



TEST DATA OF MGS34815

Regulated DC Power Supply
August 19, 2016

Approved by : Takayuki Fukuda _____
Takayuki Fukuda Design Manager

Prepared by : Shohei Mukaide _____
Shohei Mukaide Design Engineer

COSEL CO.,LTD.



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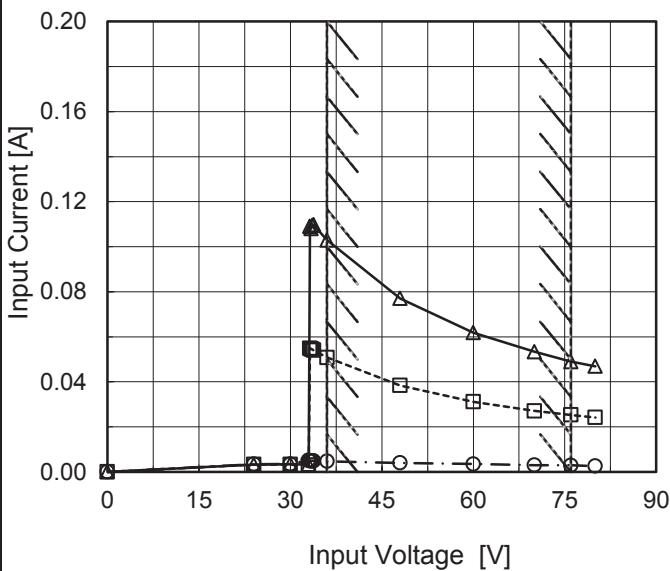
Model MGS34815

Item Input Current (by Input Voltage)

Object _____

1.Graph

—△— Load 100%
 - -□--- Load 50%
 - -○--- Load 0%



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

 Temperature 25°C
 Testing Circuitry Figure A

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	0.003	0.003
30.0	0.004	0.003	0.003
33.0	0.005	0.003	0.003
33.2	0.005	0.055	0.109
33.4	0.005	0.055	0.108
33.6	0.005	0.054	0.109
33.8	0.005	0.054	0.110
36.0	0.005	0.051	0.103
48.0	0.004	0.038	0.077
60.0	0.004	0.031	0.062
70.0	0.003	0.027	0.053
76.0	0.003	0.025	0.049
80.0	0.003	0.024	0.047
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Model	MGS34815	Temperature	25°C																																																			
Item	Input Current (by Load Current)	Testing Circuitry	Figure A																																																			
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<p>The graph plots Efficiency [%] on the y-axis (50 to 90) against Input Voltage [V] on the x-axis (30 to 90). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a general downward trend as input voltage increases. A slanted line on the graph indicates the rated input voltage range.</p> <table border="1"> <thead> <tr> <th>Input Voltage [V]</th> <th>Efficiency Load 50% [%]</th> <th>Efficiency Load 100% [%]</th> </tr> </thead> <tbody> <tr><td>34</td><td>82.5</td><td>84.4</td></tr> <tr><td>36</td><td>82.1</td><td>84.7</td></tr> <tr><td>40</td><td>82.4</td><td>84.7</td></tr> <tr><td>48</td><td>81.9</td><td>85.0</td></tr> <tr><td>55</td><td>80.9</td><td>85.0</td></tr> <tr><td>60</td><td>80.5</td><td>84.6</td></tr> <tr><td>70</td><td>79.0</td><td>83.9</td></tr> <tr><td>76</td><td>78.0</td><td>83.8</td></tr> <tr><td>80</td><td>77.6</td><td>83.3</td></tr> </tbody> </table>		Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	34	82.5	84.4	36	82.1	84.7	40	82.4	84.7	48	81.9	85.0	55	80.9	85.0	60	80.5	84.6	70	79.0	83.9	76	78.0	83.8	80	77.6	83.3
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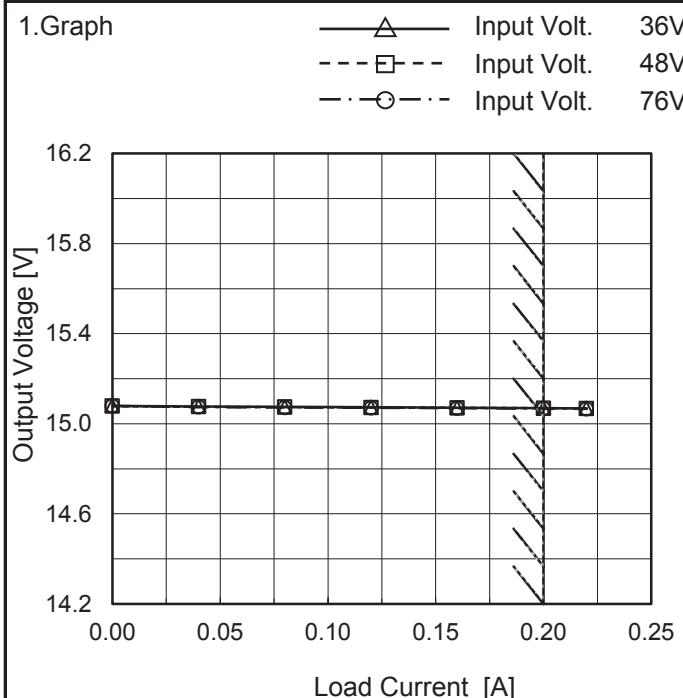
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Model	MGS34815
Item	Load Regulation
Object	+15V0.2A


 Temperature 25°C
 Testing Circuitry Figure A

2.Values

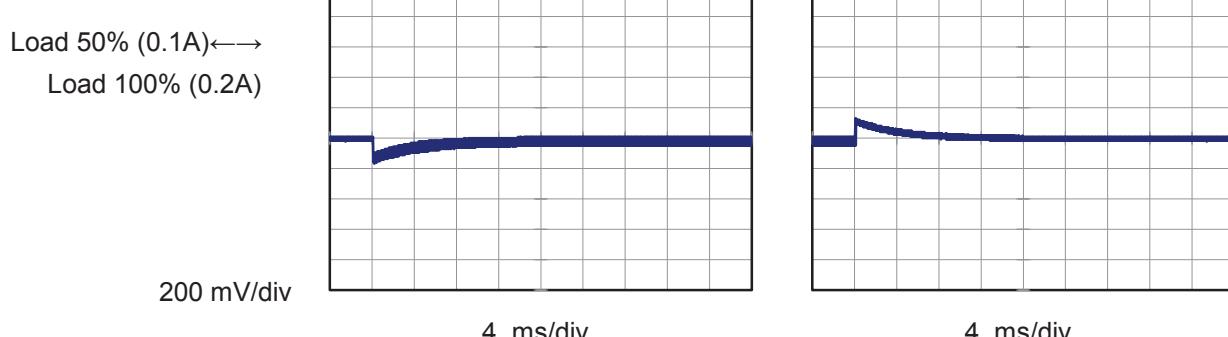
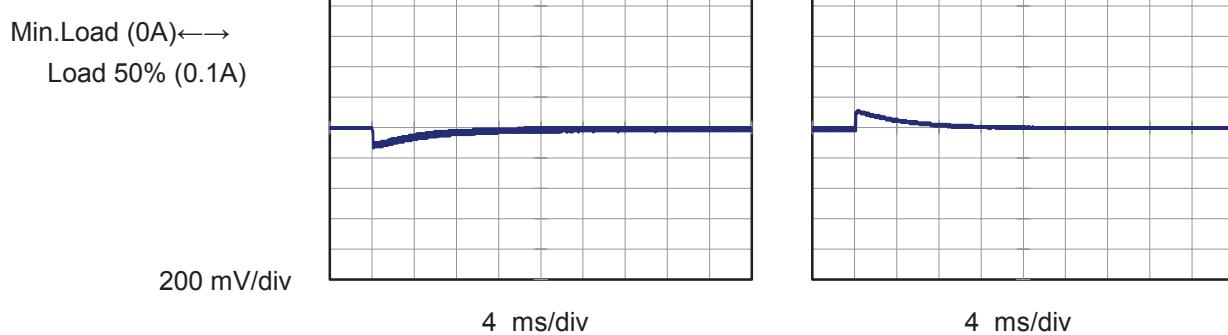
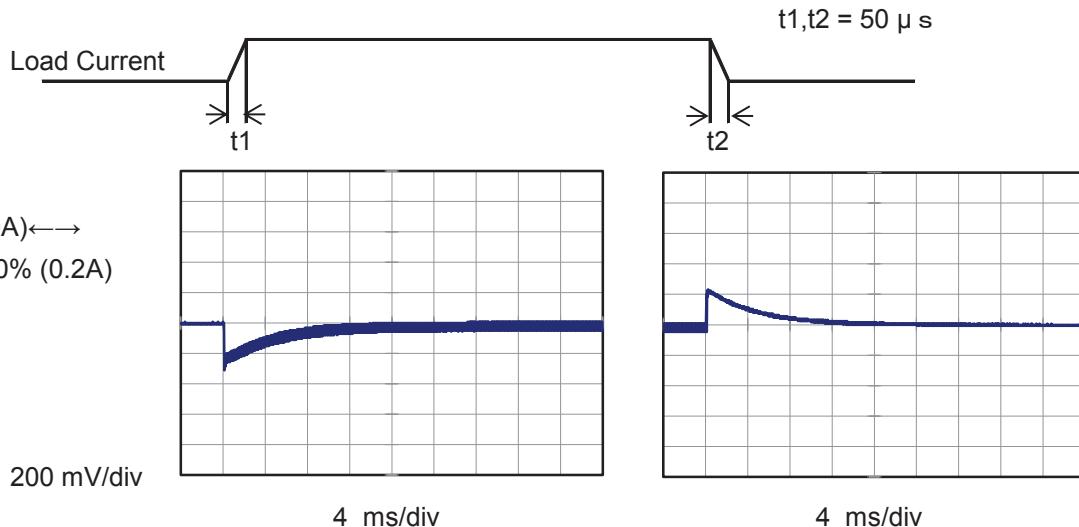
Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	15.080	15.079	15.079
0.04	15.077	15.076	15.074
0.08	15.075	15.074	15.072
0.12	15.074	15.072	15.070
0.16	15.071	15.070	15.069
0.20	15.069	15.069	15.067
0.22	15.068	15.068	15.067
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Note: Slanted line shows the range of the rated load current.

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Model	MGS34815	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+15V0.2A		

Input Volt. 48 V
 Cycle 100 ms



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Model	MGS34815																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	+15V0.2A																																							
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<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The Y-axis ranges from 0 to 400 mV, and the X-axis ranges from 0.00 to 0.25 A. Two sets of data points are plotted: Input Volt. 36V (triangles) and Input Volt. 76V (circles). A slanted line indicates the rated load current range.</p> <table border="1"> <caption>Data points estimated from Graph</caption> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (Input Volt. 36V)</th> <th>Ripple Voltage [mV] (Input Volt. 76V)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>0</td><td>0</td></tr> <tr><td>0.05</td><td>20</td><td>15</td></tr> <tr><td>0.10</td><td>40</td><td>35</td></tr> <tr><td>0.15</td><td>60</td><td>55</td></tr> <tr><td>0.20</td><td>105</td><td>75</td></tr> <tr><td>0.22</td><td>120</td><td>75</td></tr> </tbody> </table>		Load Current [A]	Ripple Voltage [mV] (Input Volt. 36V)	Ripple Voltage [mV] (Input Volt. 76V)	0.00	0	0	0.05	20	15	0.10	40	35	0.15	60	55	0.20	105	75	0.22	120	75																		
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COSSEL

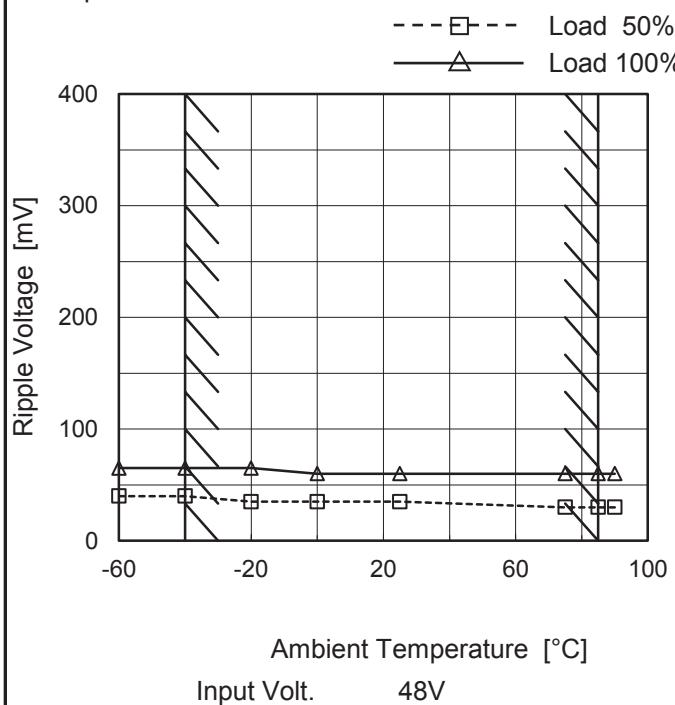
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COSEL

Model	MGS34815
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.2A

Testing Circuitry Figure B

1. Graph



2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	40	65
-40	40	65
-20	35	65
0	35	60
25	35	60
75	30	60
85	30	60
90	30	60
--	-	-
--	-	-
--	-	-

Measured by 100 MHz Oscilloscope.

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

COSEL

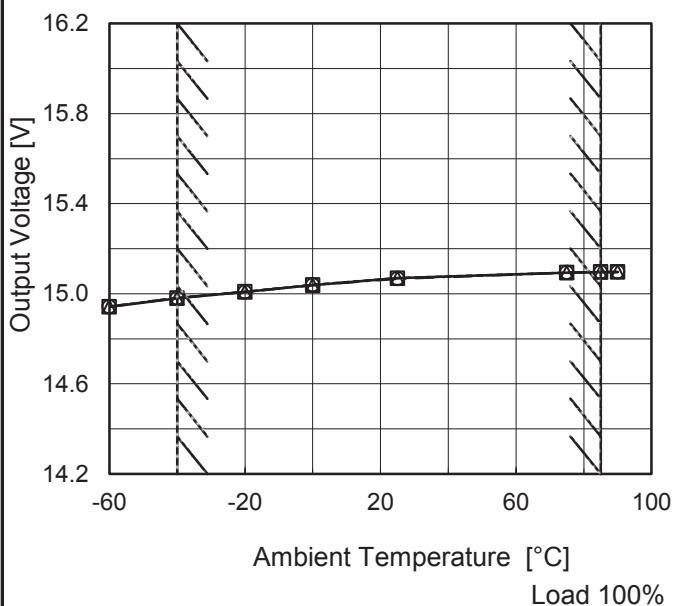
Model MGS34815

Item Ambient Temperature Drift

Object +15V0.2A

1.Graph

—△— Input Volt. 36V
 - - -□--- Input Volt. 48V
 - - -○--- Input Volt. 76V



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

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	14.942	14.943	14.943
-40	14.980	14.981	14.981
-20	15.008	15.008	15.008
0	15.038	15.039	15.039
25	15.069	15.069	15.067
75	15.093	15.094	15.094
85	15.096	15.097	15.096
90	15.097	15.097	15.097
--	-	-	-
--	-	-	-
--	-	-	-



Model	MGS34815	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+15V0.2A	

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 - 85°C

Input Voltage : 36 - 76V

Load Current : 0 - 0.2A

* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

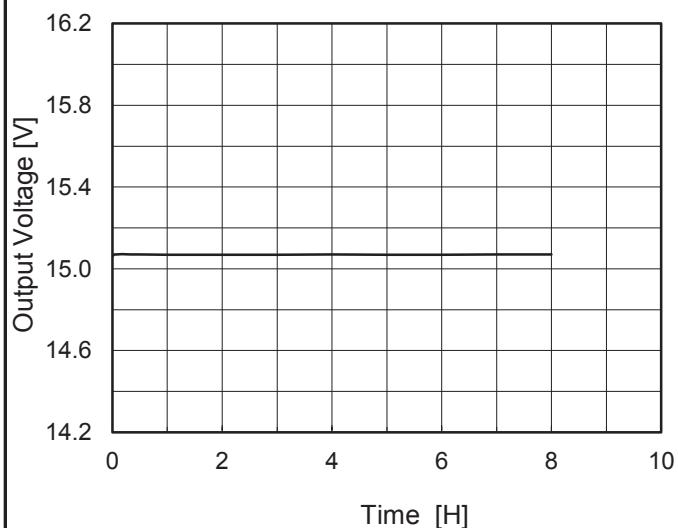
2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	85	76	0	15.110	±65	±0.4
Minimum Voltage	-40	36	0.2	14.980		

COSEL

Model	MGS34815	Temperature	25°C
Item	Time Lapse Drift	Testing Circuitry	Figure A
Object	+15V0.2A		

1.Graph



Input Volt. 48V
Load 100%

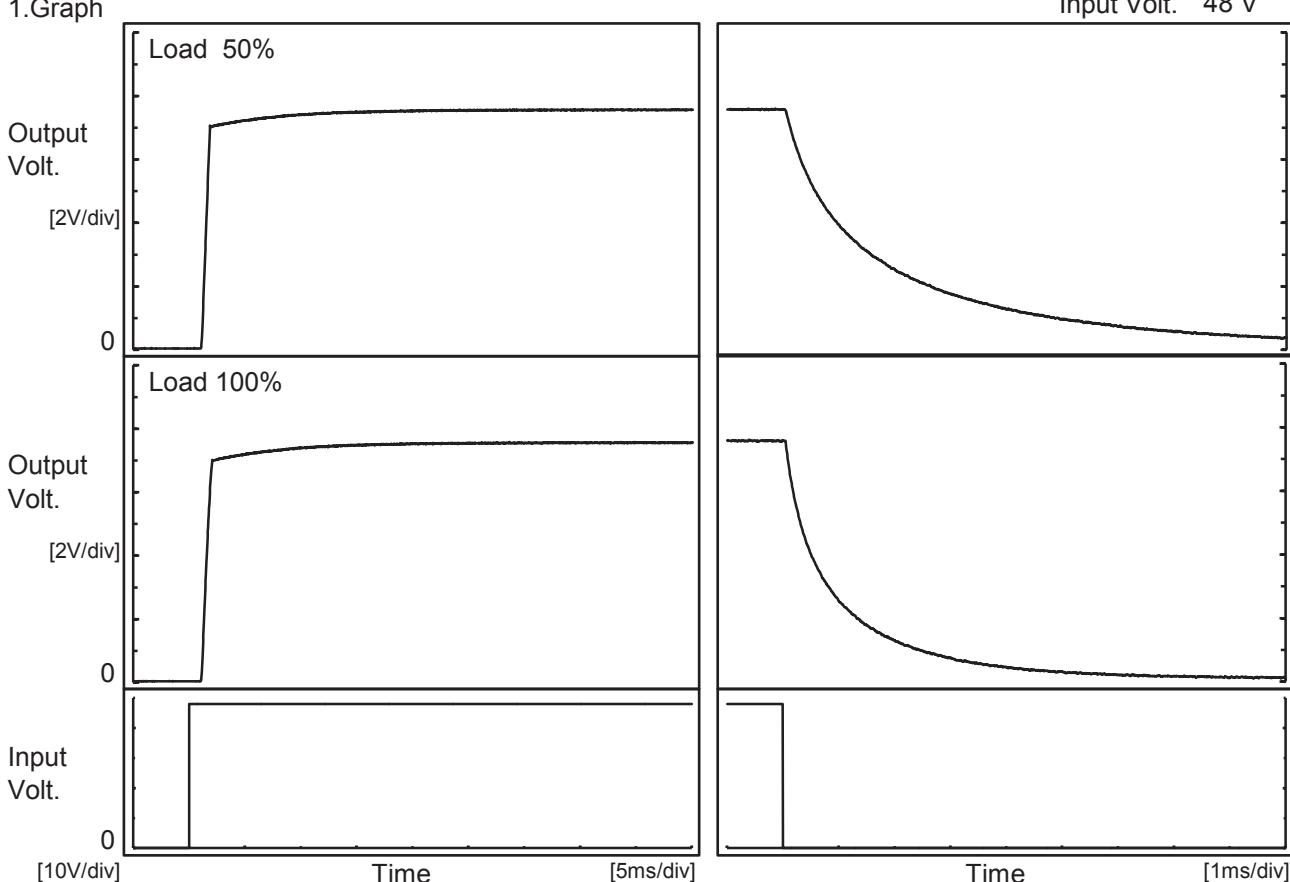
2.Values

Time since start [H]	Output Voltage [V]
0.0	15.062
0.5	15.070
1.0	15.069
2.0	15.069
3.0	15.069
4.0	15.071
5.0	15.069
6.0	15.069
7.0	15.071
8.0	15.070

COSEL

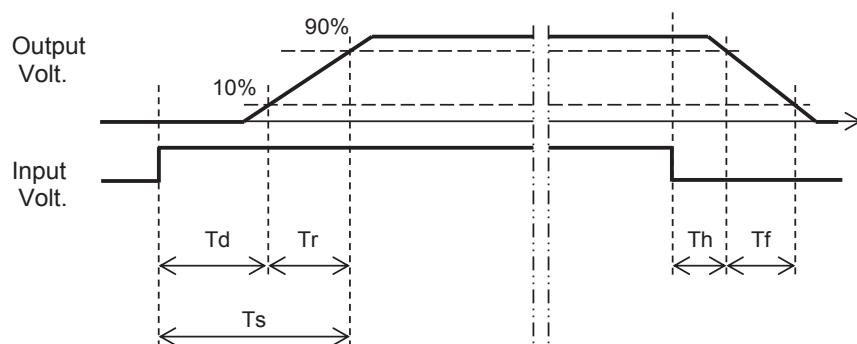
Model	MGS34815	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+15V0.2A		

1. Graph



2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		1.2	0.7	1.9	0.2	5.7	
100 %		1.2	0.8	2.0	0.1	2.8	

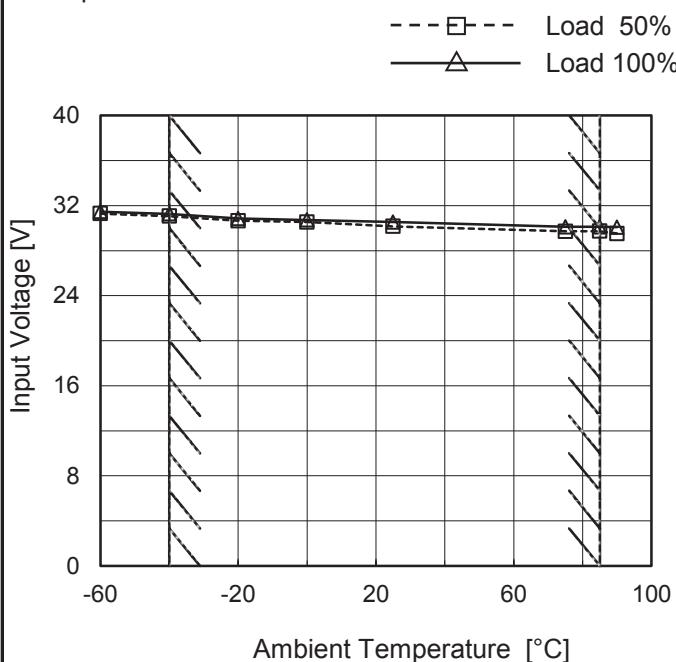


COSEL

Model	MGS34815
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V0.2A

Testing Circuitry Figure A

1.Graph



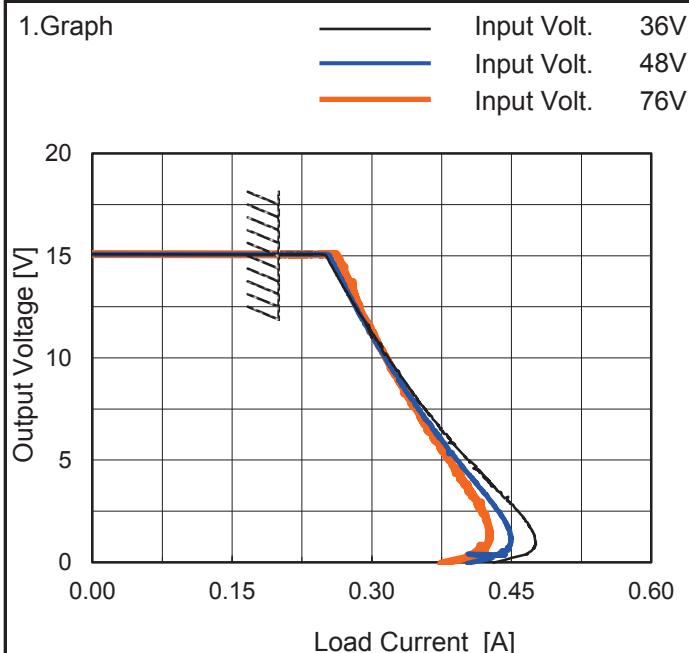
Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	31.3	31.5
-40	31.1	31.3
-20	30.7	30.9
0	30.6	30.8
25	30.2	30.6
75	29.8	30.2
85	29.8	30.2
90	29.6	30.1
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS34815
Item	Overcurrent Protection
Object	+15V0.2A



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

Temperature 25°C
Testing Circuitry Figure A

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
15.0	0.20	0.20	0.20
14.3	0.26	0.26	0.27
13.5	0.27	0.27	0.28
12.0	0.29	0.29	0.29
10.5	0.31	0.31	0.31
9.0	0.33	0.33	0.33
7.5	0.36	0.35	0.34
6.0	0.38	0.37	0.37
4.5	0.41	0.40	0.39
3.0	0.44	0.43	0.41
1.5	0.47	0.45	0.43
0.0	0.43	0.40	0.37

COSEL

Model	MGS34815	Temperature	25°C																																																			
Item	Switching Frequency (by Load Current)	Testing Circuitry	Figure A																																																			
Object	+15V0.2A																																																					
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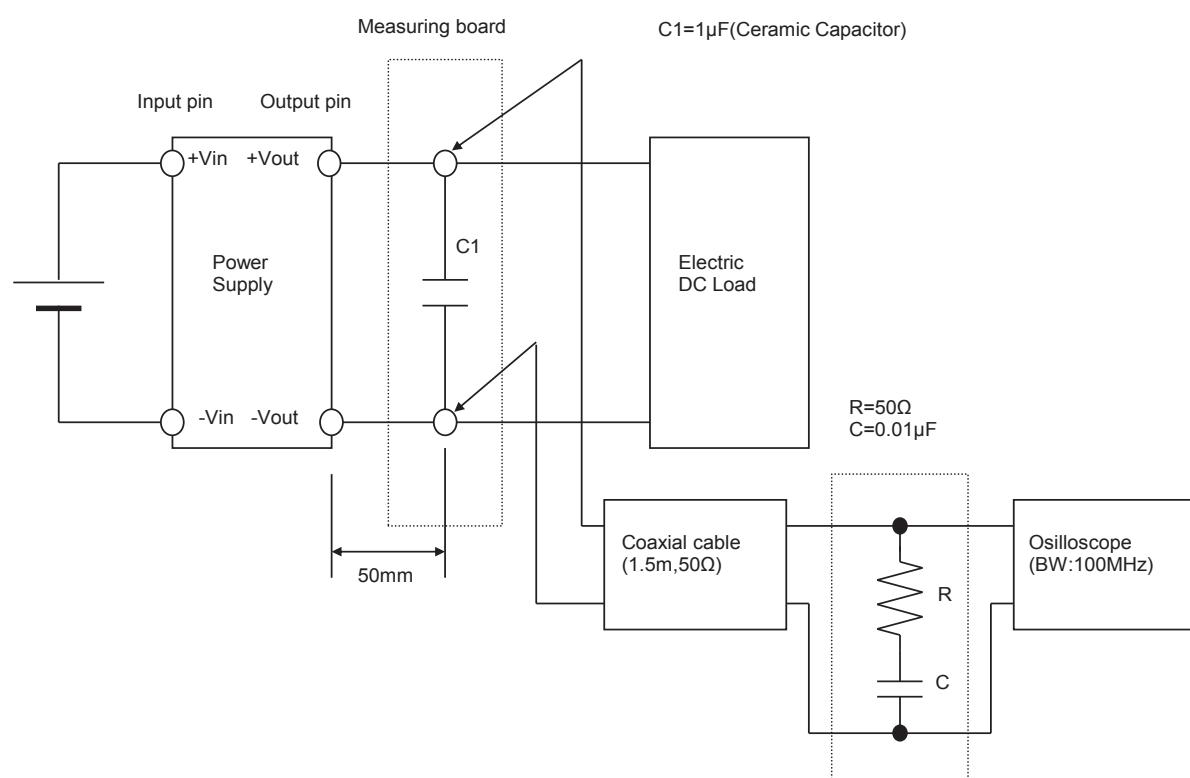
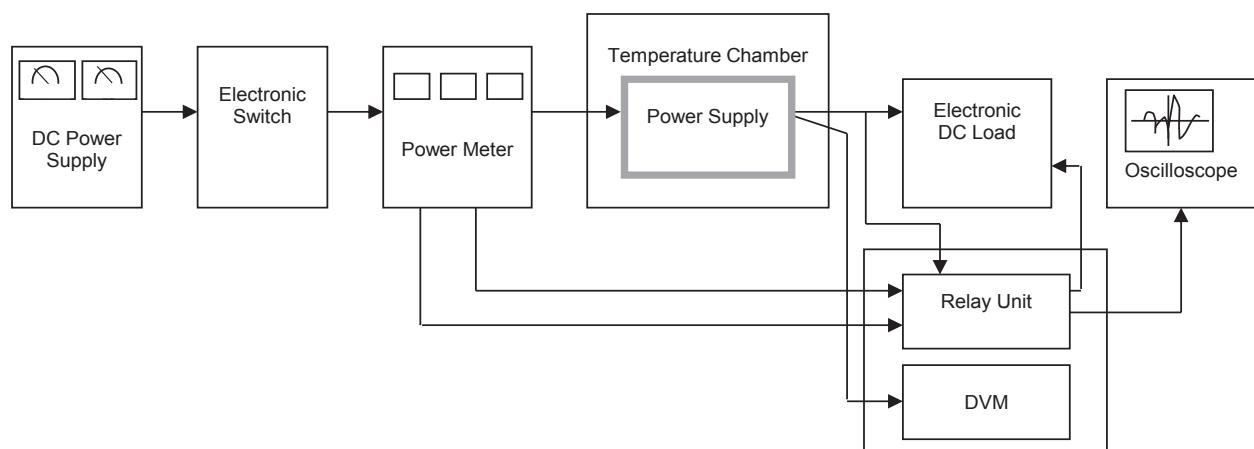


Figure B (Ripple and Ripple noise Characteristic)