参考資料

COSEL

TEST DATA OF MGS64805

Regulated DC Power Supply
August 1, 2016

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COSEL CO.,LTD.

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

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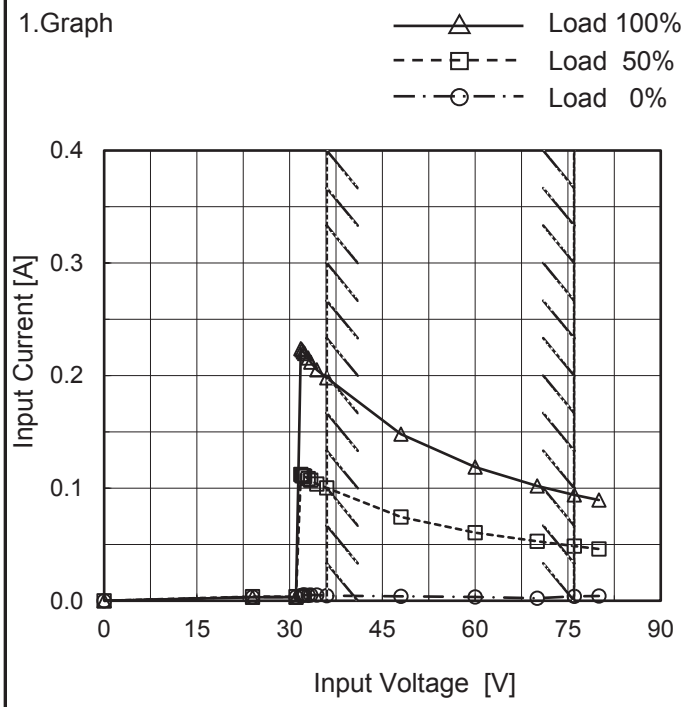


Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
24.0	0.003	0.004	0.003
31.0	0.003	0.004	0.003
31.8	0.005	0.112	0.224
32.0	0.005	0.111	0.223
32.2	0.005	0.111	0.221
32.4	0.005	0.111	0.220
33.0	0.005	0.108	0.216
33.4	0.005	0.107	0.212
34.4	0.005	0.104	0.205
36.0	0.005	0.100	0.198
48.0	0.004	0.074	0.148
60.0	0.003	0.061	0.119
70.0	0.002	0.053	0.102
76.0	0.004	0.049	0.094
80.0	0.004	0.046	0.090
--	-	-	-
--	-	-	-

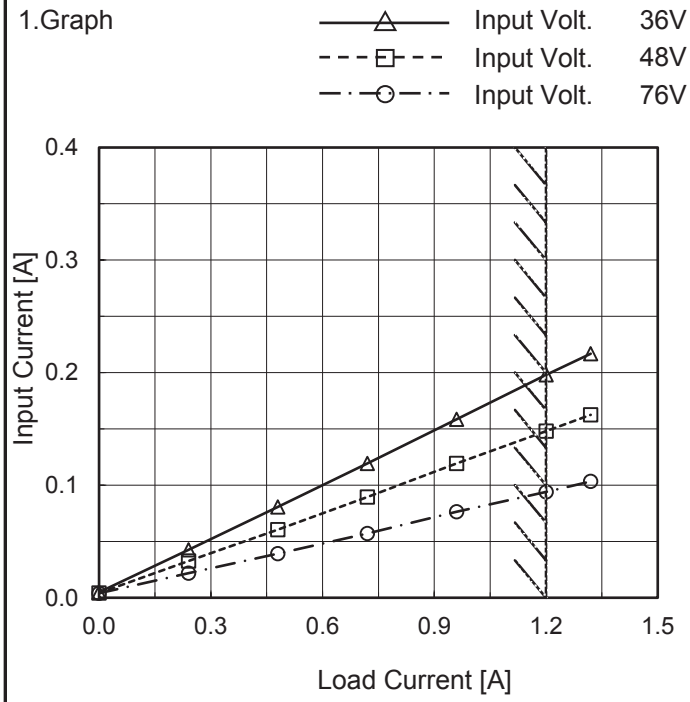
BC-11023

COSEL

Model	MGS64805
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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.005	0.004	0.004
0.24	0.043	0.033	0.022
0.48	0.081	0.061	0.039
0.72	0.119	0.089	0.057
0.96	0.159	0.119	0.076
1.20	0.198	0.148	0.094
1.32	0.217	0.163	0.103
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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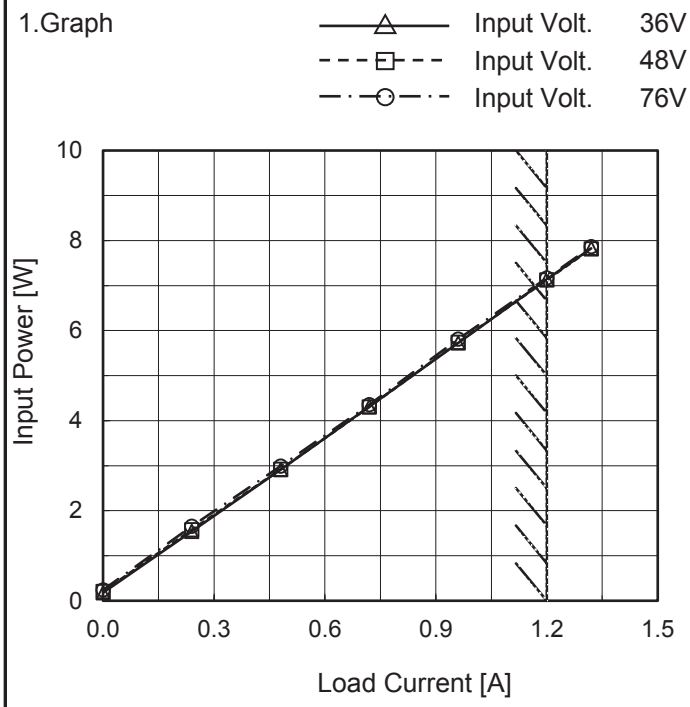
Model	MGS64805
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

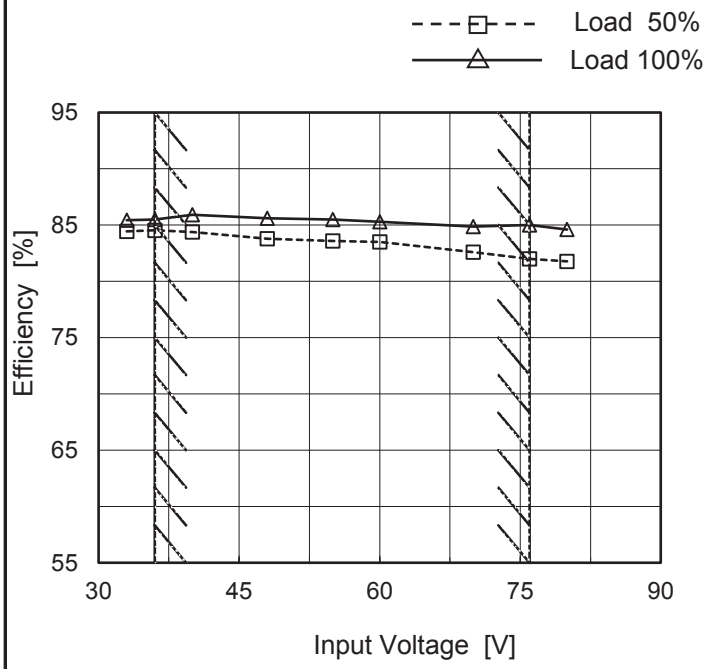
Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.18	0.20	0.24
0.24	1.54	1.57	1.66
0.48	2.91	2.92	2.99
0.72	4.31	4.30	4.35
0.96	5.72	5.74	5.81
1.20	7.14	7.12	7.17
1.32	7.83	7.82	7.86
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS64805
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%
33	84.5	85.4
36	84.5	85.5
40	84.4	85.9
48	83.8	85.6
55	83.6	85.5
60	83.5	85.3
70	82.6	84.9
76	82.0	85.0
80	81.8	84.6

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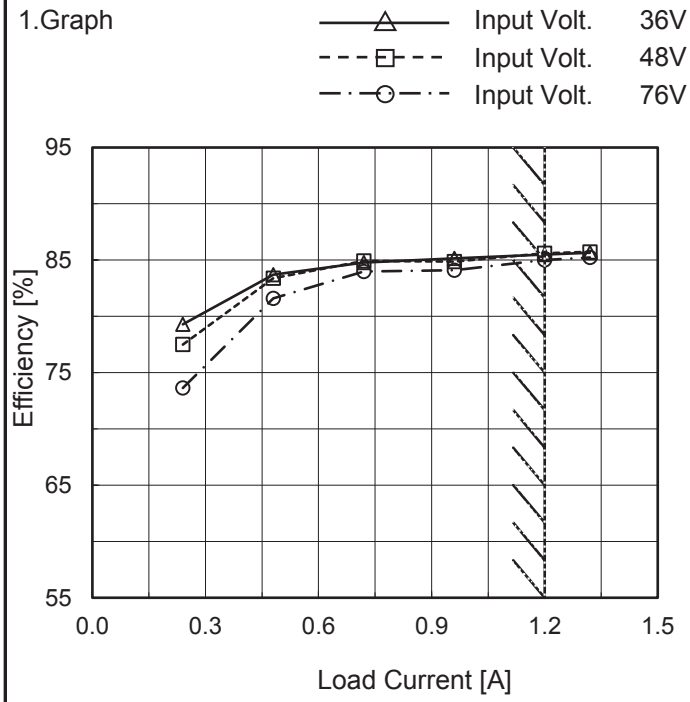
Model	MGS64805
Item	Efficiency (by Load Current)
Object	———————

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	-	-	-
0.24	79.3	77.5	73.6
0.48	83.7	83.4	81.6
0.72	84.8	84.9	84.0
0.96	85.2	84.9	84.1
1.20	85.5	85.6	85.0
1.32	85.6	85.7	85.2
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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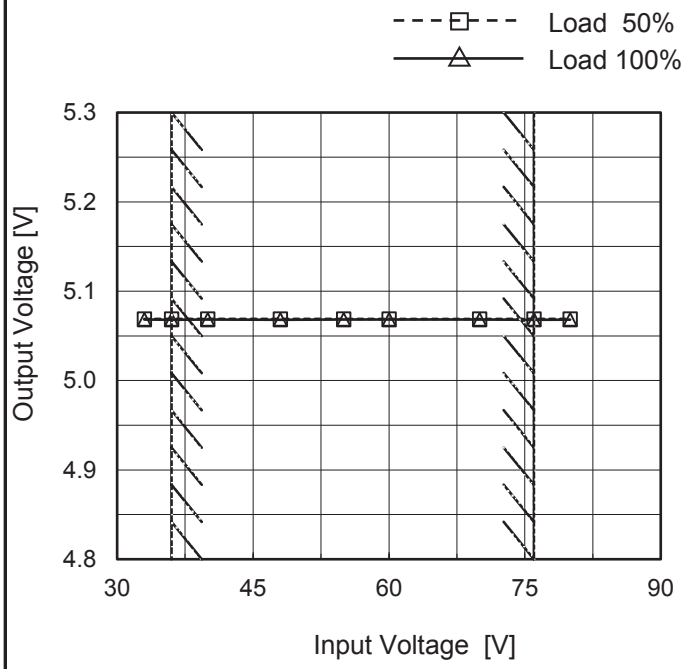
Model	MGS64805
Item	Line Regulation
Object	+5V1.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

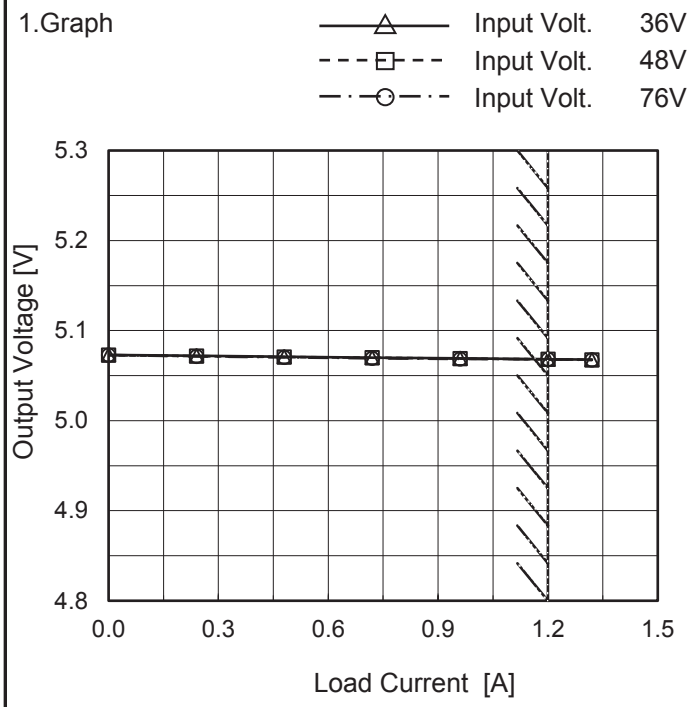
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	5.069	5.068
36	5.069	5.068
40	5.069	5.068
48	5.069	5.068
55	5.069	5.068
60	5.069	5.068
70	5.069	5.068
76	5.069	5.068
80	5.069	5.068

COSEL

Model	MGS64805
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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	5.073	5.073	5.073
0.24	5.072	5.072	5.071
0.48	5.071	5.071	5.070
0.72	5.070	5.070	5.069
0.96	5.069	5.069	5.069
1.20	5.068	5.068	5.068
1.32	5.068	5.068	5.067
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

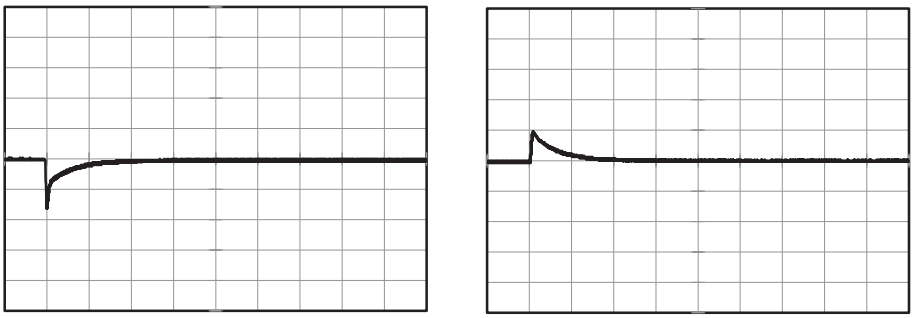
COSEL

Model	MGS64805	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+5V1.2A	

Input Volt. 48 V
Cycle 100 ms

t1,t2 = 100 μ s

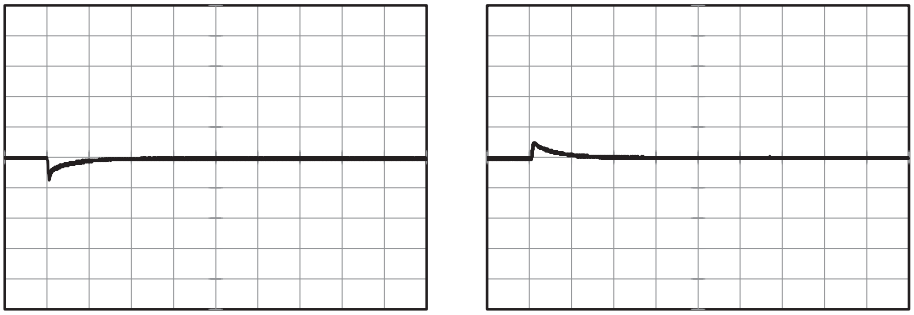
Min.Load (0A)←→
Load 100% (1.2A)



200 mV/div

1 ms/div 1 ms/div

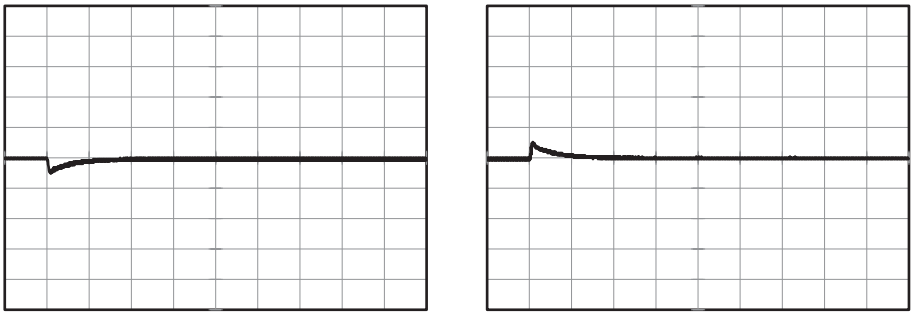
Min.Load (0A)←→
Load 50% (0.6A)



200 mV/div

1 ms/div 1 ms/div

Load 50% (0.6A)←→
Load 100% (1.2A)



200 mV/div

1 ms/div 1 ms/div

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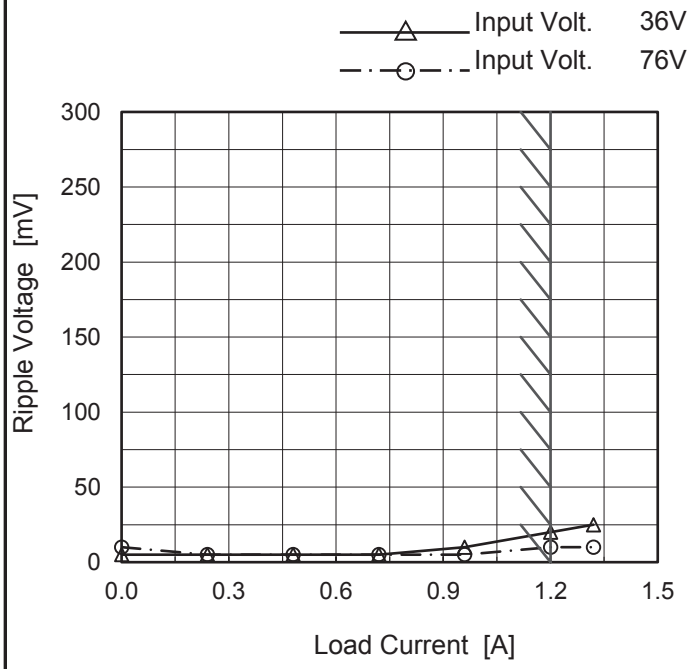
Model	MGS64805
Item	Ripple Voltage (by Load Current)
Object	+5V1.2A

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]

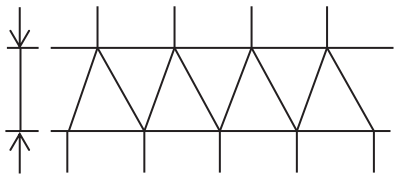


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	5	10
0.24	5	5
0.48	5	5
0.72	5	5
0.96	10	5
1.20	20	10
1.32	25	10
--	-	-
--	-	-
--	-	-
--	-	-

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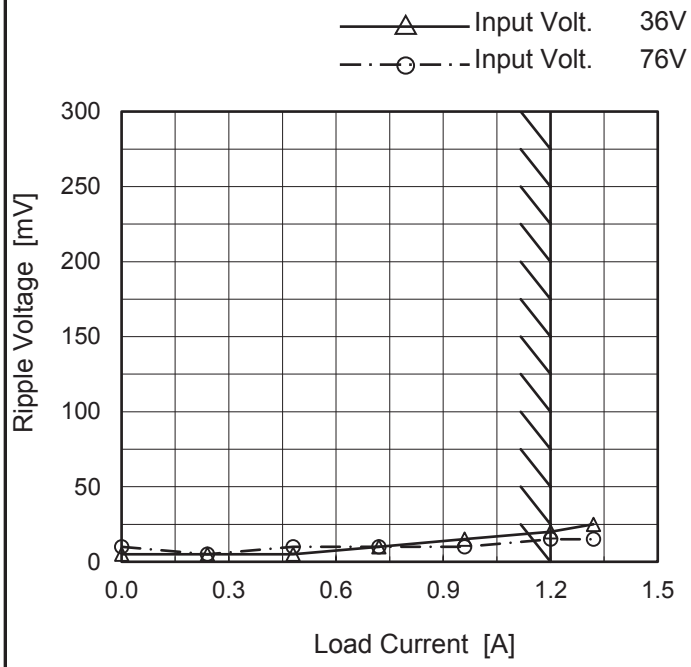
Model	MGS64805
Item	Ripple-Noise
Object	+5V1.2A

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]

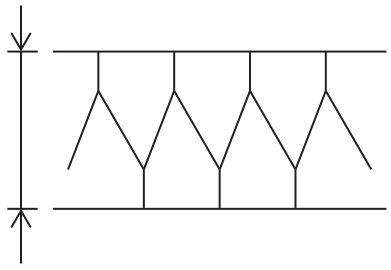


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	5	10
0.24	5	5
0.48	5	10
0.72	10	10
0.96	15	10
1.20	20	15
1.32	25	15
--	-	-
--	-	-
--	-	-
--	-	-

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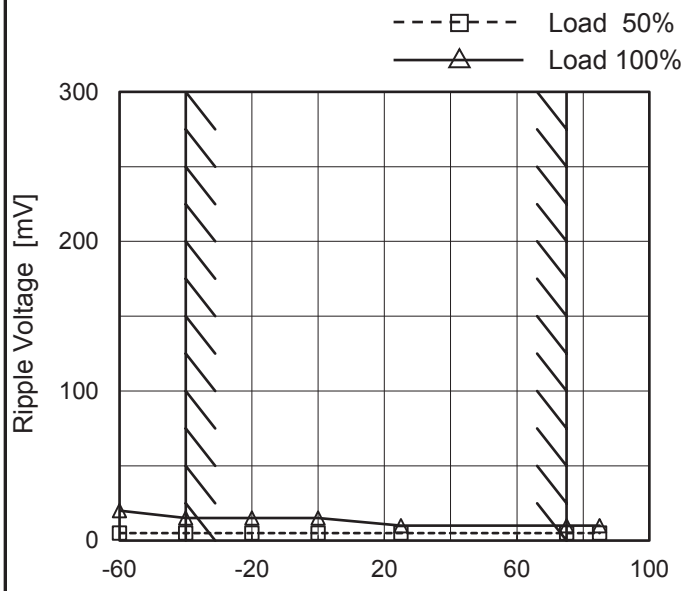
Model	MGS64805
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V1.2A

Testing Circuitry Figure B

1.Graph



Input Volt. 48V

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	20
-40	5	15
-20	5	15
0	5	15
25	5	10
75	5	10
85	5	10
--	-	-
--	-	-
--	-	-
--	-	-

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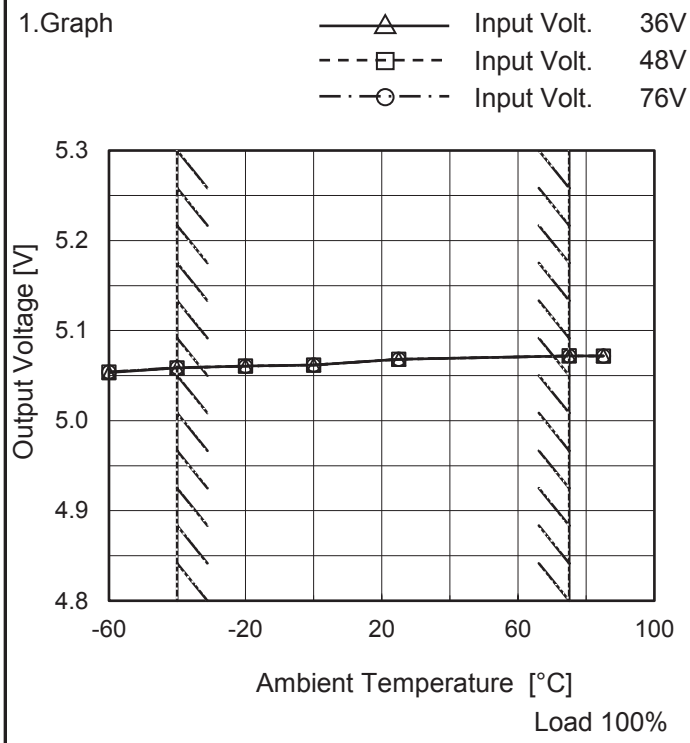
Model	MGS64805
Item	Ambient Temperature Drift
Object	+5V1.2A

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	5.053	5.054	5.054
-40	5.059	5.059	5.059
-20	5.061	5.061	5.060
0	5.062	5.062	5.062
25	5.068	5.068	5.068
75	5.072	5.072	5.072
85	5.072	5.072	5.072
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	MGS64805	
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 : 36 - 76V
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	76	0	5.077	±9	±0.2
Minimum Voltage	-40	36	1.2	5.059		

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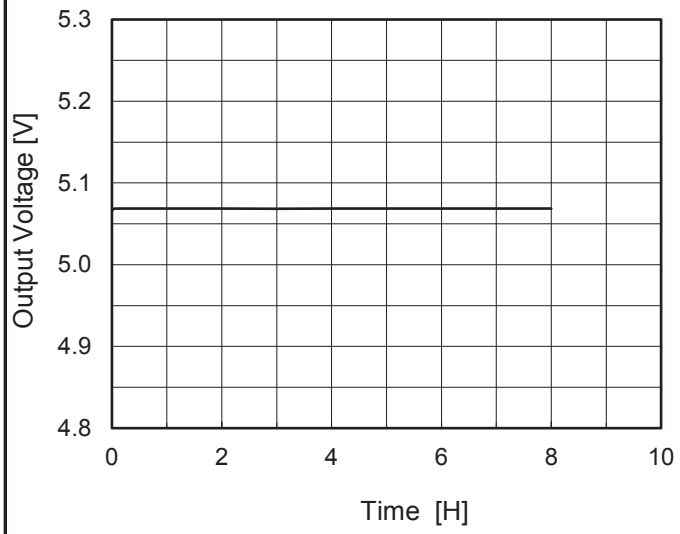
Model	MGS64805
Item	Time Lapse Drift
Object	+5V1.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 48V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.066
0.5	5.069
1.0	5.069
2.0	5.069
3.0	5.069
4.0	5.069
5.0	5.069
6.0	5.069
7.0	5.069
8.0	5.069

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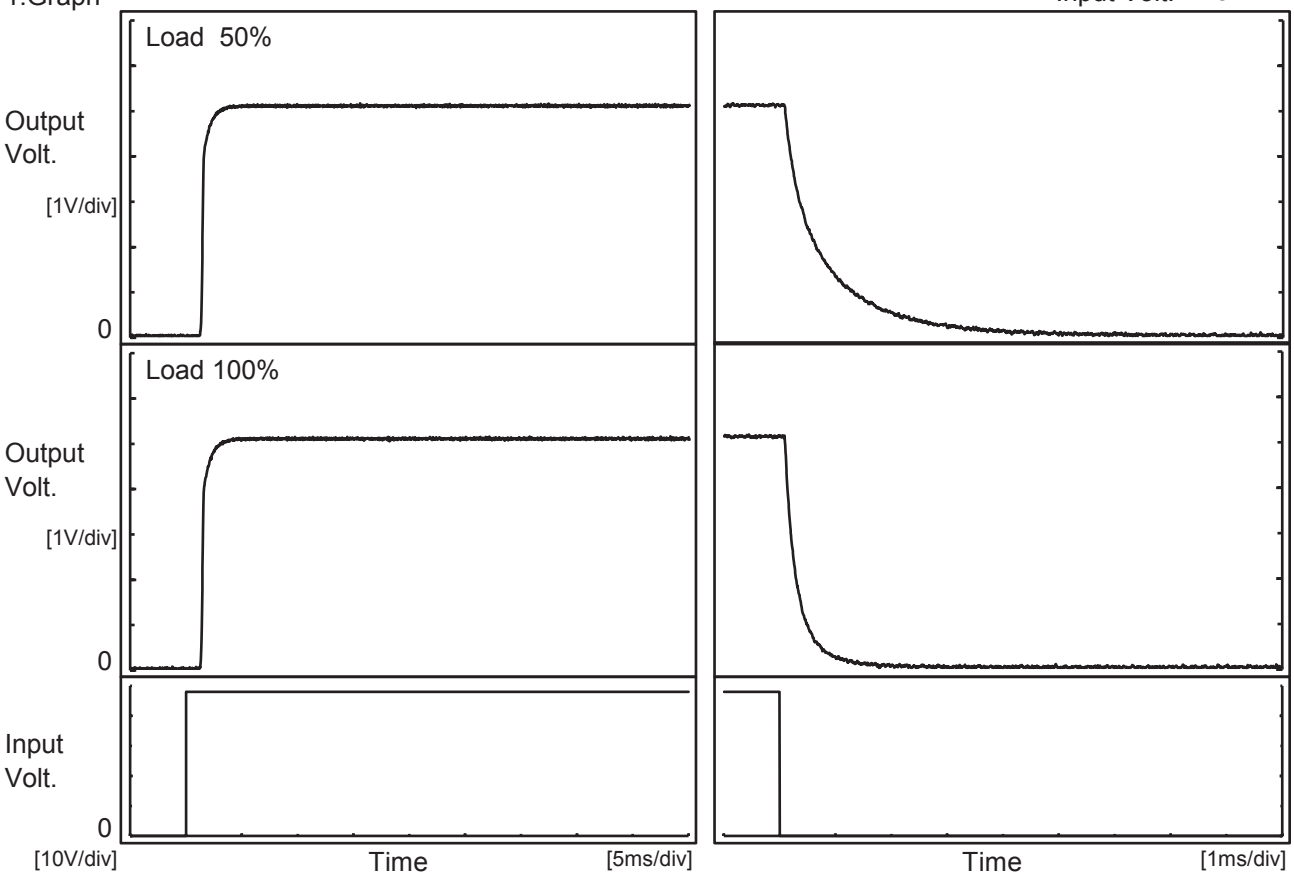
Model	MGS64805
Item	Rise and Fall Time
Object	+5V1.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

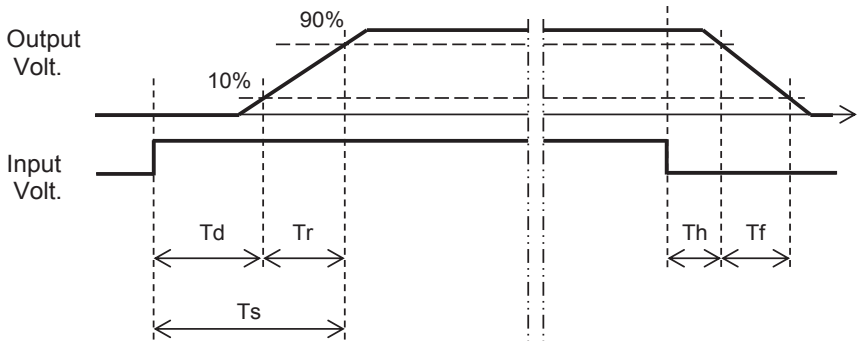
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.4	0.6	2.0	0.1	1.9
100 %	1.4	0.7	2.1	0.1	0.6



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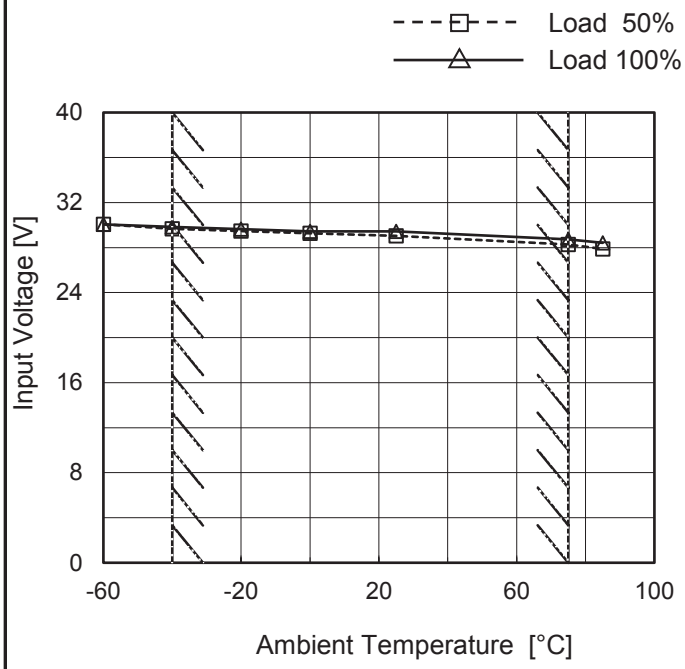
Model	MGS64805
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V1.2A

Testing Circuitry Figure A

1.Graph



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

2.Values

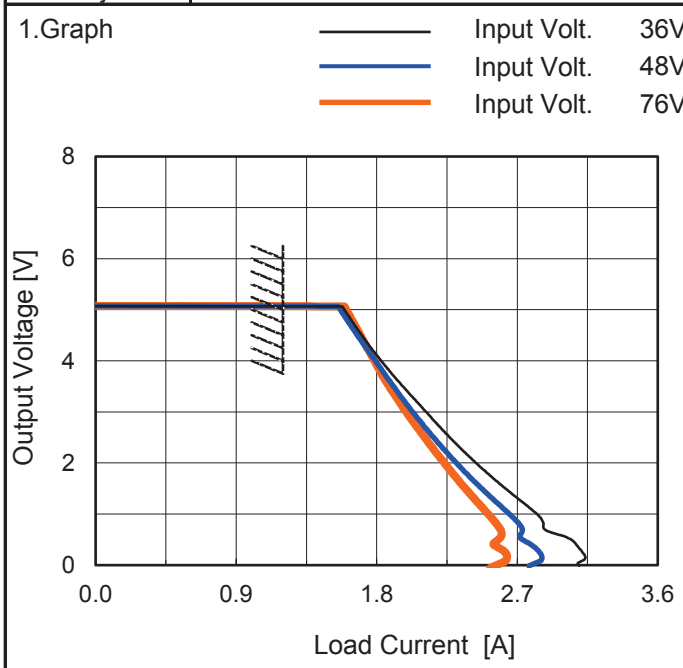
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	30.1	30.1
-40	29.7	29.9
-20	29.5	29.7
0	29.3	29.5
25	29.1	29.5
75	28.3	28.8
85	27.9	28.5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS64805
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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
5.00	1.24	1.24	1.24
4.75	1.65	1.62	1.65
4.50	1.70	1.67	1.70
4.00	1.83	1.79	1.79
3.50	1.96	1.90	1.88
3.00	2.11	2.03	1.99
2.50	2.26	2.16	2.11
2.00	2.44	2.31	2.23
1.50	2.62	2.47	2.37
1.00	2.82	2.65	2.51
0.50	3.04	2.73	2.59
0.00	3.10	2.77	2.53

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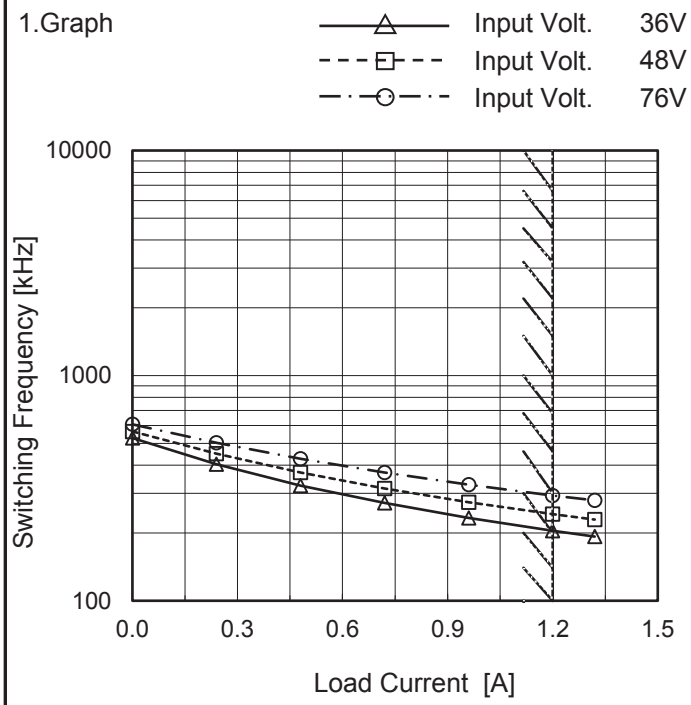
Model	MGS64805
Item	Switching Frequency (by Load Current)
Object	+5V1.2A

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	528	565	607
0.24	404	450	503
0.48	325	371	427
0.72	272	315	371
0.96	234	274	328
1.20	205	243	294
1.32	193	229	279
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

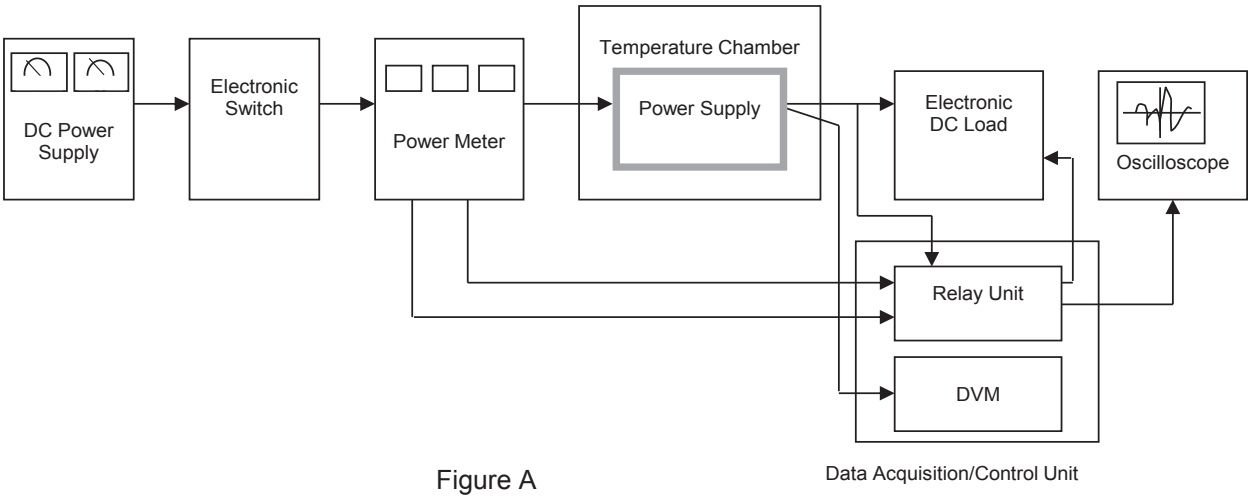


Figure A

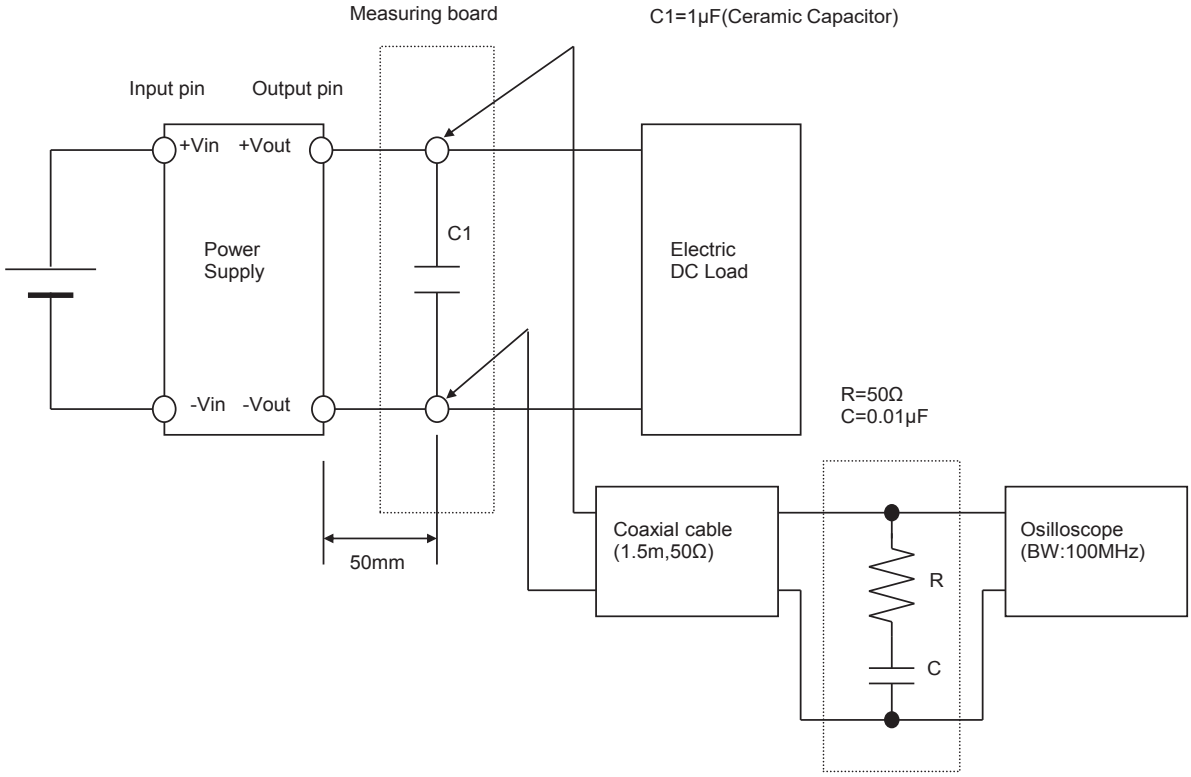


Figure B（Ripple and Ripple noise Characteristic）