参考資料

COSEL

TEST DATA OF MGS101205

Regulated DC Power Supply
July 14, 2016

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COSEL CO.,LTD.

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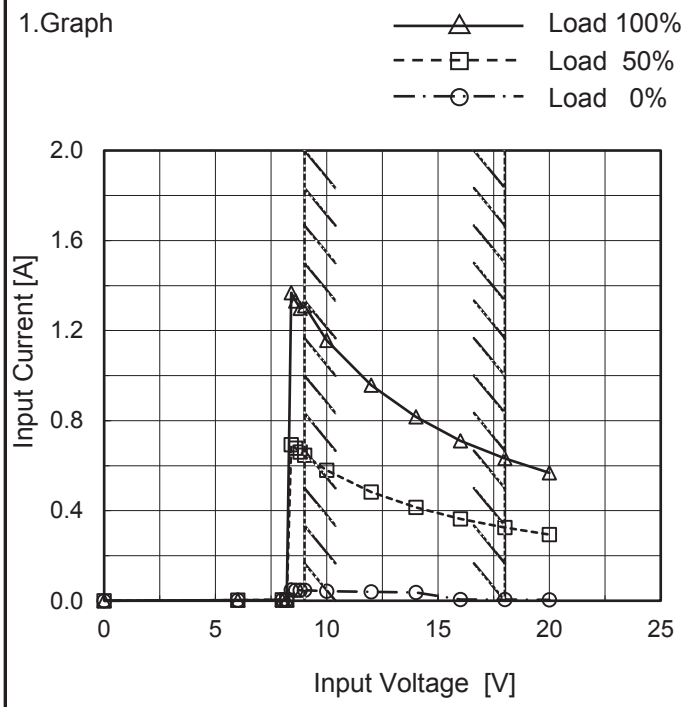
Model	MGS101205
Item	Input Current (by Input Voltage)
Object	————————

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
6.0	0.003	0.002	0.003
8.0	0.004	0.004	0.003
8.2	0.004	0.003	0.003
8.4	0.049	0.693	1.368
8.6	0.047	0.678	1.332
8.8	0.047	0.661	1.299
9.0	0.046	0.647	1.310
10.0	0.043	0.579	1.156
12.0	0.039	0.483	0.957
14.0	0.036	0.414	0.816
16.0	0.006	0.364	0.711
18.0	0.005	0.325	0.632
20.0	0.005	0.294	0.569
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

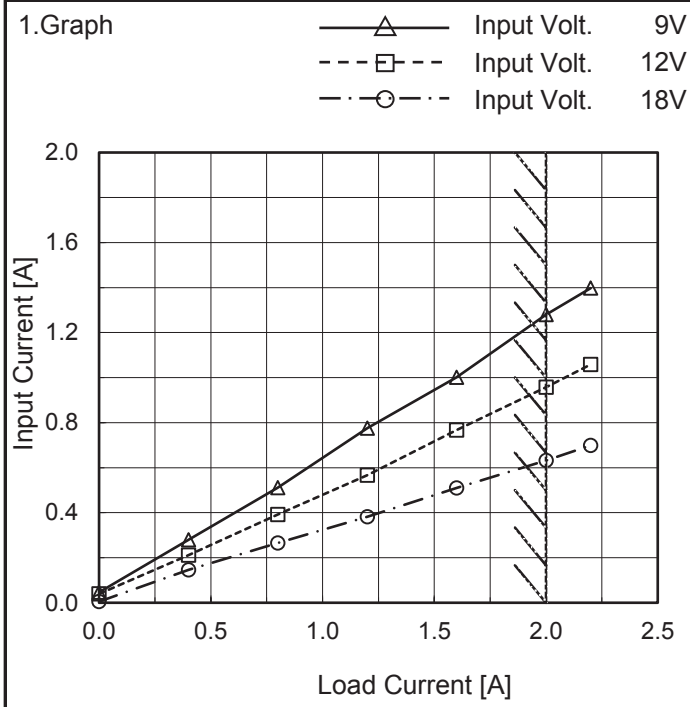
BC-11051

COSEL

Model	MGS101205
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

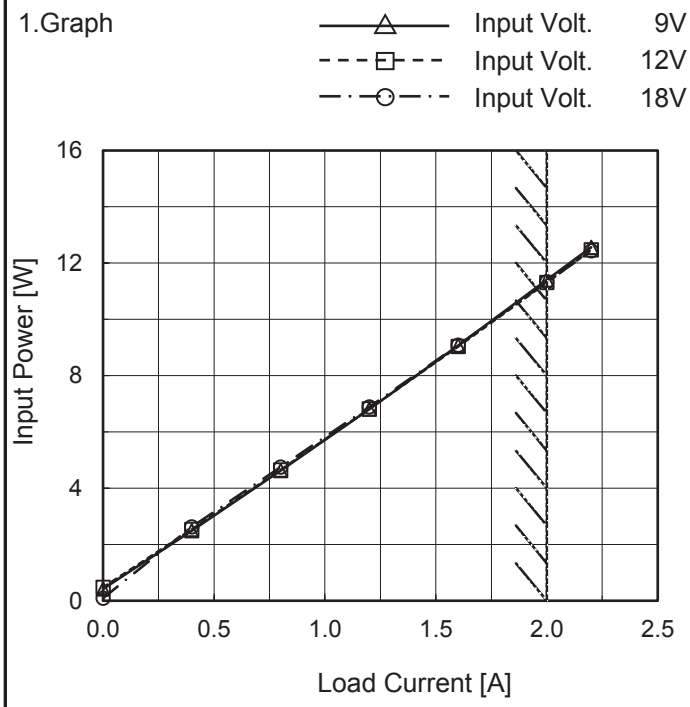
Load Current [A]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	0.046	0.039	0.005
0.4	0.280	0.212	0.146
0.8	0.511	0.392	0.266
1.2	0.776	0.567	0.382
1.6	1.002	0.767	0.510
2.0	1.280	0.957	0.632
2.2	1.398	1.059	0.699
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS101205
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

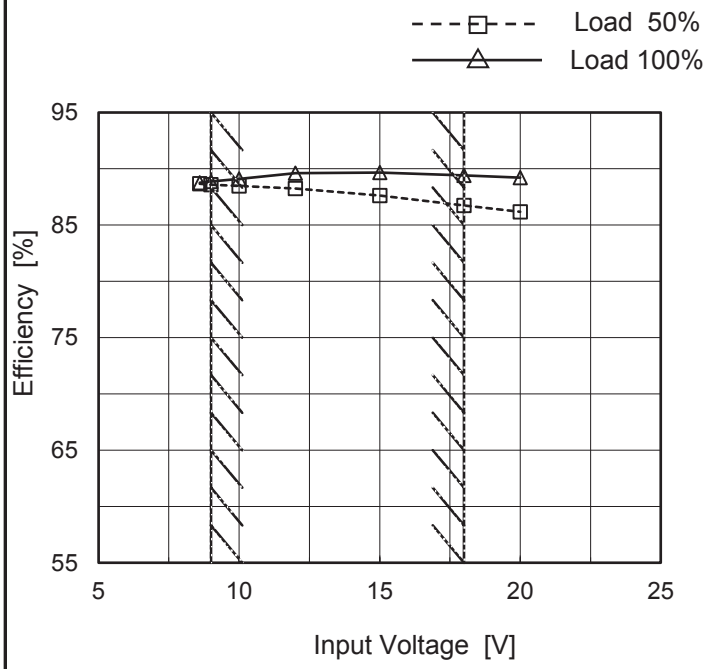
Load Current [A]	Input Power [W]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	0.42	0.47	0.09
0.4	2.49	2.53	2.62
0.8	4.62	4.65	4.75
1.2	6.81	6.82	6.89
1.6	9.07	9.04	9.09
2.0	11.40	11.31	11.33
2.2	12.56	12.46	12.43
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS101205
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%
8.6	88.7	88.8
9.0	88.6	88.9
10.0	88.5	89.1
12.0	88.2	89.6
15.0	87.6	89.7
18.0	86.8	89.4
20.0	86.2	89.2
--	-	-
--	-	-

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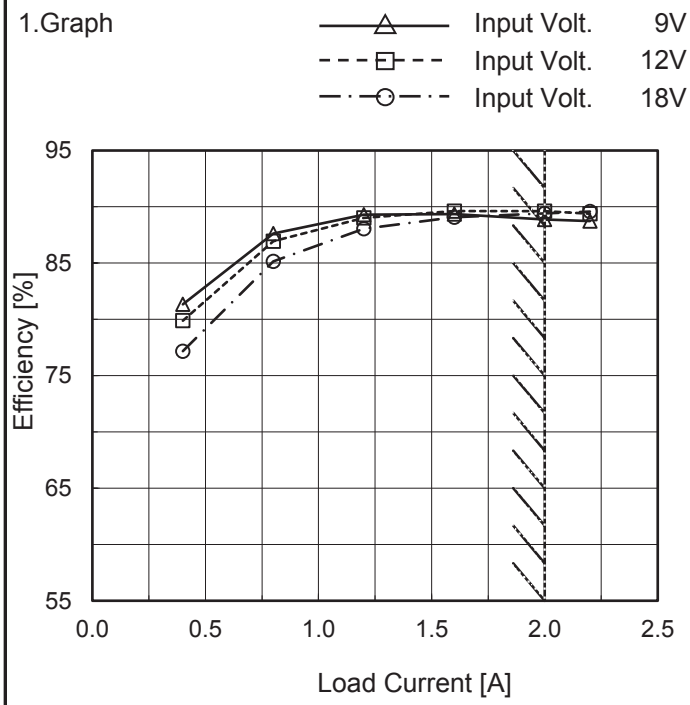
Model	MGS101205
Item	Efficiency (by Load Current)
Object	———————

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	-	-	-
0.4	81.3	79.9	77.2
0.8	87.6	86.9	85.2
1.2	89.3	89.0	88.0
1.6	89.4	89.6	89.1
2.0	88.9	89.6	89.4
2.2	88.7	89.4	89.6
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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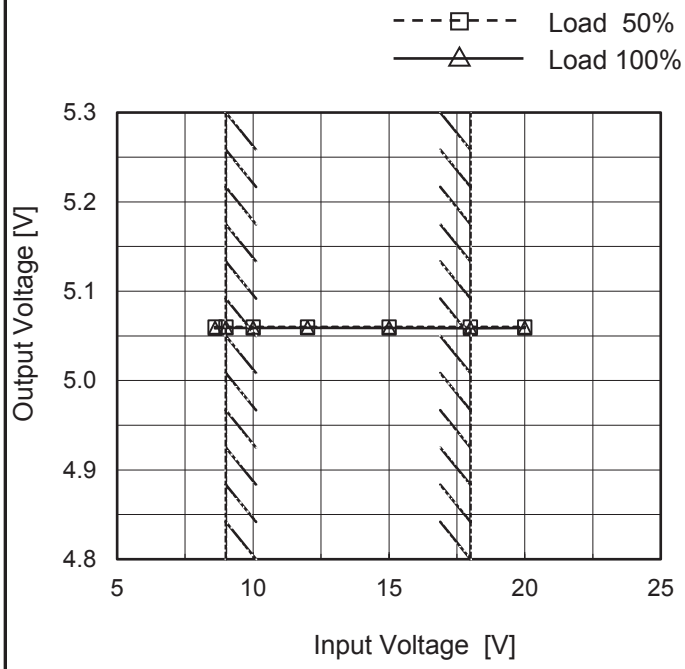
Model	MGS101205
Item	Line Regulation
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

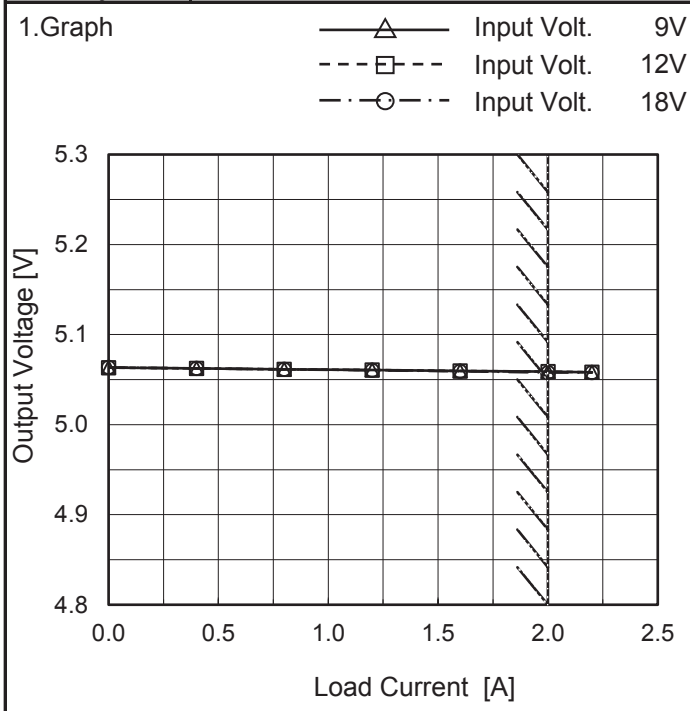
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.6	5.060	5.059
9.0	5.060	5.059
10.0	5.060	5.059
12.0	5.060	5.059
15.0	5.060	5.059
18.0	5.060	5.059
20.0	5.060	5.059
--	-	-
--	-	-

COSEL

Model	MGS101205
Item	Load Regulation
Object	+5V2A

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	5.063	5.063	5.064
0.4	5.063	5.063	5.062
0.8	5.062	5.062	5.061
1.2	5.061	5.061	5.060
1.6	5.060	5.060	5.059
2.0	5.059	5.059	5.058
2.2	5.058	5.058	5.058
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MGS101205
Item	Dynamic Load Response
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure A

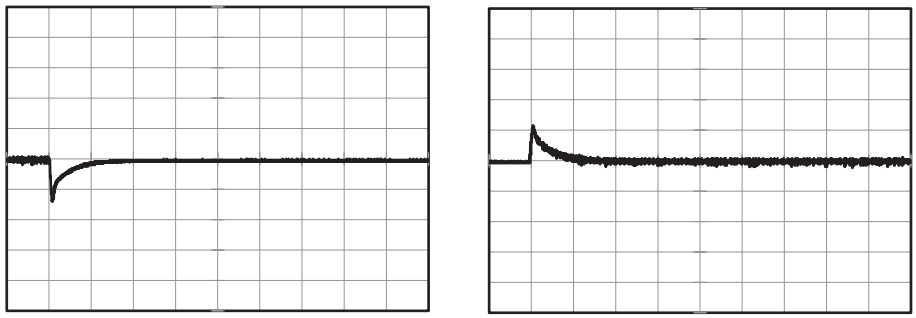
Input Volt. 12 V
Cycle 100 ms

t1,t2 = 100 μs

Load Current

t1 t2

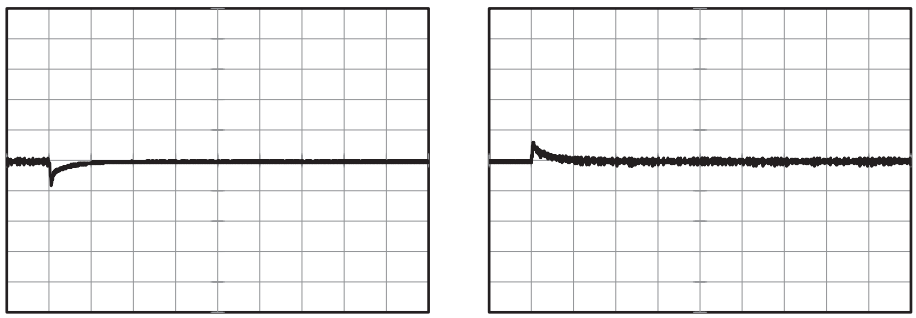
Min.Load (0A)←→
Load 100% (2A)



200 mV/div

1 ms/div 1 ms/div

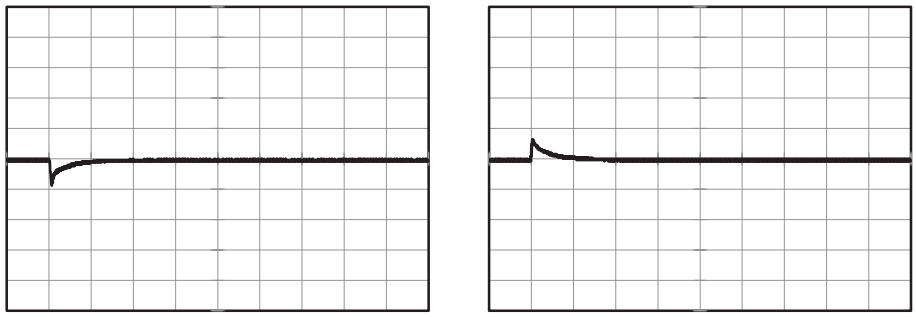
Min.Load (0A)←→
Load 50% (1A)



200 mV/div

1 ms/div 1 ms/div

Load 50% (1A)←→
Load 100% (2A)



200 mV/div

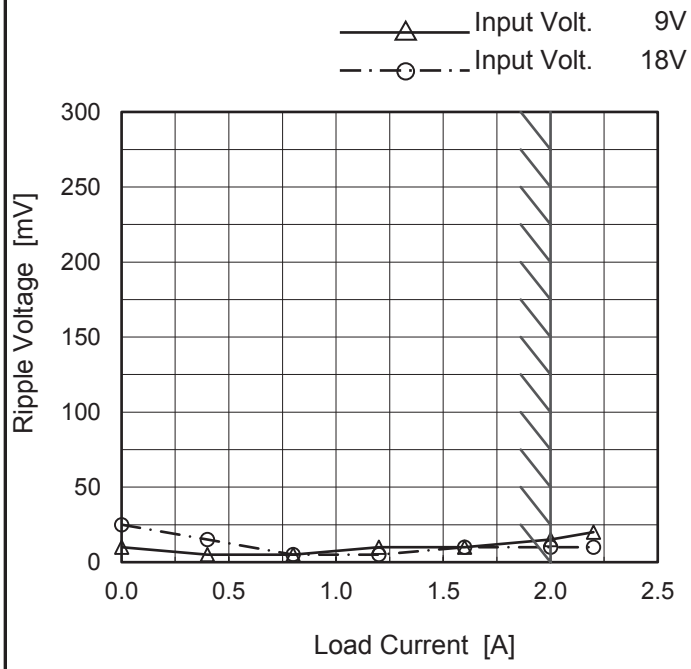
1 ms/div 1 ms/div

COSEL

Model	MGS101205
Item	Ripple Voltage (by Load Current)
Object	+5V2A

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]

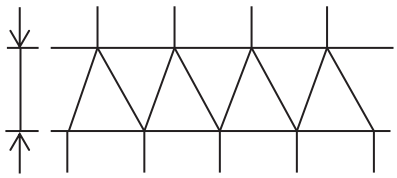


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.0	10	25
0.4	5	15
0.8	5	5
1.2	10	5
1.6	10	10
2.0	15	10
2.2	20	10
--	-	-
--	-	-
--	-	-
--	-	-

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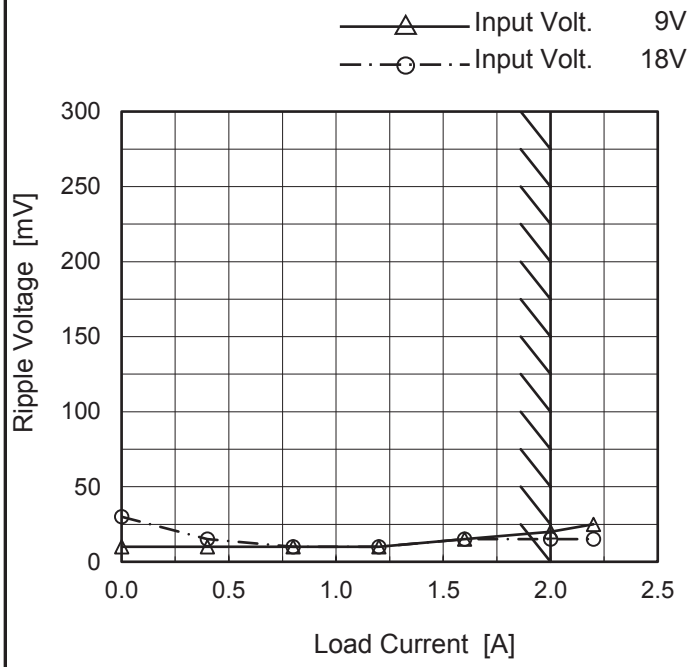
Model	MGS101205
Item	Ripple-Noise
Object	+5V2A

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.

Ripple Noise[mVp-p]

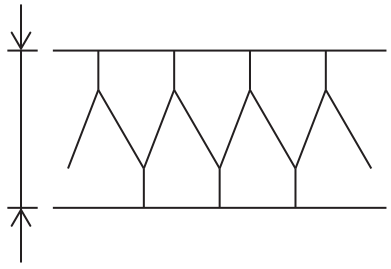


Fig.Complex Ripple Noise Wave Form

2.Values

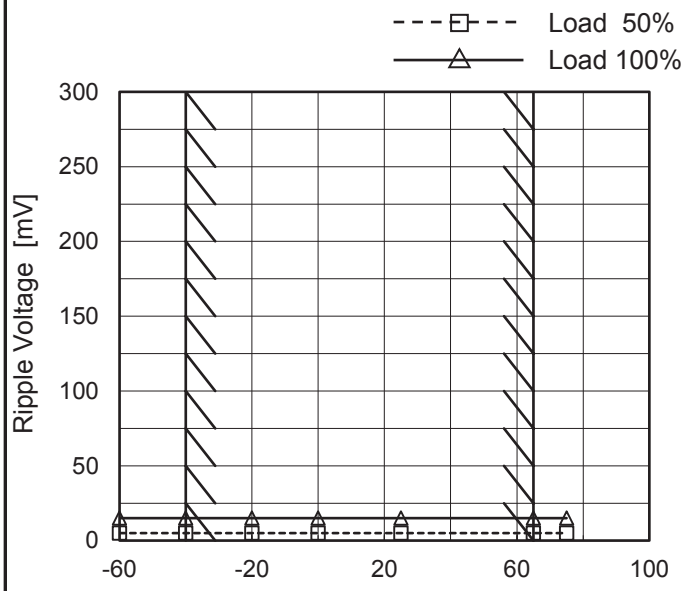
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.0	10	30
0.4	10	15
0.8	10	10
1.2	10	10
1.6	15	15
2.0	20	15
2.2	25	15
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS101205
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V2A

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

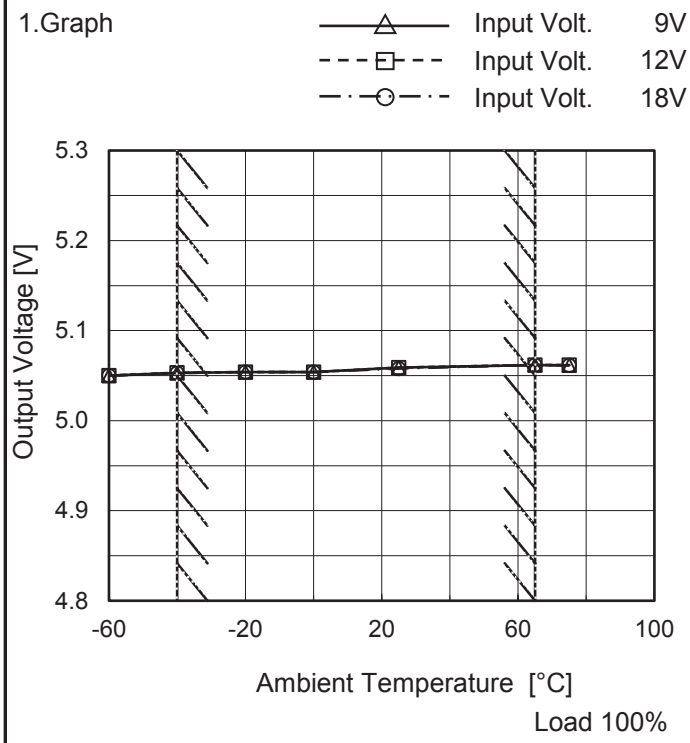
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	5	15
-40	5	15
-20	5	15
0	5	15
25	5	15
65	5	15
75	5	15
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS101205
Item	Ambient Temperature Drift
Object	+5V2A

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	5.050	5.050	5.050
-40	5.053	5.053	5.053
-20	5.054	5.054	5.054
0	5.054	5.054	5.054
25	5.059	5.059	5.058
65	5.062	5.062	5.062
75	5.061	5.062	5.062
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	MGS101205	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V2A	

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 - 65°C
Input Voltage : 9 - 18V
Load Current : 0 - 2A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ratio)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	65	18	0	5.067	±7	±0.1
Minimum Voltage	-40	9	2	5.053		

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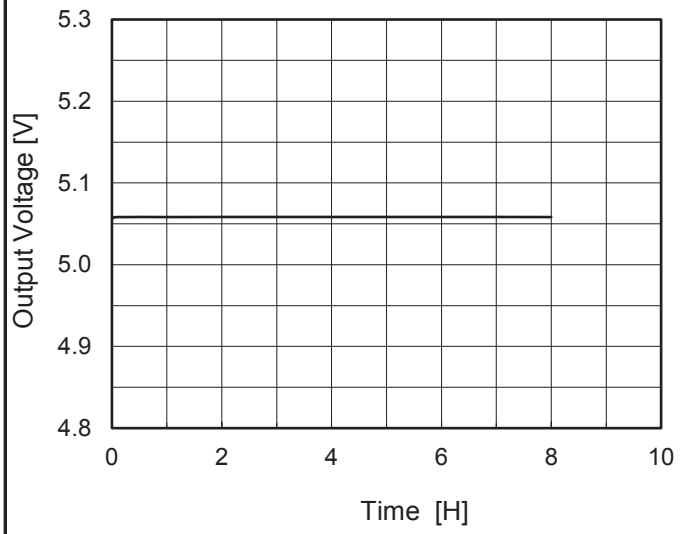
Model	MGS101205
Item	Time Lapse Drift
Object	+5V2A

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	5.056
0.5	5.058
1.0	5.058
2.0	5.058
3.0	5.058
4.0	5.058
5.0	5.058
6.0	5.058
7.0	5.058
8.0	5.058

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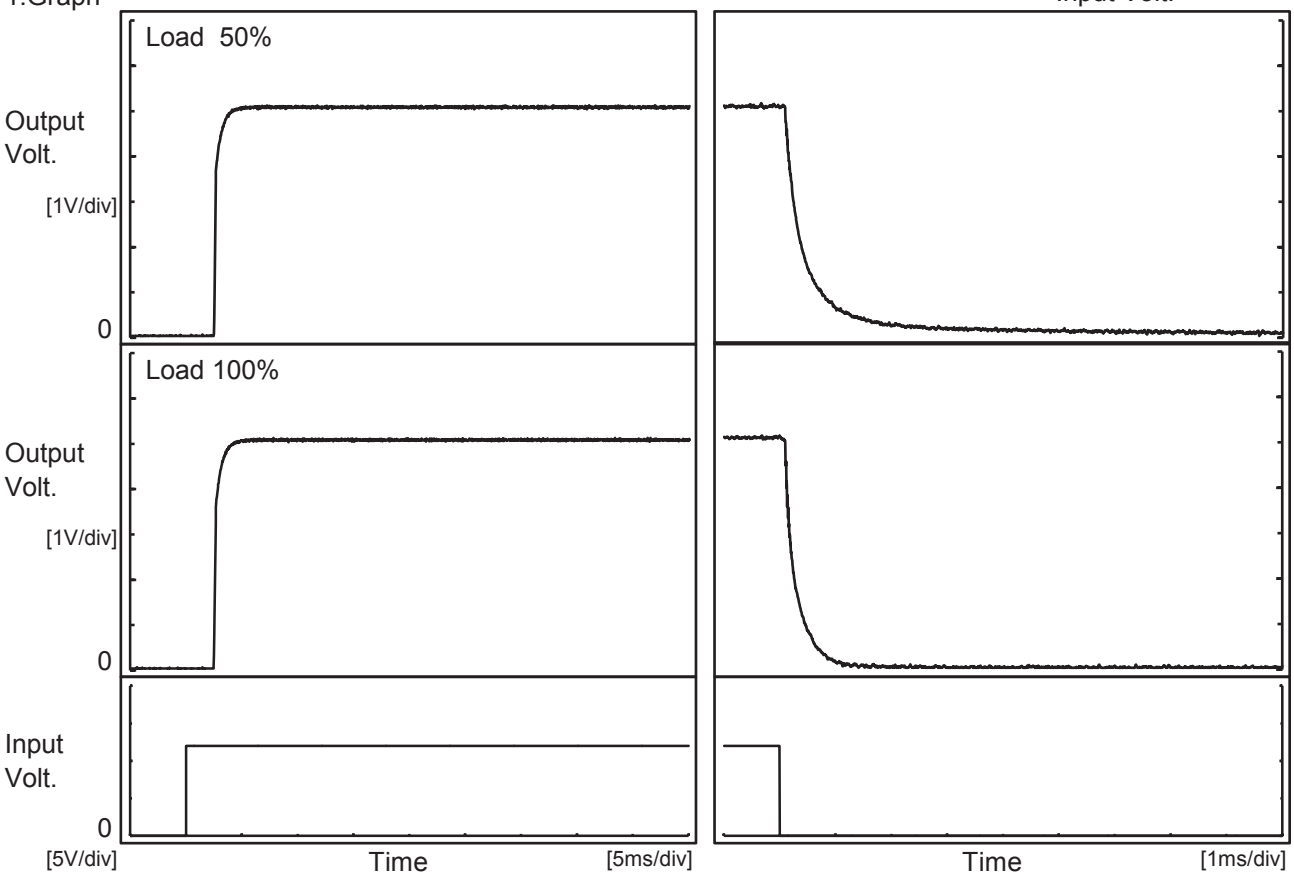
Model	MGS101205
Item	Rise and Fall Time
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

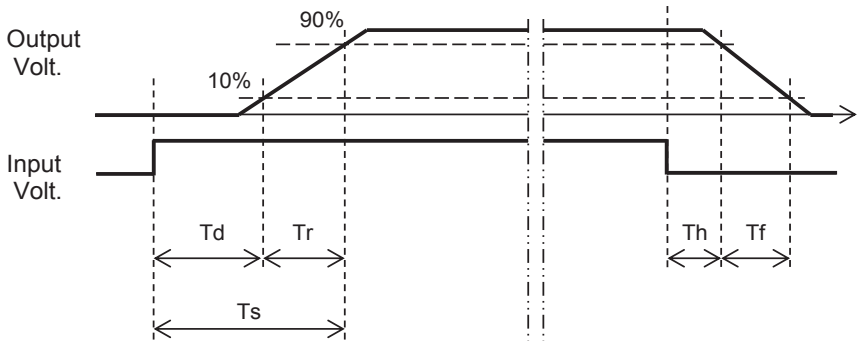
Input Volt. 12 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	2.6	0.6	3.2	0.1	1.1
100 %	2.5	0.7	3.2	0.1	0.5



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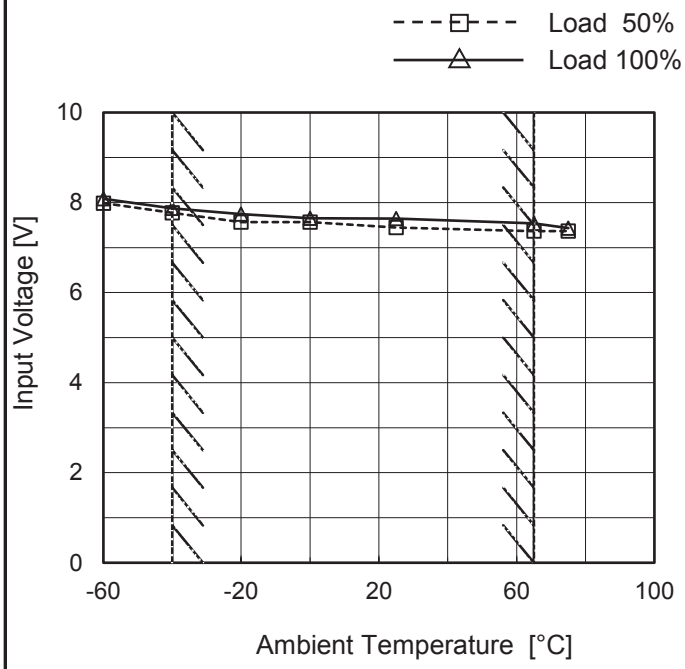
Model	MGS101205
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V2A

Testing Circuitry Figure A

1.Graph



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

2.Values

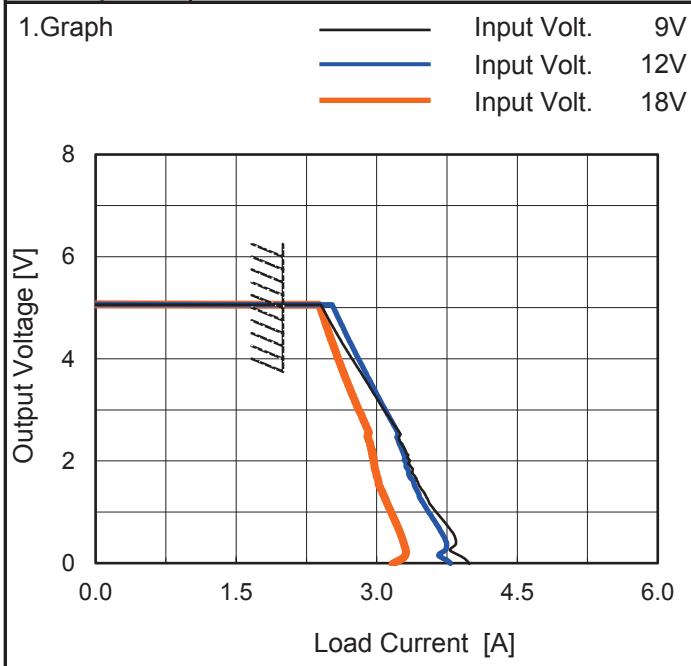
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	8.0	8.1
-40	7.8	7.9
-20	7.6	7.8
0	7.6	7.7
25	7.5	7.7
65	7.4	7.6
75	7.4	7.5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS101205
Item	Overcurrent Protection
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

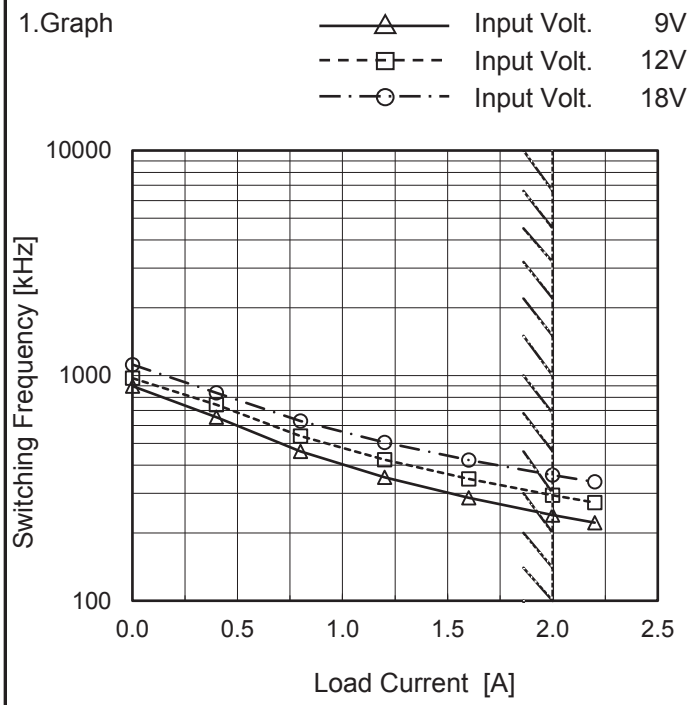
Output Voltage [V]	Load Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
5.00	2.01	2.01	2.01
4.75	2.49	2.60	2.44
4.50	2.57	2.67	2.49
4.00	2.73	2.81	2.59
3.50	2.90	2.94	2.69
3.00	3.08	3.08	2.80
2.50	3.25	3.23	2.92
2.00	3.35	3.30	2.97
1.50	3.45	3.40	3.03
1.00	3.64	3.55	3.15
0.50	3.84	3.72	3.27
0.00	3.99	3.79	3.17

COSEL

Model	MGS101205
Item	Switching Frequency (by Load Current)
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

-When load current is low, MG operates intermittently, so switching frequency would not become constant.

2.Values

Load Current [A]	Frequency [kHz]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	899	975	1120
0.4	653	744	839
0.8	460	540	629
1.2	354	423	505
1.6	287	348	421
2.0	241	294	361
2.2	222	273	337
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

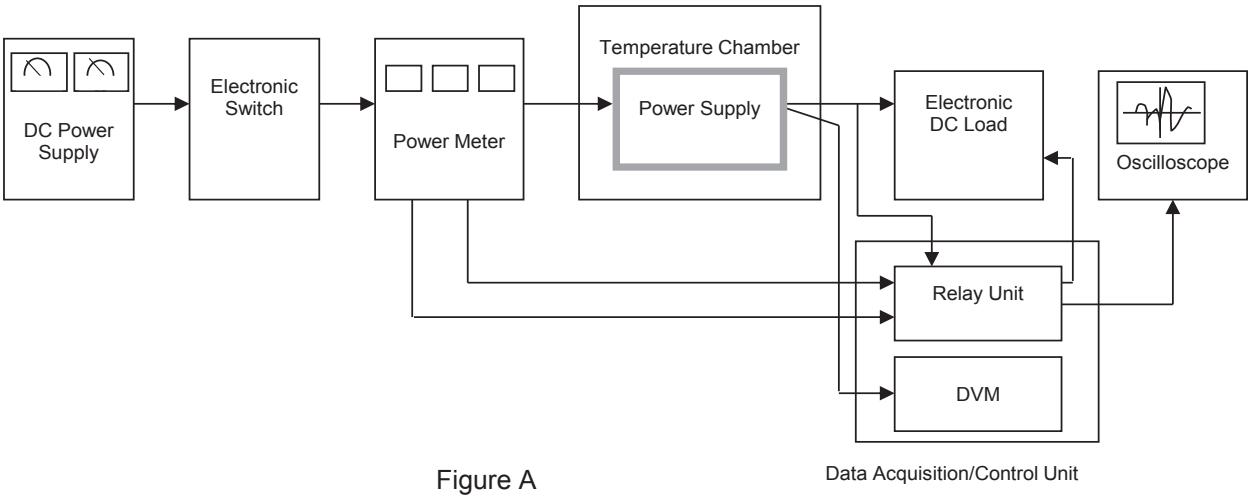


Figure A

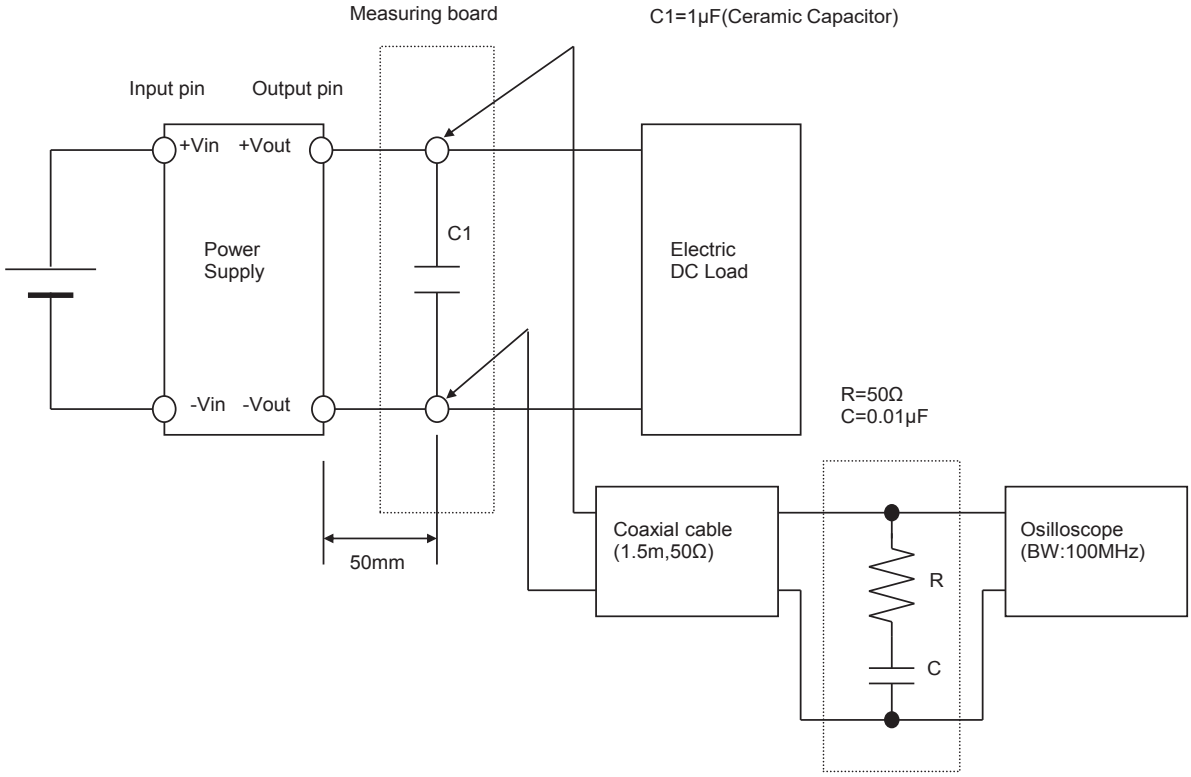


Figure B（Ripple and Ripple noise Characteristic）