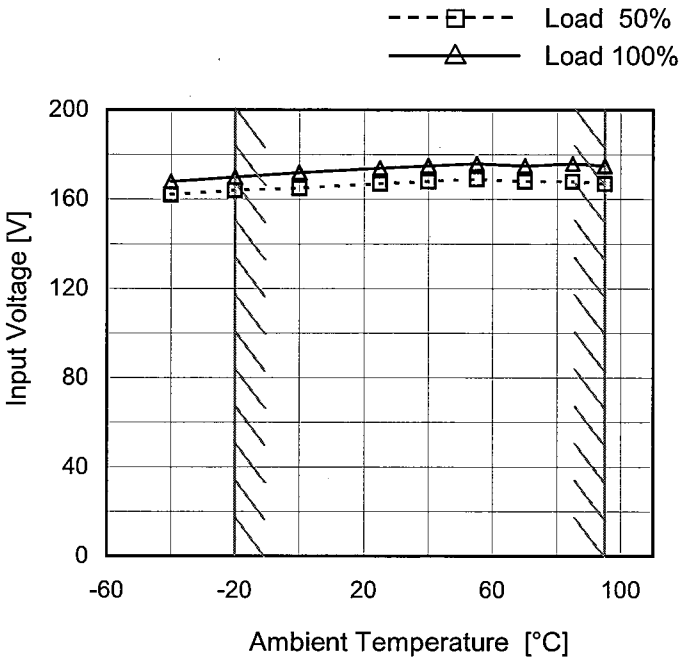
Model	SNDHS100B15
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V6.7A

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	162	168
-20	164	170
0	165	172
25	167	174
40	168	175
55	169	176
70	168	175
85	168	176
95	167	175
--	-	-
--	-	-

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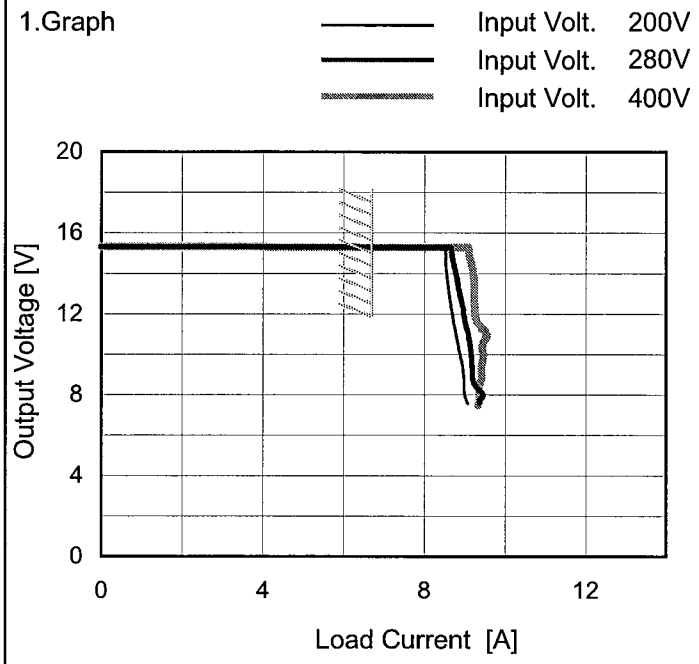
Model	SNDHS100B15
Item	Overcurrent Protection
Object	+15V6.7A

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 7.5V to 0V.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
14.3	8.55	8.75	9.19
13.5	8.59	8.83	9.24
12.0	8.70	8.97	9.25
10.5	8.83	9.13	9.45
9.0	8.97	9.19	9.42
7.5	9.08	9.37	9.34
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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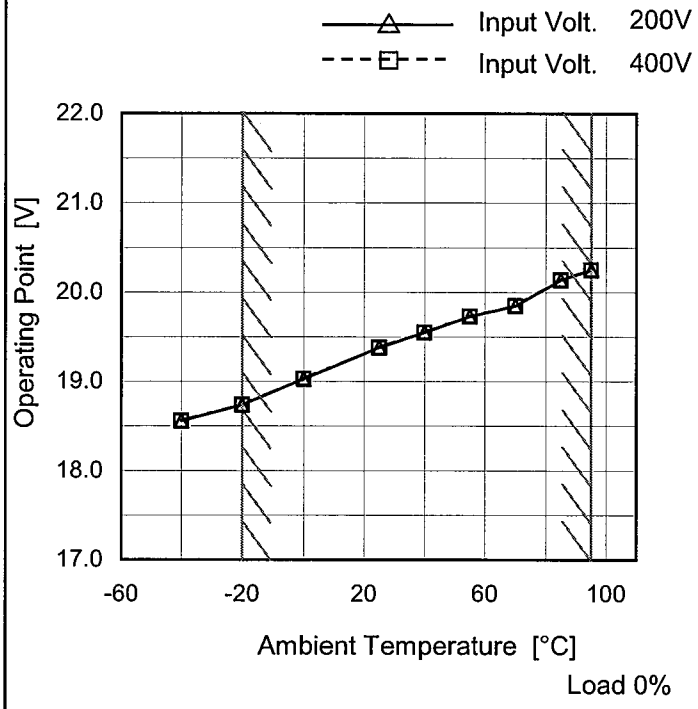
Model	SNDHS100B15
Item	Overvoltage Protection
Object	+15V6.7A

Testing Circuitry Figure A

1.Graph



Load 0%

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	18.56	18.56
-20	18.74	18.74
0	19.03	19.03
25	19.38	19.38
40	19.55	19.55
55	19.73	19.73
70	19.85	19.85
85	20.14	20.14
95	20.25	20.25
--	-	-
--	-	-

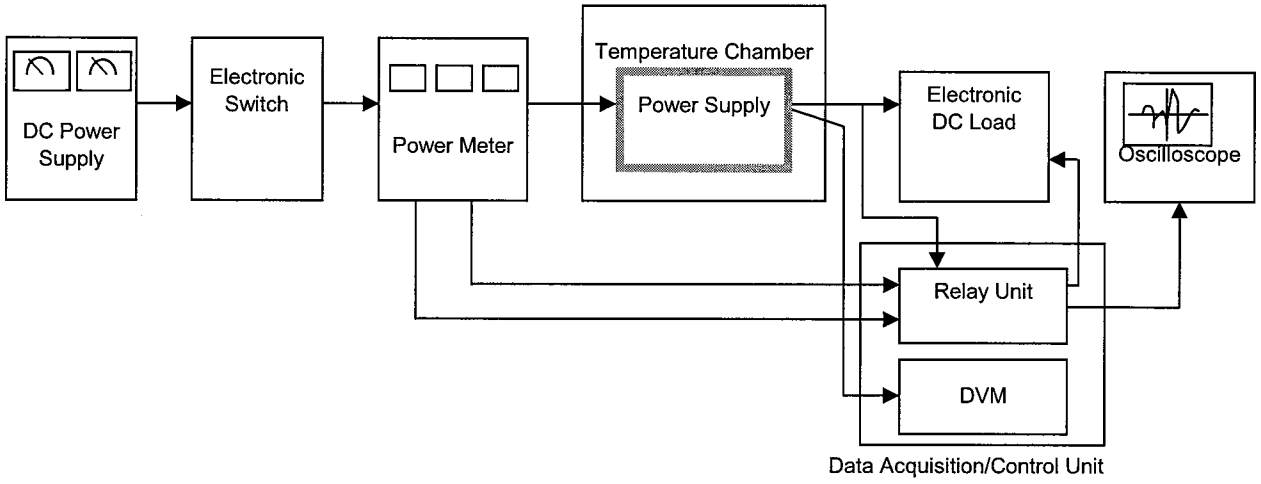


Figure A

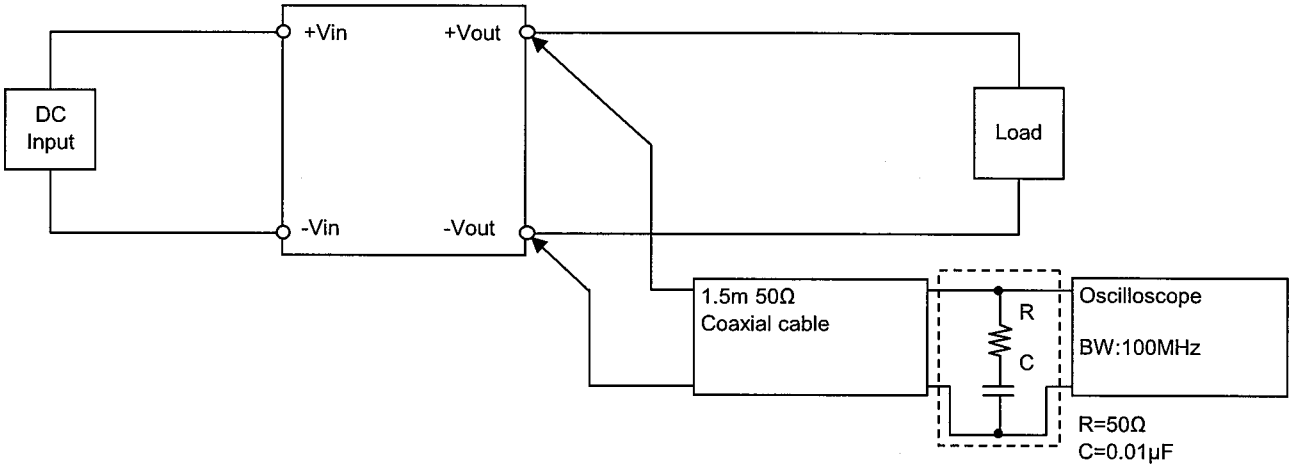


Figure B（Ripple and Ripple noise Characteristic）