COSEL

参考資料

TEST DATA OF MGS154815

Regulated DC Power Supply
September 8, 2010

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Hidetaka Kobayashi Design Engineer

COSEL CO.,LTD.

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

Temperature 25°C
Testing Circuitry Figure A

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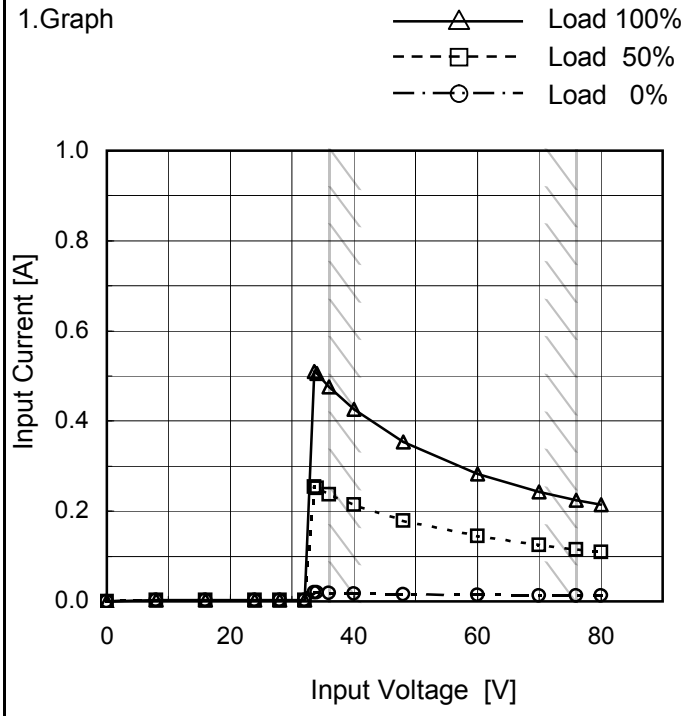


Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
8.0	0.003	0.003	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
33.6	0.019	0.255	0.510
34.0	0.019	0.252	0.505
36.0	0.019	0.238	0.476
40.0	0.018	0.215	0.426
48.0	0.016	0.179	0.353
60.0	0.014	0.144	0.283
70.0	0.013	0.125	0.243
76.0	0.013	0.115	0.225
80.0	0.013	0.110	0.214
--	-	-	-
--	-	-	-
--	-	-	-

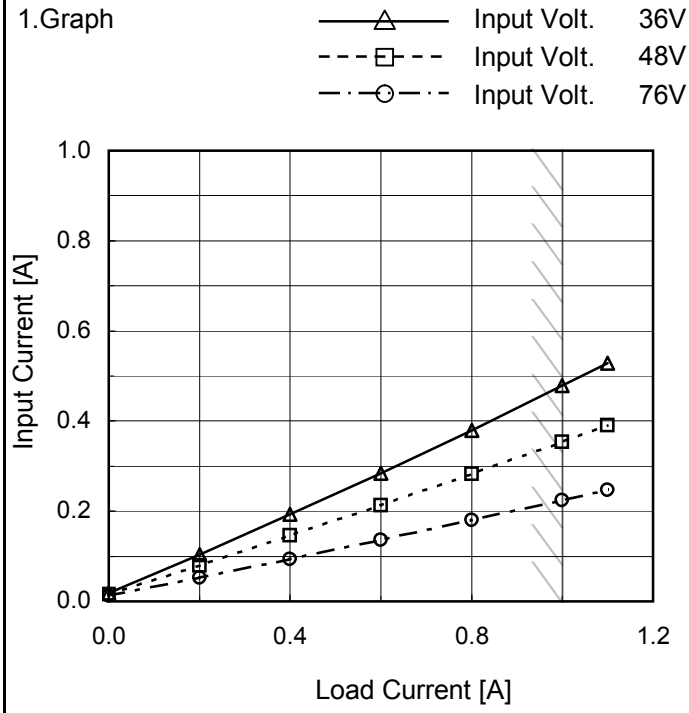
BC-10450

COSEL

Model	MGS154815
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	0.013
0.2	0.104	0.080	0.053
0.4	0.193	0.146	0.094
0.6	0.285	0.213	0.137
0.8	0.380	0.283	0.180
1.0	0.478	0.354	0.225
1.1	0.528	0.391	0.247
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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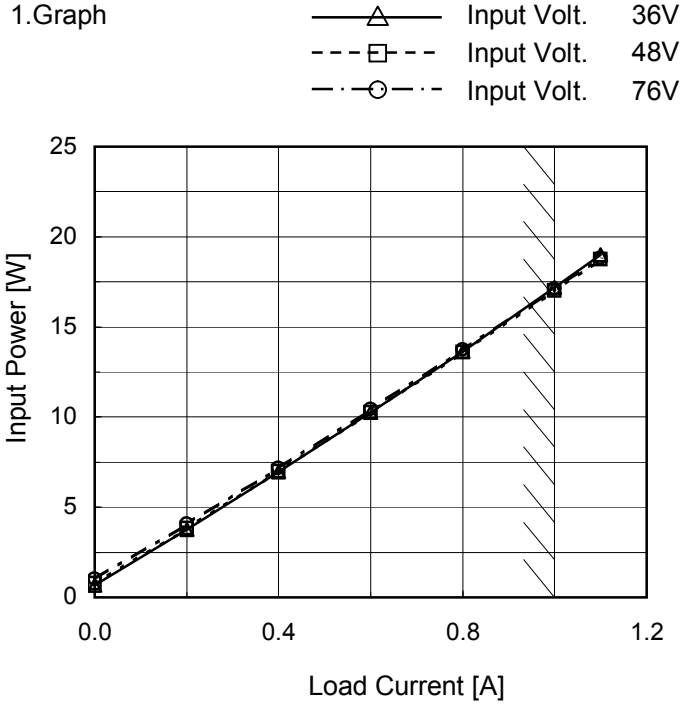
Model	MGS154815
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

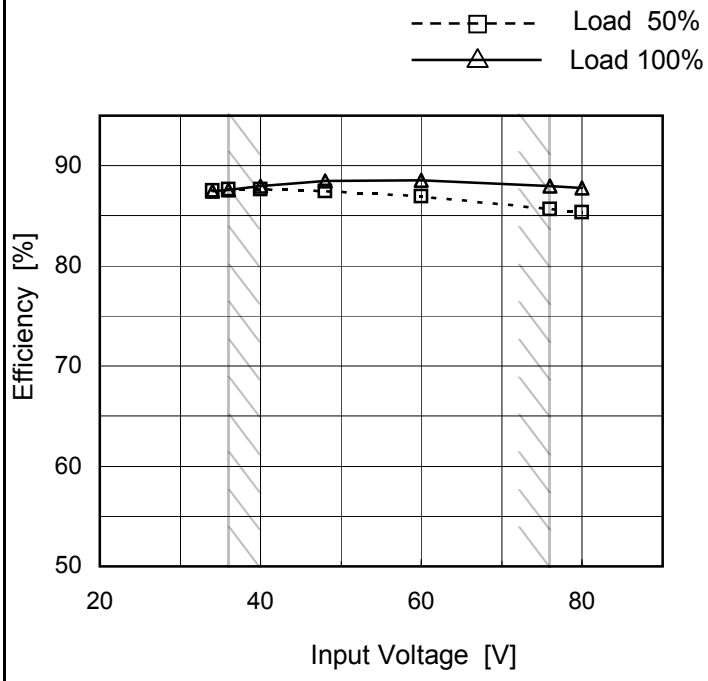
Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.68	0.78	1.02
0.2	3.76	3.84	4.07
0.4	6.95	7.00	7.19
0.6	10.25	10.25	10.43
0.8	13.65	13.59	13.74
1.0	17.18	17.01	17.10
1.1	19.00	18.76	18.83
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS154815
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	87.5	87.4
36	87.7	87.6
40	87.7	88.0
48	87.4	88.5
60	87.0	88.5
76	85.7	87.9
80	85.4	87.8
--	-	-
--	-	-

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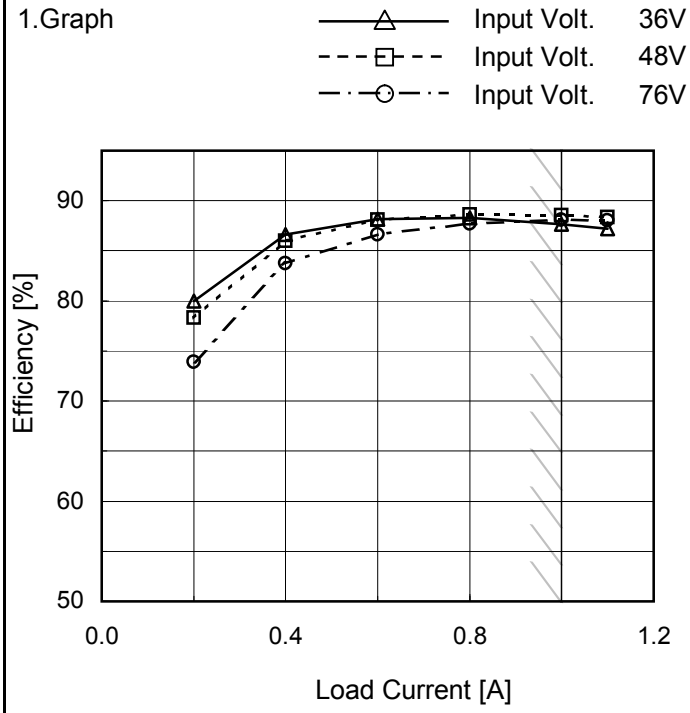
Model	MGS154815
Item	Efficiency (by Load Current)
Object	————————

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	-	-	-
0.2	80.0	78.3	73.9
0.4	86.6	86.0	83.7
0.6	88.1	88.1	86.6
0.8	88.3	88.6	87.7
1.0	87.7	88.5	88.1
1.1	87.2	88.3	88.0
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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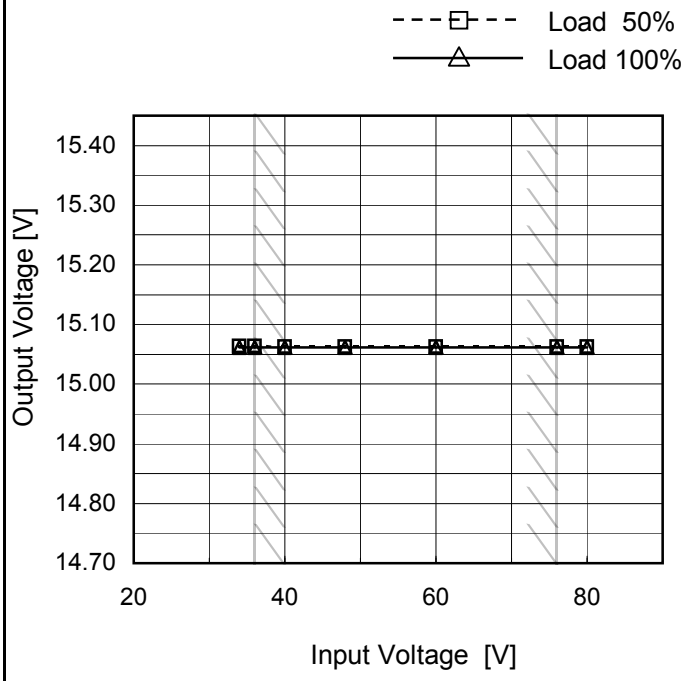
Model	MGS154815
Item	Line Regulation
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

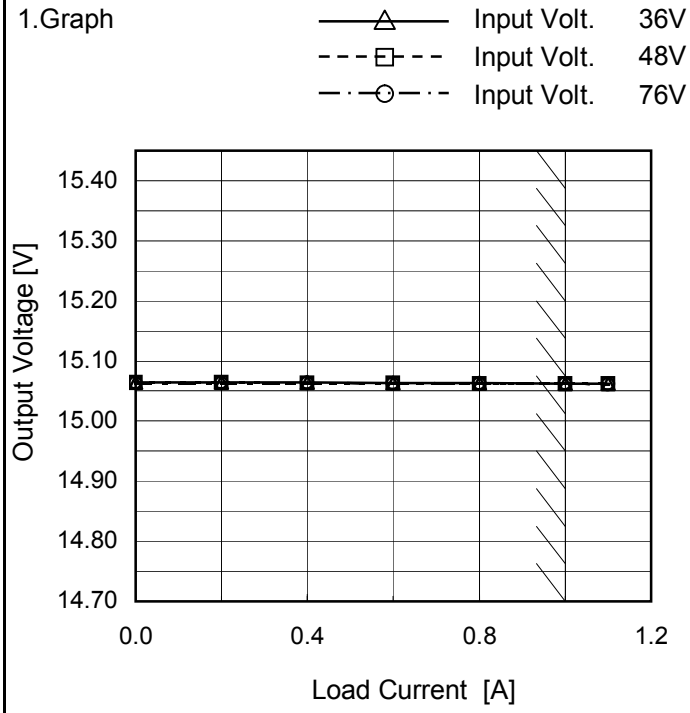
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	15.063	15.061
36	15.063	15.061
40	15.063	15.062
48	15.063	15.062
60	15.063	15.062
76	15.063	15.062
80	15.062	15.062
--	-	-
--	-	-

COSEL

Model	MGS154815
Item	Load Regulation
Object	+15V1A

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	15.065	15.064	15.064
0.2	15.064	15.064	15.063
0.4	15.064	15.064	15.063
0.6	15.064	15.063	15.063
0.8	15.063	15.063	15.062
1.0	15.062	15.062	15.062
1.1	15.062	15.062	15.062
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

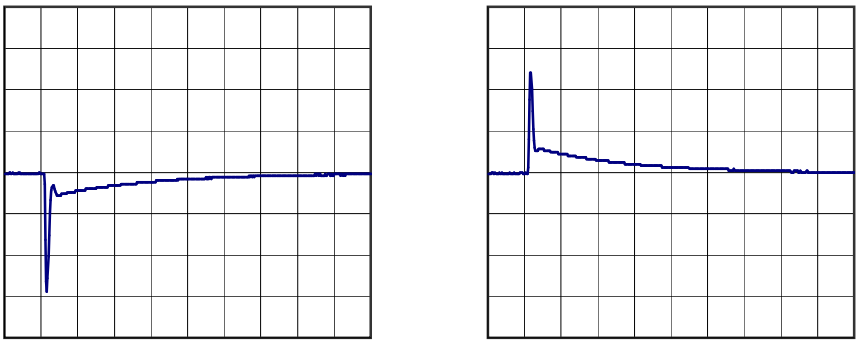
COSEL

Model	MGS154815
Item	Dynamic Load Response
Object	+15V1A

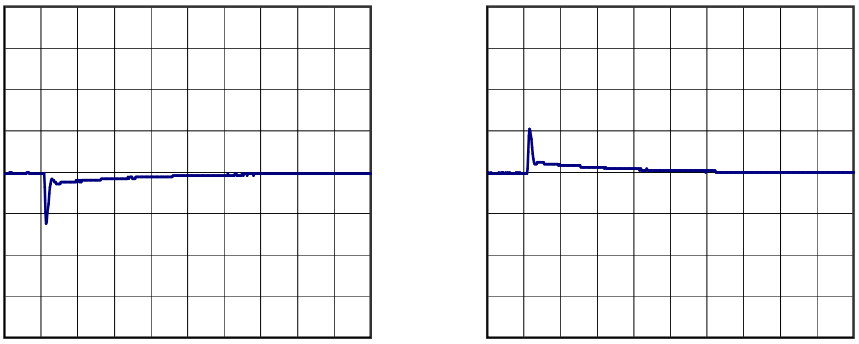
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 48 V
Cycle 1000 ms

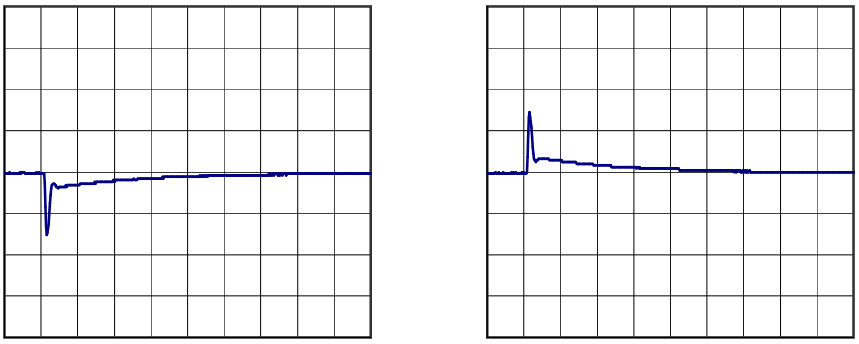
Min. Load (0A) ⟷ Load 100% (1A)



Min. Load (0A) ⟷ Load 50% (0.5A)



Load 50% (0.5A) ⟷ Load 100% (1A)



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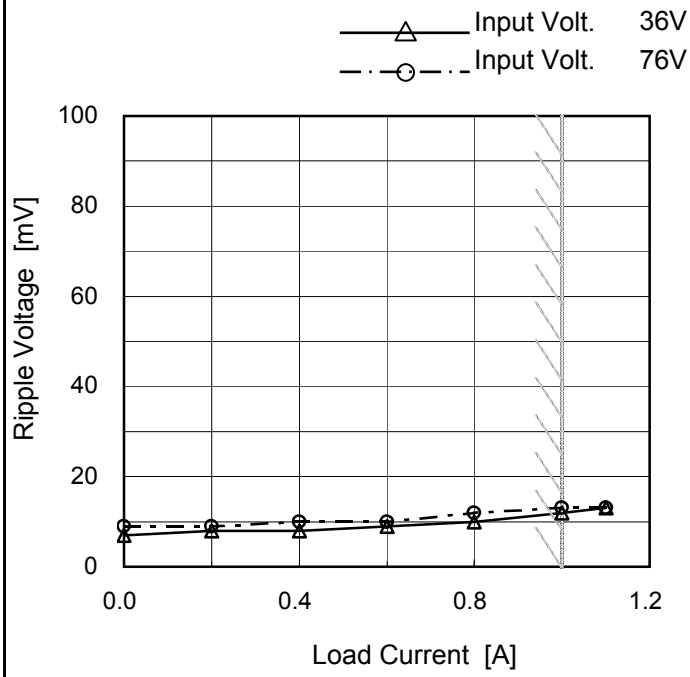
Model	MGS154815
Item	Ripple Voltage (by Load Current)
Object	+15V1A

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]

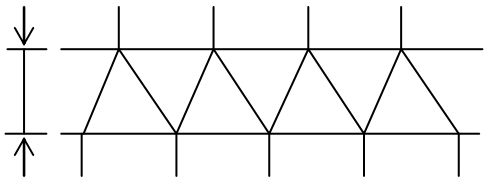


Fig.Complex Ripple Wave Form

2.Values

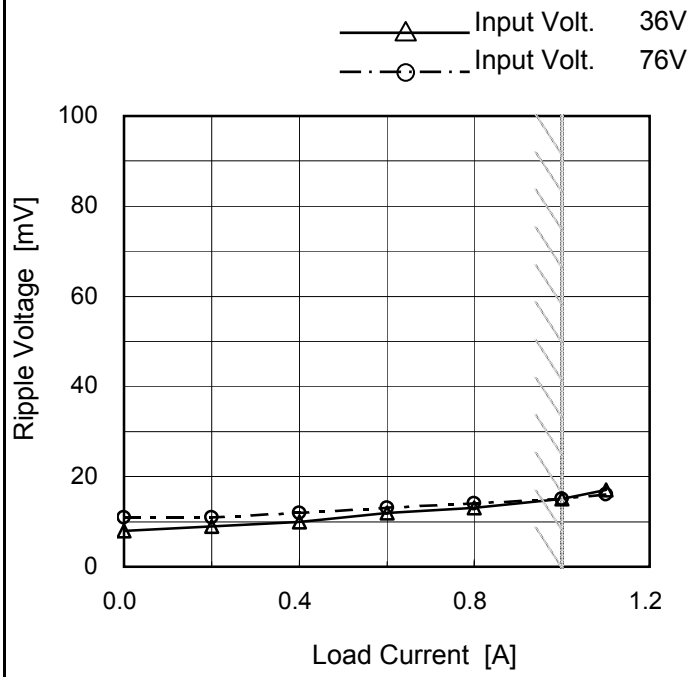
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	7	9
0.2	8	9
0.4	8	10
0.6	9	10
0.8	10	12
1.0	12	13
1.1	13	13
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS154815
Item	Ripple-Noise
Object	+15V1A

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.

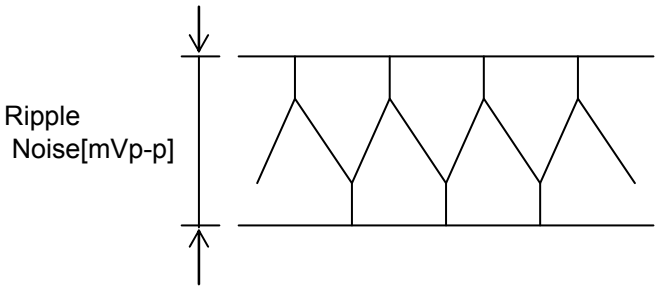


Fig.Complex Ripple Noise Wave Form

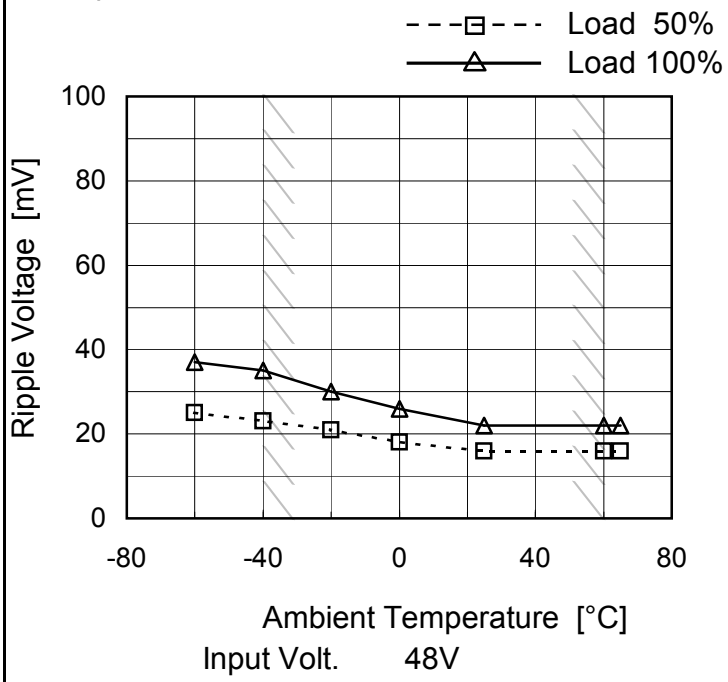
2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	8	11
0.2	9	11
0.4	10	12
0.6	12	13
0.8	13	14
1.0	15	15
1.1	17	16
--	-	-
--	-	-
--	-	-
--	-	-

Model	MGS154815
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V1A

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

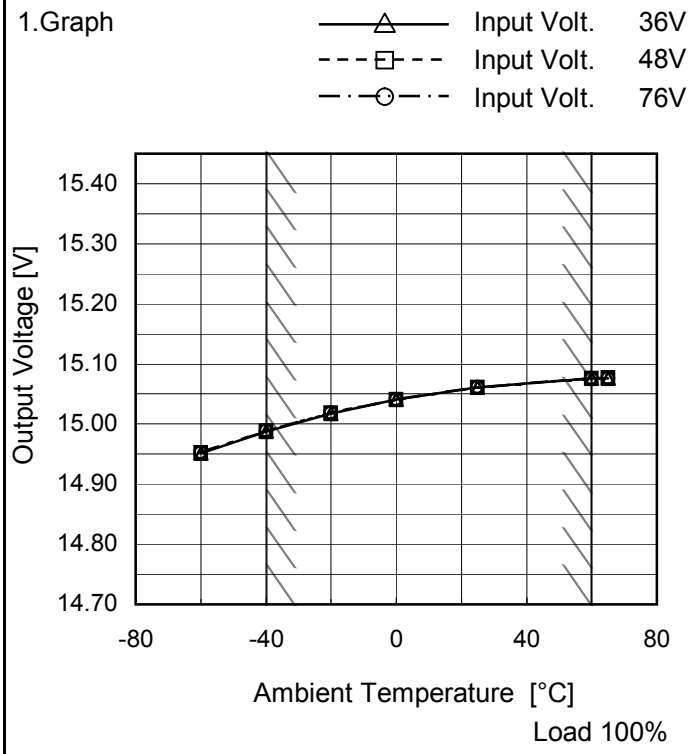
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	25	37
-40	23	35
-20	21	30
0	18	26
25	16	22
60	16	22
65	16	22
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS154815
Item	Ambient Temperature Drift
Object	+15V1A

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	14.952	14.952	14.952
-40	14.988	14.988	14.989
-20	15.018	15.018	15.019
0	15.041	15.041	15.041
25	15.061	15.061	15.061
60	15.076	15.076	15.076
65	15.077	15.077	15.077
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS154815	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V1A	

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 - 1A

* 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

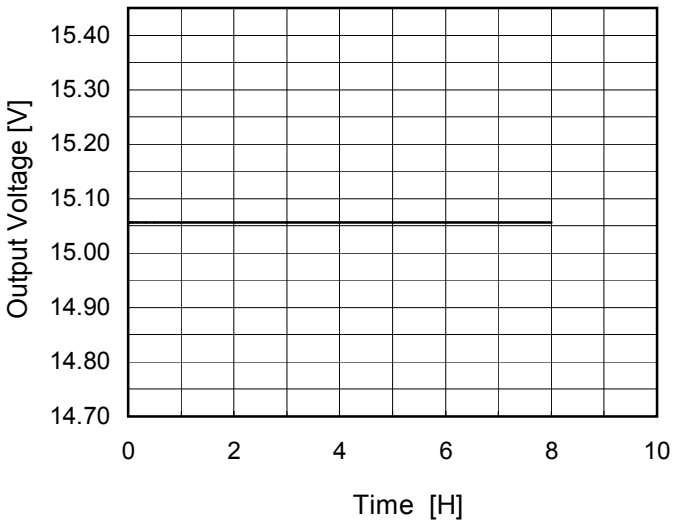
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	36	0	15.079	±46	±0.3
Minimum Voltage	-40	36	1	14.988		

COSEL

Model	MGS154815
Item	Time Lapse Drift
Object	+15V1A

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	15.056
0.5	15.056
1.0	15.056
2.0	15.056
3.0	15.056
4.0	15.056
5.0	15.056
6.0	15.056
7.0	15.056
8.0	15.056

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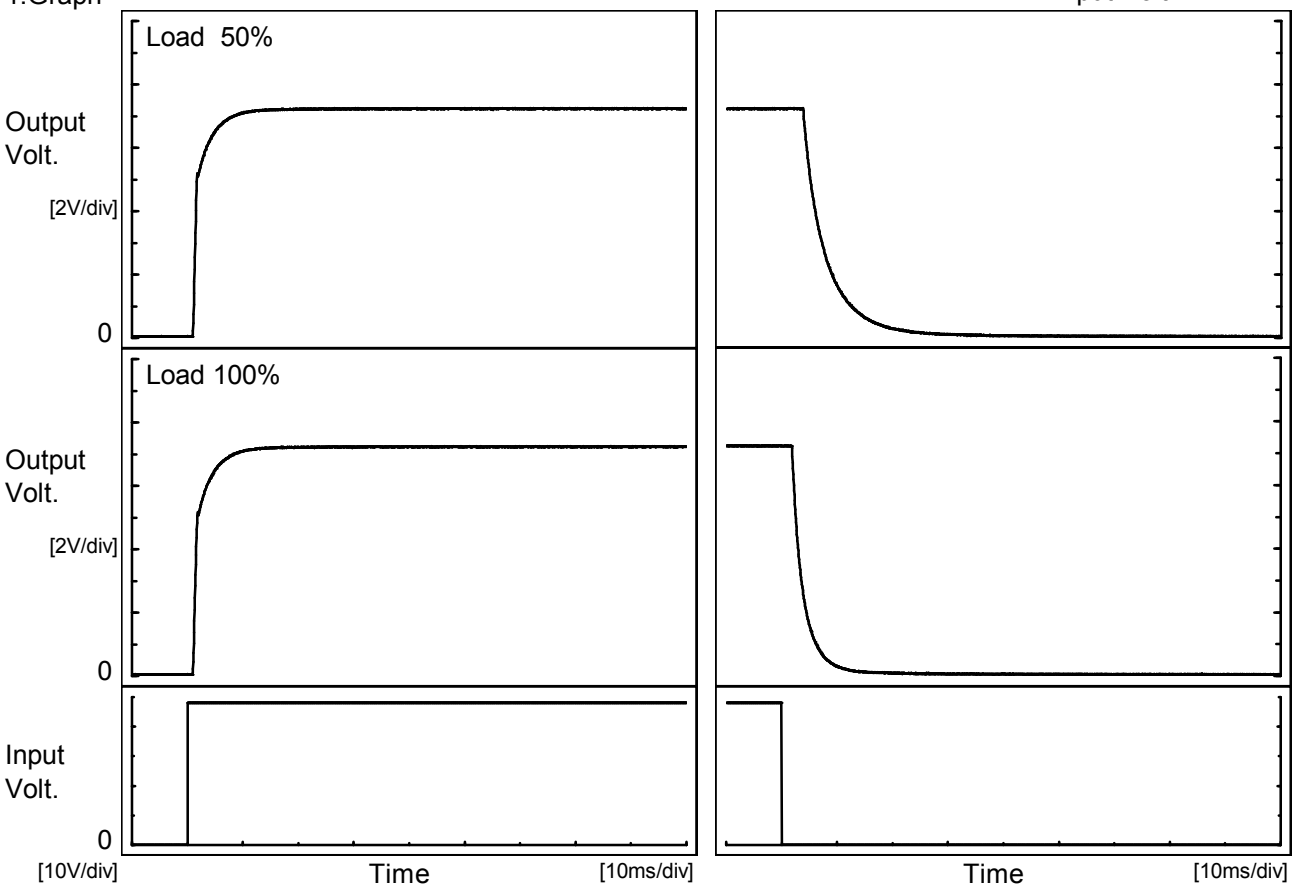
Model	MGS154815
Item	Rise and Fall Time
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

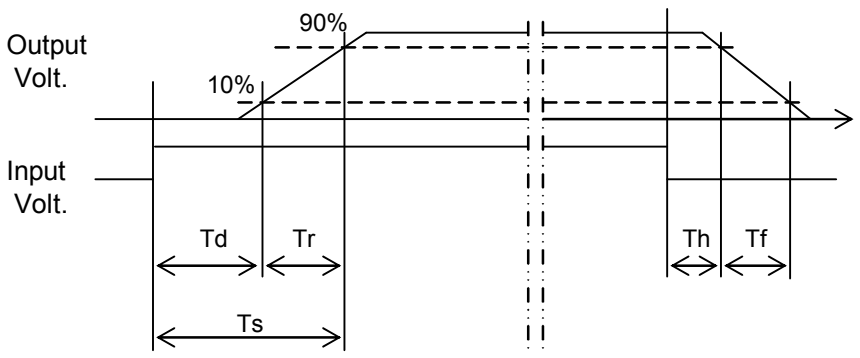
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.2	5.3	6.5	4.0	9.7
100 %	1.2	5.4	6.6	2.0	4.9



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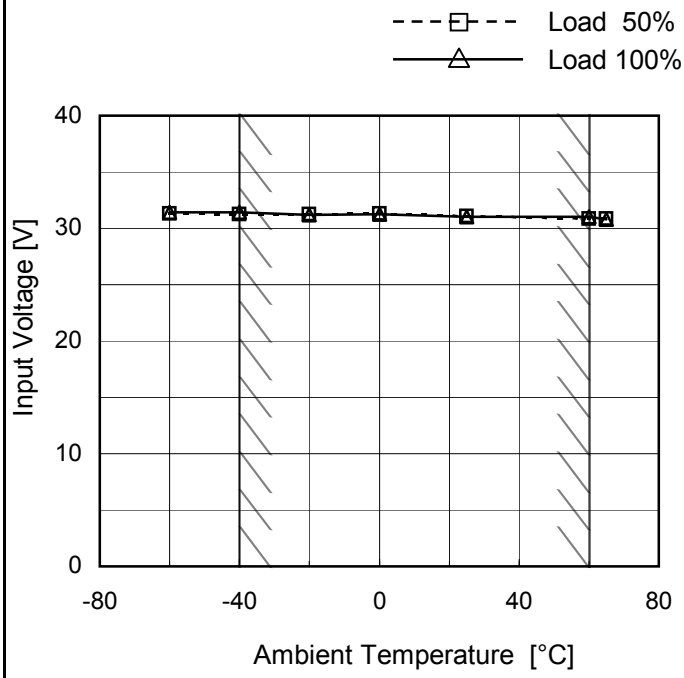
Model	MGS154815
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V1A

Testing Circuitry Figure A

1.Graph



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

2.Values

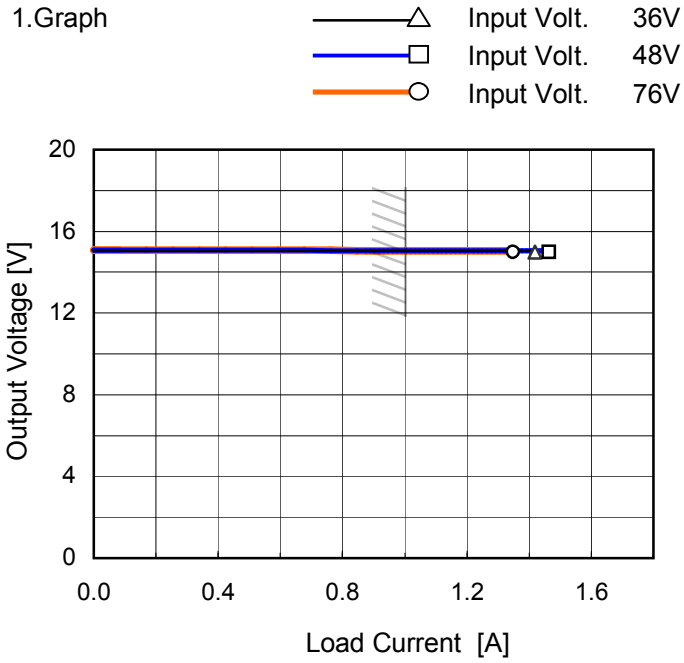
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	31.3	31.5
-40	31.3	31.5
-20	31.3	31.3
0	31.3	31.3
25	31.1	31.1
60	30.9	31.1
65	30.9	30.9
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS154815
Item	Overcurrent Protection
Object	+15V1A

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]
15.0	1.42	1.46	1.35
14.3	-	-	-
13.5	-	-	-
12.0	-	-	-
10.5	-	-	-
9.0	-	-	-
7.5	-	-	-
6.0	-	-	-
4.5	-	-	-
3.0	-	-	-
1.5	-	-	-
0.0	-	-	-

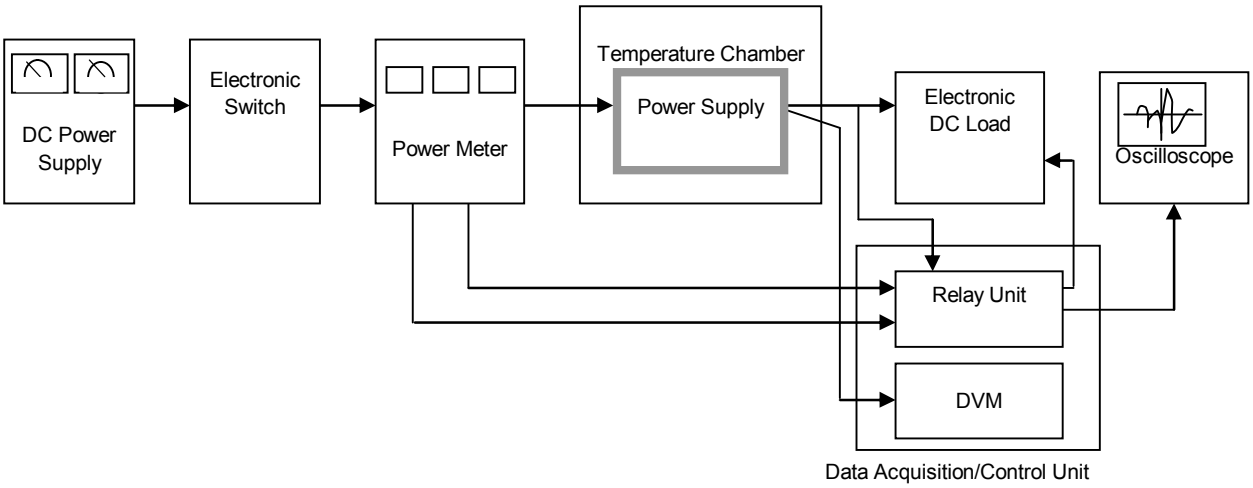


Figure A

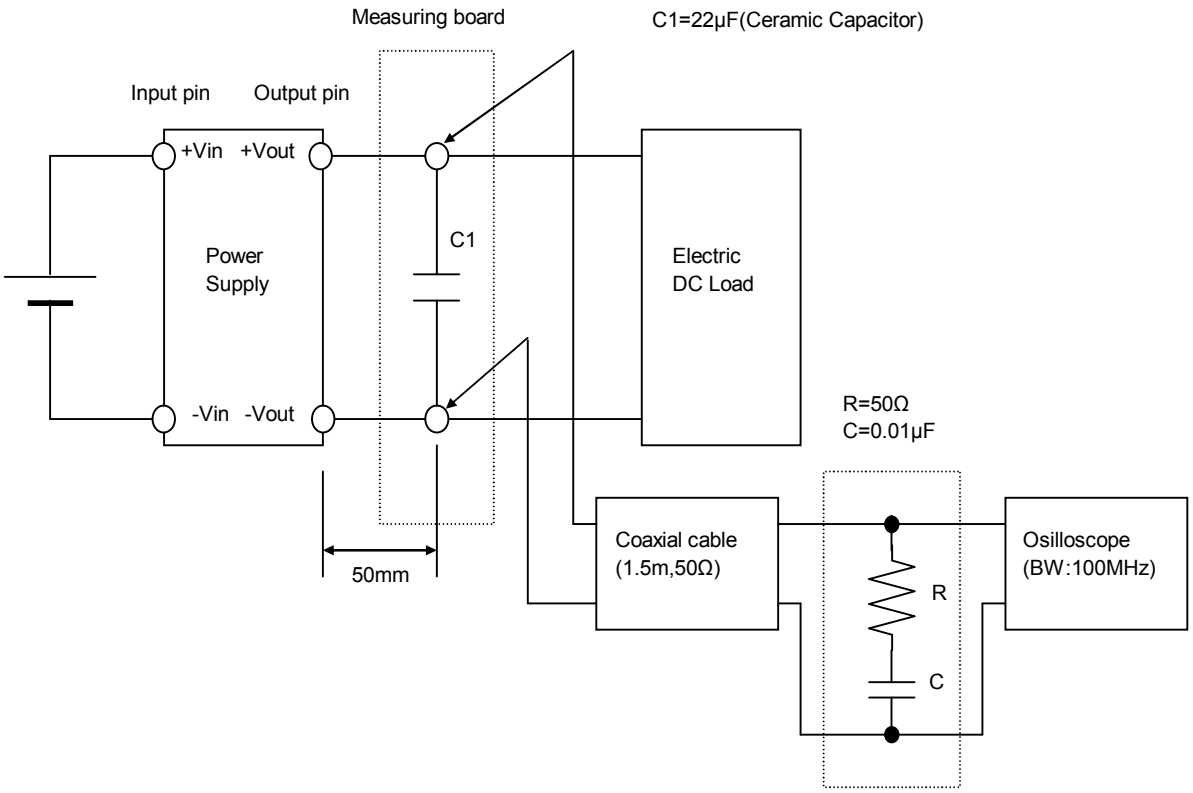


Figure B（Ripple and Ripple noise Characteristic）