COSEL

参考資料

TEST DATA OF SNDHS100A15

Regulated DC Power Supply
April 9, 2012

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COSEL CO.,LTD.

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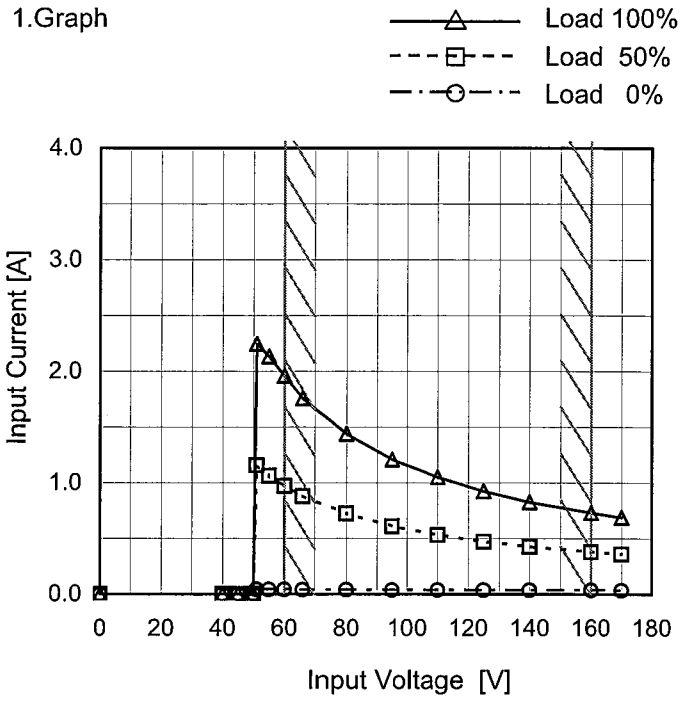
Item	Input Current (by Input Voltage)
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

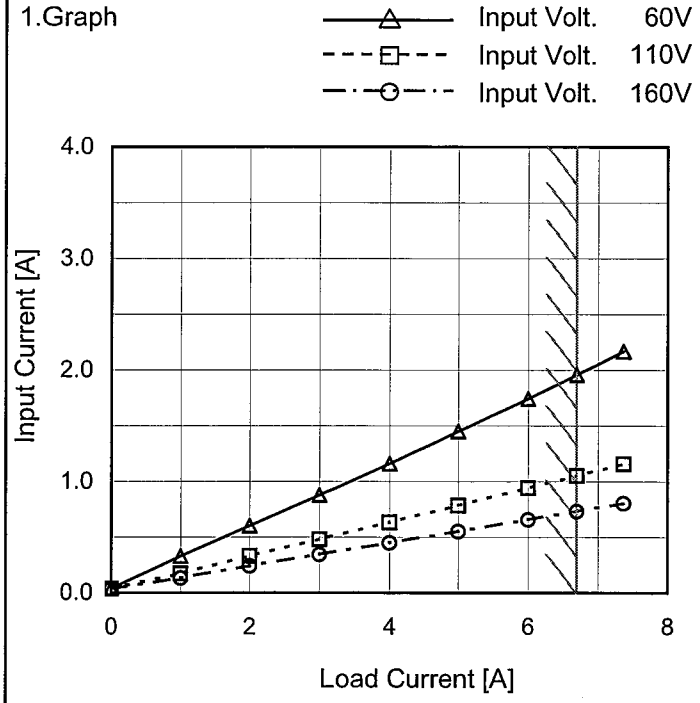
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
40	0.000	0.000	0.000
45	0.000	0.000	0.000
50	0.002	0.002	0.002
51	0.044	1.158	2.246
55	0.043	1.063	2.136
60	0.042	0.971	1.960
66	0.041	0.880	1.760
80	0.039	0.724	1.441
95	0.038	0.610	1.209
110	0.037	0.531	1.053
125	0.037	0.472	0.925
140	0.036	0.426	0.828
160	0.036	0.379	0.733
170	0.035	0.360	0.690
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS100A15
Item	Input Current (by Load Current)
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]	Input Current [A]		
	Input Volt. 60[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.00	0.042	0.037	0.036
1.00	0.332	0.173	0.132
2.00	0.603	0.332	0.242
3.00	0.879	0.480	0.345
4.00	1.160	0.631	0.448
5.00	1.450	0.784	0.553
6.00	1.745	0.942	0.658
6.70	1.960	1.053	0.733
7.37	2.170	1.159	0.804
--	-	-	-
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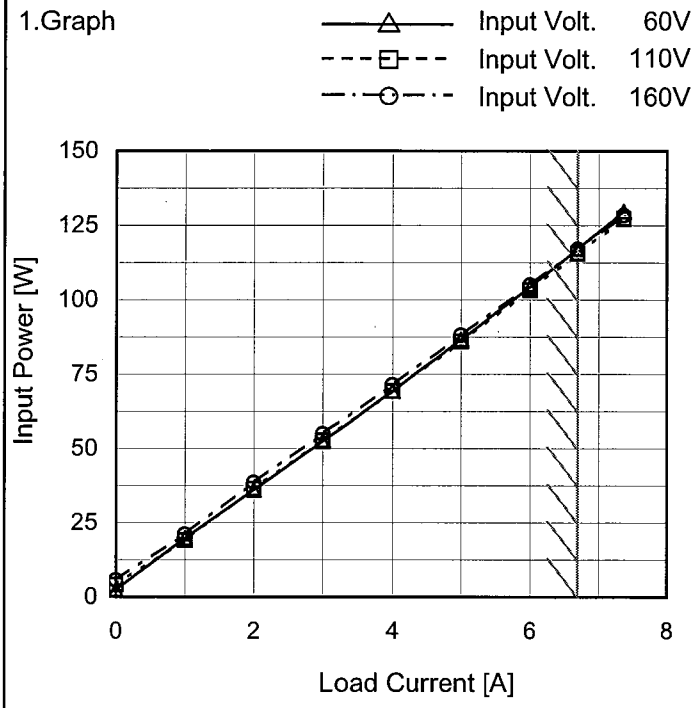
COSEL

Model	SNDHS100A15
Item	Input Power (by Load Current)
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

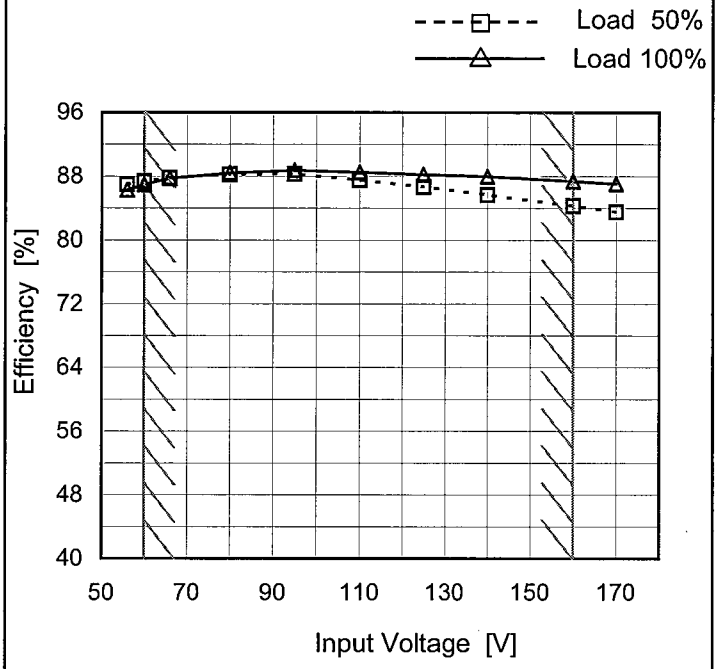
Load Current [A]	Input Power [W]		
	Input Volt. 60[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.00	2.5	4.1	5.7
1.00	19.9	19.1	21.1
2.00	36.1	36.4	38.6
3.00	52.5	52.7	55.0
4.00	69.4	69.3	71.5
5.00	86.7	86.0	88.2
6.00	104.4	103.3	105.1
6.70	117.2	115.6	117.1
7.37	129.7	127.3	128.5
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS100A15
Item	Efficiency (by Input Voltage)
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]	Efficiency [%]	
	Load 50%	Load 100%
56	87.0	86.3
60	87.4	87.0
66	87.8	87.8
80	88.3	88.4
95	88.3	88.7
110	87.5	88.5
125	86.7	88.2
140	85.7	88.0
160	84.3	87.4
170	83.5	87.1

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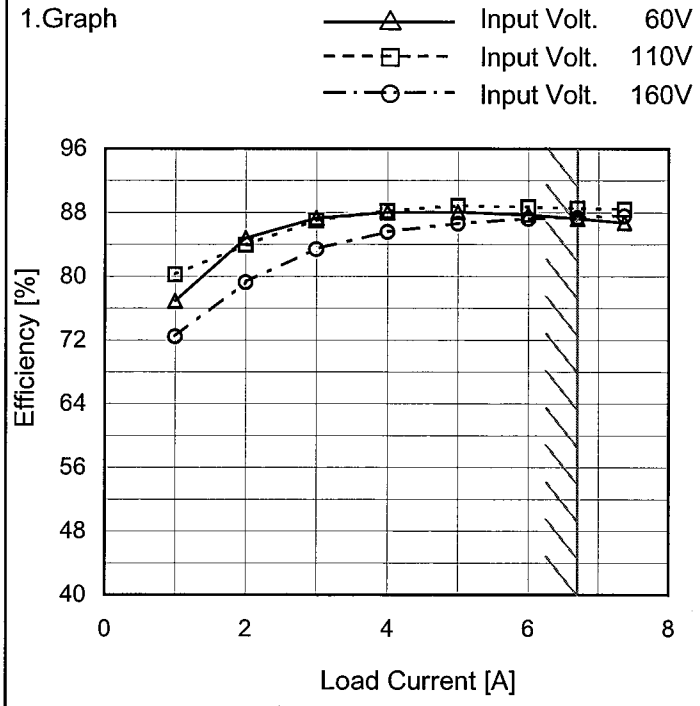
Model	SNDHS100A15
Item	Efficiency (by Load Current)
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

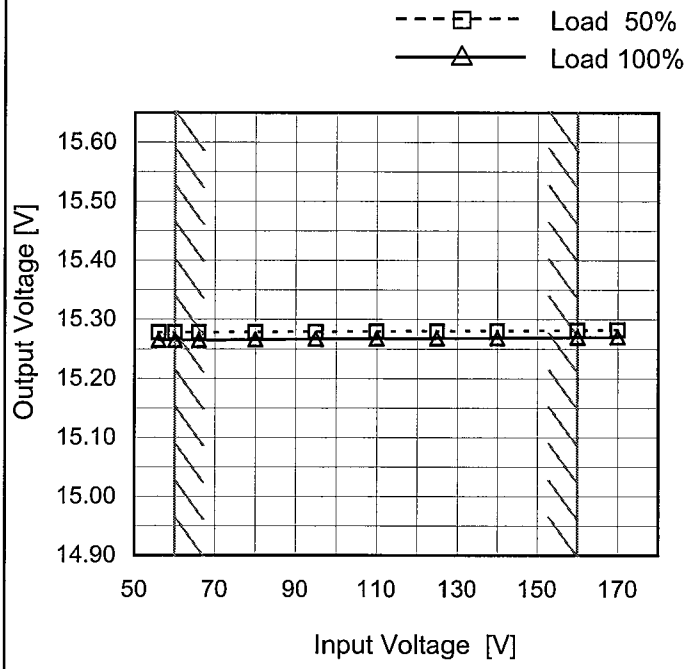
Load Current [A]	Efficiency [%]		
	Input Volt. 60[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.00	-	-	-
1.00	76.9	80.2	72.5
2.00	84.8	83.9	79.3
3.00	87.3	87.0	83.4
4.00	88.0	88.2	85.6
5.00	88.1	88.8	86.6
6.00	87.7	88.7	87.2
6.70	87.3	88.5	87.4
7.37	86.8	88.4	87.6
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS100A15
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

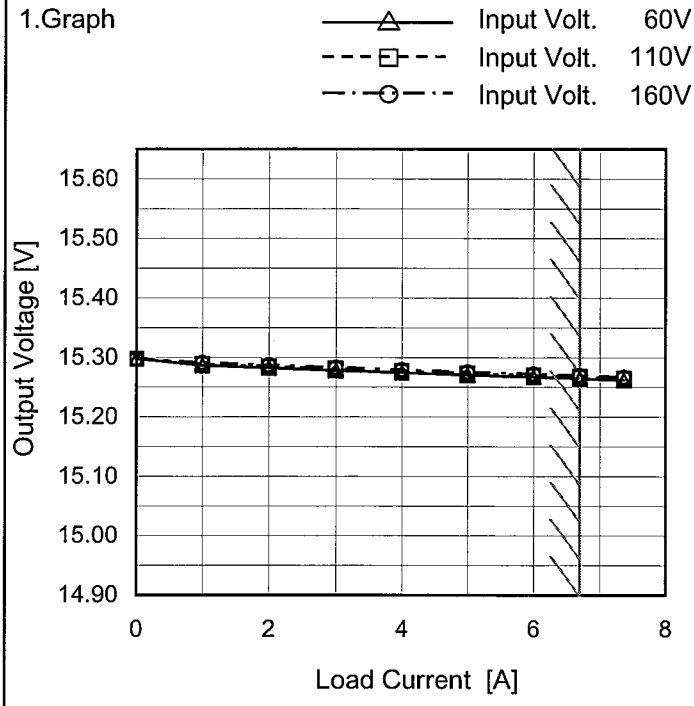
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
56	15.278	15.265
60	15.278	15.265
66	15.278	15.265
80	15.278	15.266
95	15.279	15.267
110	15.280	15.268
125	15.280	15.268
140	15.281	15.269
160	15.282	15.270
170	15.282	15.270

COSEL

Model	SNDHS100A15
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. 60[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.00	15.298	15.297	15.298
1.00	15.287	15.289	15.291
2.00	15.283	15.285	15.287
3.00	15.279	15.281	15.283
4.00	15.275	15.277	15.280
5.00	15.271	15.274	15.276
6.00	15.267	15.270	15.272
6.70	15.265	15.267	15.270
7.37	15.262	15.265	15.267
--	-	-	-
--	-	-	-

COSEL

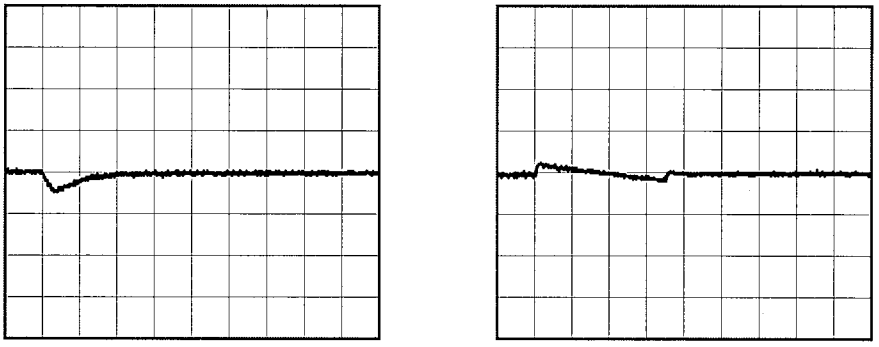
Model	SNDHS100A15
Item	Dynamic Load Response
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

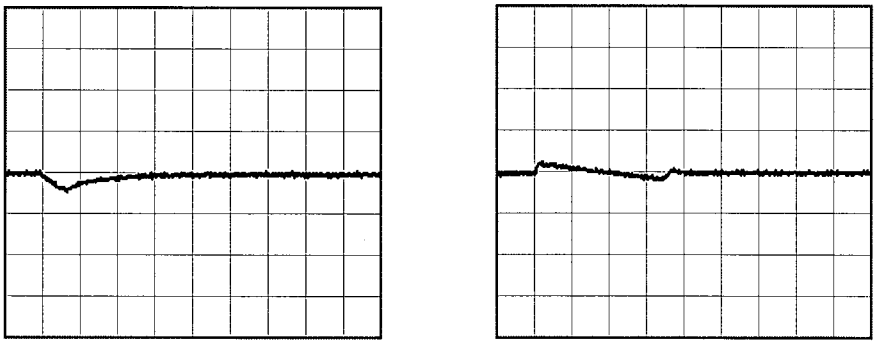
Input Volt. 110 V
Cycle 1000 ms

Load Current
6.7A/50 μ s

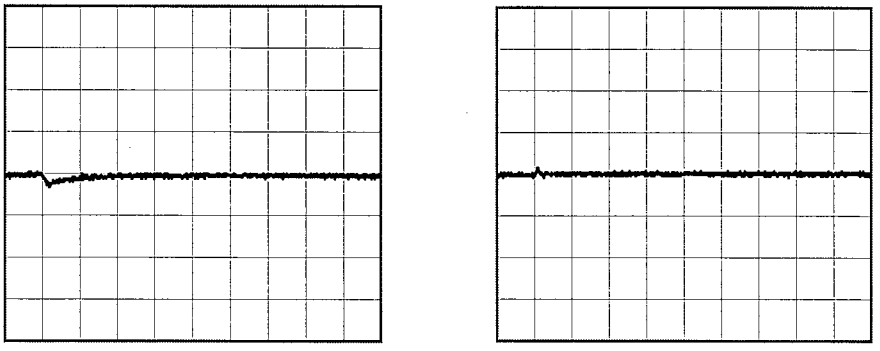
Min. Load (0A) ⟷
Load 100% (6.7A)



Min. Load (0A) ⟷
Load 50% (3.35A)



Load 10% (0.67A) ⟷
Load 100% (6.7A)

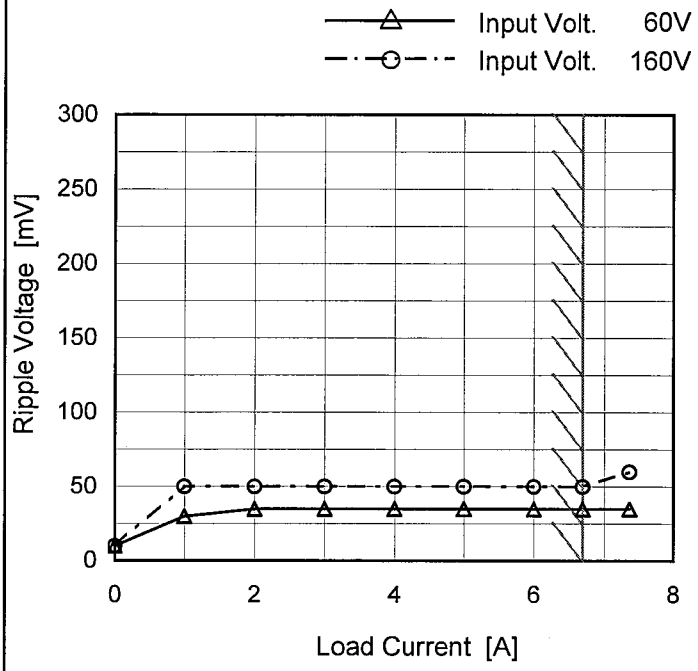


COSEL

Model	SNDHS100A15
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]

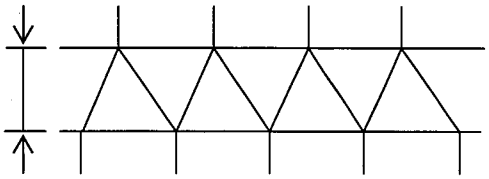


Fig.Complex Ripple Wave Form

2.Values

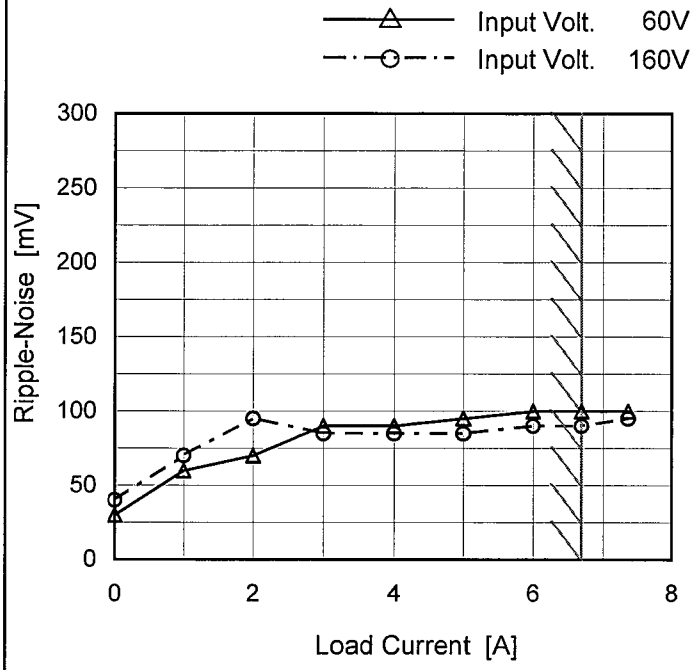
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 60 [V]	Input Volt. 160 [V]
0.00	10	10
1.00	30	50
2.00	35	50
3.00	35	50
4.00	35	50
5.00	35	50
6.00	35	50
6.70	35	50
7.37	35	60
--	-	-
--	-	-

COSEL

Model	SNDHS100A15
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.

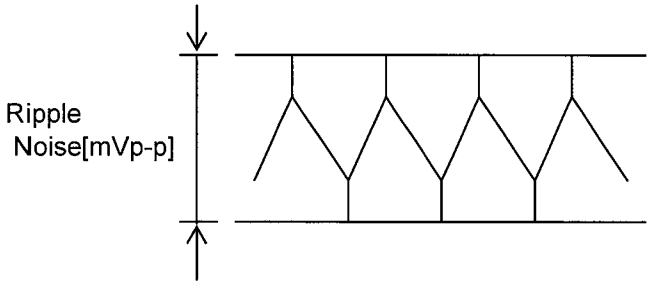


Fig.Complex Ripple Noise Wave Form

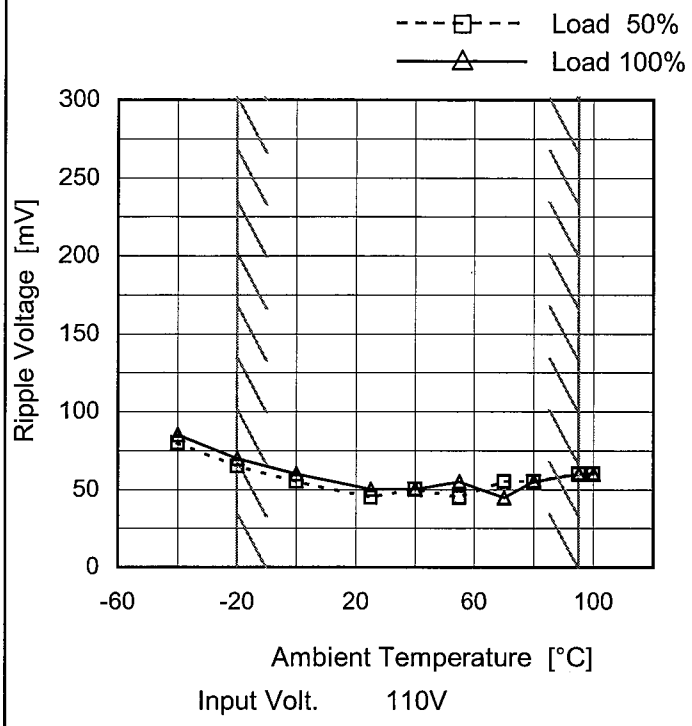
2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 60 [V]	Input Volt. 160 [V]
0.00	30	40
1.00	60	70
2.00	70	95
3.00	90	85
4.00	90	85
5.00	95	85
6.00	100	90
6.70	100	90
7.37	100	95
--	-	-
--	-	-

Model	SNDHS100A15
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V6.7A

Testing Circuitry Figure B

1.Graph



Input Volt. 110V

Measured by 100 MHz Oscilloscope.

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

Ripple [mVp-p]

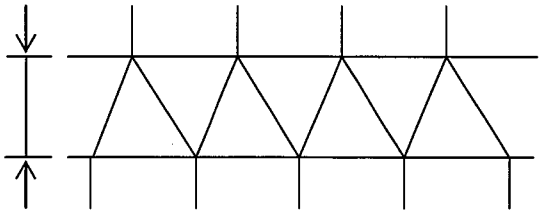


Fig.Complex Ripple Wave Form

2.Values

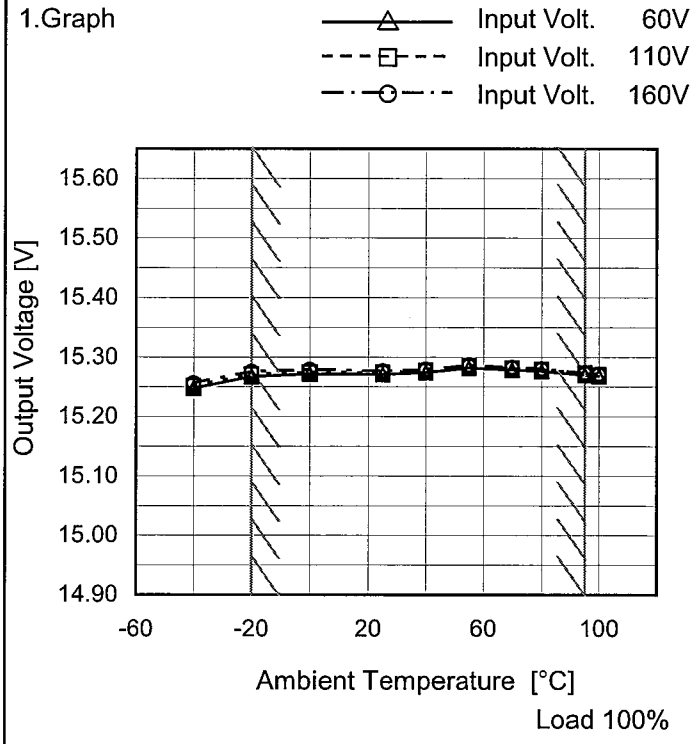
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	80	85
-20	65	70
0	55	60
25	45	50
40	50	50
55	45	55
70	55	45
80	55	55
95	60	60
100	60	60
--	-	-

COSEL

Model	SNDHS100A15
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. 60[V]	Input Volt. 110[V]	Input Volt. 160[V]
-40	15.248	15.252	15.256
-20	15.268	15.271	15.276
0	15.272	15.275	15.279
25	15.271	15.274	15.276
40	15.275	15.277	15.279
55	15.282	15.285	15.286
70	15.279	15.282	15.283
80	15.276	15.279	15.281
95	15.270	15.273	15.274
100	15.268	15.270	15.271
--	-	-	-

COSEL

Model	SNDHS100A15	
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 : 60 - 160V
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

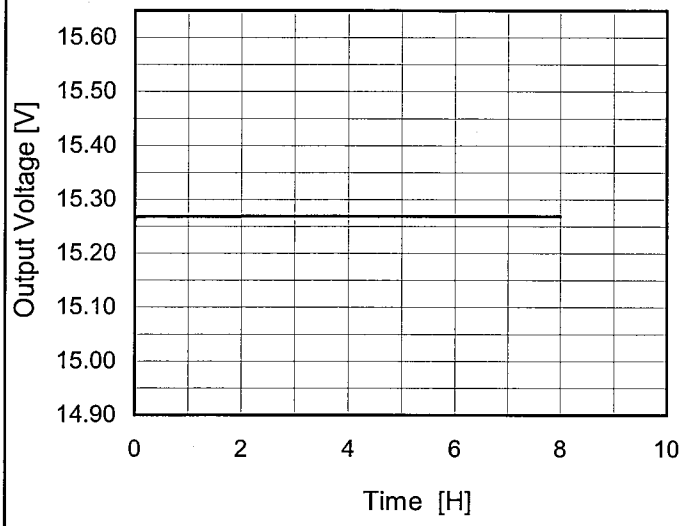
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	60	0	15.318	±25	±0.2
Minimum Voltage	-20	60	6.7	15.268		

COSEL

Model	SNDHS100A15
Item	Time Lapse Drift
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 110V
Load 100%

2.Values

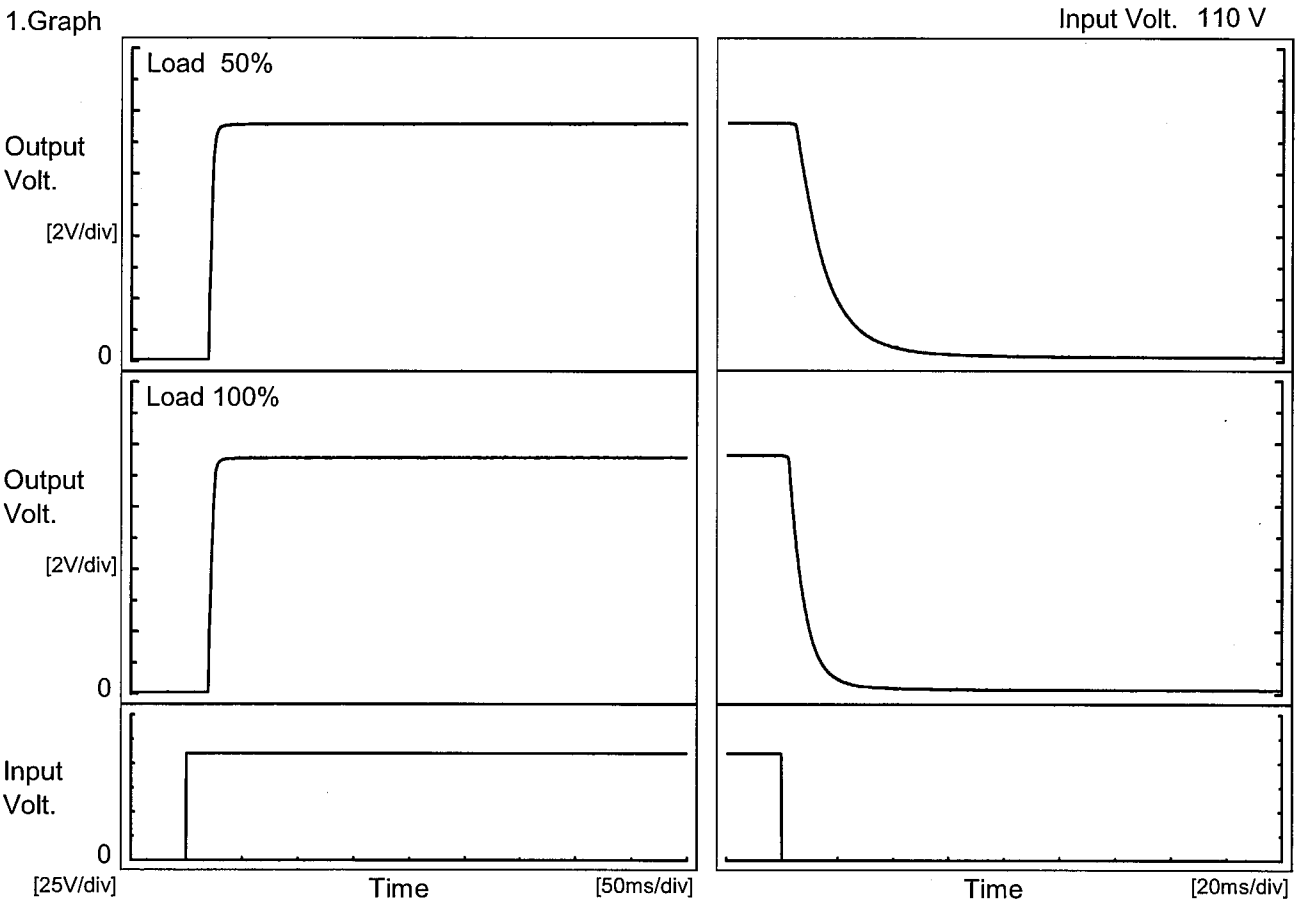
Time since start [H]	Output Voltage [V]
0.0	15.263
0.5	15.269
1.0	15.269
2.0	15.269
3.0	15.269
4.0	15.269
5.0	15.269
6.0	15.269
7.0	15.269
8.0	15.269

COSEL

Model	SNDHS100A15
Item	Rise and Fall Time
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

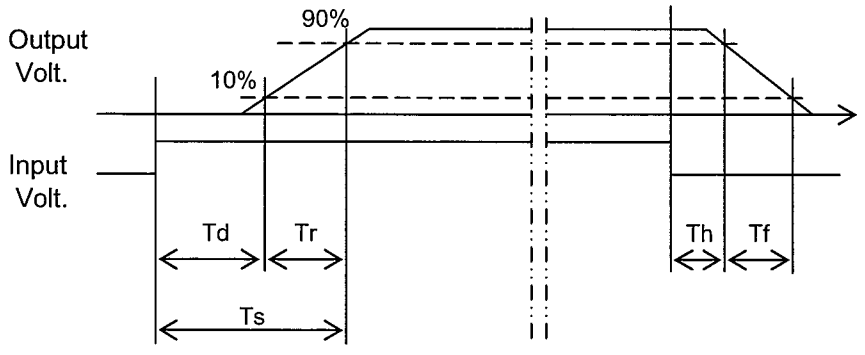
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	20.0	5.0	25.0	6.0	24.9
100 %	20.0	5.8	25.8	3.0	13.0

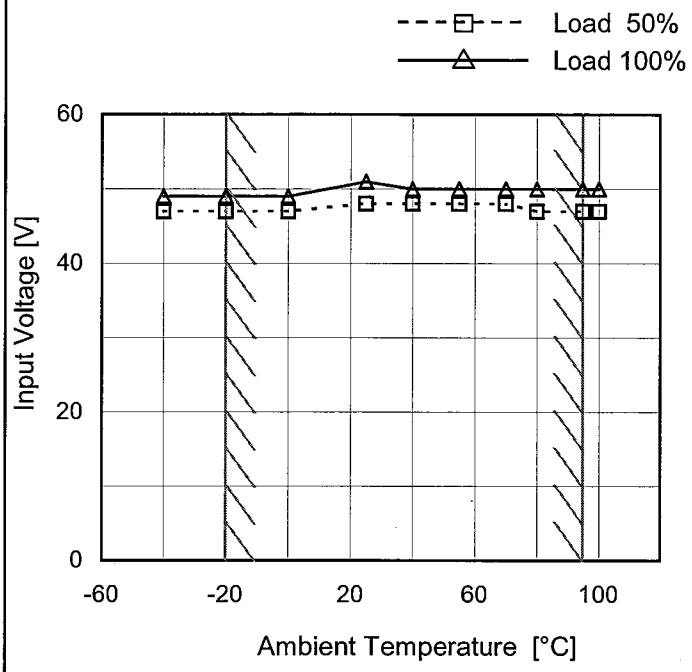


COSEL

Model	SNDHS100A15
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

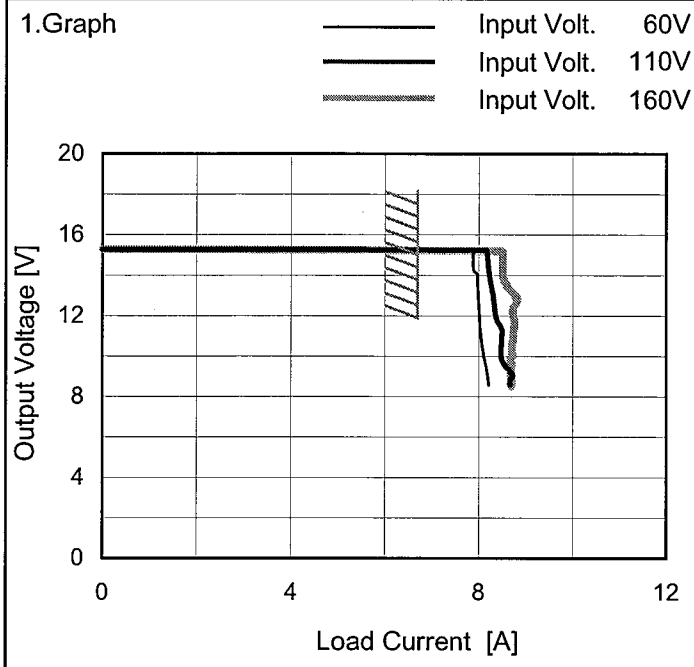
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	47	49
-20	47	49
0	47	49
25	48	51
40	48	50
55	48	50
70	48	50
80	47	50
95	47	50
100	47	50
--	-	-

COSEL

Model	SNDHS100A15
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 overcurrent protection is activated.

Intermittent operation occurs when the output voltage is from 8.5V to 0V.

2.Values

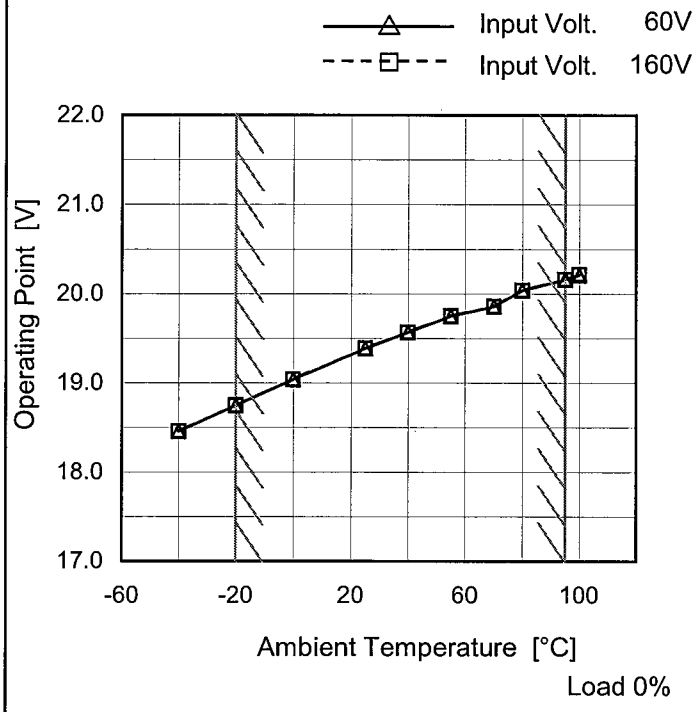
Output Voltage [V]	Load Current [A]		
	Input Volt. 60[V]	Input Volt. 110[V]	Input Volt. 160[V]
14.3	7.90	8.21	8.51
13.5	7.97	8.26	8.58
12.0	8.01	8.36	8.73
10.5	8.07	8.49	8.71
9.0	8.19	8.73	8.69
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS100A15
Item	Overvoltage Protection
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]	Operating Point [V]	
	Input Volt. 60[V]	Input Volt. 160[V]
-40	18.46	18.46
-20	18.75	18.75
0	19.04	19.04
25	19.39	19.39
40	19.57	19.57
55	19.75	19.75
70	19.86	19.86
80	20.04	20.04
95	20.16	20.16
100	20.21	20.22
--	-	-

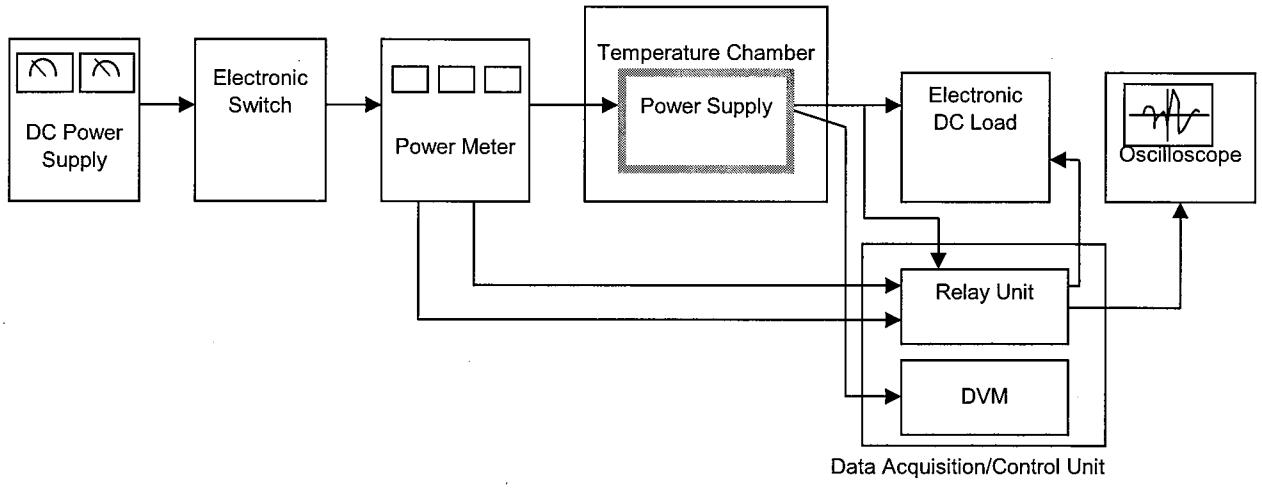


Figure A

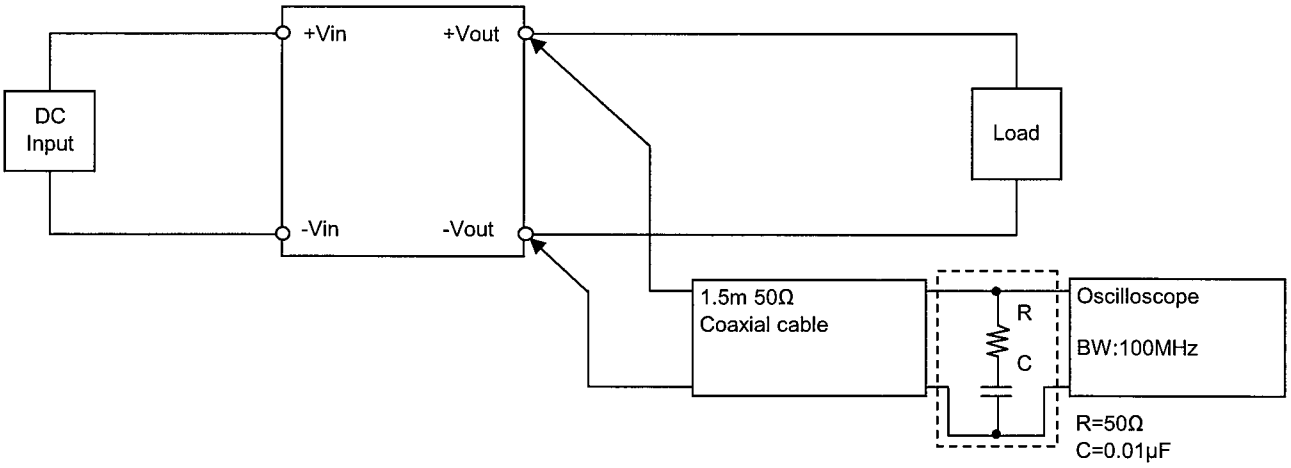


Figure B (Ripple and Ripple noise Characteristic)