COSEL

参考資料

TEST DATA OF MGS154805

Regulated DC Power Supply
September 7, 2010

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Hidetaka Kobayashi
Hidetaka Kobayashi Design Engineer

COSEL CO.,LTD.

COSEL

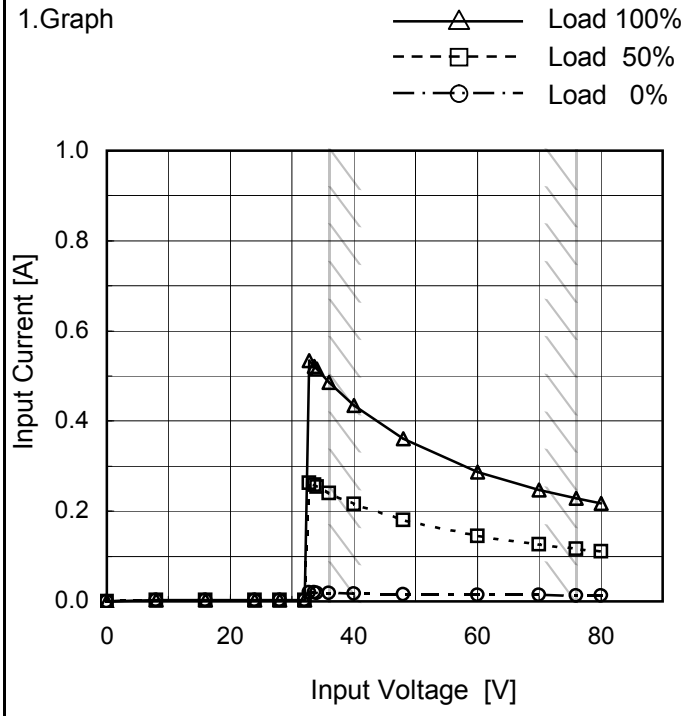
CONTENTS

COSEL

Model	MGS154805
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

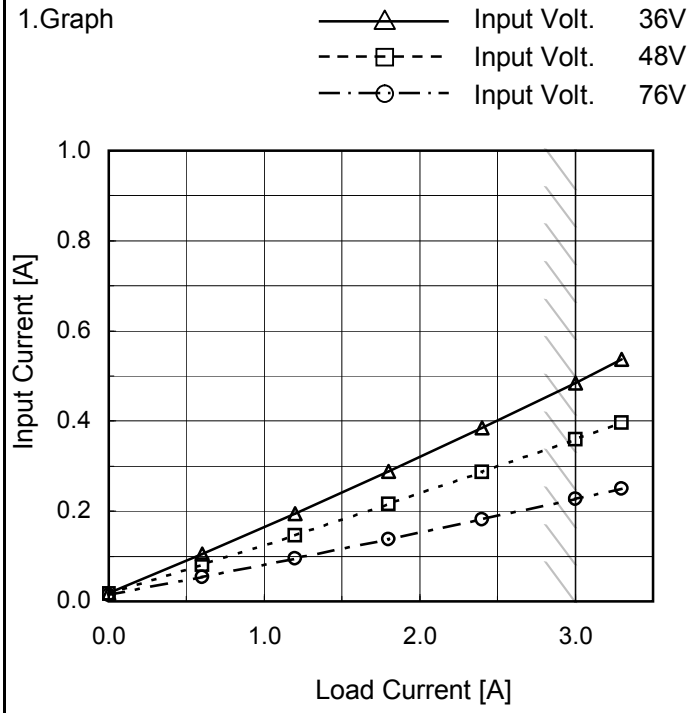
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
8.0	0.002	0.002	0.003
16.0	0.003	0.003	0.003
24.0	0.003	0.003	0.003
28.0	0.003	0.003	0.003
32.0	0.003	0.003	0.003
32.8	0.019	0.263	0.534
33.6	0.019	0.258	0.522
34.0	0.019	0.254	0.516
36.0	0.018	0.241	0.486
40.0	0.018	0.216	0.435
48.0	0.016	0.181	0.361
60.0	0.015	0.145	0.288
70.0	0.014	0.126	0.247
76.0	0.013	0.116	0.228
80.0	0.013	0.111	0.217
--	-	-	-
--	-	-	-

COSEL

Model	MGS154805
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

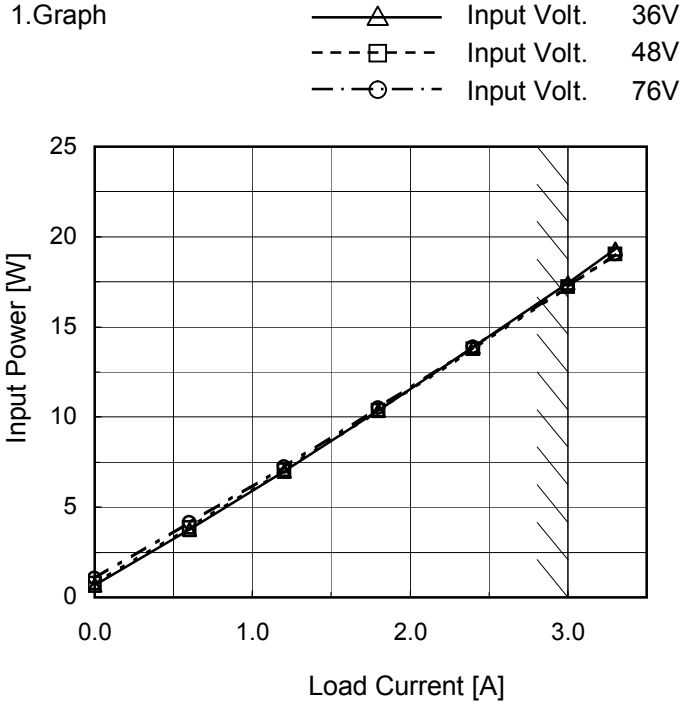
Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.019	0.016	0.014
0.6	0.105	0.081	0.054
1.2	0.194	0.147	0.095
1.8	0.288	0.216	0.138
2.4	0.386	0.287	0.182
3.0	0.485	0.359	0.227
3.3	0.537	0.397	0.250
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS154805
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

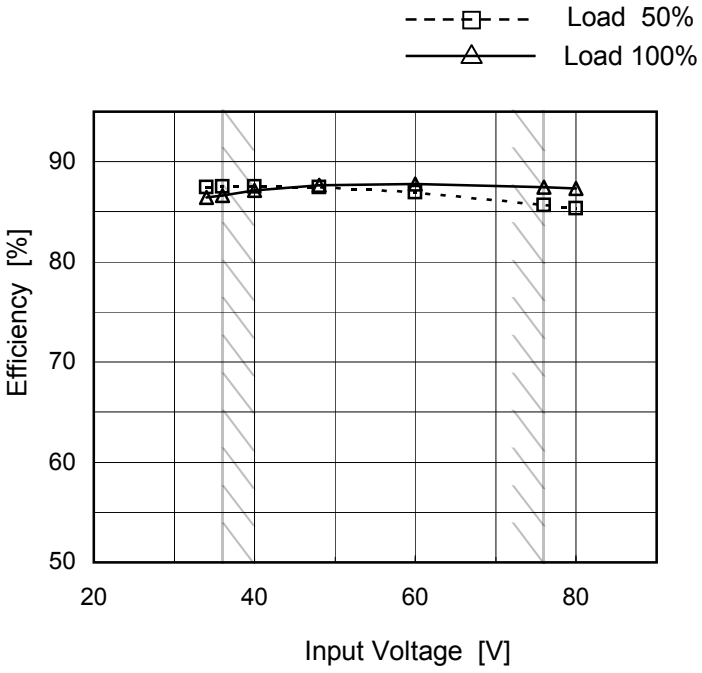
Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.68	0.79	1.05
0.6	3.78	3.88	4.14
1.2	7.01	7.05	7.26
1.8	10.38	10.37	10.52
2.4	13.88	13.79	13.89
3.0	17.45	17.24	17.27
3.3	19.32	19.04	19.03
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS154805
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

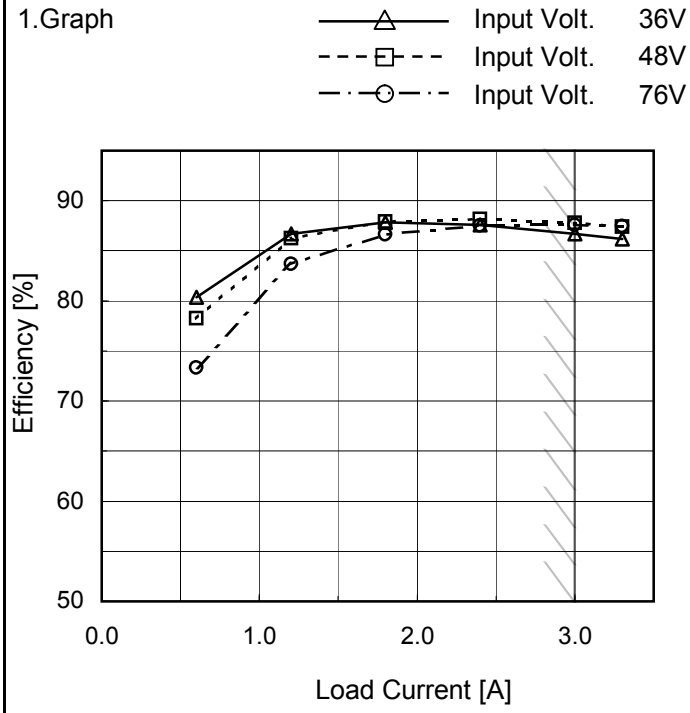
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
34	87.4	86.5
36	87.5	86.6
40	87.5	87.1
48	87.4	87.6
60	86.9	87.8
76	85.7	87.4
80	85.4	87.3
--	-	-
--	-	-

COSEL

Model	MGS154805
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

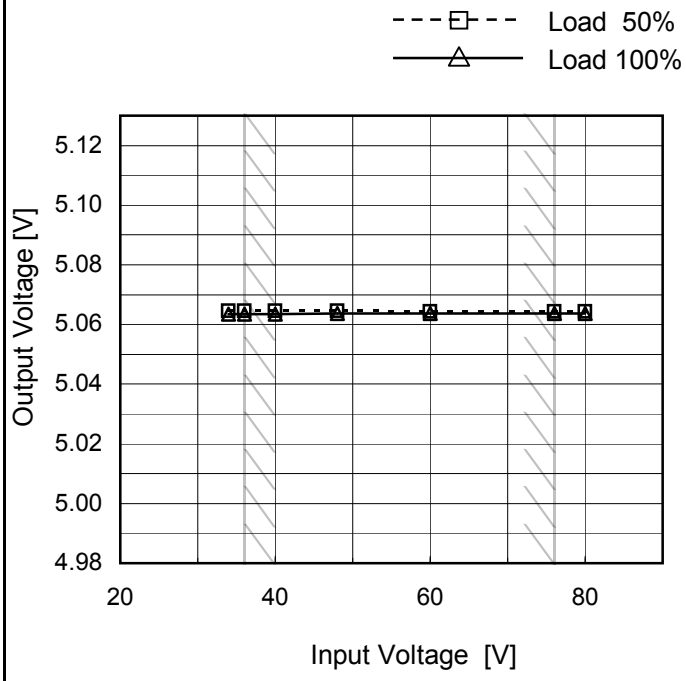
Load Current [A]	Efficiency [%] Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	-	-	-
0.6	80.3	78.3	73.4
1.2	86.7	86.2	83.7
1.8	87.8	87.9	86.7
2.4	87.6	88.1	87.5
3.0	86.7	87.7	87.6
3.3	86.2	87.4	87.5
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS154805
Item	Line Regulation
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

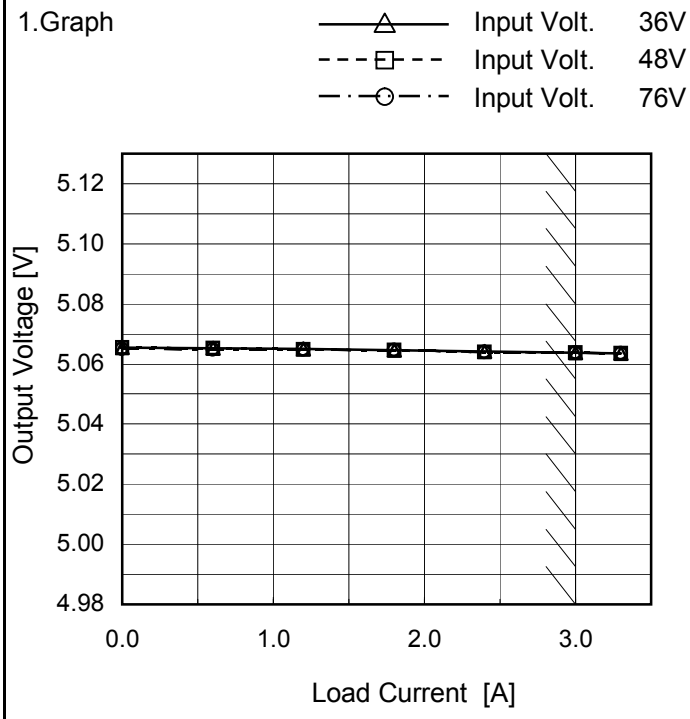
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	5.065	5.063
36	5.065	5.064
40	5.065	5.064
48	5.065	5.064
60	5.064	5.064
76	5.064	5.064
80	5.064	5.064
--	-	-
--	-	-

COSEL

Model	MGS154805
Item	Load Regulation
Object	+5V3A

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]
0.0	5.066	5.065	5.065
0.6	5.065	5.065	5.065
1.2	5.065	5.065	5.065
1.8	5.065	5.065	5.065
2.4	5.064	5.064	5.064
3.0	5.064	5.064	5.064
3.3	5.064	5.064	5.064
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

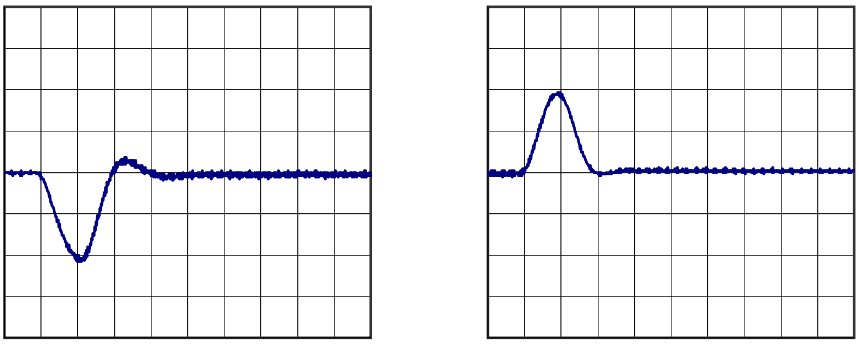
COSEL

Model	MGS154805
Item	Dynamic Load Response
Object	+5V3A

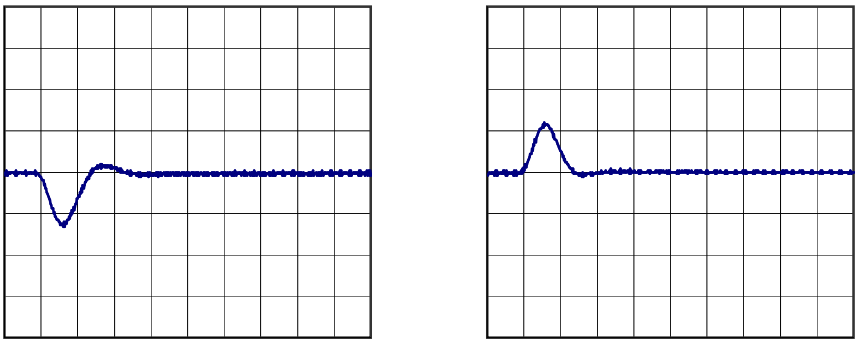
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 48 V
Cycle 1000 ms

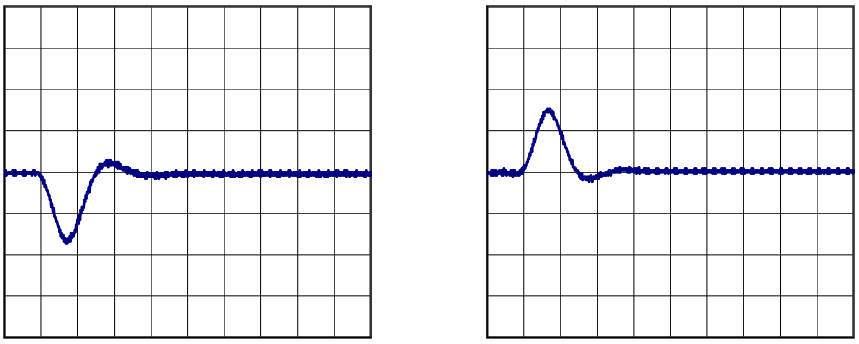
Min. Load (0A) ⟷ Load 100% (3A)



Min. Load (0A) ⟷ Load 50% (1.5A)



Load 50% (1.5A) ⟷ Load 100% (3A)

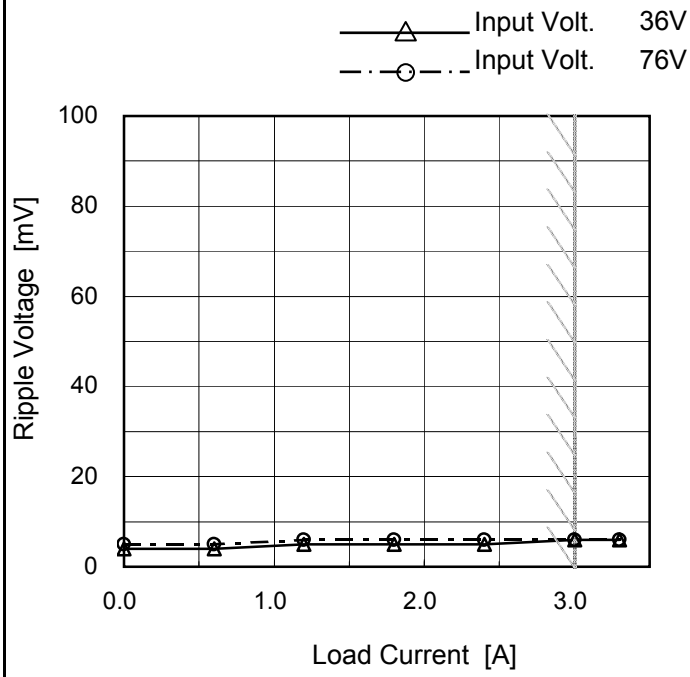


COSEL

Model	MGS154805
Item	Ripple Voltage (by Load Current)
Object	+5V3A

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]

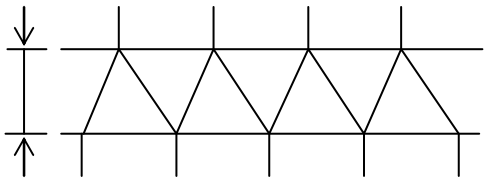


Fig.Complex Ripple Wave Form

2.Values

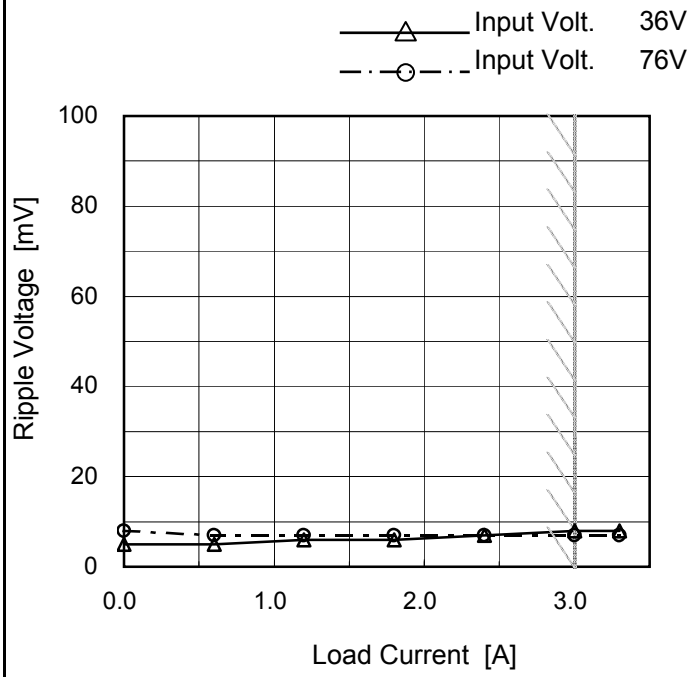
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	4	5
0.6	4	5
1.2	5	6
1.8	5	6
2.4	5	6
3.0	6	6
3.3	6	6
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS154805
Item	Ripple-Noise
Object	+5V3A

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.

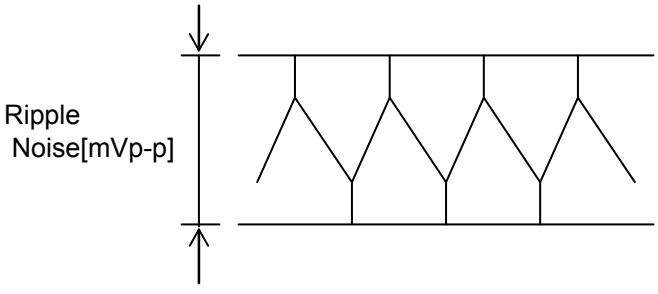


Fig.Complex Ripple Noise Wave Form

2.Values

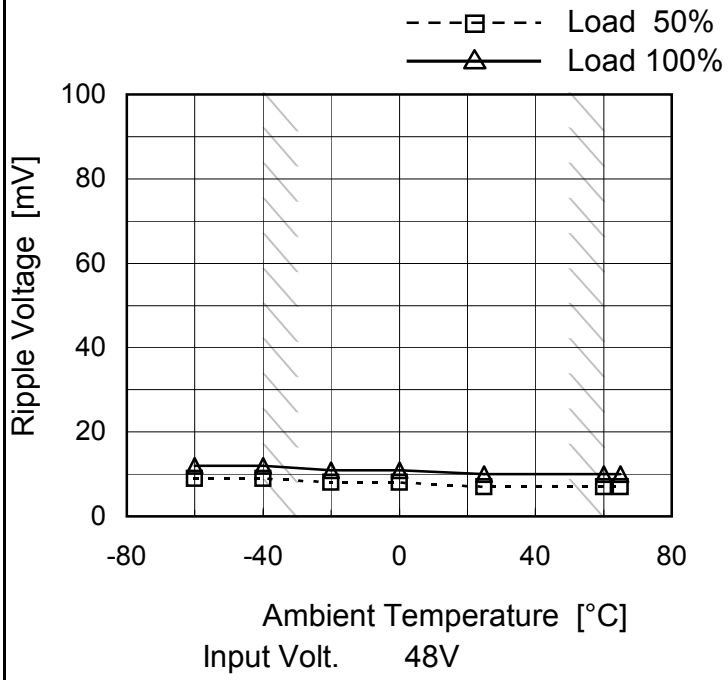
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	5	8
0.6	5	7
1.2	6	7
1.8	6	7
2.4	7	7
3.0	8	7
3.3	8	7
--	-	-
--	-	-
--	-	-
--	-	-

BC-10448

Model	MGS154805
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V3A

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

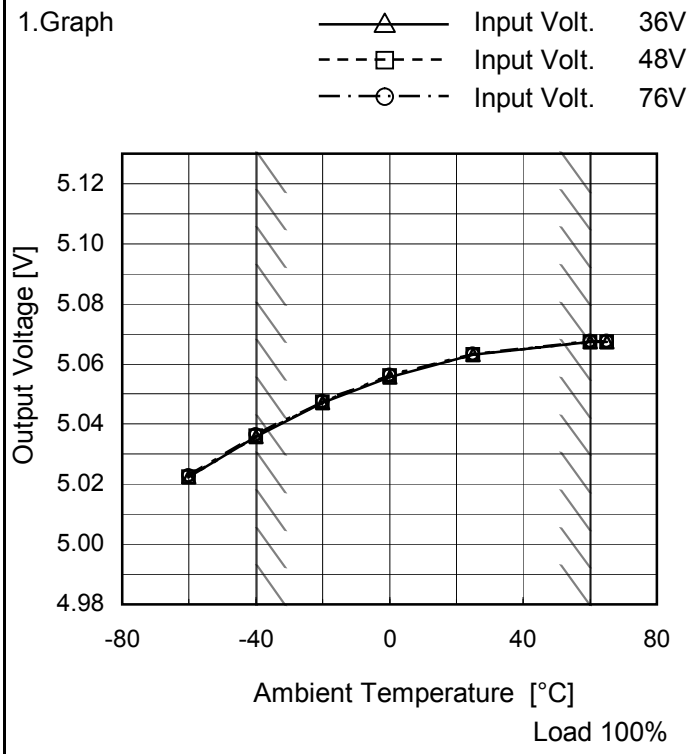
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	9	12
-40	9	12
-20	8	11
0	8	11
25	7	10
60	7	10
65	7	10
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS154805
Item	Ambient Temperature Drift
Object	+5V3A

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	5.022	5.023	5.023
-40	5.036	5.036	5.036
-20	5.047	5.047	5.048
0	5.056	5.056	5.056
25	5.063	5.063	5.063
60	5.067	5.067	5.068
65	5.067	5.067	5.068
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS154805	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V3A	

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 : 36 - 76V
Load Current : 0 - 3A

* 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

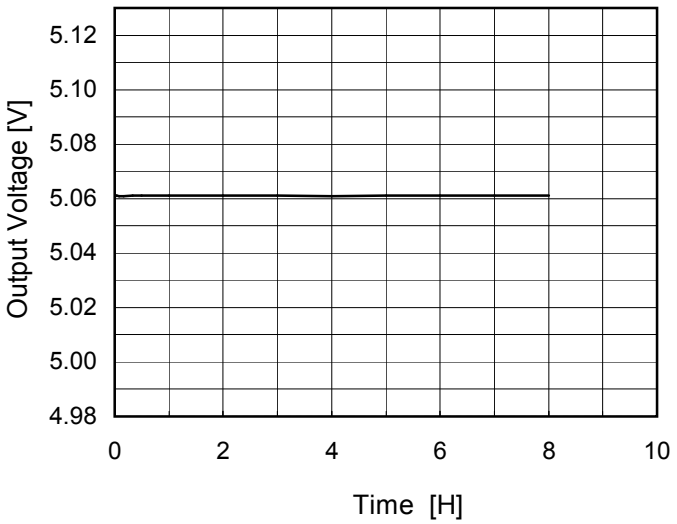
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	36	0	5.069	±17	±0.3
Minimum Voltage	-40	36	3	5.036		

COSEL

Model	MGS154805
Item	Time Lapse Drift
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 48V
Load 100%

2.Values

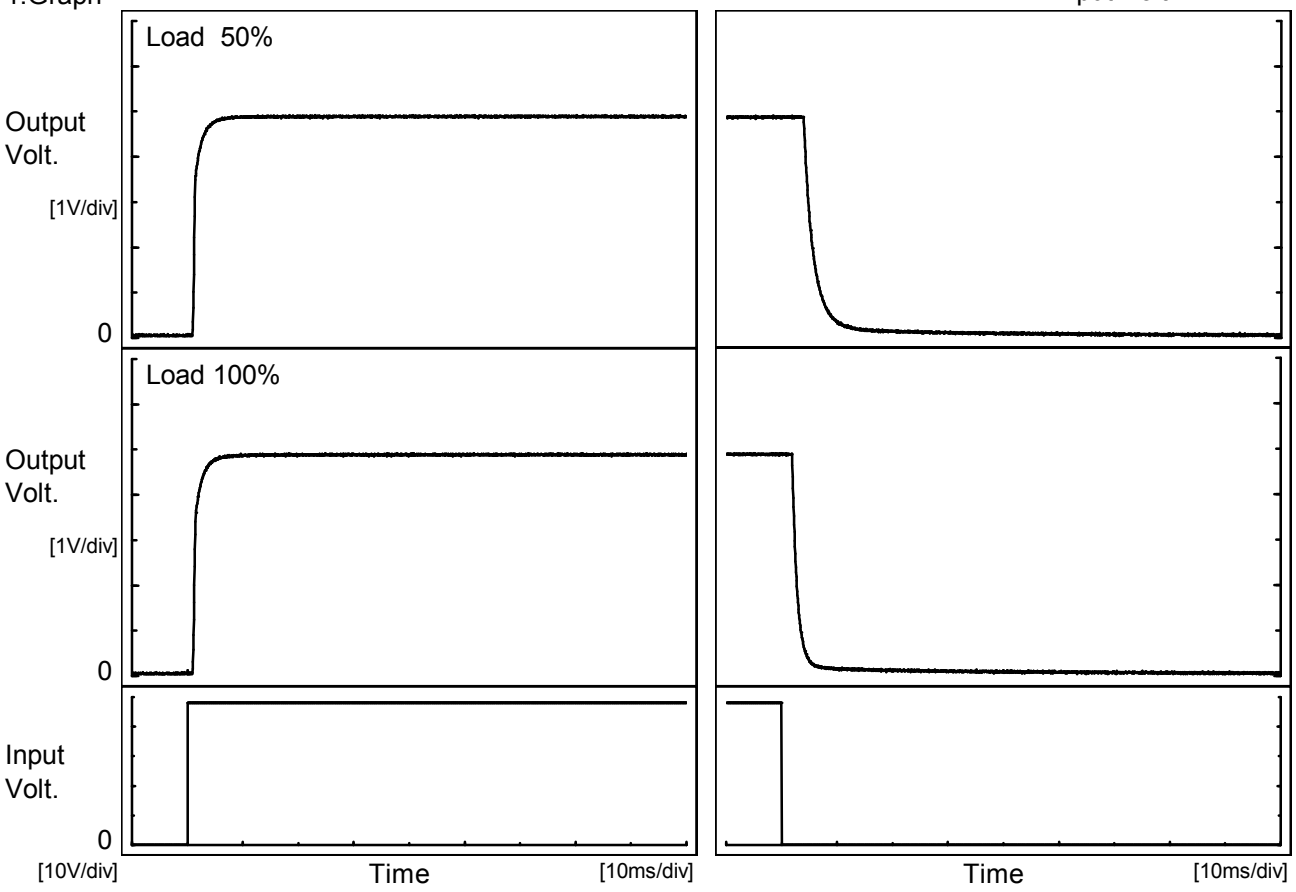
Time since start [H]	Output Voltage [V]
0.0	5.061
0.5	5.061
1.0	5.061
2.0	5.061
3.0	5.061
4.0	5.061
5.0	5.061
6.0	5.061
7.0	5.061
8.0	5.061

COSEL

Model	MGS154805	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+5V3A	

1.Graph

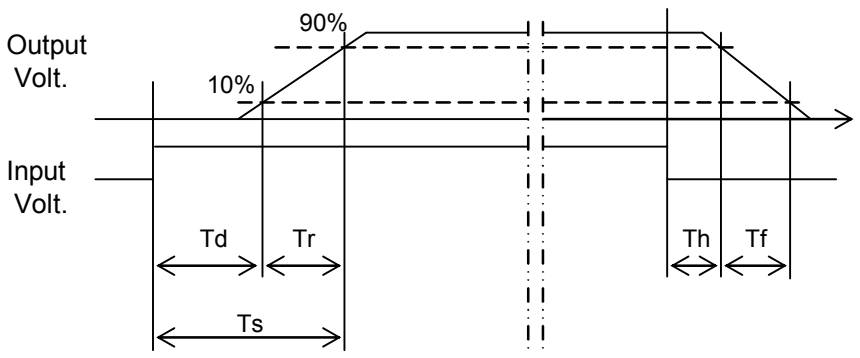
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.1	2.2	3.3	4.0	4.5
100 %	1.1	2.2	3.3	2.0	2.2



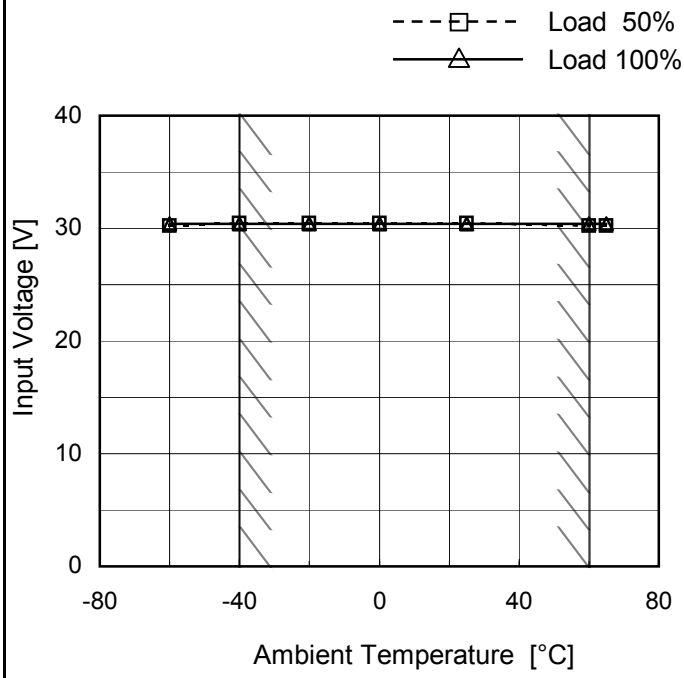
BC-10448

COSEL

Model	MGS154805
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V3A

Testing Circuitry Figure A

1.Graph



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

2.Values

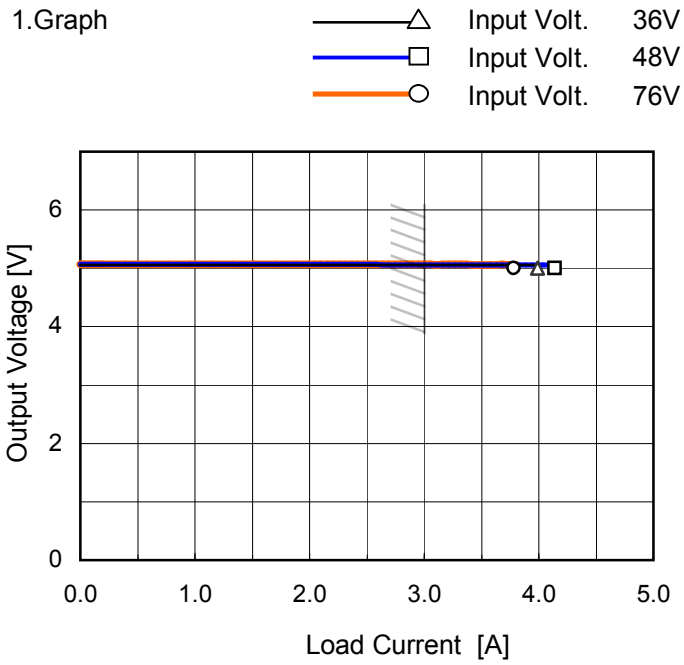
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	30.3	30.5
-40	30.5	30.4
-20	30.5	30.4
0	30.5	30.4
25	30.5	30.4
60	30.3	30.5
65	30.3	30.5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS154805
Item	Overcurrent Protection
Object	+5V3A

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
5.00	3.99	4.14	3.78
4.75	-	-	-
4.50	-	-	-
4.00	-	-	-
3.50	-	-	-
3.00	-	-	-
2.50	-	-	-
2.00	-	-	-
1.50	-	-	-
1.00	-	-	-
0.50	-	-	-
0.00	-	-	-

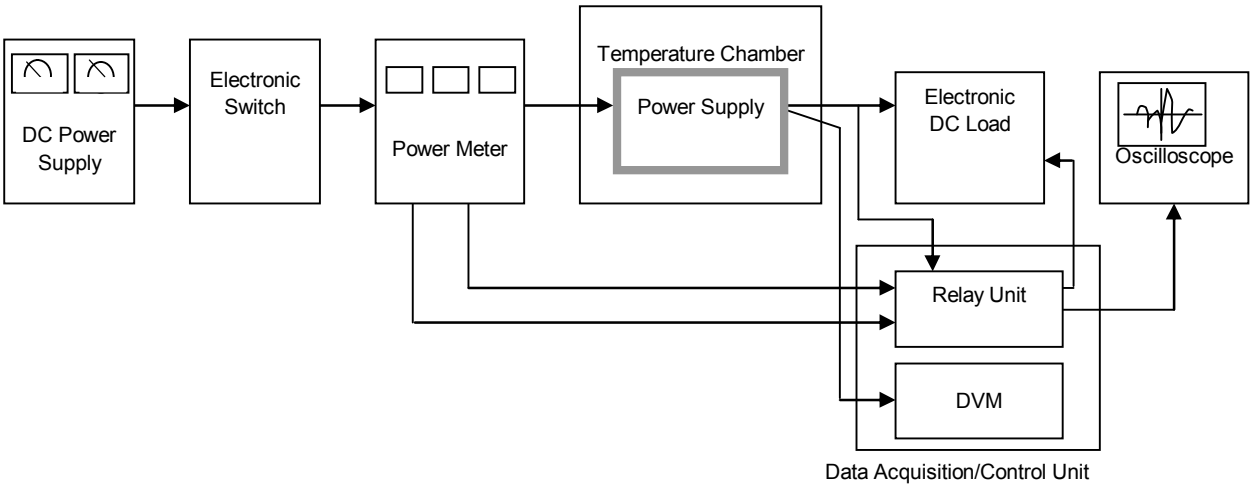


Figure A

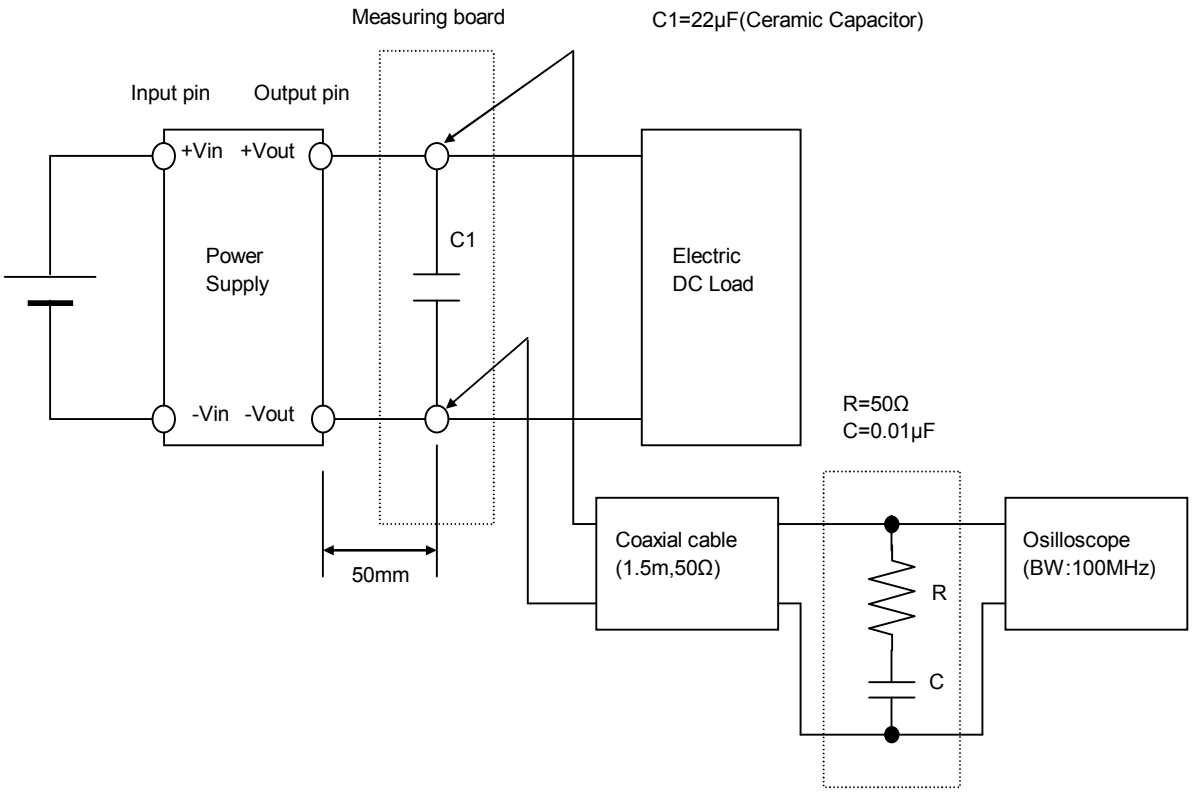


Figure B（Ripple and Ripple noise Characteristic）