参考資料

COSEL

TEST DATA OF MGS62405

Regulated DC Power Supply
July 29, 2016

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COSEL CO.,LTD.

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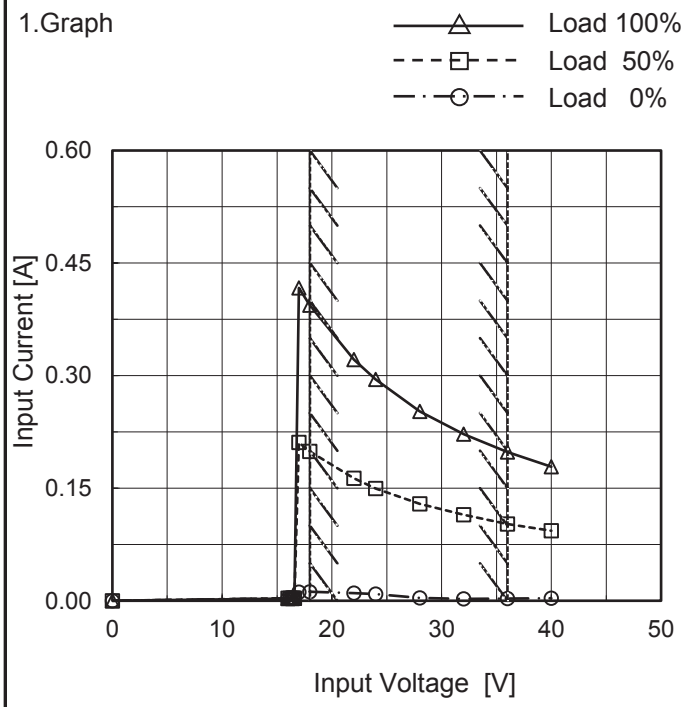
COSEL

Model	MGS62405
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

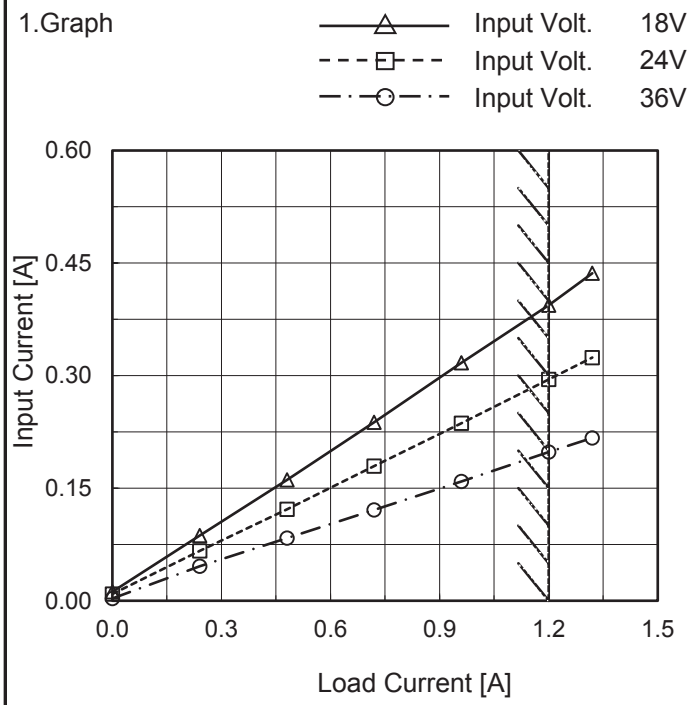
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
16.0	0.003	0.003	0.003
16.2	0.003	0.004	0.003
16.4	0.003	0.003	0.003
16.5	0.003	0.003	0.004
16.6	0.003	0.003	0.003
17.0	0.012	0.211	0.417
18.0	0.012	0.199	0.394
22.0	0.010	0.163	0.321
24.0	0.009	0.149	0.295
28.0	0.004	0.129	0.252
32.0	0.003	0.115	0.222
36.0	0.003	0.102	0.198
40.0	0.003	0.094	0.179
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS62405
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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.012	0.009	0.003
0.24	0.087	0.067	0.046
0.48	0.161	0.122	0.083
0.72	0.238	0.179	0.121
0.96	0.317	0.237	0.159
1.20	0.394	0.295	0.198
1.32	0.436	0.324	0.217
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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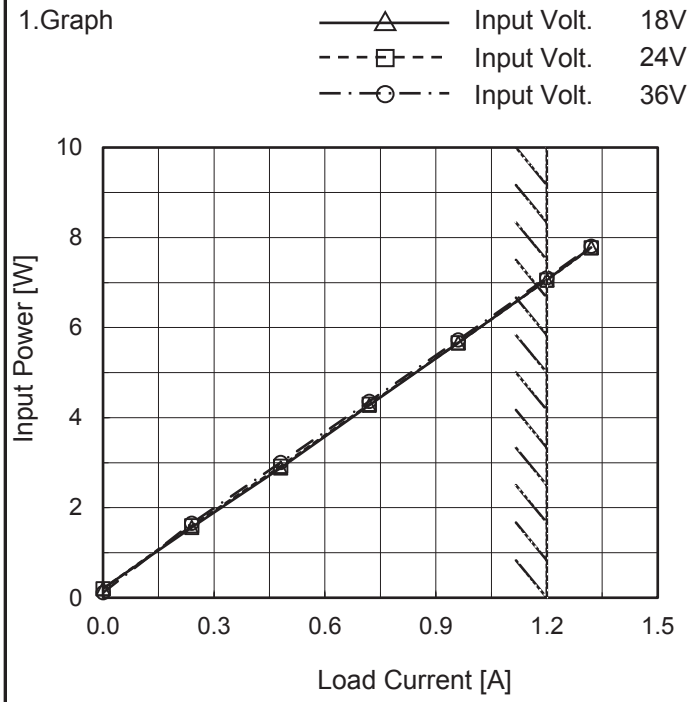
Model	MGS62405
Item	Input Power (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

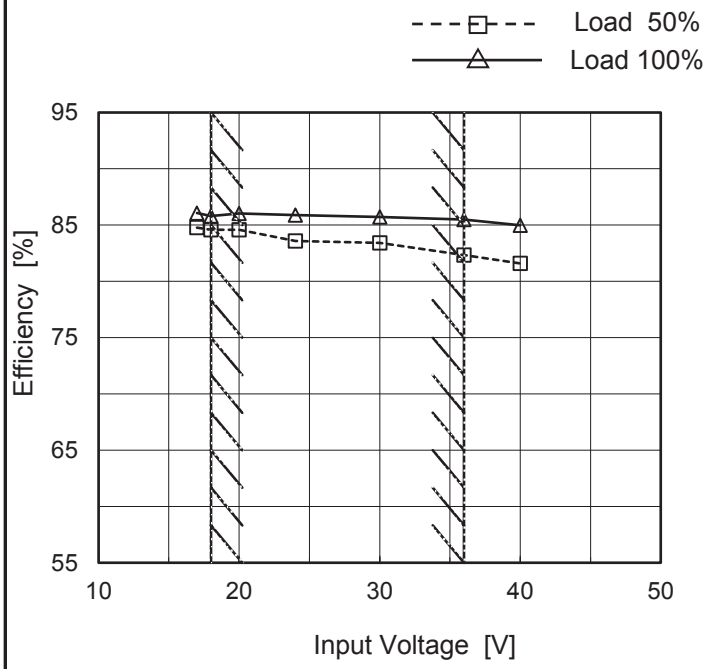
Load Current [A]	Input Power [W]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.20	0.20	0.11
0.24	1.56	1.60	1.66
0.48	2.89	2.92	3.00
0.72	4.27	4.30	4.36
0.96	5.66	5.66	5.73
1.20	7.07	7.06	7.10
1.32	7.78	7.77	7.81
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS62405
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

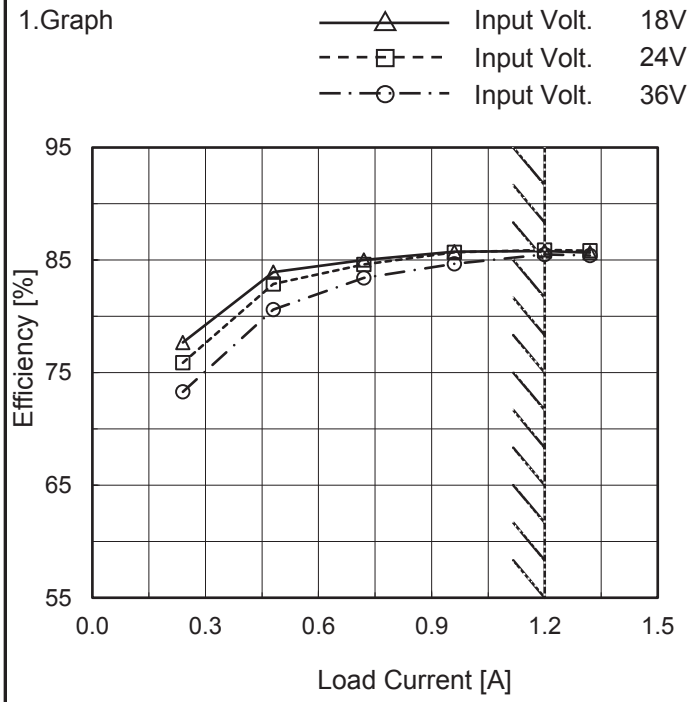
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
17	84.8	86.1
18	84.6	85.8
20	84.6	86.0
24	83.6	85.9
30	83.4	85.7
36	82.3	85.5
40	81.6	85.0
--	-	-
--	-	-

COSEL

Model	MGS62405
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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-	-	-
0.24	77.7	75.9	73.3
0.48	83.9	82.9	80.6
0.72	85.0	84.6	83.4
0.96	85.7	85.7	84.7
1.20	85.8	85.9	85.5
1.32	85.7	85.8	85.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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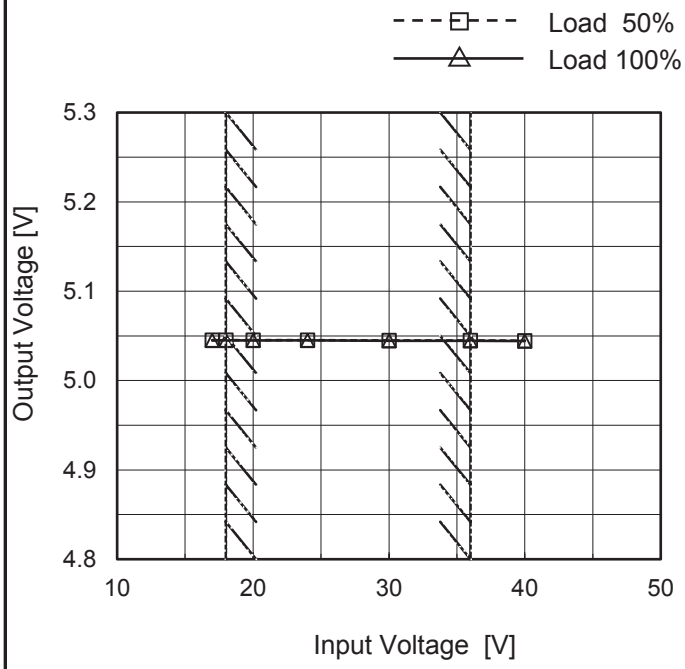
Model	MGS62405
Item	Line Regulation
Object	+5V1.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

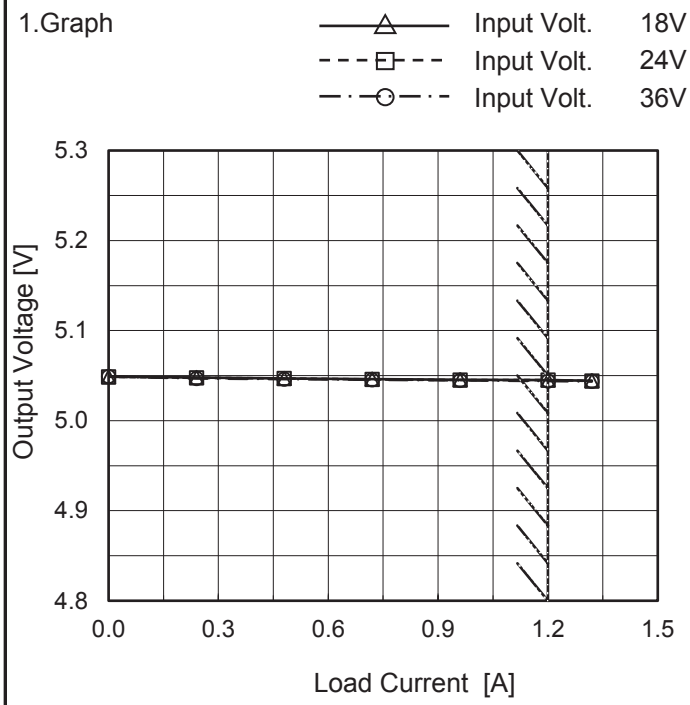
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	5.045	5.045
18	5.045	5.045
20	5.045	5.045
24	5.045	5.045
30	5.045	5.045
36	5.045	5.044
40	5.045	5.044
--	-	-
--	-	-

COSEL

Model	MGS62405
Item	Load Regulation
Object	+5V1.2A

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	5.049	5.049	5.049
0.24	5.048	5.048	5.047
0.48	5.047	5.047	5.046
0.72	5.046	5.046	5.045
0.96	5.046	5.045	5.045
1.20	5.045	5.045	5.044
1.32	5.044	5.044	5.044
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MGS62405	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+5V1.2A	

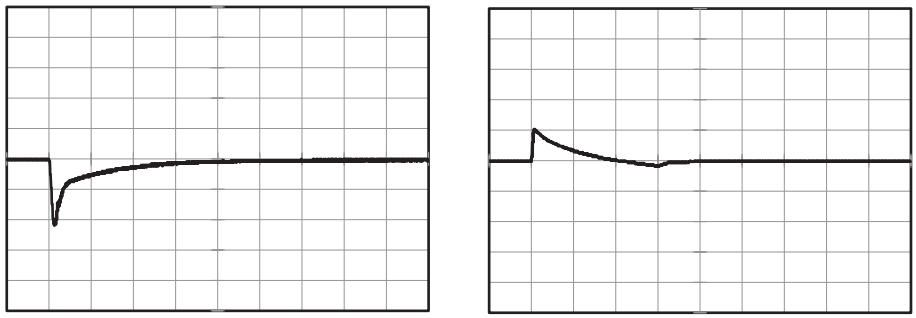
Input Volt. 24 V
Cycle 100 ms

t1,t2 = 50 μ s

Load Current

t1 t2

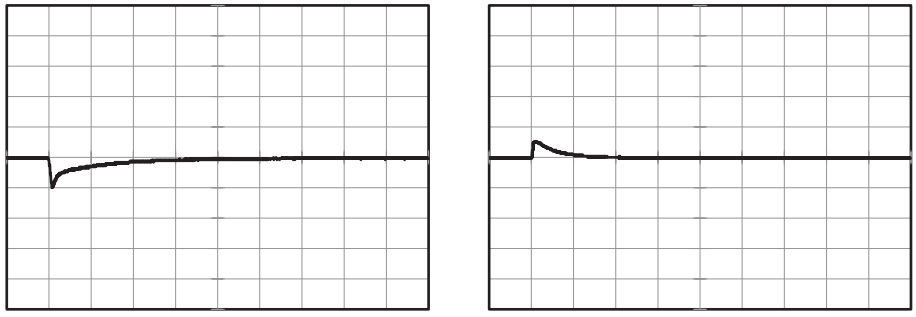
Min.Load (0A)←→
Load 100% (1.2A)



200 mV/div

400 μs/div 1 ms/div

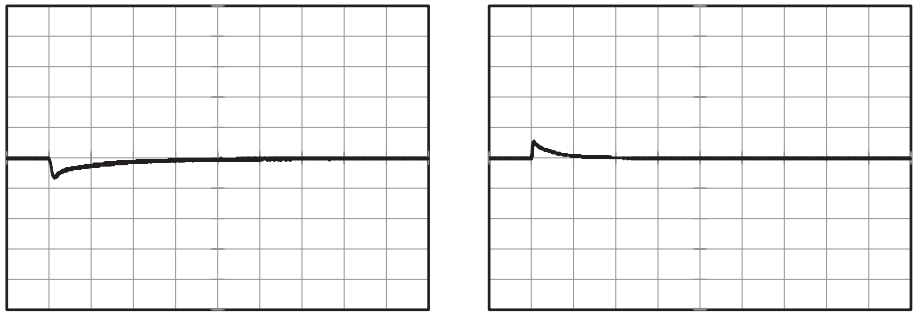
Min.Load (0A)←→
Load 50% (0.6A)



200 mV/div

400 μs/div 1 ms/div

Load 50% (0.6A)←→
Load 100% (1.2A)



200 mV/div

400 μs/div 1 ms/div

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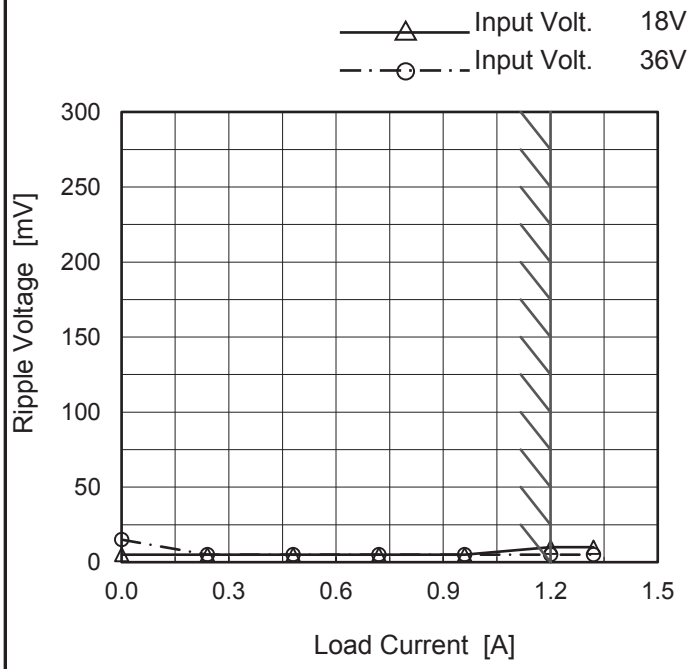
Model	MGS62405
Item	Ripple Voltage (by Load Current)
Object	+5V1.2A

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]

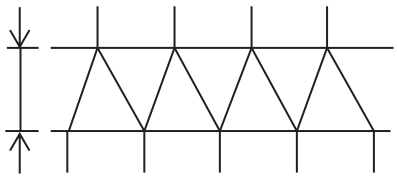


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV] Input Volt. 18 [V]	Ripple Voltage [mV] Input Volt. 36 [V]
0.00	5	15
0.24	5	5
0.48	5	5
0.72	5	5
0.96	5	5
1.20	10	5
1.32	10	5
--	-	-
--	-	-
--	-	-
--	-	-

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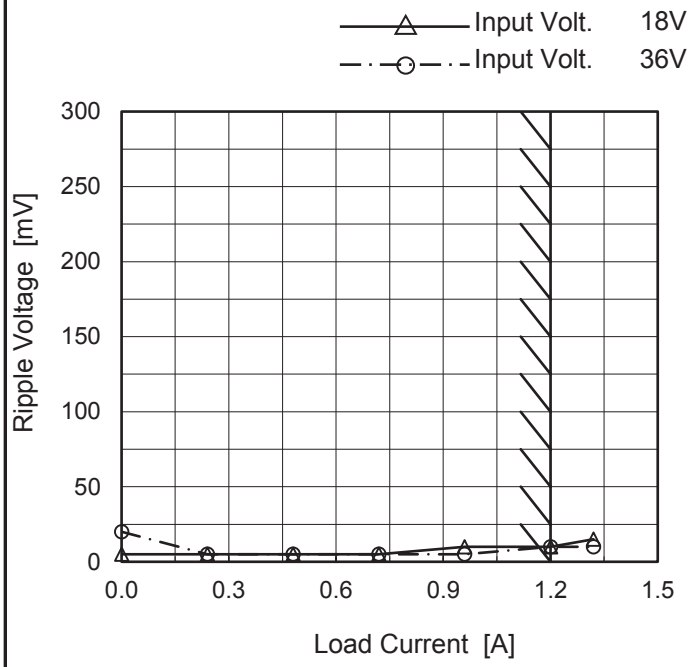
Model	MGS62405
Item	Ripple-Noise
Object	+5V1.2A

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]

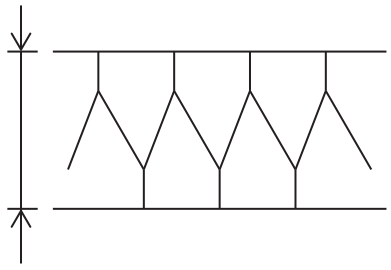


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	5	20
0.24	5	5
0.48	5	5
0.72	5	5
0.96	10	5
1.20	10	10
1.32	15	10
--	-	-
--	-	-
--	-	-
--	-	-

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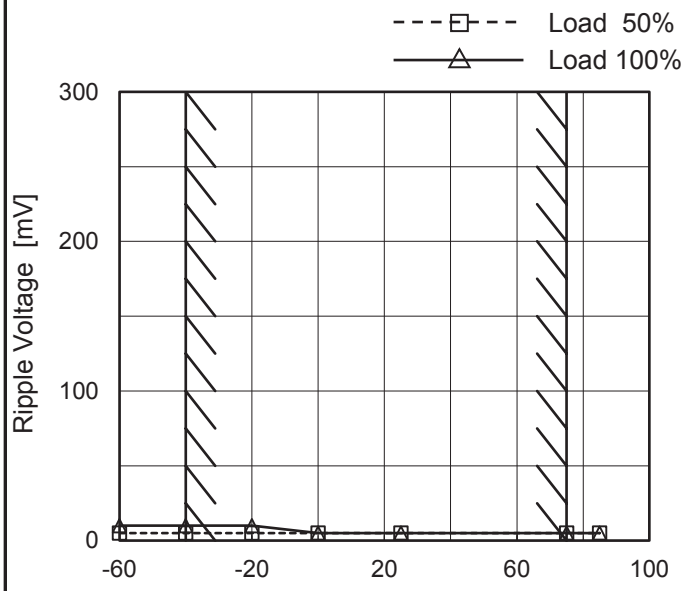
Model	MGS62405
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V1.2A

Testing Circuitry Figure B

1.Graph



Input Volt. 24V

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	10
-40	5	10
-20	5	10
0	5	5
25	5	5
75	5	5
85	5	5
--	-	-
--	-	-
--	-	-
--	-	-

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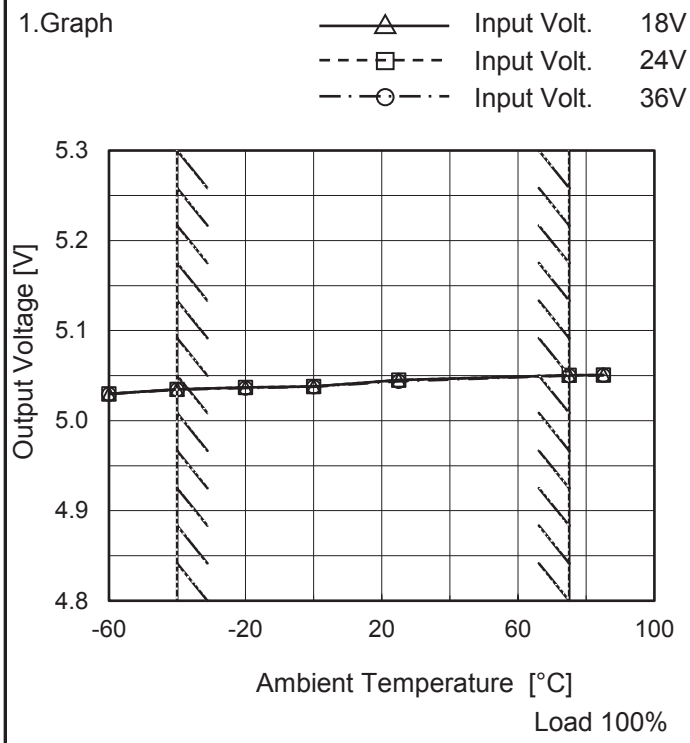
Model	MGS62405
Item	Ambient Temperature Drift
Object	+5V1.2A

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-60	5.030	5.030	5.030
-40	5.035	5.035	5.035
-20	5.037	5.037	5.036
0	5.038	5.038	5.038
25	5.045	5.045	5.044
75	5.050	5.051	5.050
85	5.051	5.051	5.051
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	MGS62405	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V1.2A	

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 - 75°C
Input Voltage : 18 - 36V
Load Current : 0 - 1.2A

* 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

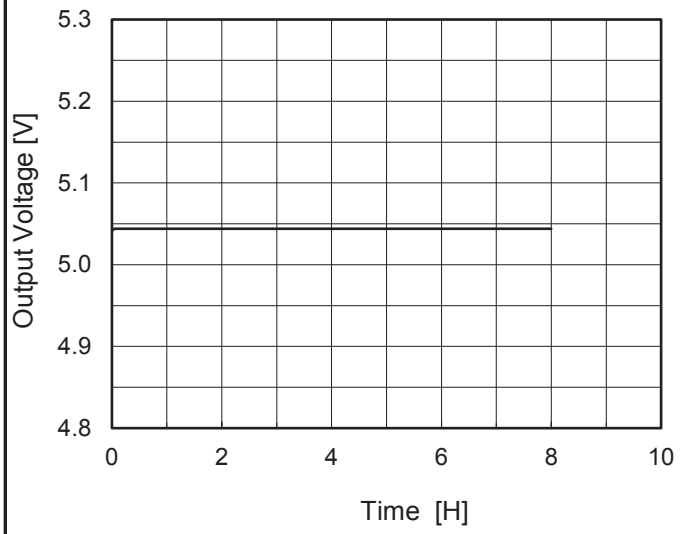
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	75	24	0	5.055	±10	±0.2
Minimum Voltage	-40	36	1.2	5.035		

COSEL

Model	MGS62405
Item	Time Lapse Drift
Object	+5V1.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 24V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.041
0.5	5.044
1.0	5.044
2.0	5.044
3.0	5.044
4.0	5.044
5.0	5.044
6.0	5.044
7.0	5.044
8.0	5.044

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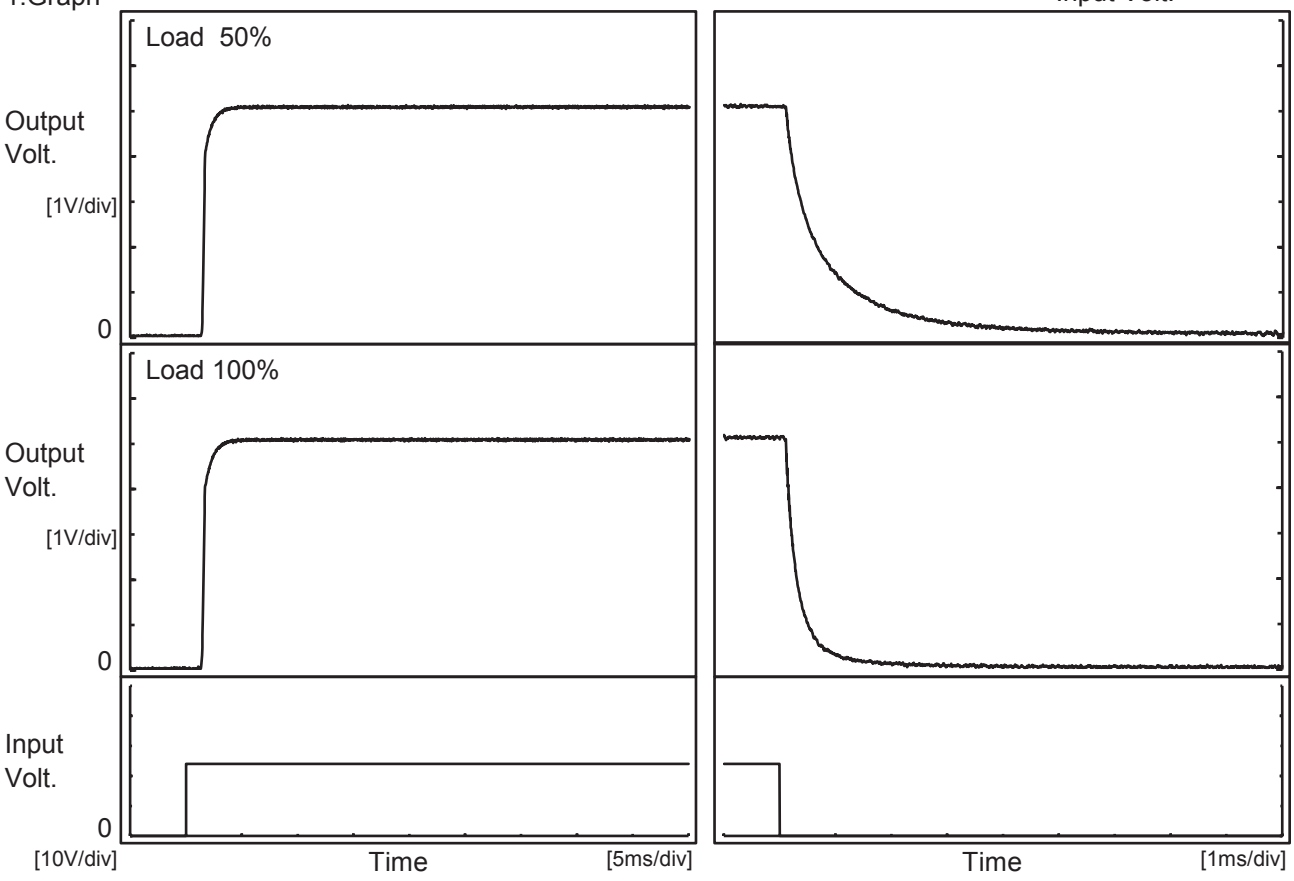
Model	MGS62405
Item	Rise and Fall Time
Object	+5V1.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

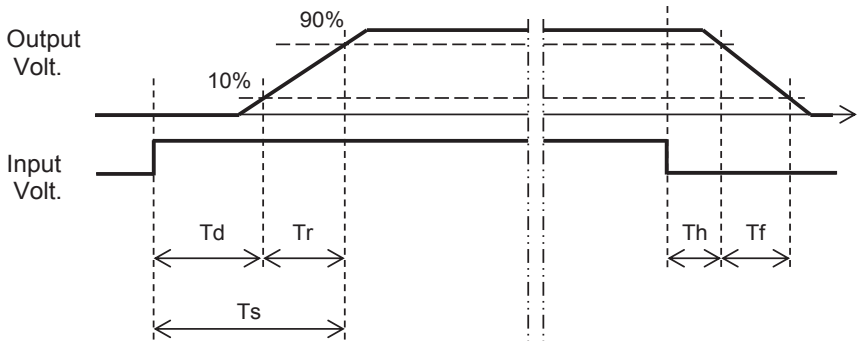
Input Volt. 24 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.5	0.7	2.2	0.2	2.1
100 %	1.5	0.7	2.2	0.1	0.6



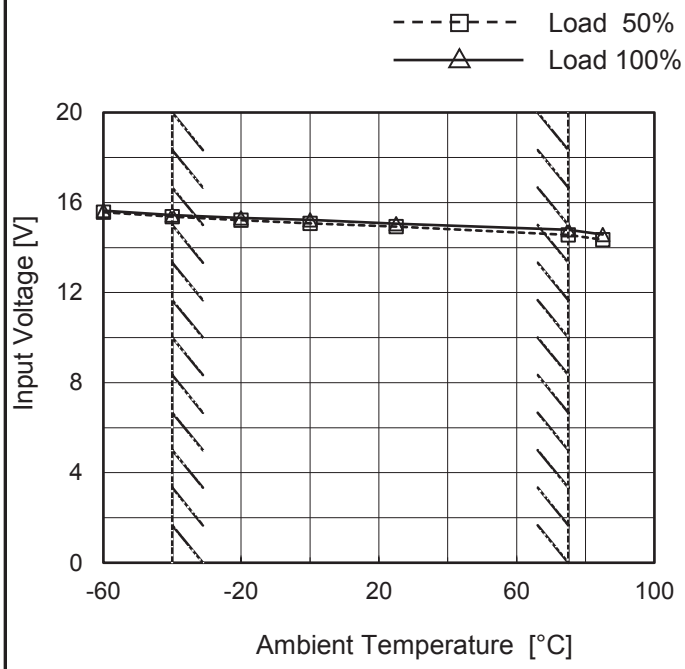
BC-11019

COSEL

Model	MGS62405
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V1.2A

Testing Circuitry Figure A

1.Graph



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

2.Values

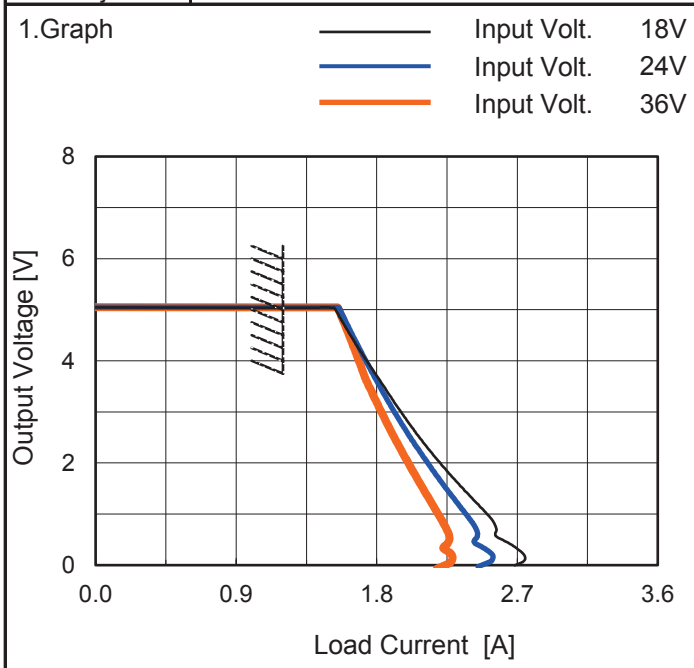
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	15.6	15.7
-40	15.4	15.5
-20	15.3	15.4
0	15.1	15.3
25	15.0	15.1
75	14.6	14.8
85	14.4	14.6
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS62405
Item	Overcurrent Protection
Object	+5V1.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

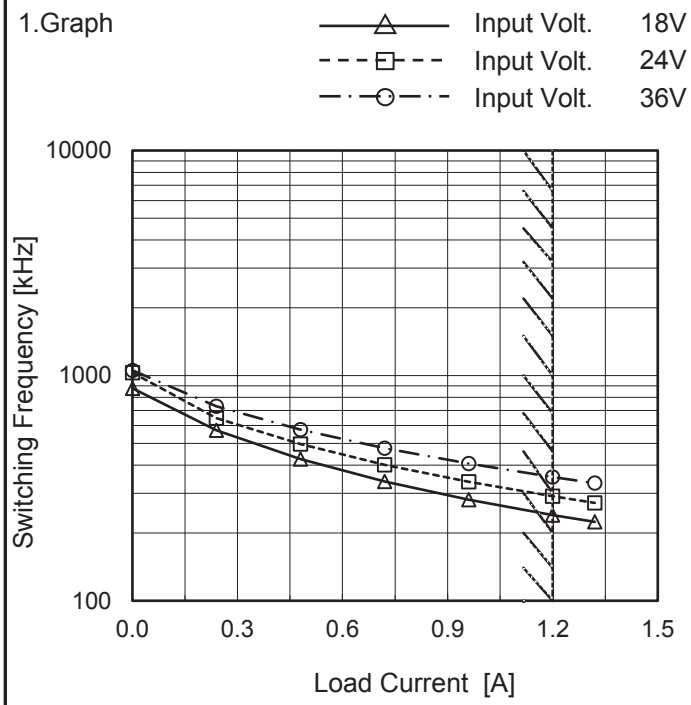
Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
5.00	1.20	1.20	1.20
4.75	1.58	1.60	1.59
4.50	1.63	1.64	1.62
4.00	1.73	1.73	1.69
3.50	1.84	1.82	1.75
3.00	1.95	1.91	1.83
2.50	2.07	2.01	1.91
2.00	2.20	2.12	2.00
1.50	2.35	2.24	2.09
1.00	2.51	2.37	2.19
0.50	2.60	2.44	2.27
0.00	2.69	2.45	2.19

COSEL

Model	MGS62405
Item	Switching Frequency (by Load Current)
Object	+5V1.2A

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	879	1031	1056
0.24	573	647	730
0.48	427	497	576
0.72	339	402	476
0.96	281	338	407
1.20	240	291	354
1.32	224	272	333
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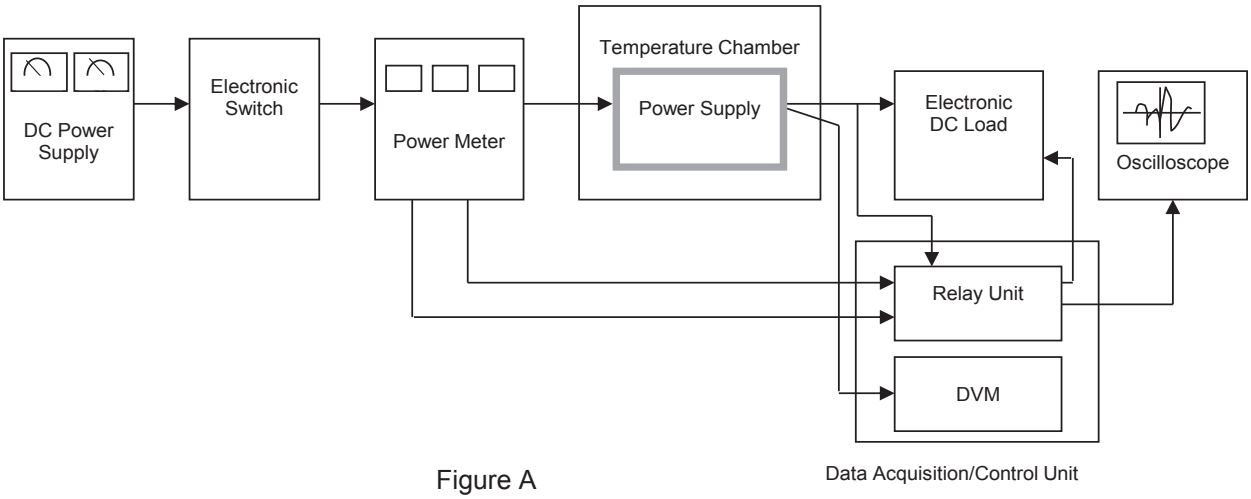

Figure A

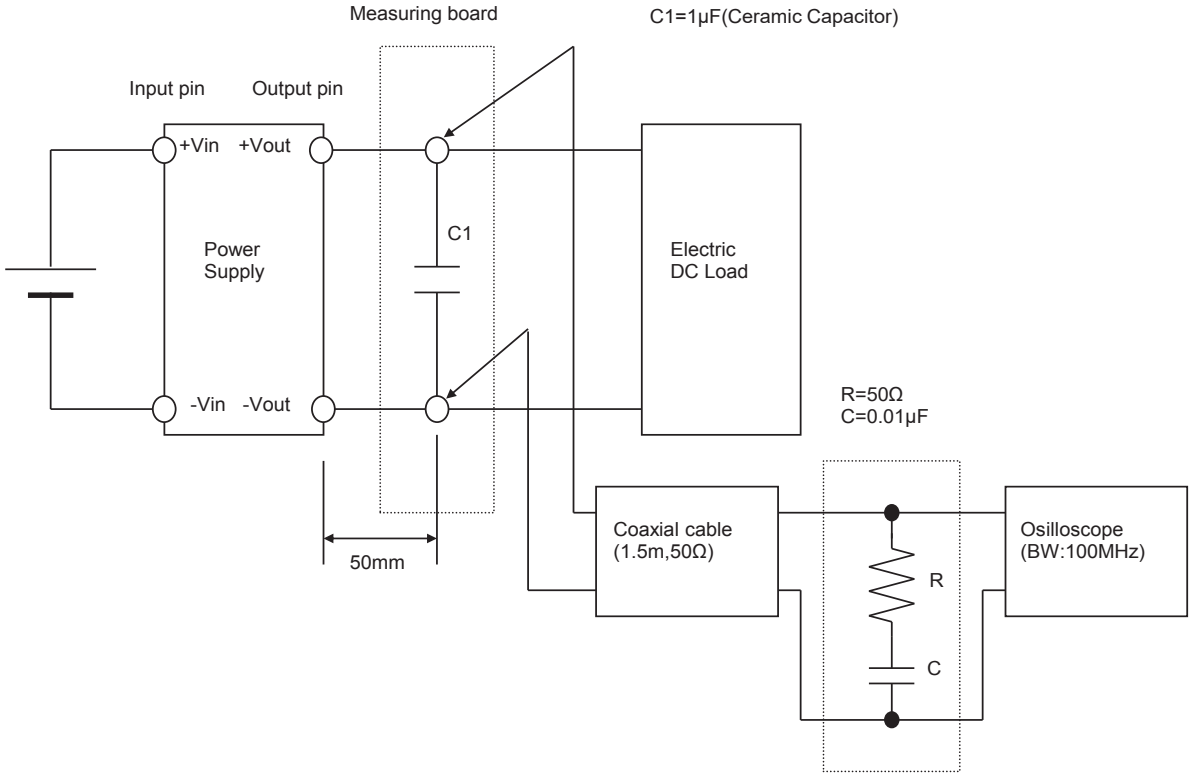

Figure B（Ripple and Ripple noise Characteristic）