COSEL

参考資料

TEST DATA OF MGS301205

Regulated DC Power Supply
November 26, 2010

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CONTENTS

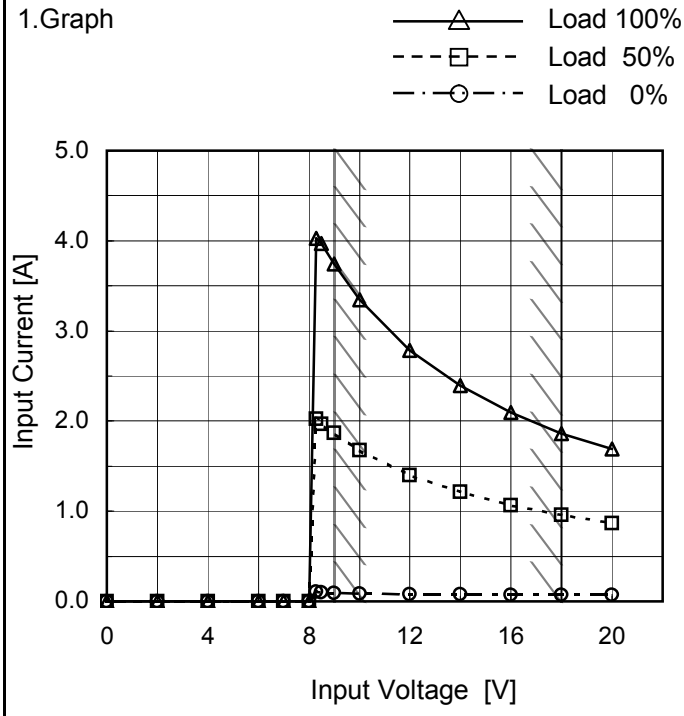
1.Input Current (by Input Voltage) ・・・・・・・・・・・・・・・・・・・・・・・・・ 1
2.Input Current (by Load Current) ・・・・・・・・・・・・・・・・・・・・・・・ 2
3.Input Power (by Load Current) ・・・・・・・・・・・・・・・・・・・・・・・・ 3
4.Efficiency (by Input Voltage) ・・・・・・・・・・・・・・・・・・・・・・・・ 4
5.Efficiency (by Load Current) ・・・・・・・・・・・・・・・・・・・・・・・・・ 5
6.Line Regulation ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 6
7.Load Regulation ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 7
8.Dynamic Load Response ・・・・・・・・・・・・・・・・・・・・・・・・・・・ 8
9.Ripple Voltage (by Load Current) ・・・・・・・・・・・・・・・・・・・・・・ 9
10.Ripple-Noise ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 10
11.Ripple Voltage (by Ambient Temperature) ・・・・・・・・・・・・・・・・・ 11
12.Ambient Temperature Drift ・・・・・・・・・・・・・・・・・・・・・・・・・ 12
13.Output Voltage Accuracy ・・・・・・・・・・・・・・・・・・・・・・・・・・ 13
14.Time Lapse Drift ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 14
15.Rise and Fall Time ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 15
16.Minimum Input Voltage for Regulated Output Voltage ・・・・・・・・・・・ 16
17.Overcurrent Protection ・・・・・・・・・・・・・・・・・・・・・・・・・・・ 17
18.Overvoltage Protection ・・・・・・・・・・・・・・・・・・・・・・・・・・・ 18
19.Figure of Testing Circuitry ・・・・・・・・・・・・・・・・・・・・・・・・・ 19
(Final Page 19)

COSEL

Model	MGS301205
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

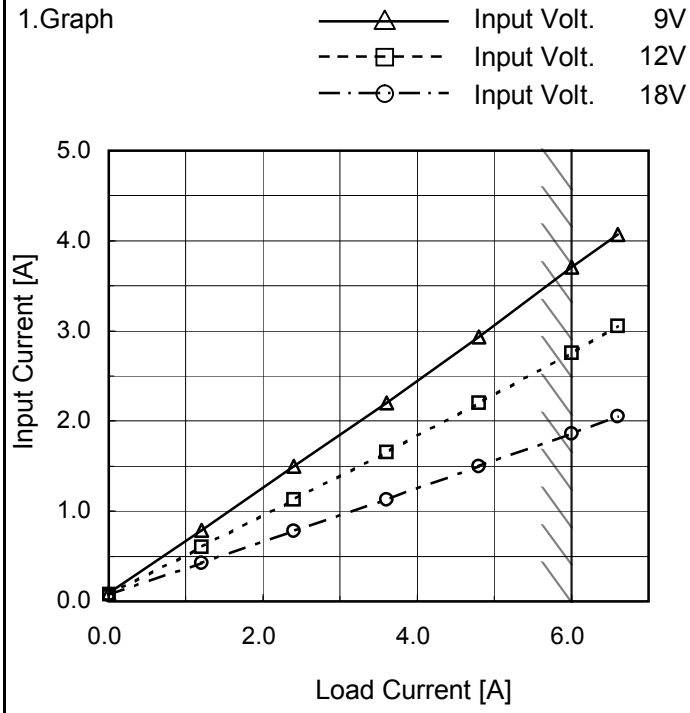
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.000	0.000	0.000
4.0	0.002	0.001	0.001
6.0	0.002	0.002	0.001
7.0	0.002	0.002	0.002
8.0	0.002	0.002	0.002
8.3	0.104	2.024	4.029
8.5	0.099	1.964	3.969
9.0	0.090	1.865	3.745
10.0	0.085	1.673	3.343
12.0	0.080	1.396	2.782
14.0	0.077	1.212	2.393
16.0	0.074	1.066	2.093
18.0	0.072	0.956	1.862
20.0	0.069	0.867	1.690
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS301205
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	0.094	0.079	0.069
1.2	0.791	0.603	0.423
2.4	1.500	1.130	0.779
3.6	2.200	1.658	1.131
4.8	2.930	2.205	1.499
6.0	3.707	2.757	1.864
6.6	4.073	3.052	2.054
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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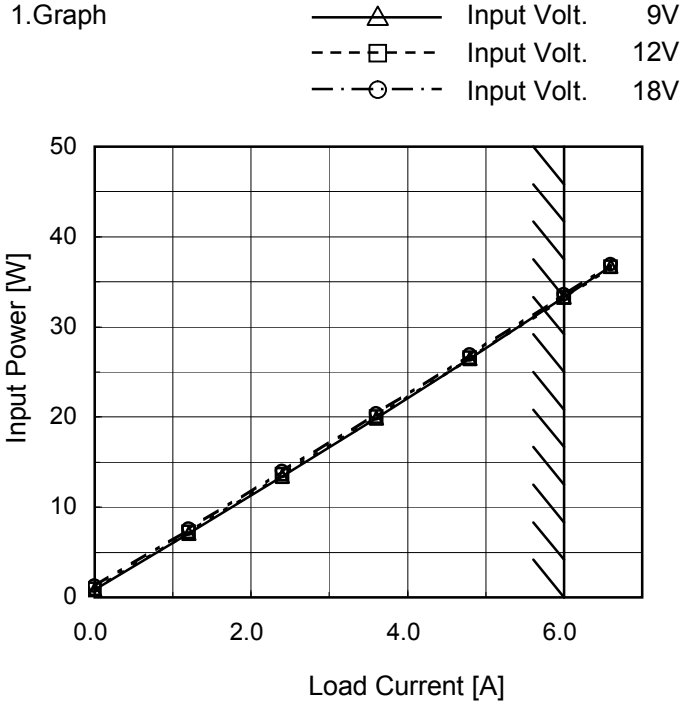
Model	MGS301205
Item	Input Power (by Load Current)
Object	————————

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	0.84	0.95	1.25
1.2	7.11	7.26	7.60
2.4	13.46	13.63	14.01
3.6	19.89	20.00	20.40
4.8	26.52	26.55	26.92
6.0	33.29	33.25	33.56
6.6	36.74	36.65	36.94
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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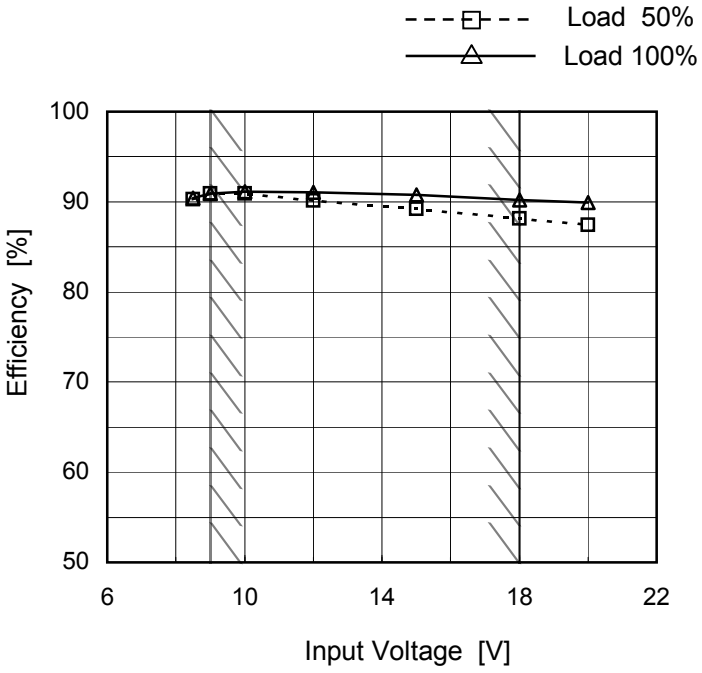
Model	MGS301205
Item	Efficiency (by Input Voltage)
Object	――――――――――

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	90.3	90.4
9.0	90.9	90.9
10.0	90.9	91.1
12.0	90.2	91.1
15.0	89.2	90.7
18.0	88.1	90.2
20.0	87.5	89.9
--	-	-
--	-	-

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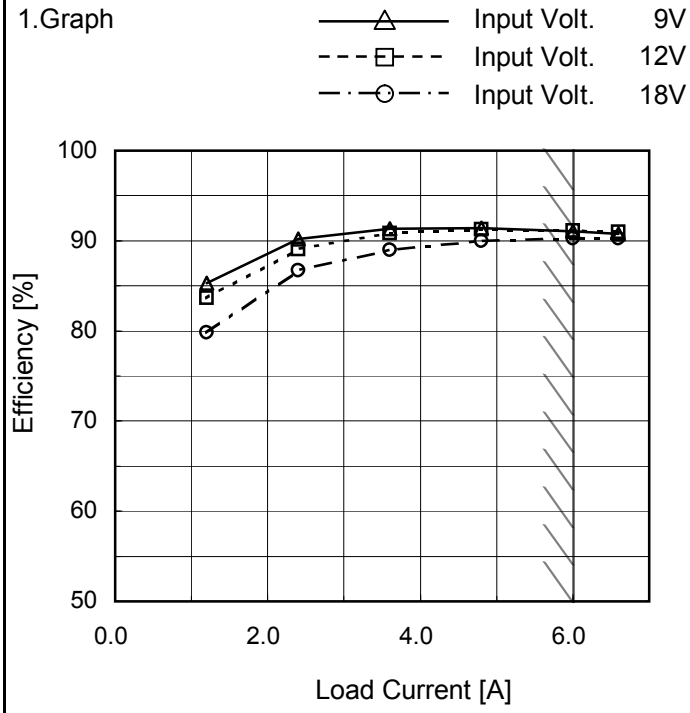
Model	MGS301205
Item	Efficiency (by Load Current)
Object	————————

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	-	-	-
1.2	85.3	83.7	79.8
2.4	90.2	89.1	86.7
3.6	91.3	90.8	89.0
4.8	91.4	91.3	90.0
6.0	91.0	91.2	90.3
6.6	90.8	91.0	90.3
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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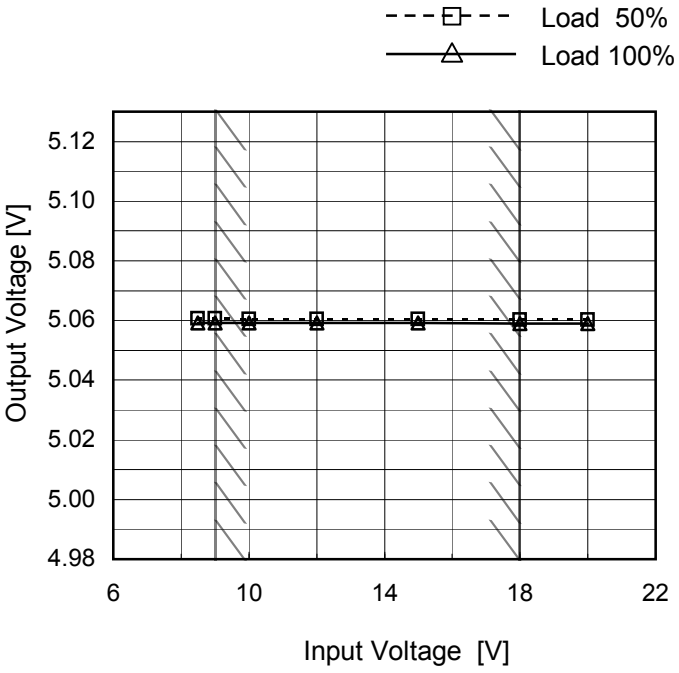
Model	MGS301205
Item	Line Regulation
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

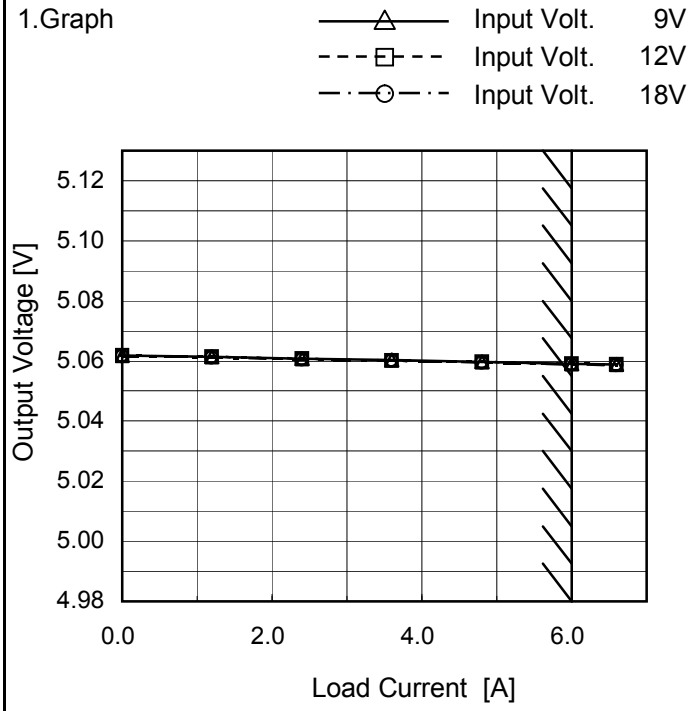
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.5	5.061	5.059
9.0	5.061	5.059
10.0	5.061	5.059
12.0	5.061	5.059
15.0	5.060	5.059
18.0	5.060	5.059
20.0	5.060	5.059
--	-	-
--	-	-

COSEL

Model	MGS301205
Item	Load Regulation
Object	+5V6A

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	5.062	5.062	5.062
1.2	5.061	5.061	5.061
2.4	5.061	5.061	5.061
3.6	5.060	5.060	5.060
4.8	5.060	5.060	5.060
6.0	5.059	5.059	5.059
6.6	5.059	5.059	5.059
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MGS301205
Item	Dynamic Load Response
Object	+5V6A

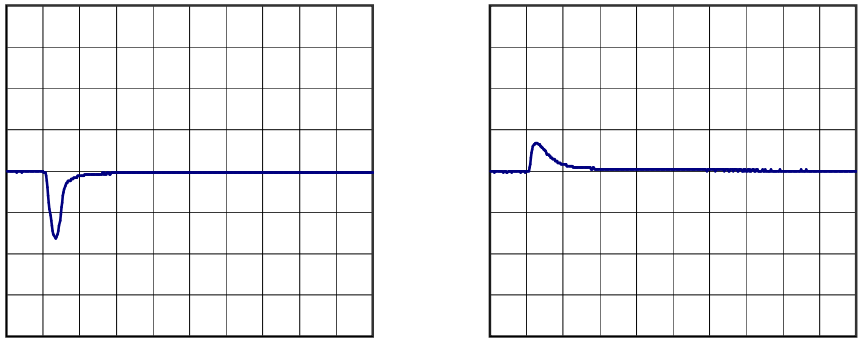
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 12 V
Cycle 1000 ms

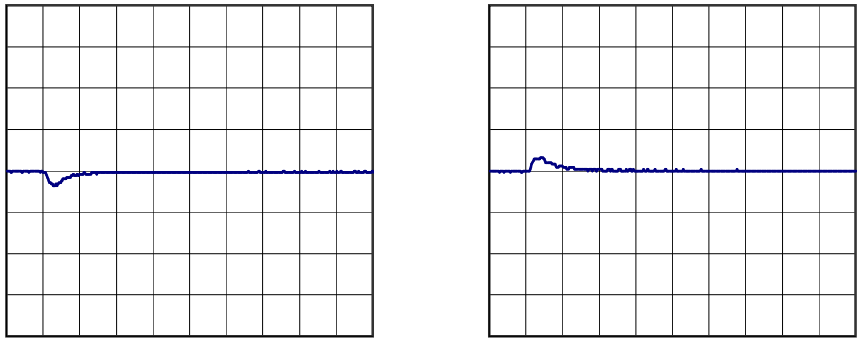
t_1、t_2 = 50μs

Load Current

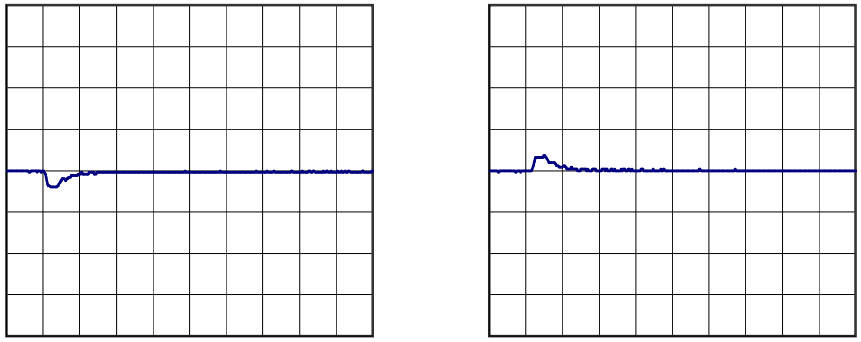
Min. Load (0A) ⟷ Load 100% (6A)



Min. Load (0A) ⟷ Load 50% (3A)



Load 50% (3A) ⟷ Load 100% (6A)



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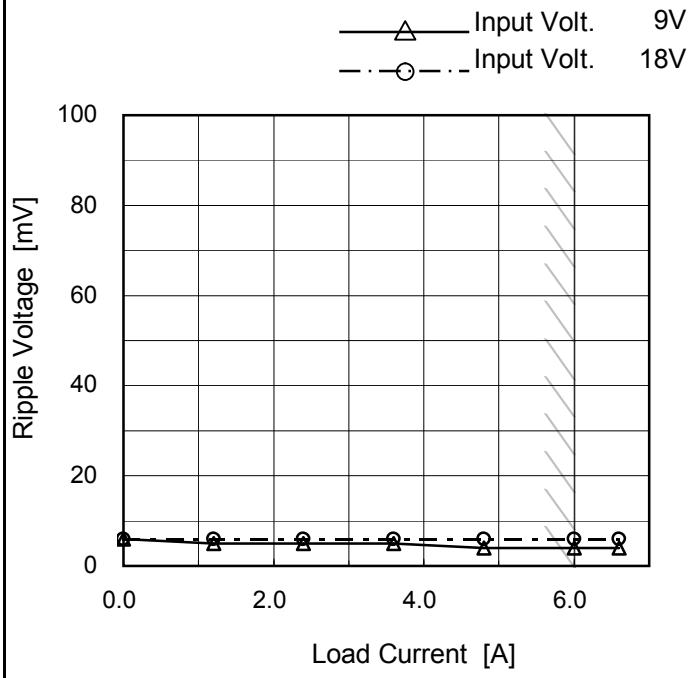
Model	MGS301205
Item	Ripple Voltage (by Load Current)
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



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]

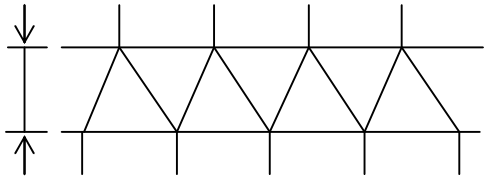


Fig.Complex Ripple Wave Form

2.Values

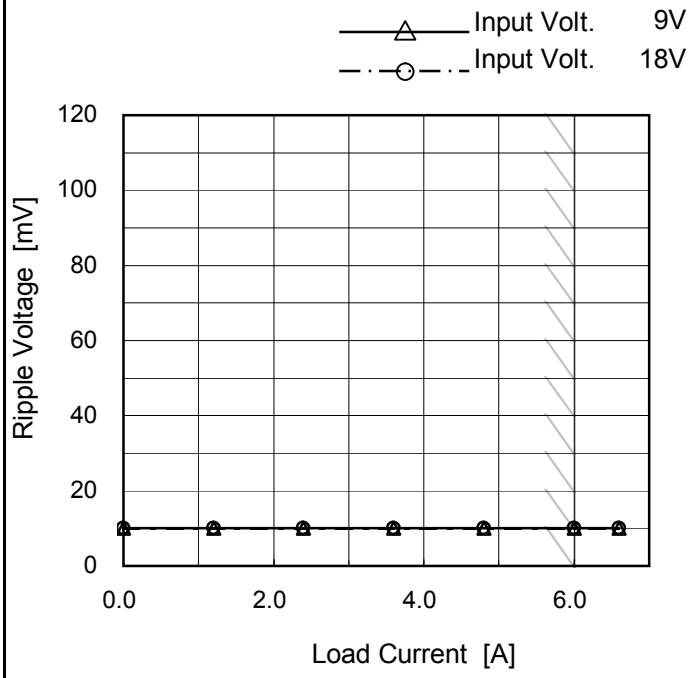
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.0	6	6
1.2	5	6
2.4	5	6
3.6	5	6
4.8	4	6
6.0	4	6
6.6	4	6
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS301205
Item	Ripple-Noise
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



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

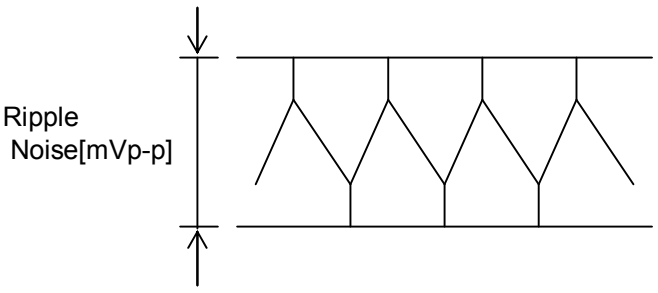


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.0	10	10
1.2	10	10
2.4	10	10
3.6	10	10
4.8	10	10
6.0	10	10
6.6	10	10
--	-	-
--	-	-
--	-	-
--	-	-

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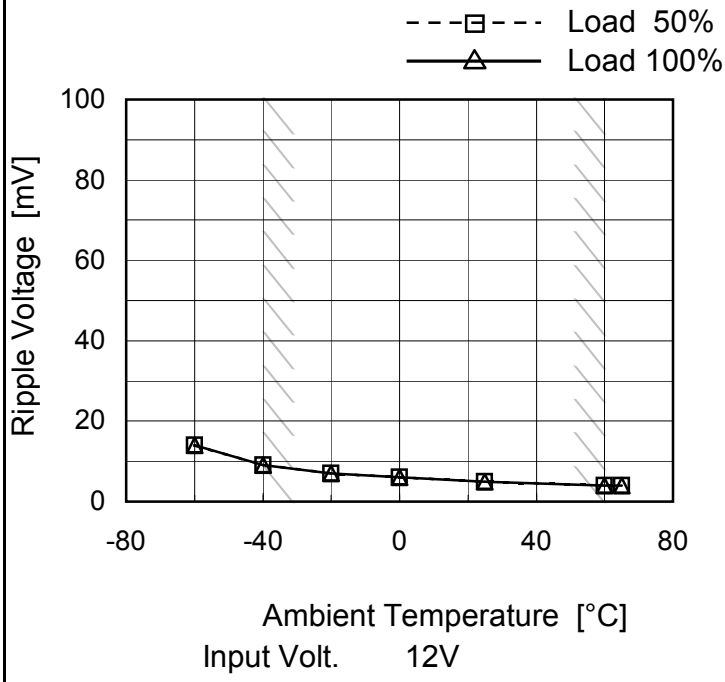
Model	MGS301205
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V6A

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

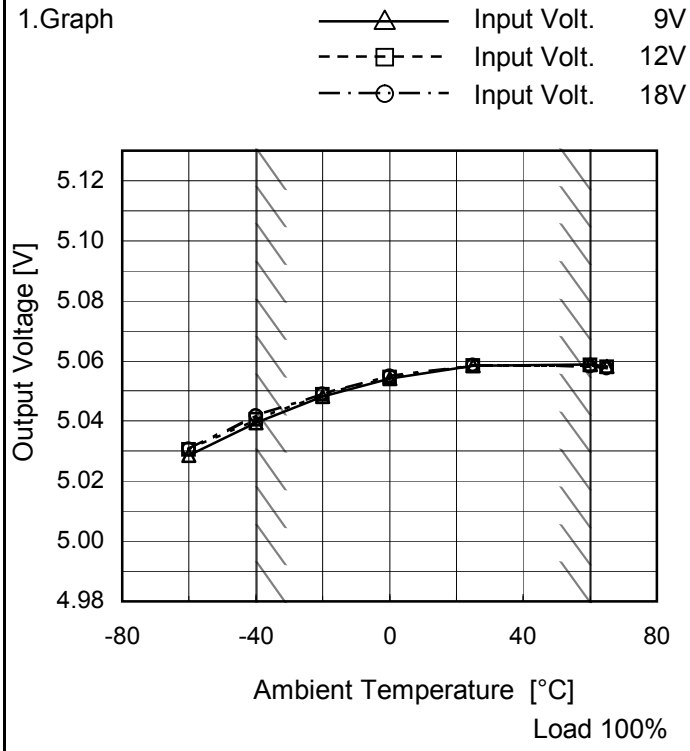
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	14	14
-40	9	9
-20	7	7
0	6	6
25	5	5
60	4	4
65	4	4
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS301205
Item	Ambient Temperature Drift
Object	+5V6A

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	5.029	5.030	5.031
-40	5.039	5.041	5.042
-20	5.048	5.049	5.049
0	5.054	5.055	5.055
25	5.059	5.059	5.059
60	5.059	5.059	5.058
65	5.058	5.058	5.058
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS301205	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V6A	

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 - 6A

* 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

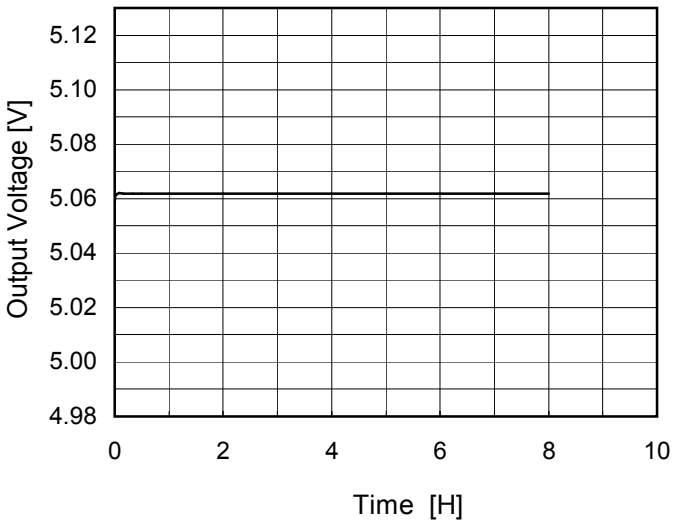
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	9	0	5.062	±12	±0.2
Minimum Voltage	-40	9	6	5.039		

COSEL

Model	MGS301205
Item	Time Lapse Drift
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 12V
Load 100%

2.Values

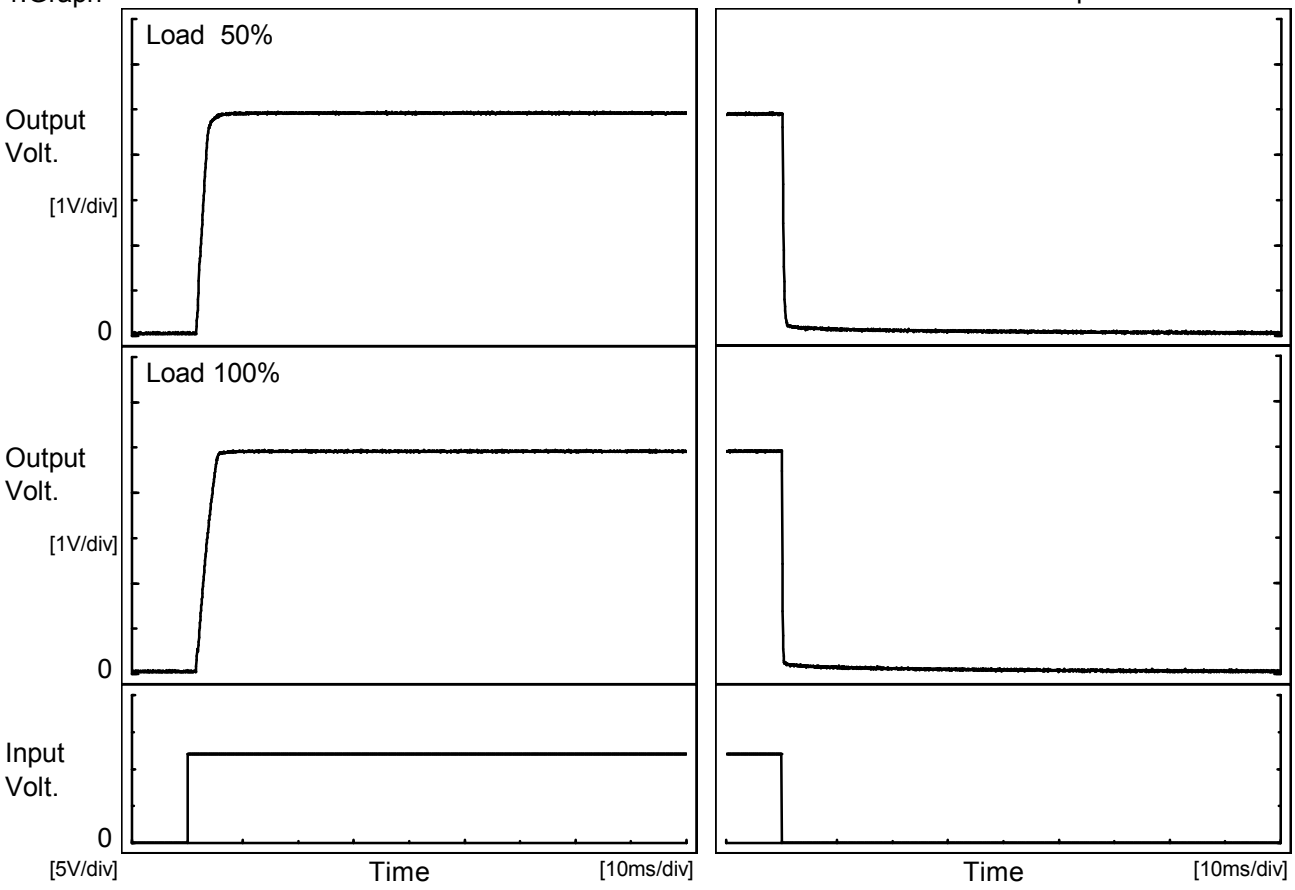
Time since start [H]	Output Voltage [V]
0.0	5.059
0.5	5.062
1.0	5.062
2.0	5.062
3.0	5.062
4.0	5.062
5.0	5.062
6.0	5.062
7.0	5.062
8.0	5.062

COSEL

Model	MGS301205	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+5V6A	

1.Graph

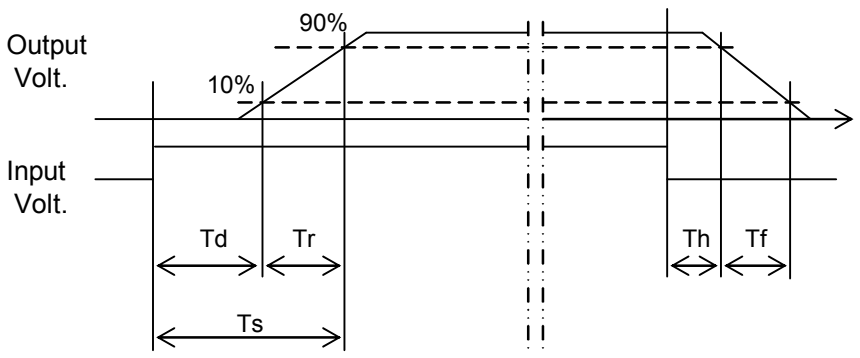
Input Volt. 12 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.9	2.0	3.9	0.1	0.5
100 %	1.8	3.3	5.1	0.1	0.3

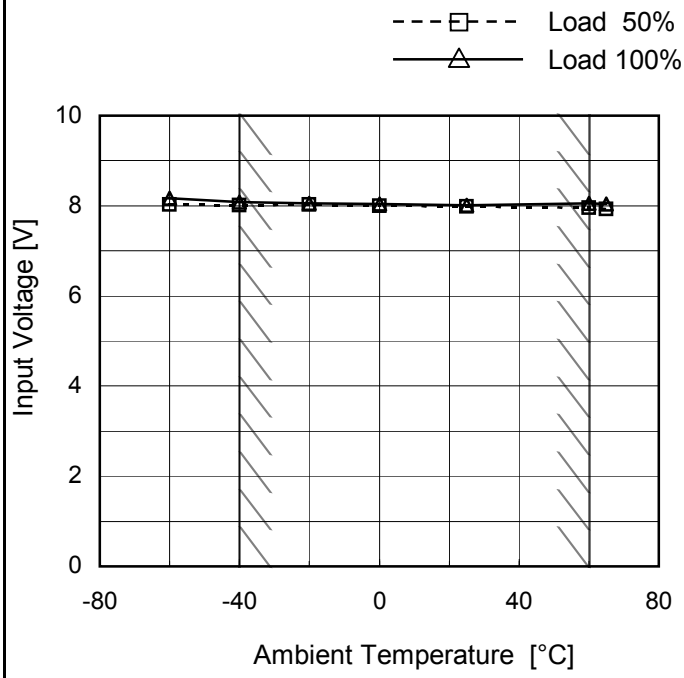


COSEL

Model	MGS301205
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V6A

Testing Circuitry Figure A

1.Graph



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

2.Values

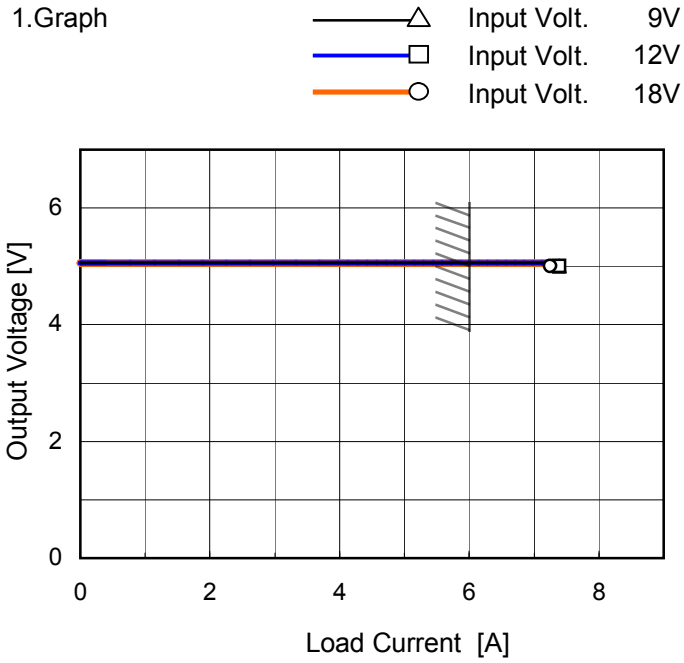
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	8.1	8.2
-40	8.1	8.1
-20	8.1	8.1
0	8.0	8.1
25	8.0	8.1
60	8.0	8.1
65	8.0	8.1
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS301205
Item	Overcurrent Protection
Object	+5V6A

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]
5.00	7.39	7.39	7.26
4.75	-	-	-
4.50	-	-	-
4.00	-	-	-
3.50	-	-	-
3.00	-	-	-
2.50	-	-	-
2.00	-	-	-
1.50	-	-	-
1.00	-	-	-
0.50	-	-	-
0.00	-	-	-

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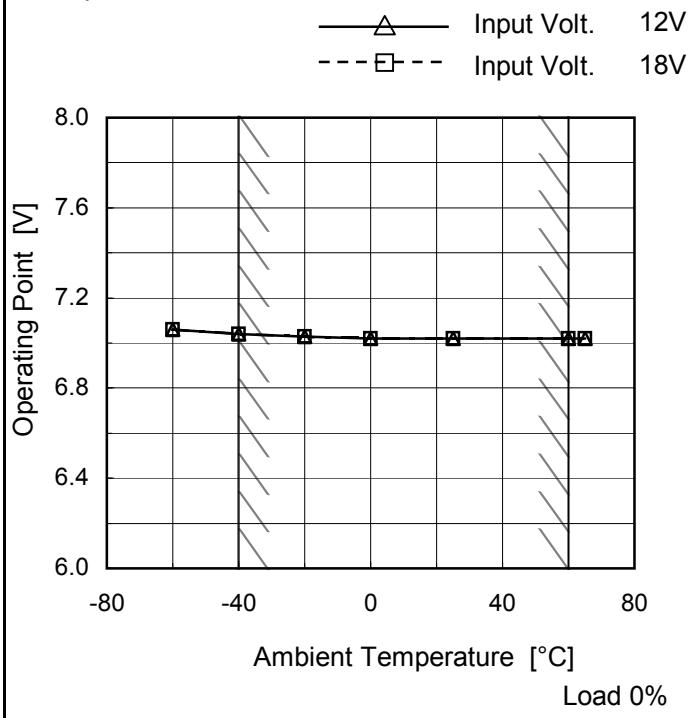
Model	MGS301205
Item	Overvoltage Protection
Object	+5V6A

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. 12[V]	Input Volt. 18[V]
-60	7.06	7.06
-40	7.04	7.04
-20	7.03	7.03
0	7.02	7.02
25	7.02	7.02
60	7.02	7.02
65	7.02	7.02
--	-	-
--	-	-
--	-	-
--	-	-

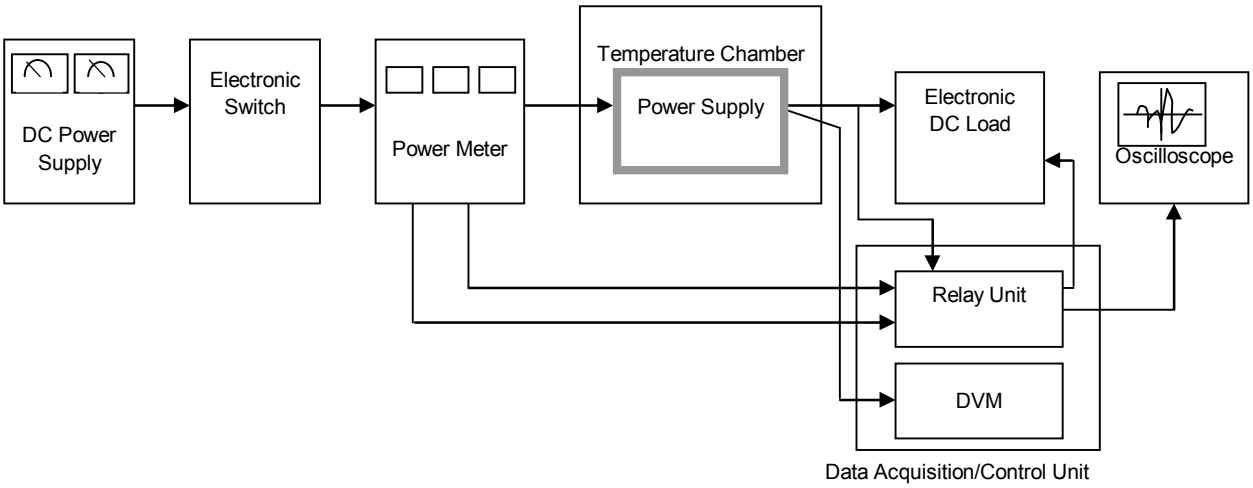


Figure A

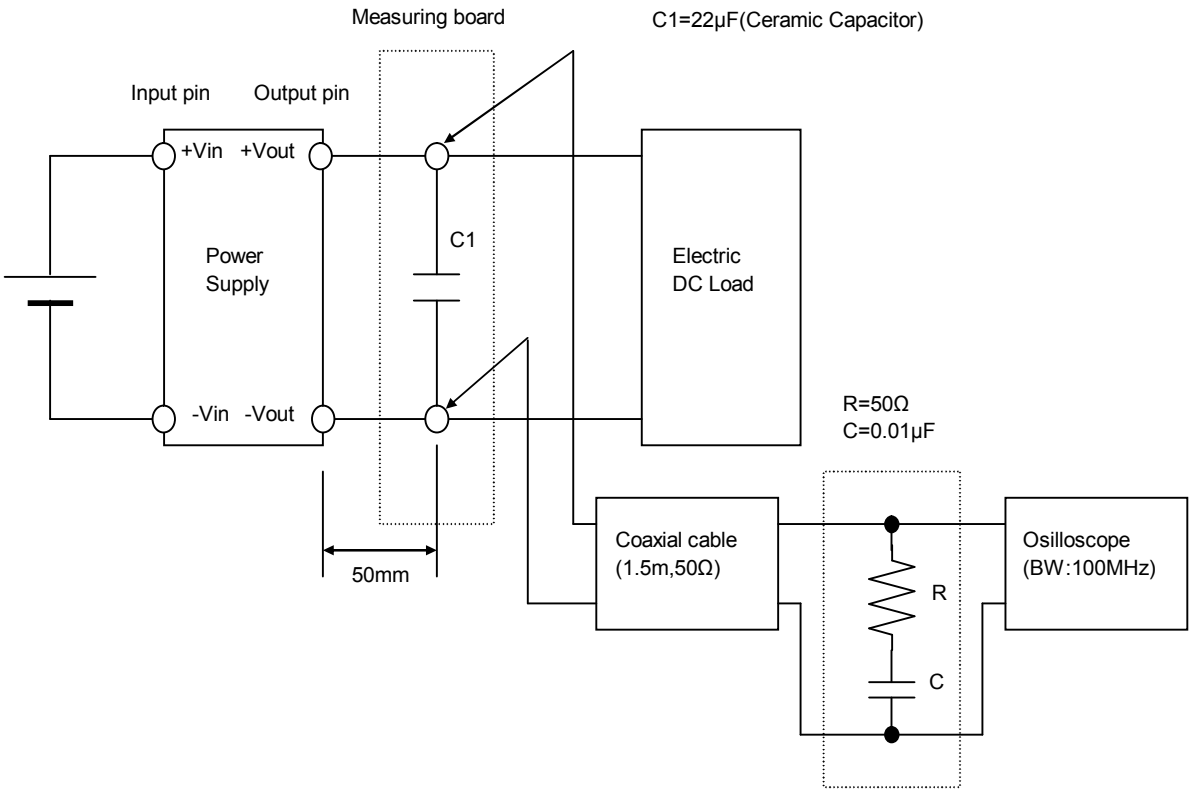


Figure B（Ripple and Ripple noise Characteristic）