COSEL

参考資料

TEST DATA OF DHS100B15

Regulated DC Power Supply
May 18, 2009

Approved by : Tatsuya Mano
Tatsuya Mano Design Manager

Prepared by : Shuuhei Sawada
Shuuhei Sawada Design Engineer

COSEL CO.,LTD.

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Object	———————

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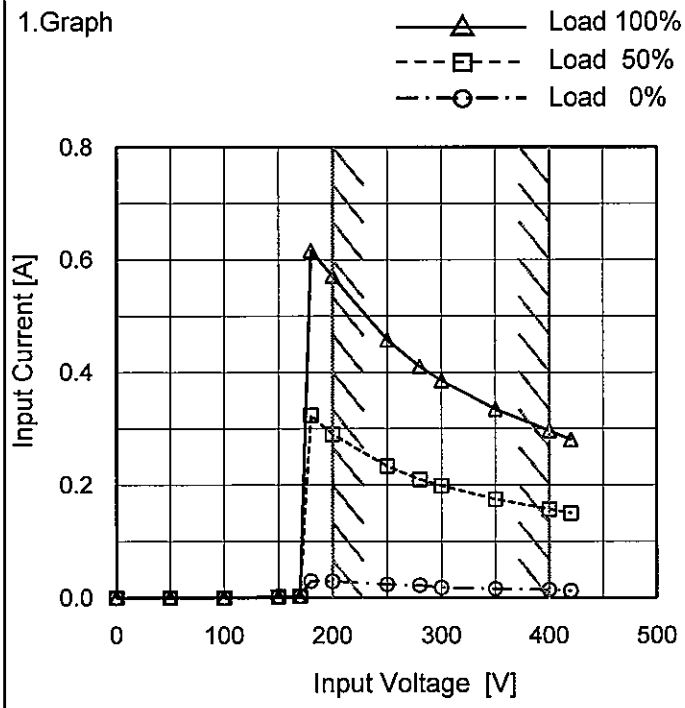

Note: Slanted line shows the range of the rated input voltage.

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	0.002	0.002	0.002
170	0.003	0.003	0.003
180	0.030	0.324	0.616
200	0.029	0.290	0.571
250	0.024	0.234	0.458
280	0.022	0.210	0.410
300	0.018	0.199	0.385
350	0.016	0.175	0.334
400	0.014	0.157	0.296
420	0.012	0.150	0.280
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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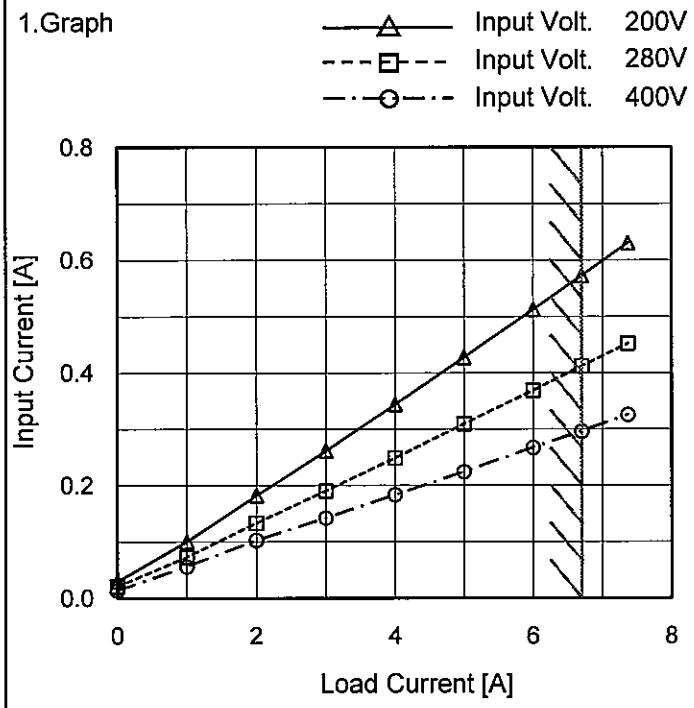
COSEL

Model	DHS100B15
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	0.029	0.021	0.014
1.00	0.100	0.073	0.056
2.00	0.182	0.133	0.103
3.00	0.261	0.190	0.142
4.00	0.344	0.249	0.183
5.00	0.427	0.309	0.224
6.00	0.512	0.368	0.267
6.70	0.572	0.412	0.296
7.37	0.630	0.452	0.326
--	-	-	-
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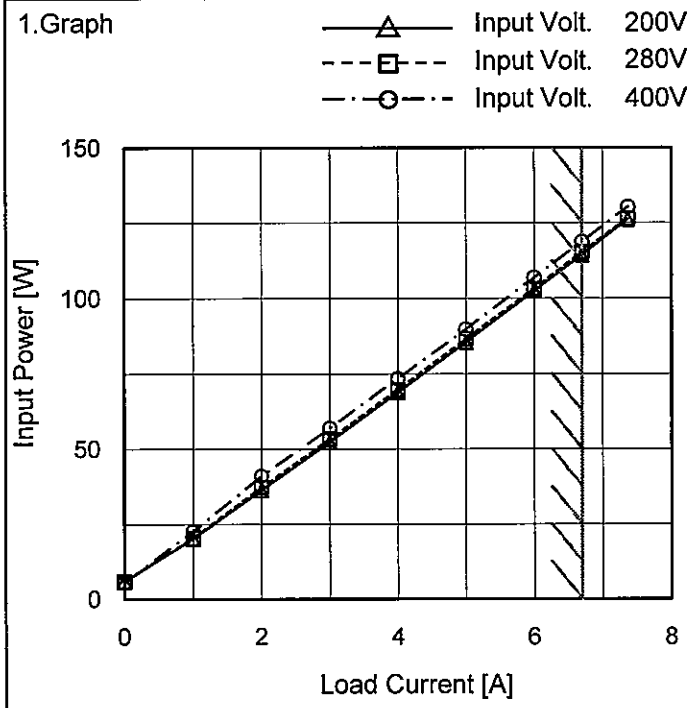
Model	DHS100B15
Item	Input Power (by Load Current)
Object	————

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	5.9	5.9	5.6
1.00	20.0	20.3	22.5
2.00	36.3	37.3	41.0
3.00	52.2	53.3	56.9
4.00	68.7	69.6	73.3
5.00	85.3	86.5	89.6
6.00	102.4	103.2	106.9
6.70	114.3	115.3	118.7
7.37	126.1	126.5	130.3
--	-	-	-
--	-	-	-

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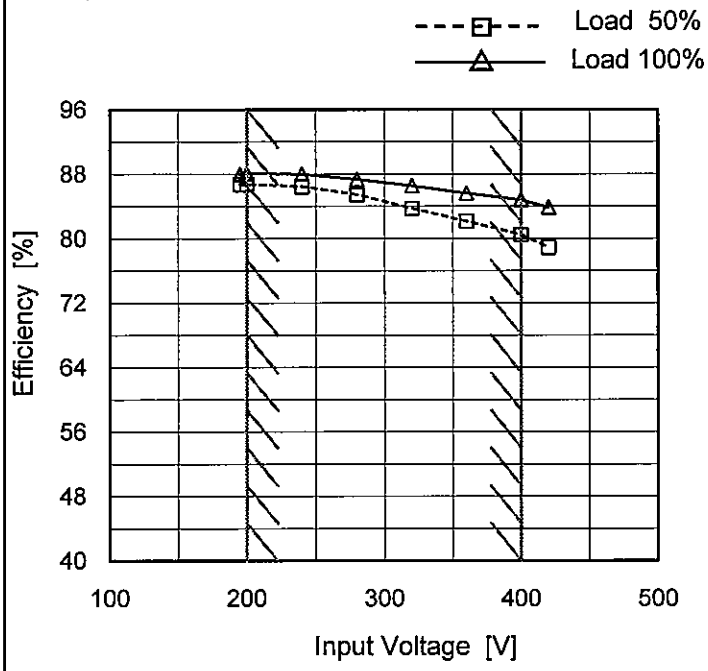
COSEL

Model	DHS100B15
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	86.7	87.9
200	86.7	88.1
240	86.5	88.0
280	85.5	87.3
320	83.7	86.5
360	82.2	85.6
400	80.5	84.8
420	78.9	83.8
--	-	-

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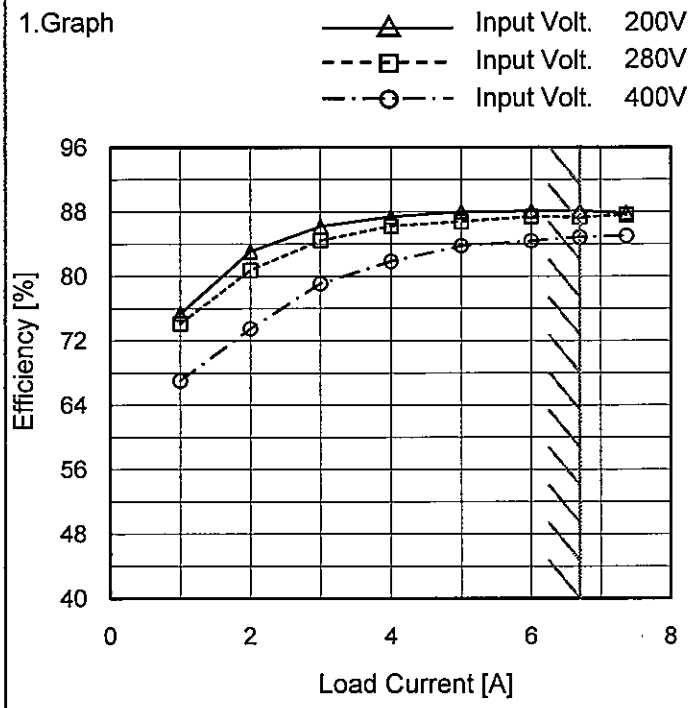
Model	DHS100B15
Item	Efficiency (by Load Current)
Object	———

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	75.3	74.1	67.0
2.00	83.1	80.8	73.5
3.00	86.2	84.4	79.1
4.00	87.4	86.2	81.8
5.00	88.0	86.8	83.8
6.00	88.0	87.4	84.3
6.70	88.1	87.3	84.8
7.37	87.8	87.6	85.0
--	-	-	-
--	-	-	-

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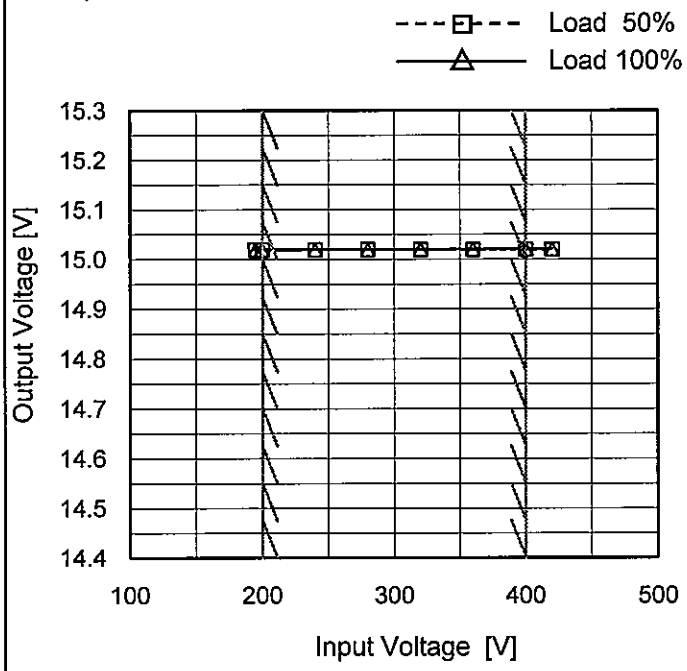
Model	DHS100B15
Item	Line Regulation
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

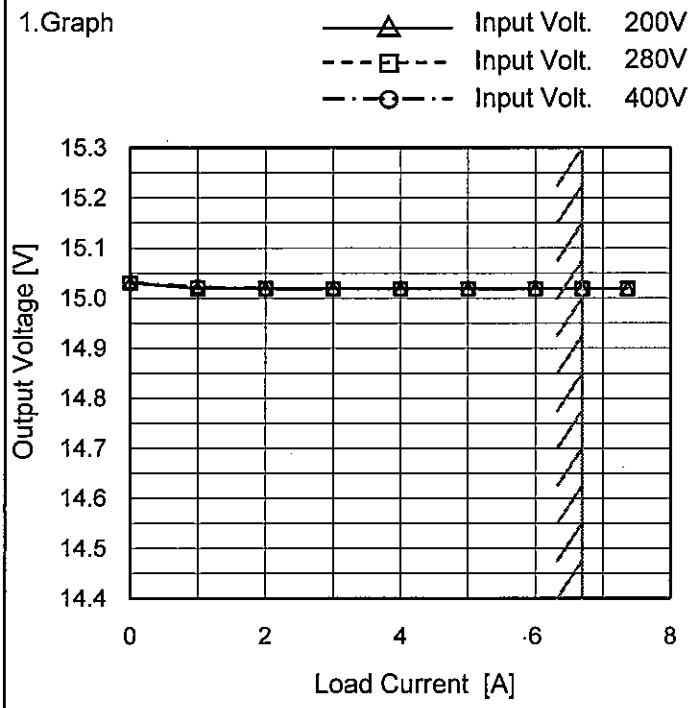
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
195	15.020	15.019
200	15.020	15.019
240	15.020	15.019
280	15.020	15.019
320	15.020	15.020
360	15.020	15.020
400	15.020	15.020
420	15.020	15.020
--	-	-

COSEL

Model	DHS100B15
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	15.030	15.030	15.032
1.00	15.019	15.021	15.023
2.00	15.018	15.019	15.020
3.00	15.018	15.019	15.020
4.00	15.019	15.019	15.020
5.00	15.018	15.019	15.019
6.00	15.019	15.019	15.019
6.70	15.019	15.019	15.020
7.37	15.019	15.019	15.019
--	-	-	-
--	-	-	-

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Model	DHS100B15
Item	Dynamic Load Response
Object	+15V6.7A

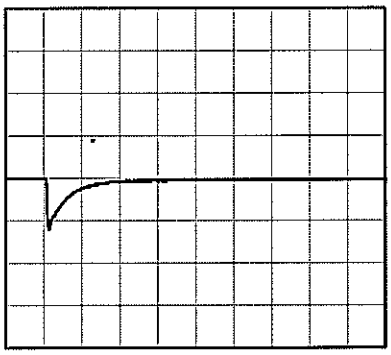
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 280 V
Cycle 1000 ms

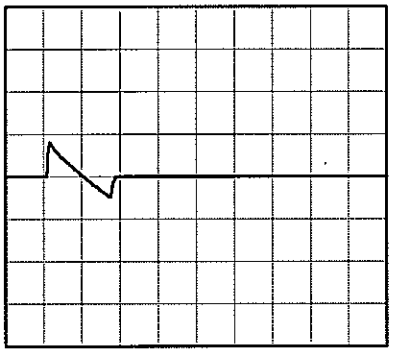
Load Current
6.7A / 20μs

Min. Load (0A) ⟷
Load 100% (6.7A)

500mV/div



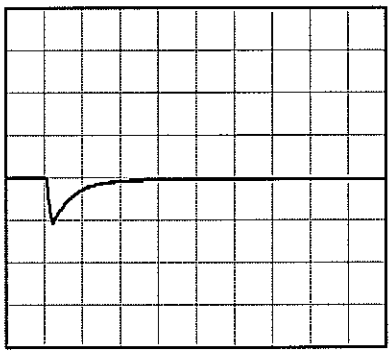
500 μs/div



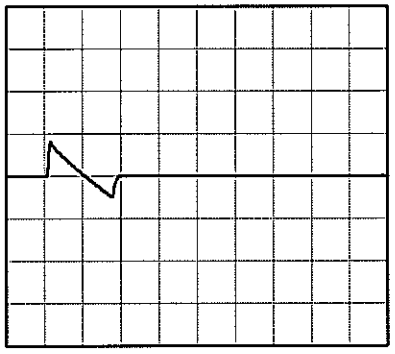
5 ms/div

Min. Load (0A) ⟷
Load 50% (3.35A)

500mV/div



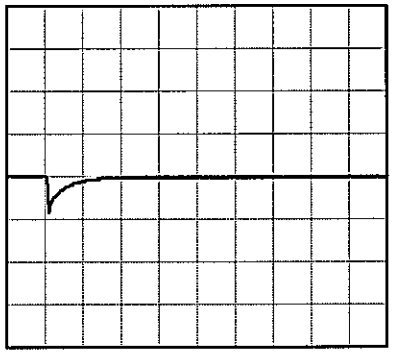
500 μs/div



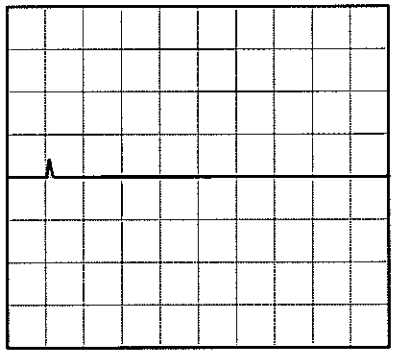
5 ms/div

Load 10% (0.67A) ⟷
Load 100% (6.7A)

500mV/div



500 μs/div



5 ms/div

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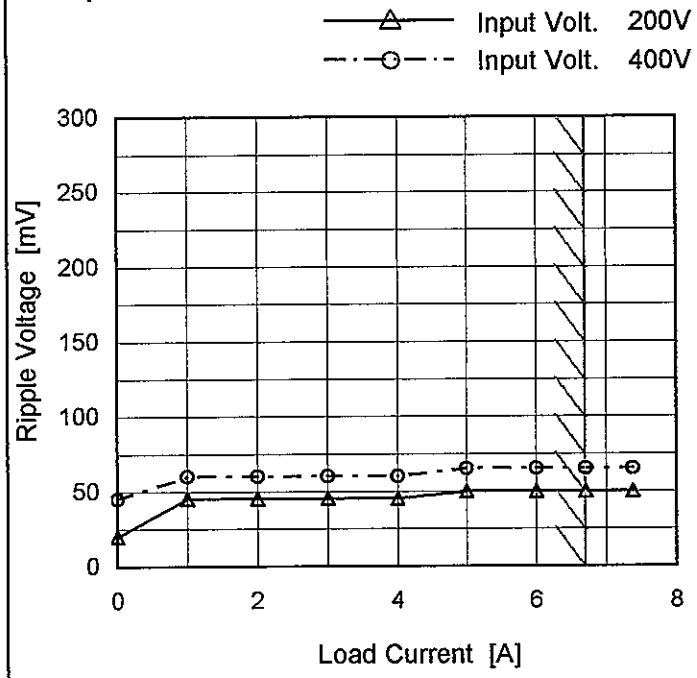
Model	DHS100B15
Item	Ripple Voltage (by Load Current)
Object	+15V6.7A

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]

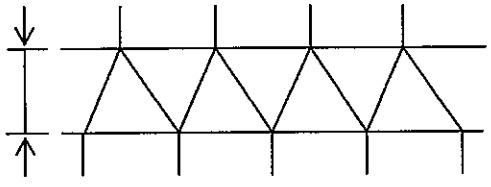


Fig.Complex Ripple Wave Form

2.Values

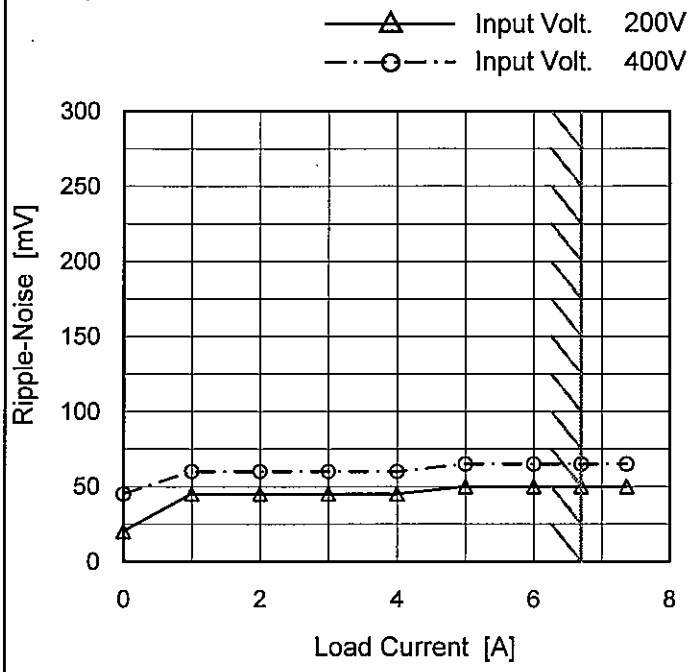
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0.00	20	45
1.00	45	60
2.00	45	60
3.00	45	60
4.00	45	60
5.00	50	65
6.00	50	65
6.70	50	65
7.37	50	65
--	-	-
--	-	-

COSEL

Model	DHS100B15
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.

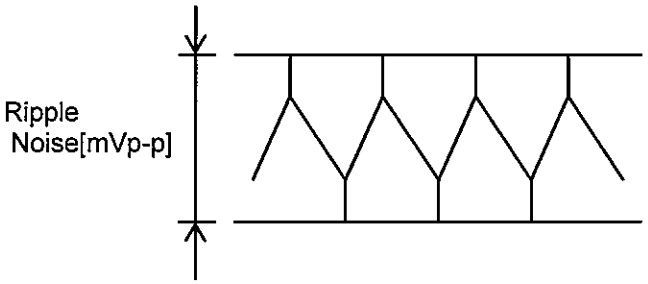


Fig.Complex Ripple Noise Wave Form

2.Values

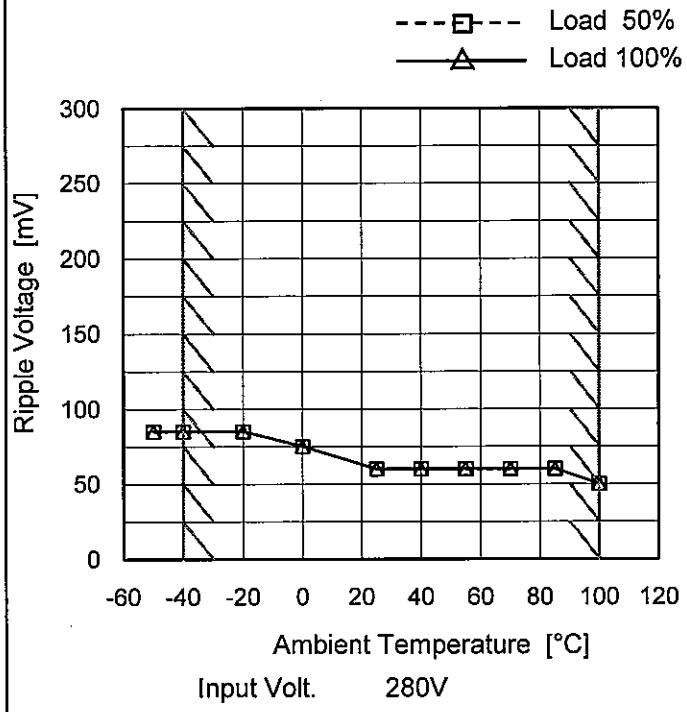
Load Current [A]	Ripple-Noise [mV] Input Volt. 200 [V]	Ripple-Noise [mV] Input Volt. 400 [V]
0.00	20	45
1.00	45	60
2.00	45	60
3.00	45	60
4.00	45	60
5.00	50	65
6.00	50	65
6.70	50	65
7.37	50	65
--	-	-
--	-	-

COSEL

Model	DHS100B15
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

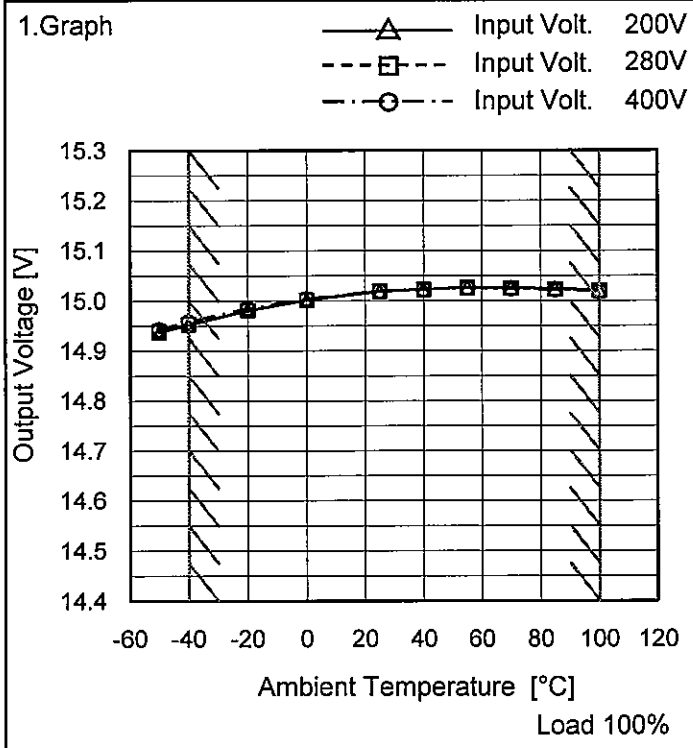
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	85	85
-40	85	85
-20	85	85
0	75	75
25	60	60
40	60	60
55	60	60
70	60	60
85	60	60
100	50	50
--	-	-

COSEL

Model	DHS100B15
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]
-50	14.937	14.939	14.943
-40	14.952	14.954	14.958
-20	14.980	14.981	14.984
0	15.001	15.001	15.004
25	15.018	15.019	15.019
40	15.022	15.022	15.022
55	15.026	15.026	15.026
70	15.026	15.025	15.023
85	15.023	15.023	15.021
100	15.020	15.020	15.019
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COSEL

Model	DHS100B15	
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 : -40 - 100°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

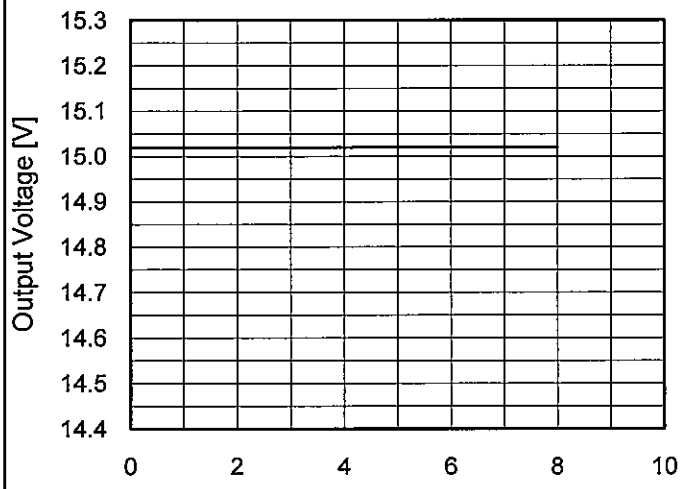
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	70	200	0	15.042	±45	±0.3
Minimum Voltage	-40	200	6.7	14.952		

COSEL

Model	DHS100B15
Item	Time Lapse Drift
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 280V
Load 100%

2.Values

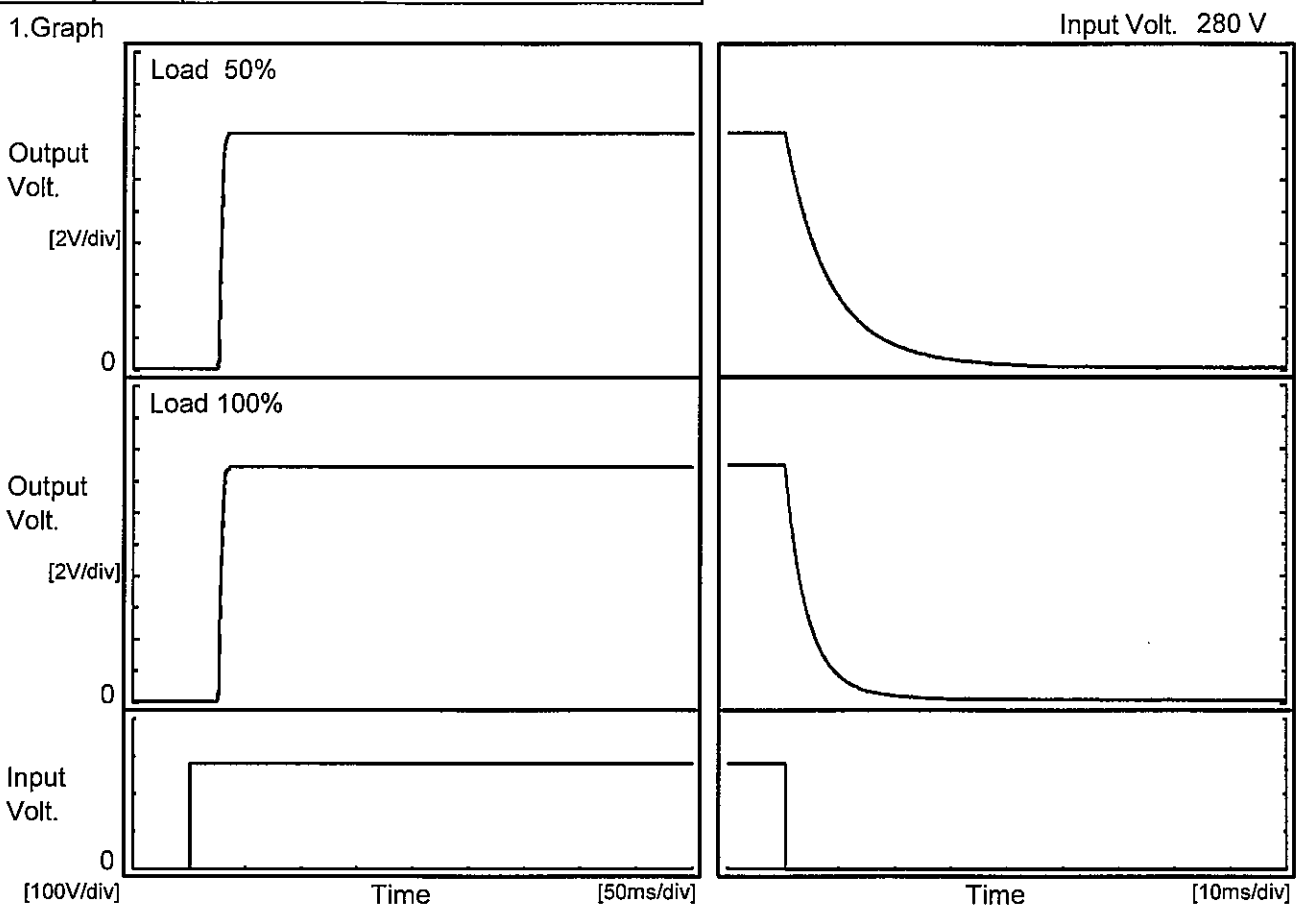
Time since start [H]	Output Voltage [V]
0.0	15.019
0.5	15.019
1.0	15.019
2.0	15.019
3.0	15.019
4.0	15.019
5.0	15.019
6.0	15.019
7.0	15.019
8.0	15.019

COSEL

Model	DHS100B15
Item	Rise and Fall Time
Object	+15V6.7A

Temperature 25°C
Testing Circuitry Figure A

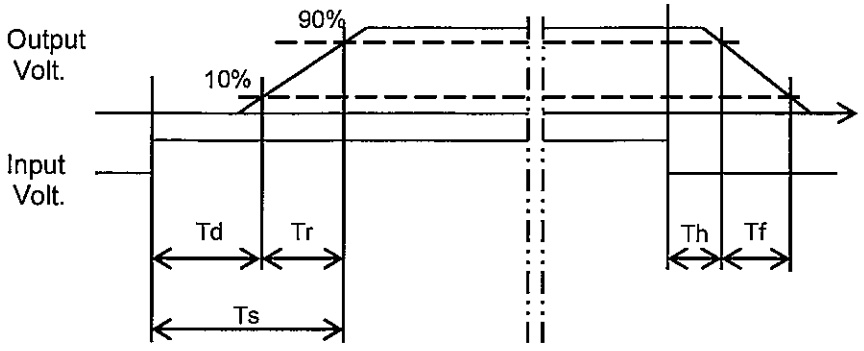
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	26.3	4.0	30.3	1.0	19.2
100 %	26.3	4.8	31.1	0.0	0.0

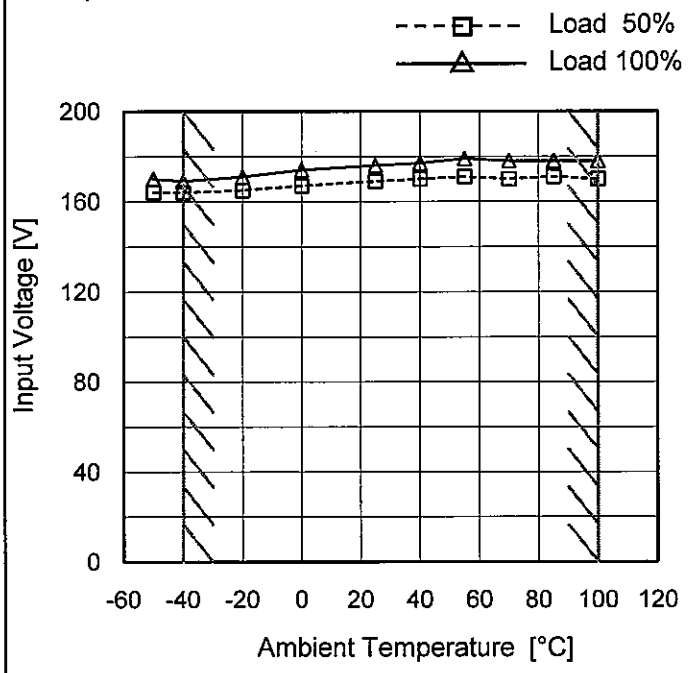


COSEL

Model	DHS100B15
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

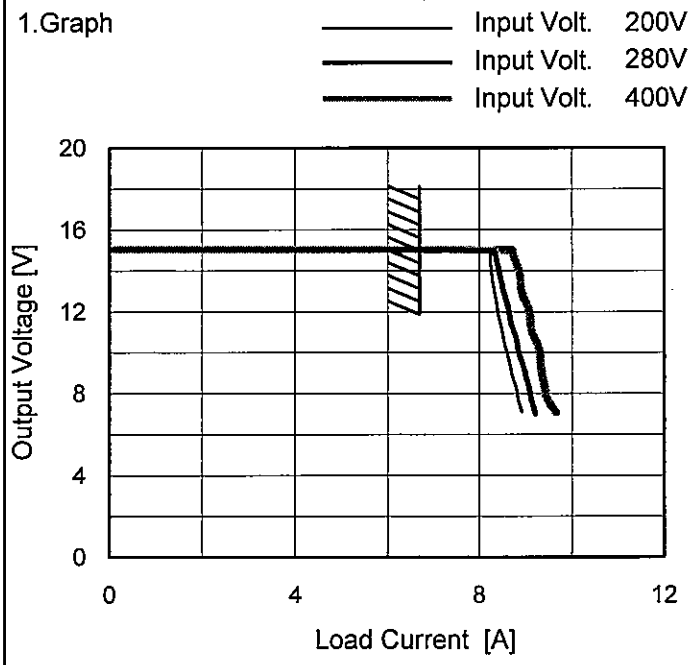
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	164	170
-40	164	169
-20	165	171
0	167	174
25	169	176
40	170	177
55	171	179
70	170	178
85	171	178
100	170	178
--	-	-

COSEL

Model	DHS100B15
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 7V to 0V.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
15.0	6.71	6.70	6.73
14.3	8.25	8.41	8.82
13.5	8.28	8.47	8.89
12.0	8.39	8.64	9.07
10.5	8.53	8.81	9.22
9.0	8.69	8.98	9.35
7.5	8.86	9.15	9.52
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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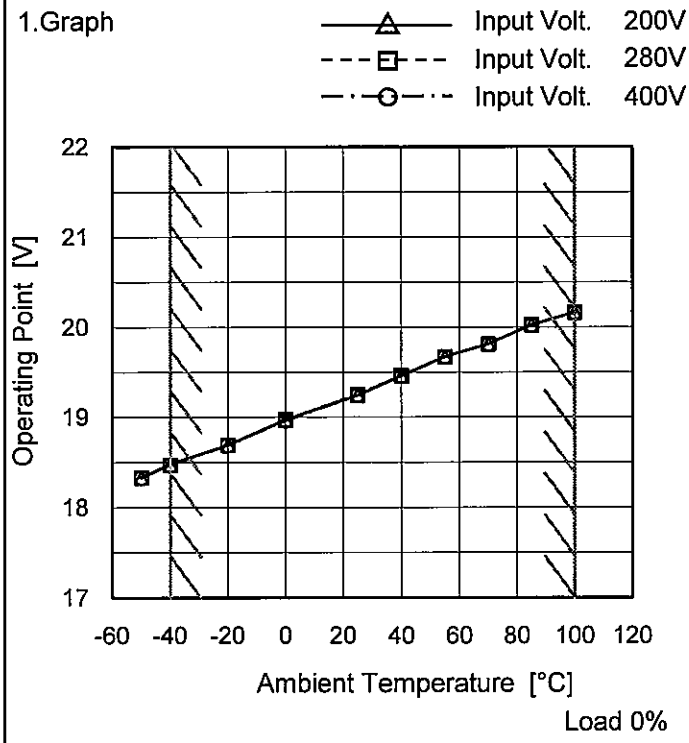
Model	DHS100B15
Item	Overvoltage Protection
Object	+15V6.7A

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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
-50	18.33	18.33	18.33
-40	18.48	18.47	18.47
-20	18.69	18.69	18.69
0	18.97	18.97	18.96
25	19.24	19.25	19.24
40	19.46	19.46	19.46
55	19.67	19.67	19.67
70	19.81	19.81	19.81
85	20.02	20.02	20.02
100	20.16	20.16	20.16
--	-	-	-

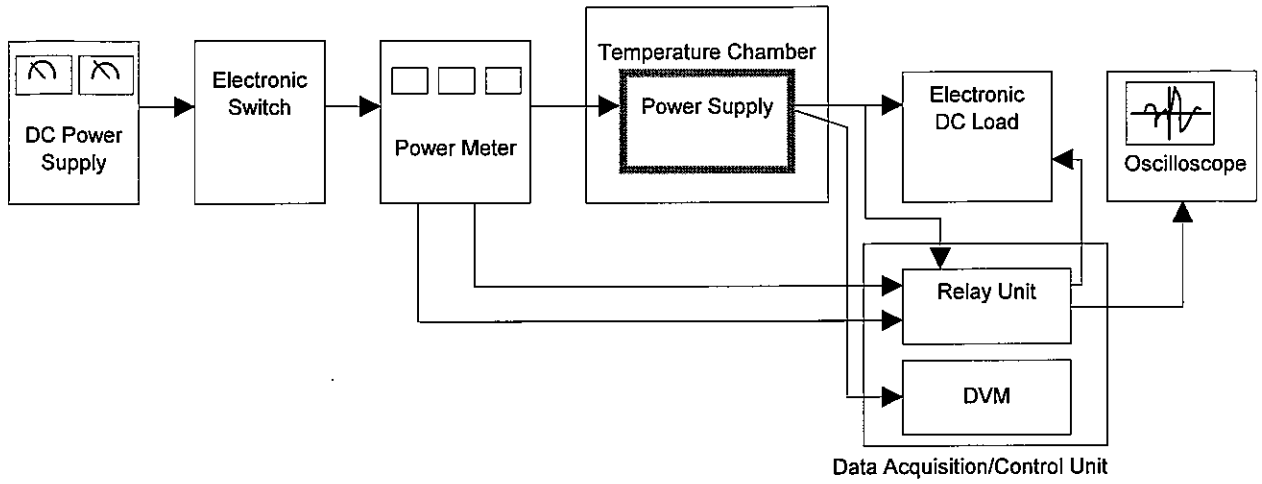
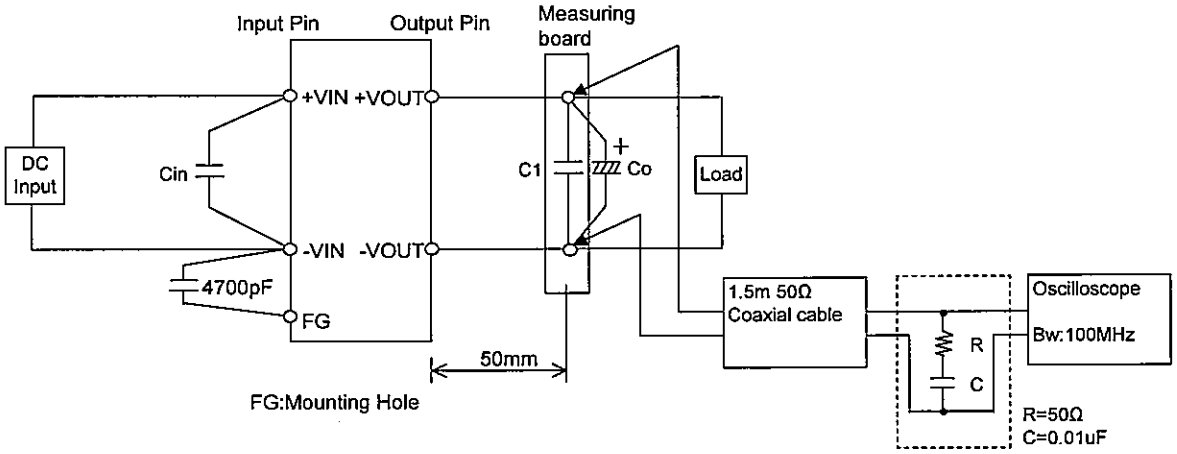


Figure A



C1 : DHS100B24 4.7uF
DHS100B28 4.7uF
Others 10uF

Co : DHS100B03 2200uF
DHS100B05 2200uF
DHS100B12 470uF
DHS100B15 470uF
DHS100B24 220uF
DHS100B28 220uF

Figure B