COSEL

参考資料

TEST DATA OF MGS151215

Regulated DC Power Supply
September 11, 2010

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Shintaro Mizukami
Mizukami Shintaro Design Engineer

COSEL CO.,LTD.

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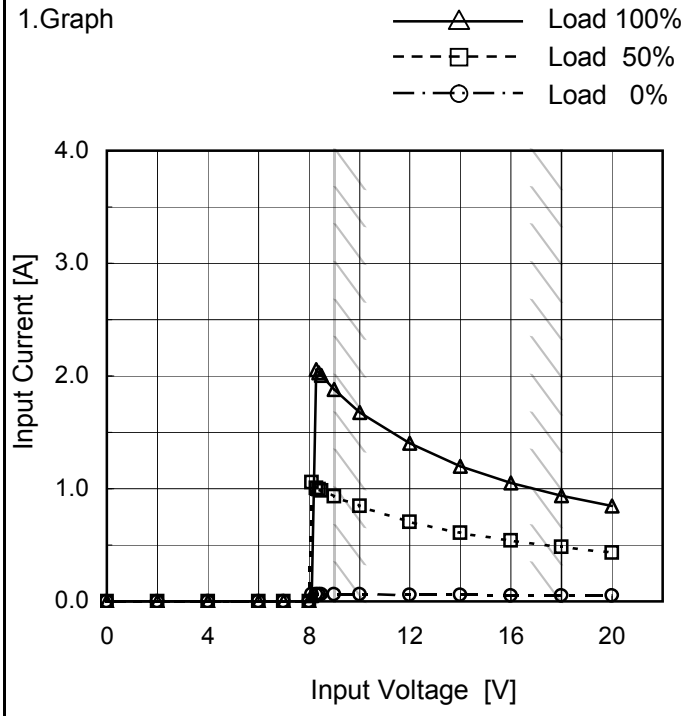
COSEL

Model	MGS151215
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

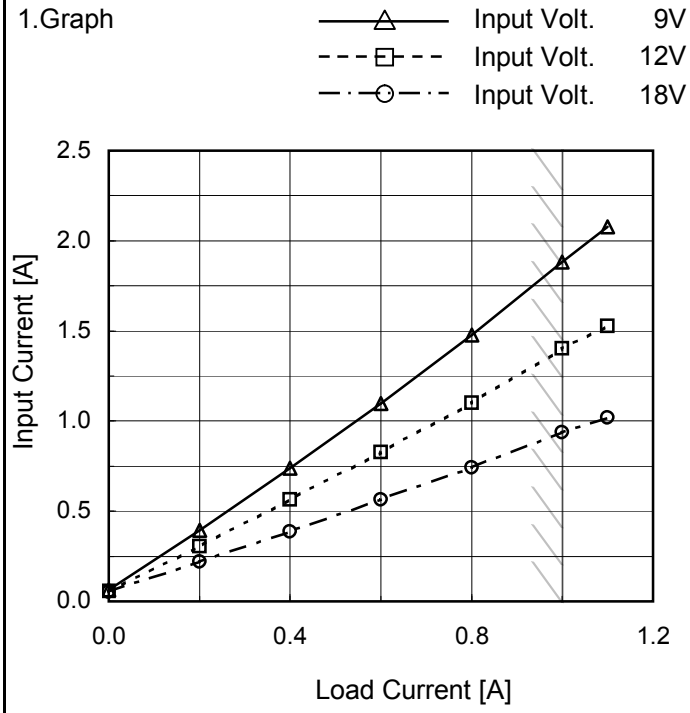
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.001	0.001	0.001
4.0	0.001	0.002	0.002
6.0	0.002	0.002	0.002
7.0	0.002	0.002	0.002
8.0	0.002	0.002	0.002
8.1	0.063	1.055	0.049
8.3	0.063	1.006	2.056
8.4	0.063	0.995	2.028
8.5	0.063	0.983	2.008
9.0	0.063	0.930	1.881
10.0	0.061	0.845	1.674
12.0	0.058	0.702	1.402
14.0	0.055	0.606	1.200
16.0	0.053	0.537	1.050
18.0	0.052	0.482	0.937
20.0	0.050	0.434	0.844
--	-	-	-

COSEL

Model	MGS151215
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

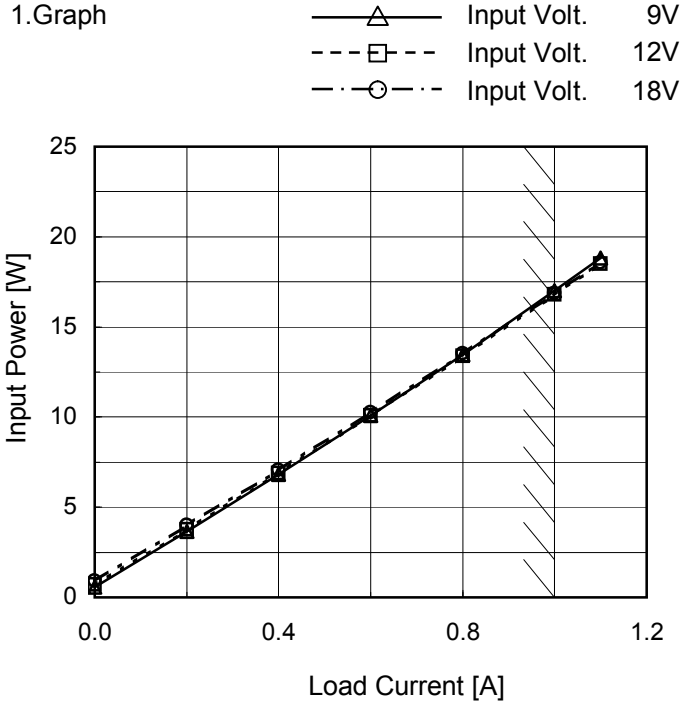
Load Current [A]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	0.063	0.058	0.052
0.2	0.395	0.307	0.218
0.4	0.739	0.563	0.389
0.6	1.099	0.827	0.564
0.8	1.476	1.101	0.743
1.0	1.881	1.401	0.937
1.1	2.078	1.527	1.020
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS151215
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

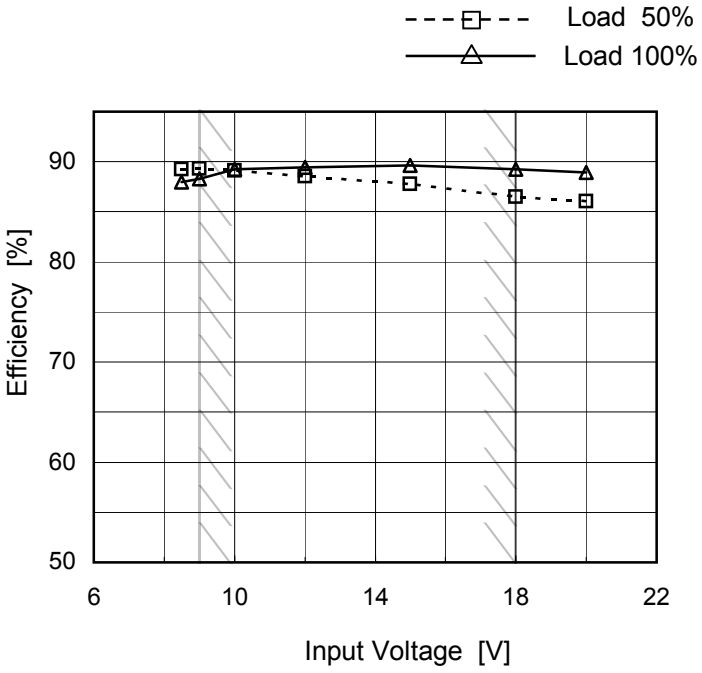
Load Current [A]	Input Power [W]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	0.58	0.72	0.94
0.2	3.65	3.77	4.01
0.4	6.81	6.89	7.07
0.6	10.07	10.10	10.27
0.8	13.45	13.40	13.52
1.0	17.01	16.78	16.87
1.1	18.82	18.50	18.56
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS151215
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

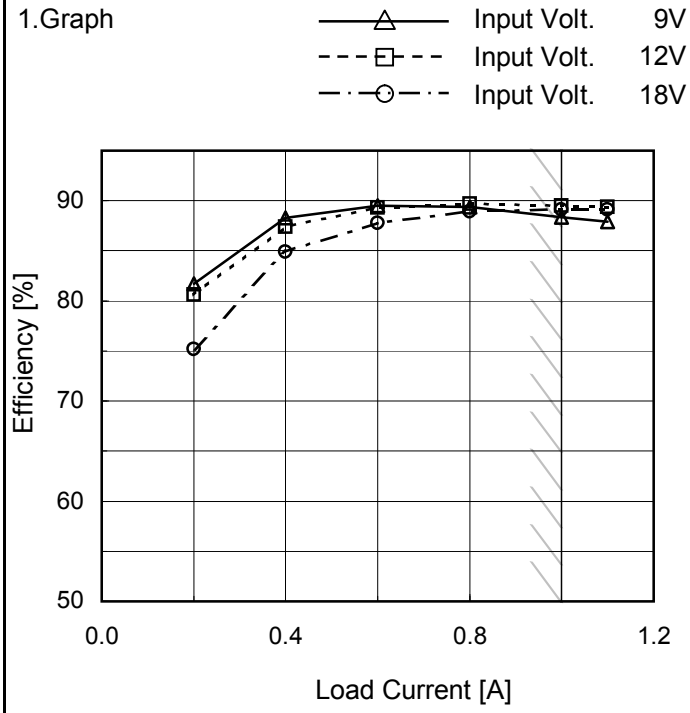
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8.5	89.2	88.0
9.0	89.3	88.3
10.0	89.1	89.3
12.0	88.5	89.4
15.0	87.8	89.6
18.0	86.5	89.2
20.0	86.0	88.9
--	-	-
--	-	-

COSEL

Model	MGS151215
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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	-	-	-
0.2	81.7	80.6	75.2
0.4	88.3	87.4	84.9
0.6	89.5	89.3	87.8
0.8	89.3	89.7	88.9
1.0	88.4	89.5	89.1
1.1	87.9	89.4	89.1
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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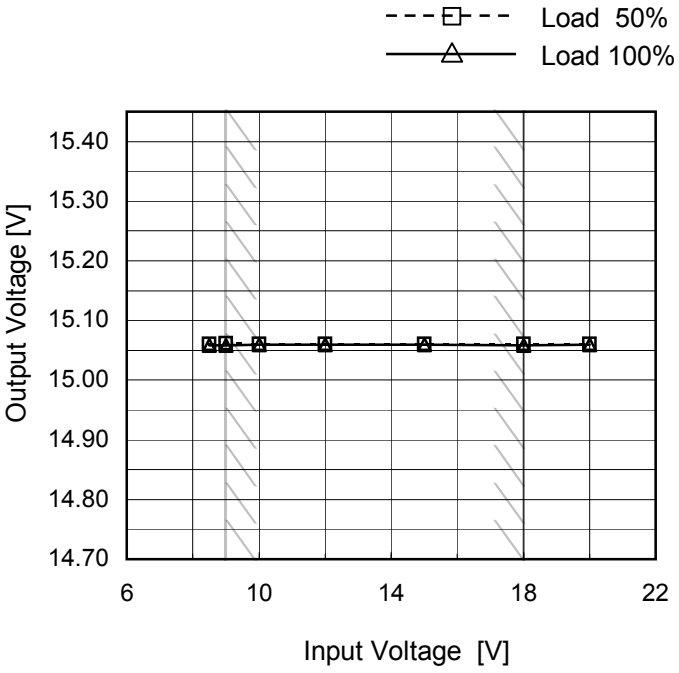
Model	MGS151215
Item	Line Regulation
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

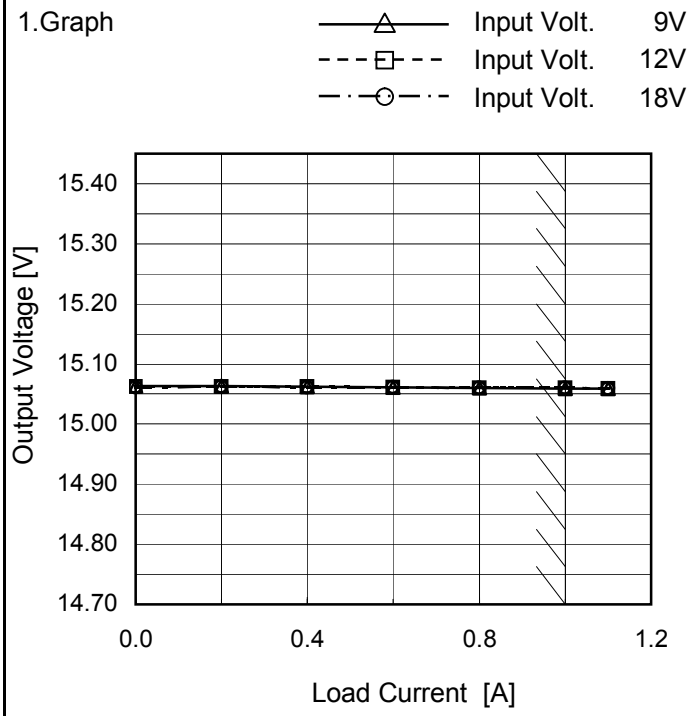
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.5	15.061	15.059
9.0	15.061	15.058
10.0	15.061	15.059
12.0	15.061	15.060
15.0	15.061	15.059
18.0	15.061	15.059
20.0	15.060	15.059
--	-	-
--	-	-

COSEL

Model	MGS151215
Item	Load Regulation
Object	+15V1A

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	15.063	15.063	15.062
0.2	15.063	15.063	15.062
0.4	15.062	15.062	15.061
0.6	15.061	15.061	15.061
0.8	15.061	15.061	15.060
1.0	15.059	15.060	15.060
1.1	15.059	15.059	15.059
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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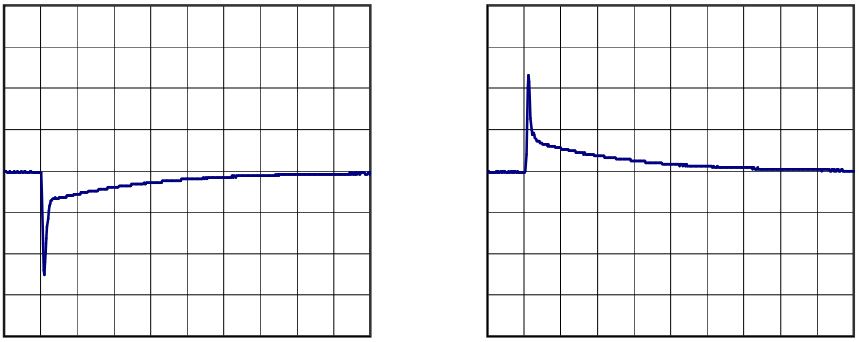
Model	MGS151215
Item	Dynamic Load Response
Object	+15V1A

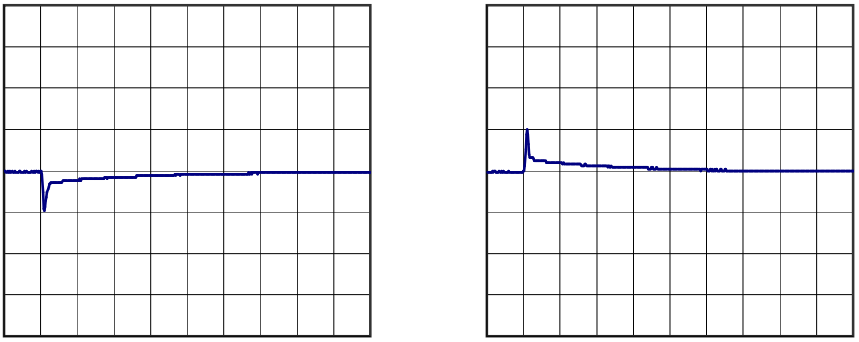
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 12 V
Cycle 1000 ms

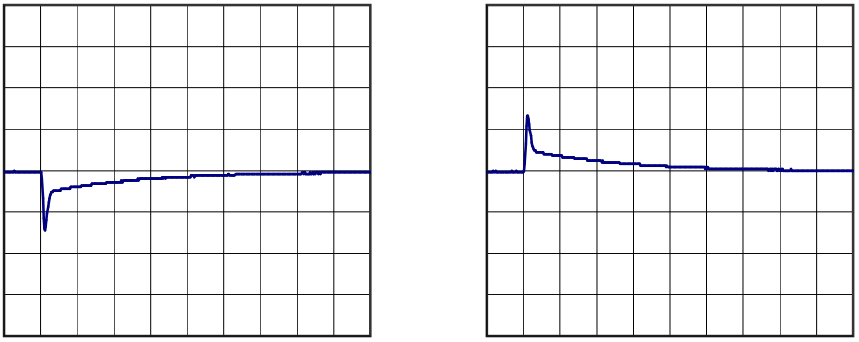
Min. Load (0A) ←→
Load 100% (1A)



Min. Load (0A) ←→
Load 50% (0.5A)



Load 50% (0.5A) ←→
Load 100% (1A)

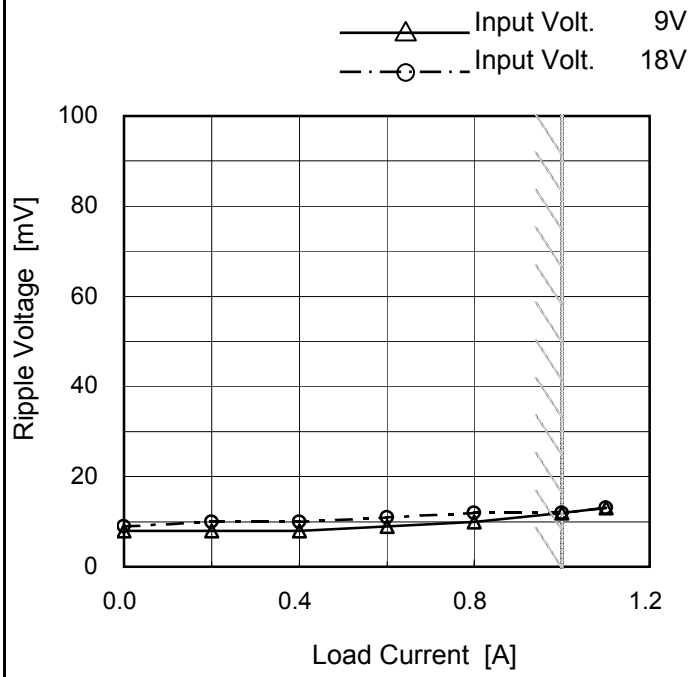


COSEL

Model	MGS151215
Item	Ripple Voltage (by Load Current)
Object	+15V1A

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]

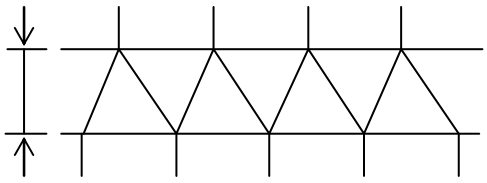


Fig.Complex Ripple Wave Form

2.Values

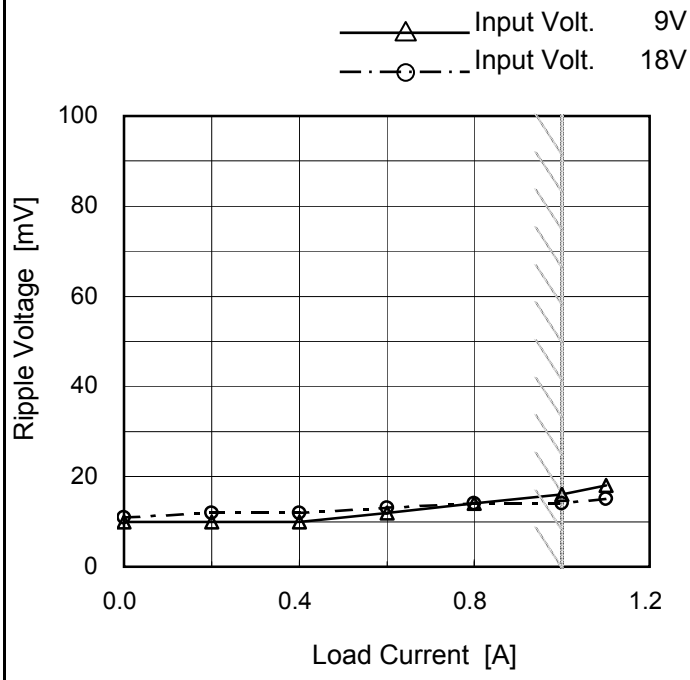
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.0	8	9
0.2	8	10
0.4	8	10
0.6	9	11
0.8	10	12
1.0	12	12
1.1	13	13
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS151215
Item	Ripple-Noise
Object	+15V1A

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.

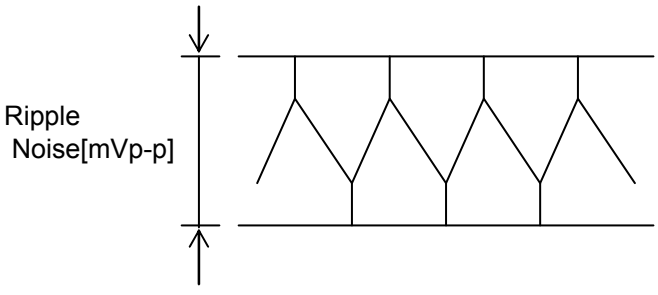


Fig.Complex Ripple Noise Wave Form

2.Values

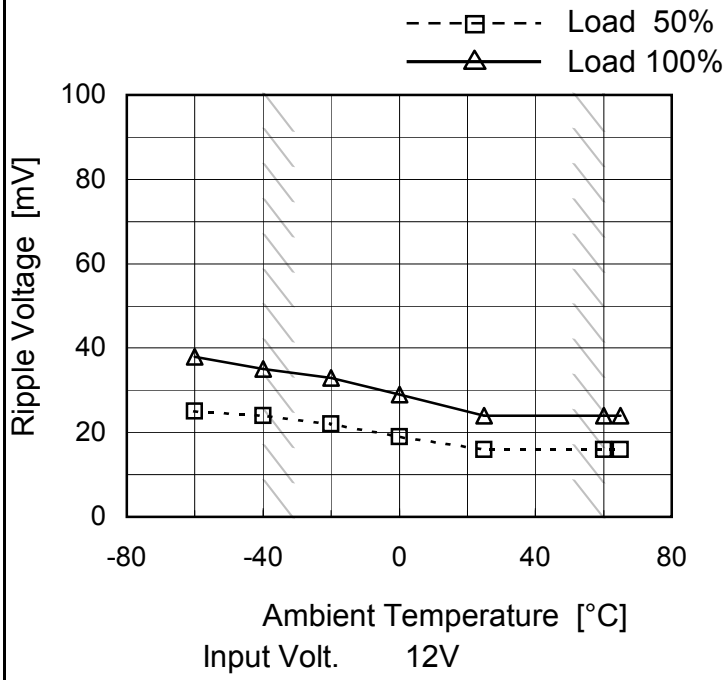
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.0	10	11
0.2	10	12
0.4	10	12
0.6	12	13
0.8	14	14
1.0	16	14
1.1	18	15
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS151215
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V1A

Testing Circuitry Figure B

1.Graph



Input Volt. 12V

Measured by 100 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

2.Values

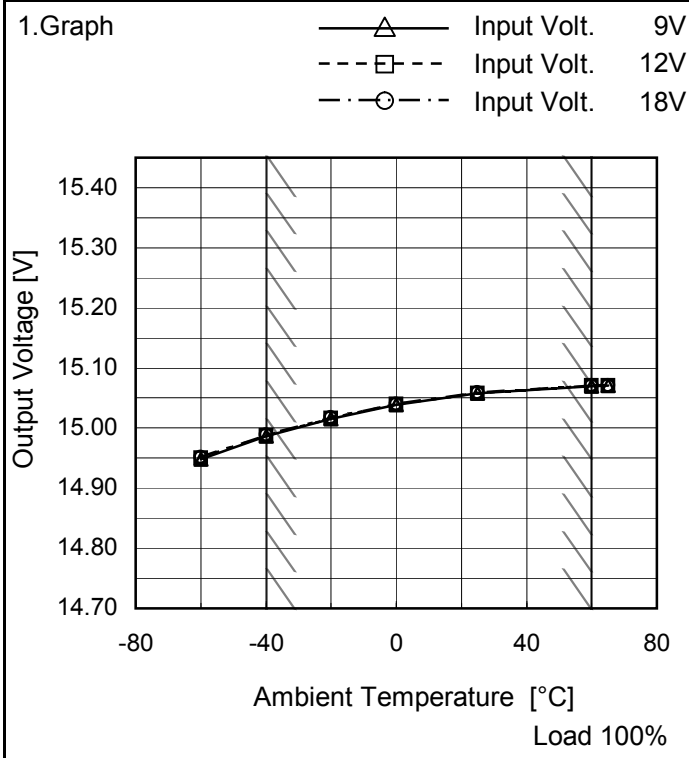
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	25	38
-40	24	35
-20	22	33
0	19	29
25	16	24
60	16	24
65	16	24
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS151215
Item	Ambient Temperature Drift
Object	+15V1A

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
-60	14.948	14.950	14.952
-40	14.986	14.988	14.989
-20	15.016	15.017	15.017
0	15.039	15.040	15.040
25	15.058	15.058	15.059
60	15.070	15.071	15.071
65	15.070	15.071	15.071
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS151215	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V1A	

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 - 60°C
Input Voltage : 9 - 18V
Load Current : 0 - 1A

* 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

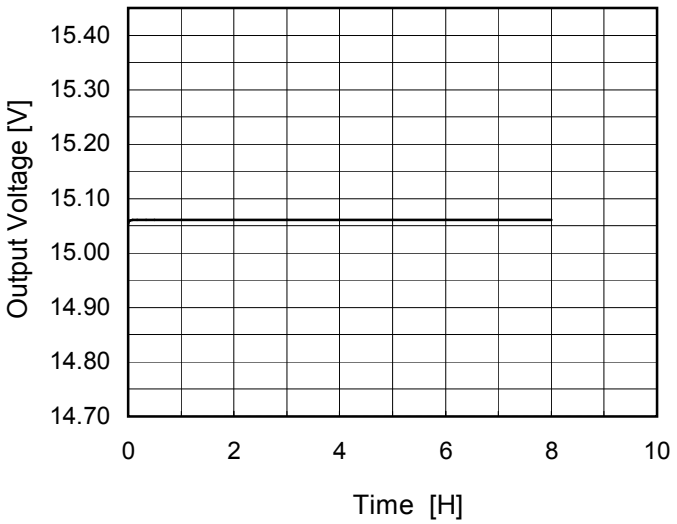
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	9	0	15.074	±44	±0.3
Minimum Voltage	-40	9	1	14.986		

COSEL

Model	MGS151215
Item	Time Lapse Drift
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 12V
Load 100%

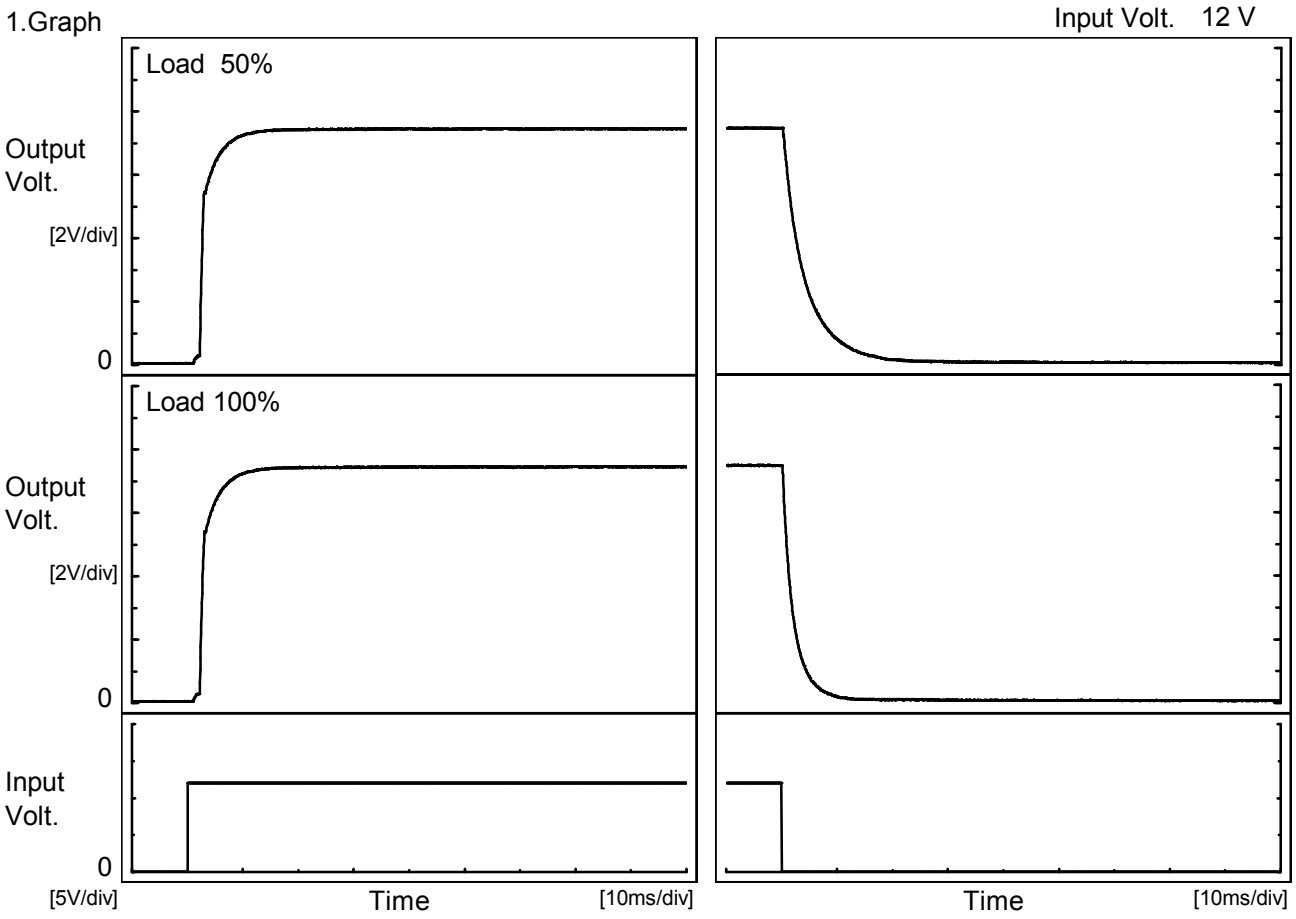
2.Values

Time since start [H]	Output Voltage [V]
0.0	15.054
0.5	15.061
1.0	15.061
2.0	15.061
3.0	15.061
4.0	15.061
5.0	15.061
6.0	15.061
7.0	15.061
8.0	15.061

COSEL

Model	MGS151215	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+15V1A	

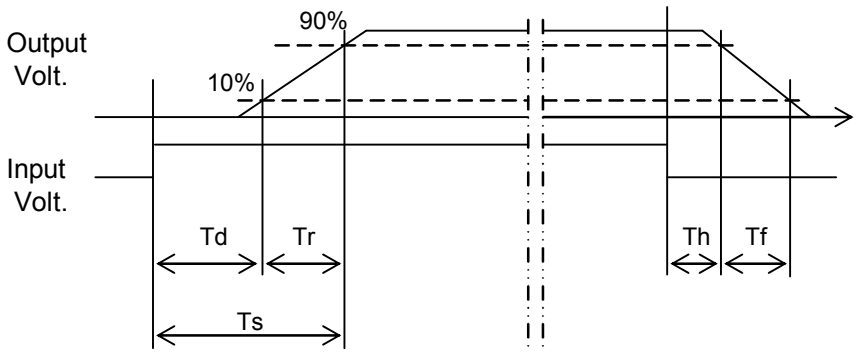
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	2.3	4.1	6.4	0.5	9.7
100 %	2.3	4.2	6.5	0.3	4.8

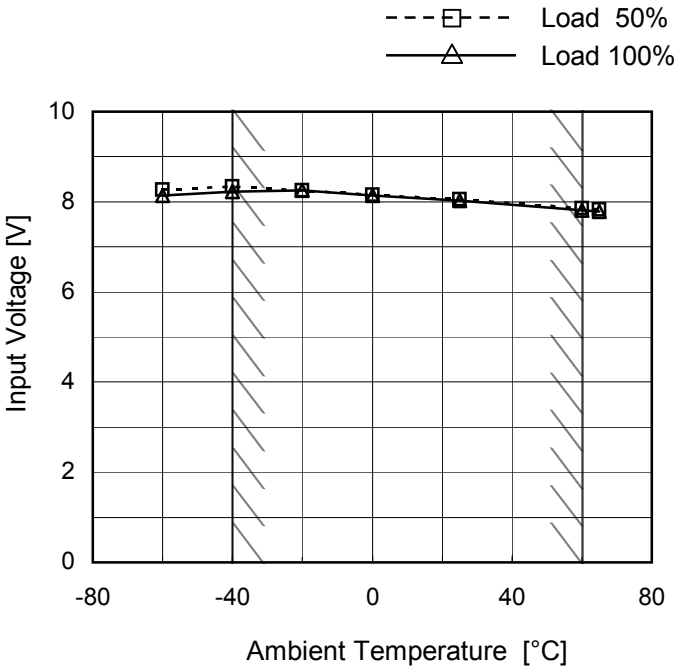


COSEL

Model	MGS151215
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V1A

Testing Circuitry Figure A

1.Graph



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

2.Values

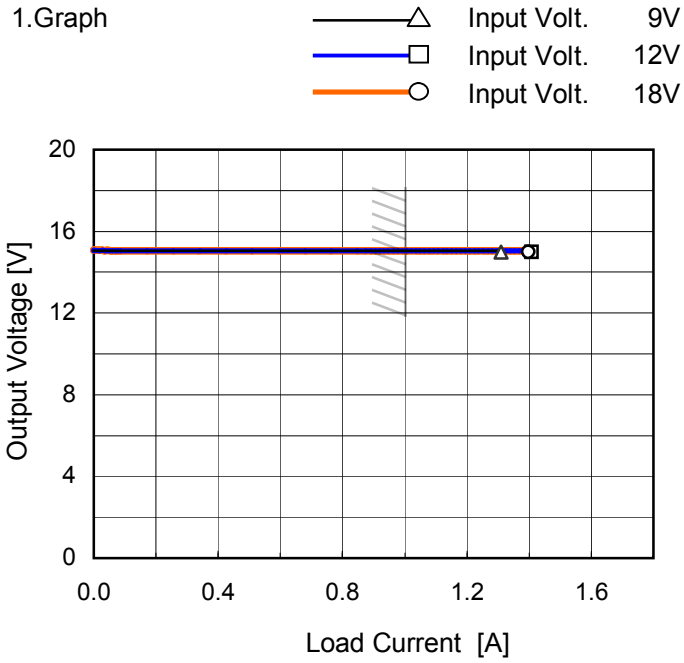
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	8.3	8.2
-40	8.4	8.3
-20	8.3	8.3
0	8.2	8.2
25	8.1	8.1
60	7.9	7.9
65	7.9	7.8
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS151215
Item	Overcurrent Protection
Object	+15V1A

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.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
15.0	1.31	1.41	1.40
14.3	-	-	-
13.5	-	-	-
12.0	-	-	-
10.5	-	-	-
9.0	-	-	-
7.5	-	-	-
6.0	-	-	-
4.5	-	-	-
3.0	-	-	-
1.5	-	-	-
0.0	-	-	-

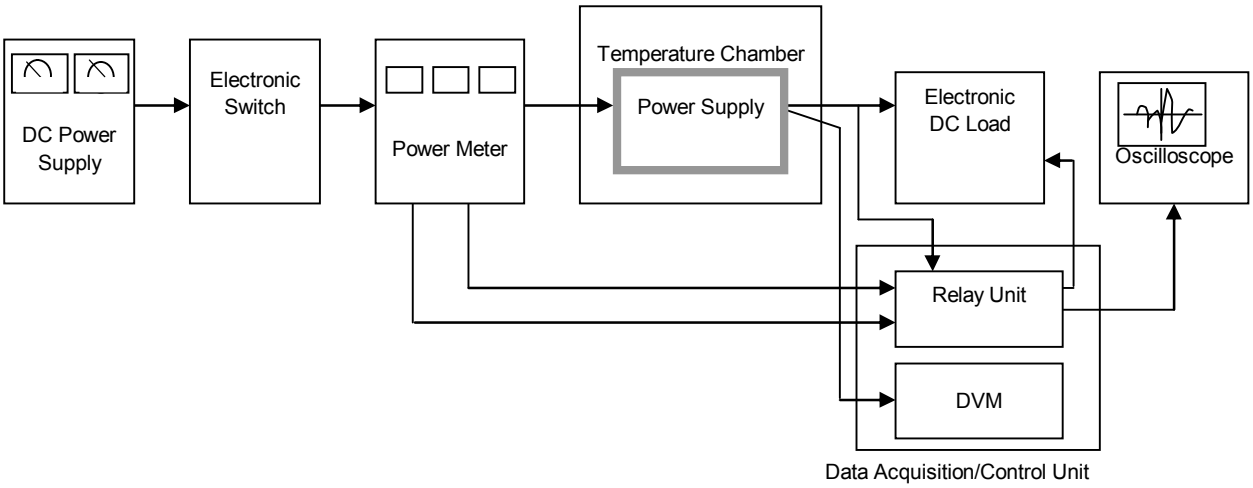


Figure A

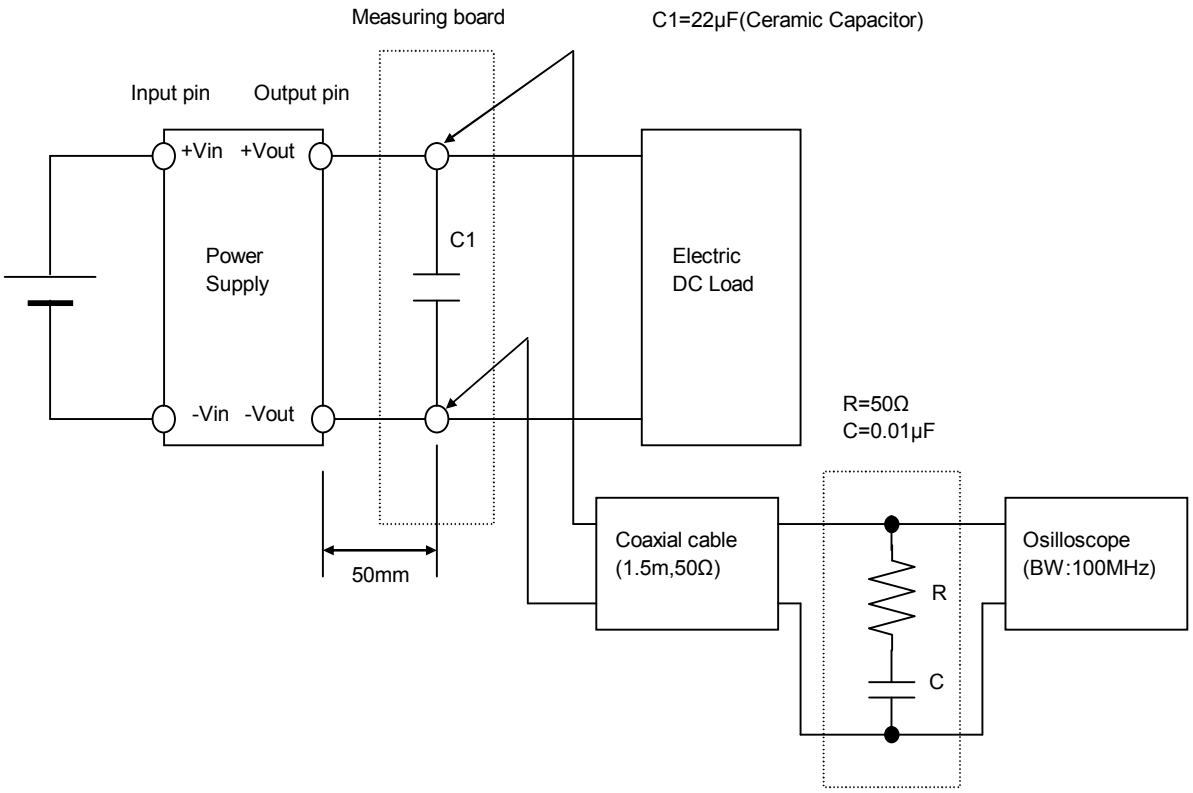


Figure B（Ripple and Ripple noise Characteristic）