COSEL

参考資料

TEST DATA OF MGFS154812

Regulated DC Power Supply

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Yuichiro Ohashi Design Engineer

COSEL CO.,LTD.

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Object	————————

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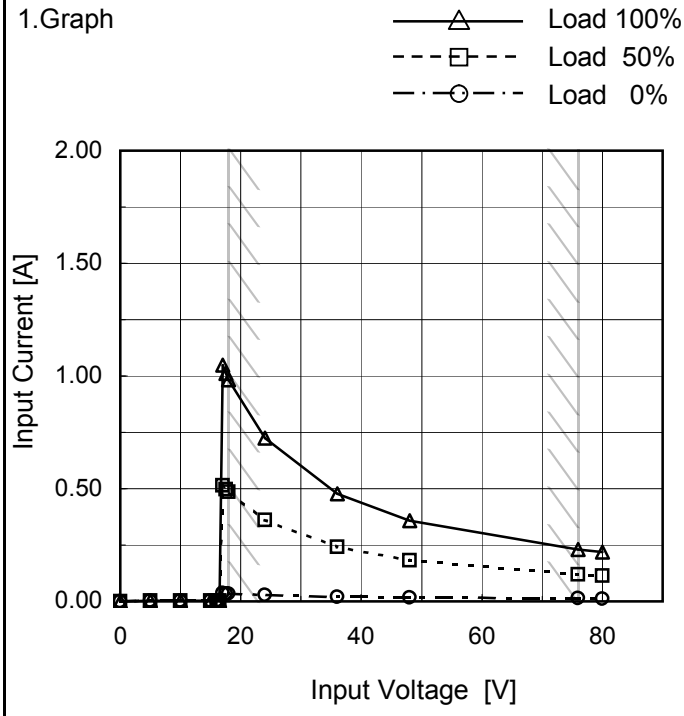

Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
5.0	0.002	0.002	0.002
10.0	0.002	0.002	0.002
15.0	0.002	0.002	0.002
16.0	0.002	0.002	0.002
16.5	0.002	0.002	0.002
17.0	0.036	0.513	1.049
17.5	0.035	0.498	1.012
18.0	0.035	0.485	0.983
24.0	0.028	0.361	0.725
36.0	0.021	0.241	0.478
48.0	0.017	0.183	0.357
76.0	0.013	0.118	0.229
80.0	0.013	0.112	0.219
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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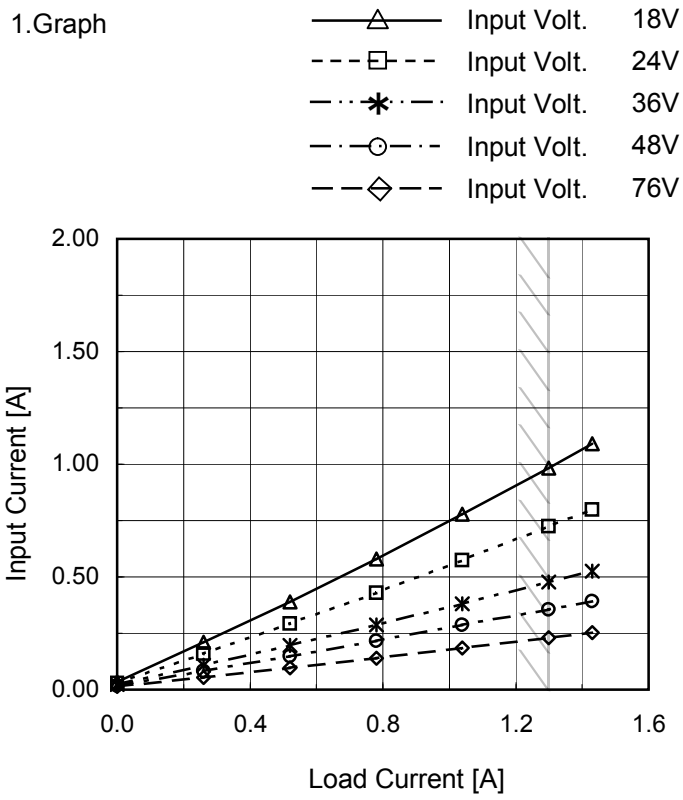
Model	MGFS154812
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

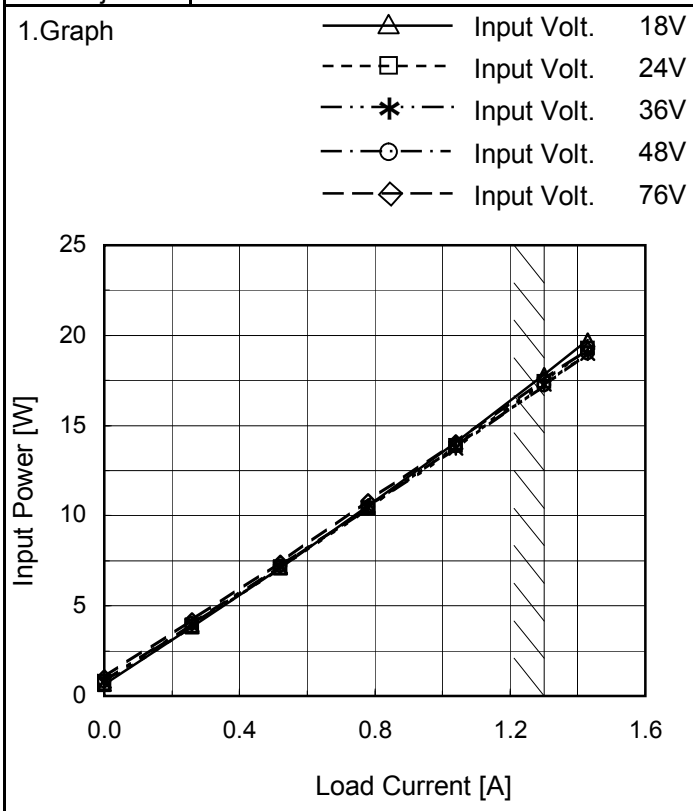
Load Current [A]	Input Current [A]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.035	0.028	0.021	0.017	0.013
0.26	0.209	0.159	0.108	0.083	0.054
0.52	0.390	0.292	0.197	0.149	0.097
0.78	0.580	0.430	0.288	0.217	0.140
1.04	0.777	0.573	0.381	0.286	0.184
1.30	0.984	0.725	0.477	0.356	0.229
1.43	1.091	0.797	0.525	0.392	0.252
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	MGFS154812
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

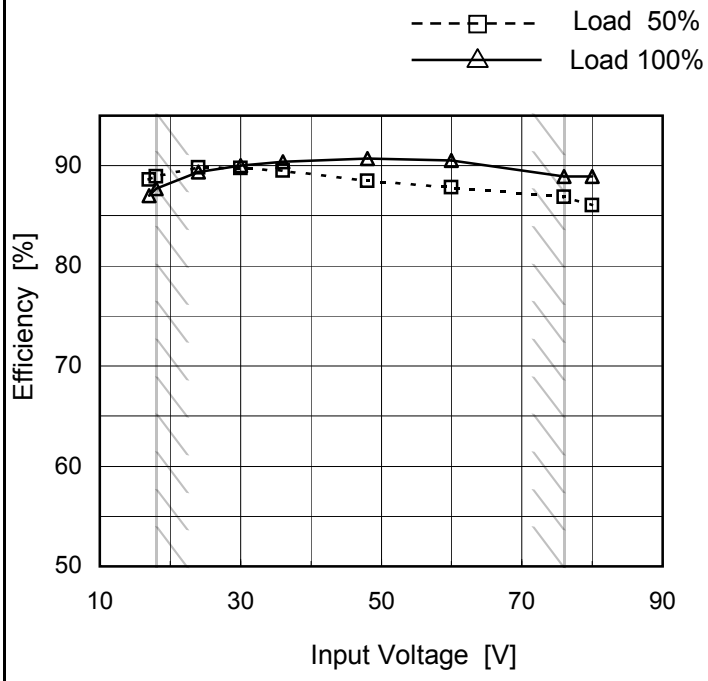
Load Current [A]	Input Power [W]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.63	0.69	0.80	0.83	1.06
0.26	3.82	3.86	3.95	4.03	4.21
0.52	7.10	7.10	7.16	7.20	7.41
0.78	10.53	10.42	10.43	10.49	10.82
1.04	14.08	13.88	13.76	13.84	14.09
1.30	17.82	17.44	17.28	17.21	17.57
1.43	19.76	19.28	19.00	18.99	19.26
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	MGFS154812
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	88.6	87.0
18	89.0	87.7
24	89.9	89.4
30	89.8	90.0
36	89.5	90.4
48	88.5	90.7
60	87.8	90.5
76	86.9	88.9
80	86.0	88.9

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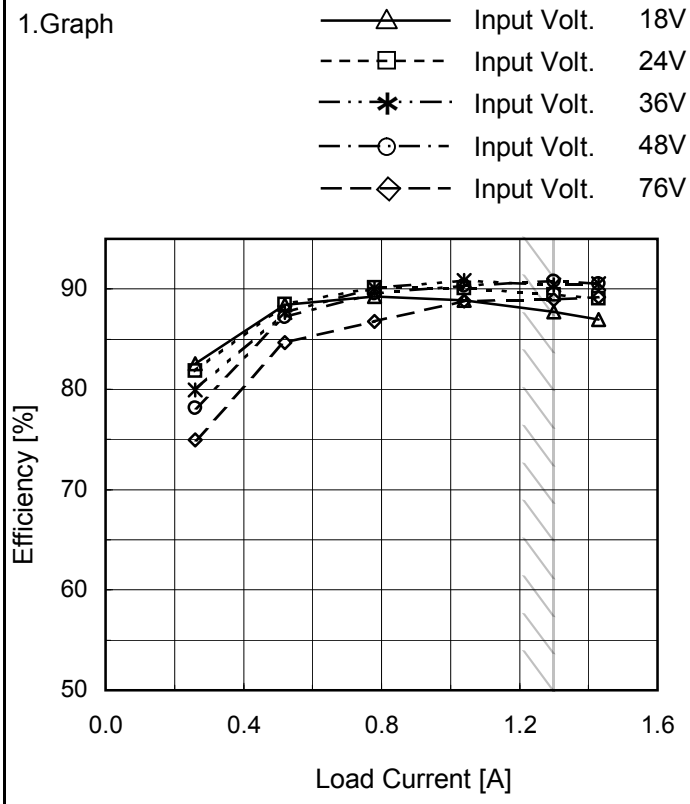
Model	MGFS154812
Item	Efficiency (by Load Current)
Object	————————

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]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	-	-	-	-	-
0.26	82.5	81.9	79.9	78.1	75.0
0.52	88.4	88.5	87.7	87.2	84.6
0.78	89.3	90.2	90.1	89.6	86.8
1.04	88.9	90.1	90.9	90.3	88.8
1.30	87.7	89.4	90.4	90.8	88.9
1.43	86.9	89.1	90.5	90.5	89.2
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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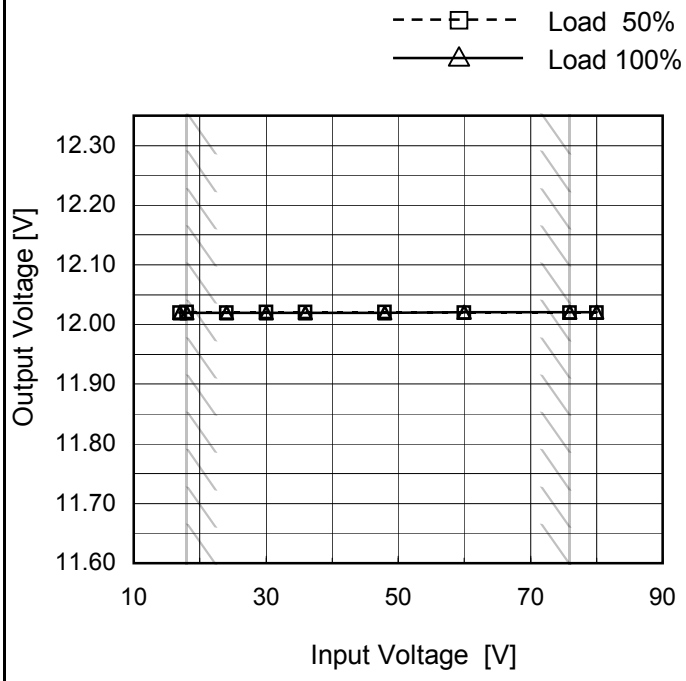
Model	MGFS154812
Item	Line Regulation
Object	+12V1.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

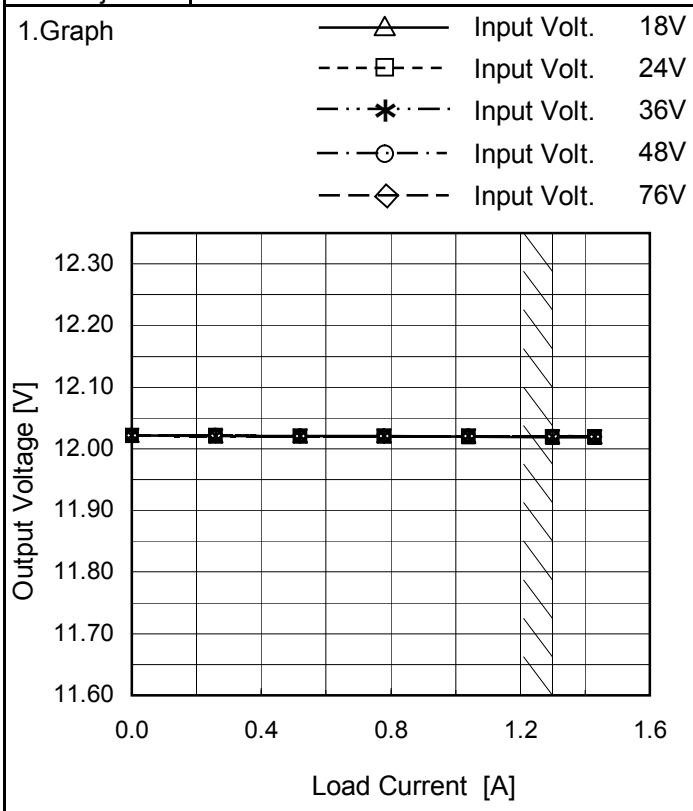
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	12.020	12.019
18	12.020	12.019
24	12.020	12.020
30	12.020	12.020
36	12.020	12.020
48	12.020	12.020
60	12.020	12.020
76	12.020	12.020
80	12.020	12.020

COSEL

Model	MGFS154812
Item	Load Regulation
Object	+12V1.3A

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]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	12.022	12.022	12.022	12.022	12.022
0.26	12.021	12.022	12.021	12.022	12.021
0.52	12.020	12.021	12.021	12.021	12.021
0.78	12.020	12.021	12.021	12.021	12.021
1.04	12.020	12.020	12.020	12.020	12.020
1.30	12.019	12.020	12.020	12.020	12.020
1.43	12.019	12.020	12.020	12.020	12.020
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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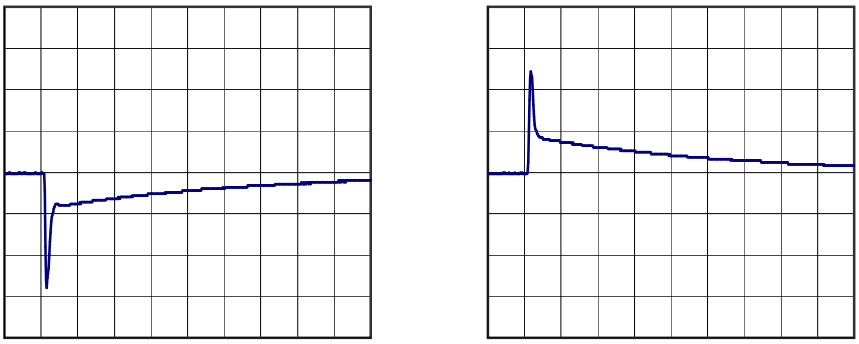
Model	MGFS154812
Item	Dynamic Load Response
Object	+12V1.3A

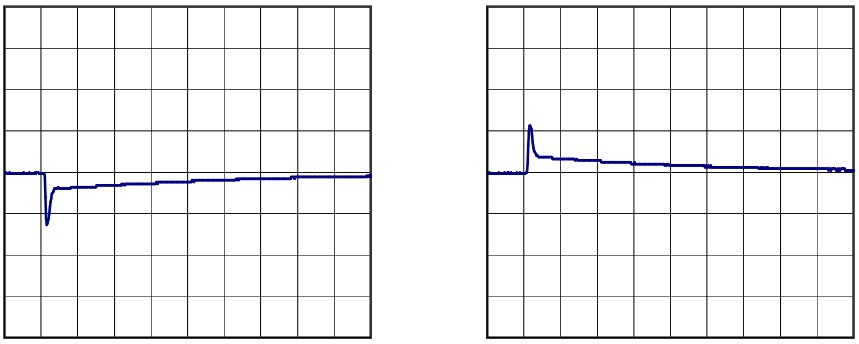
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 48 V
Cycle 1000 ms

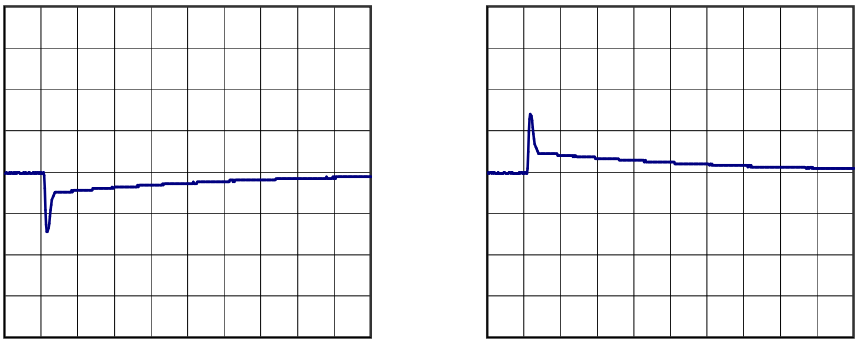
Min. Load (0A) ⟷ Load 100% (1.3A)



Min. Load (0A) ⟷ Load 50% (0.65A)



Load 50% (0.65A) ⟷ Load 100% (1.3A)



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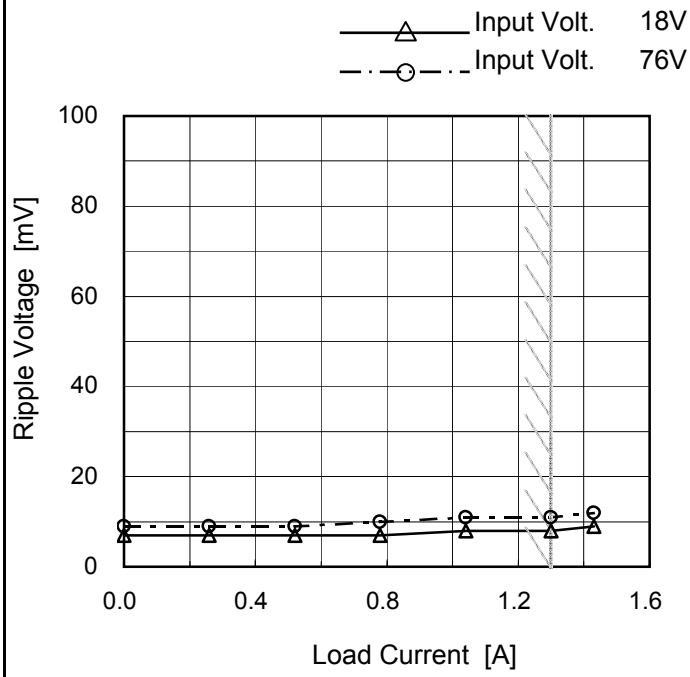
Model	MGFS154812
Item	Ripple Voltage (by Load Current)
Object	+12V1.3A

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]

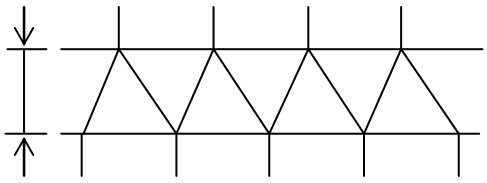


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 76 [V]
0.00	7	9
0.26	7	9
0.52	7	9
0.78	7	10
1.04	8	11
1.30	8	11
1.43	9	12
--	-	-
--	-	-
--	-	-
--	-	-

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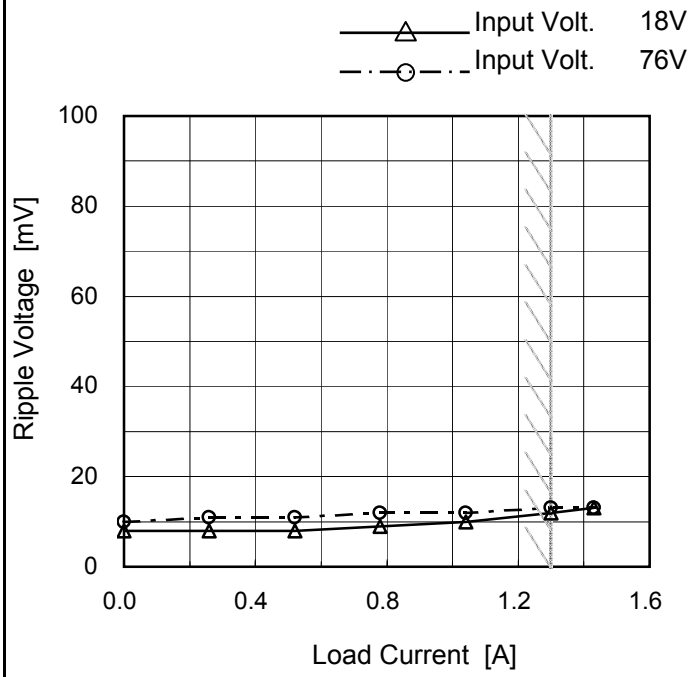
Model	MGFS154812
Item	Ripple-Noise
Object	+12V1.3A

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.

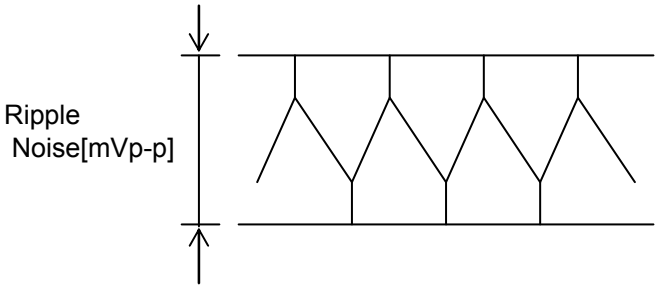


Fig.Complex Ripple Noise Wave Form

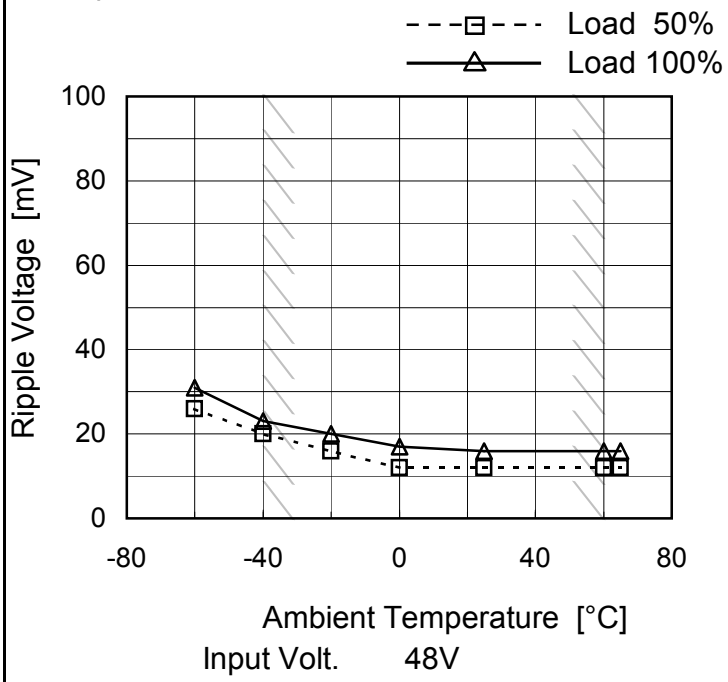
2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 76 [V]
0.00	8	10
0.26	8	11
0.52	8	11
0.78	9	12
1.04	10	12
1.30	12	13
1.43	13	13
--	-	-
--	-	-
--	-	-
--	-	-

Model	MGFS154812
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V1.3A

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

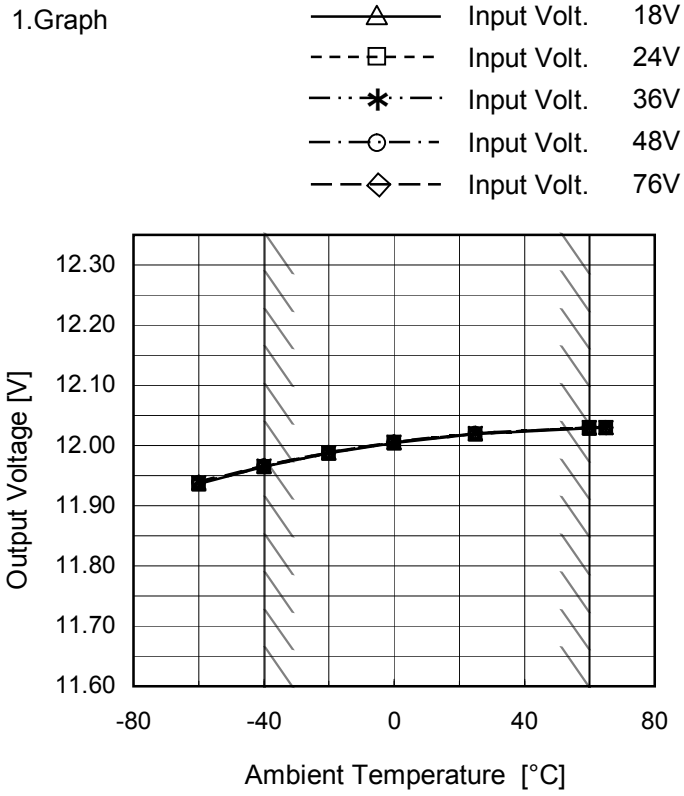
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	26	31
-40	20	23
-20	16	20
0	12	17
25	12	16
60	12	16
65	12	16
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGFS154812
Item	Ambient Temperature Drift
Object	+12V1.3A

Testing Circuitry Figure A

1.Graph



Load 100%

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]	Input Volt. 48[V]	Input Volt. 76[V]
-60	11.937	11.937	11.938	11.939	11.939
-40	11.965	11.965	11.966	11.966	11.967
-20	11.987	11.987	11.988	11.988	11.989
0	12.004	12.005	12.006	12.006	12.006
25	12.019	12.020	12.020	12.020	12.020
60	12.029	12.030	12.030	12.030	12.030
65	12.029	12.030	12.030	12.030	12.030
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	MGFS154812	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V1.3A	

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 : 18 - 76V
Load Current : 0 - 1.3A

* 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	24	0	12.032	±34	±0.3
Minimum Voltage	-40	18	1.3	11.965		

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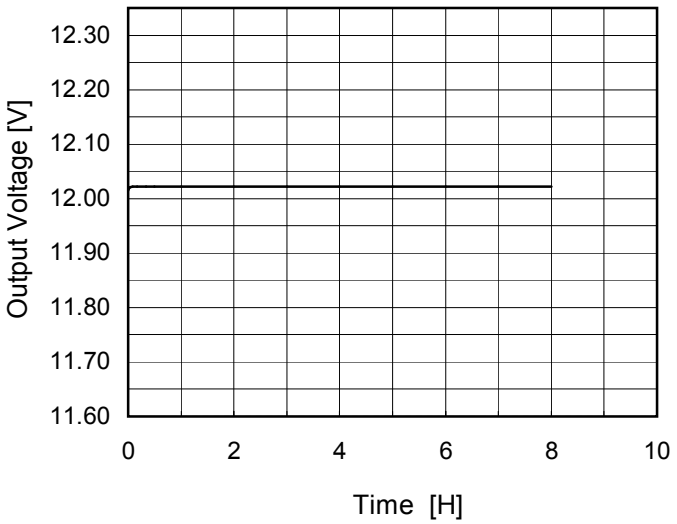
Model	MGFS154812
Item	Time Lapse Drift
Object	+12V1.3A

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	12.015
0.5	12.022
1.0	12.022
2.0	12.022
3.0	12.022
4.0	12.022
5.0	12.022
6.0	12.022
7.0	12.022
8.0	12.022

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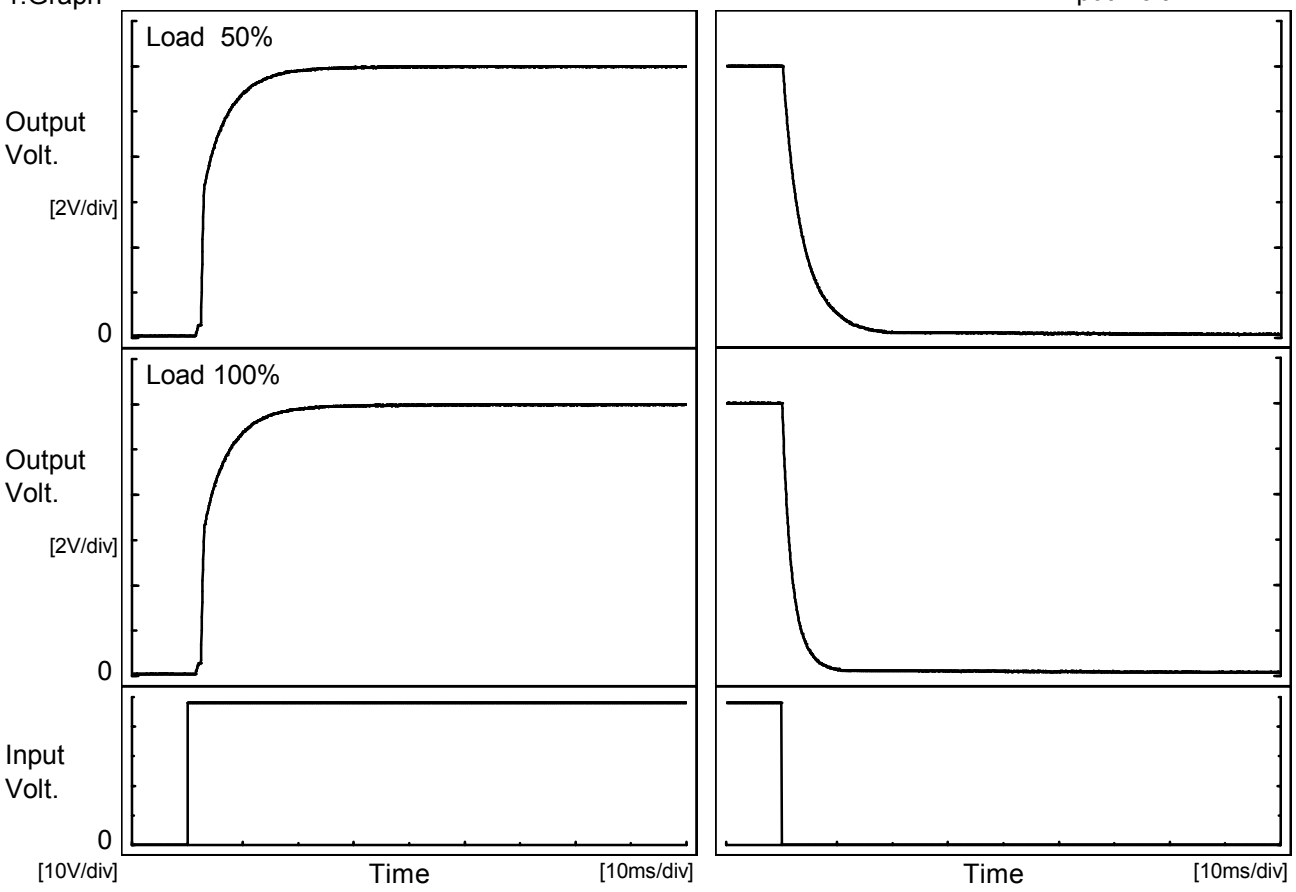
Model	MGFS154812
Item	Rise and Fall Time
Object	+12V1.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

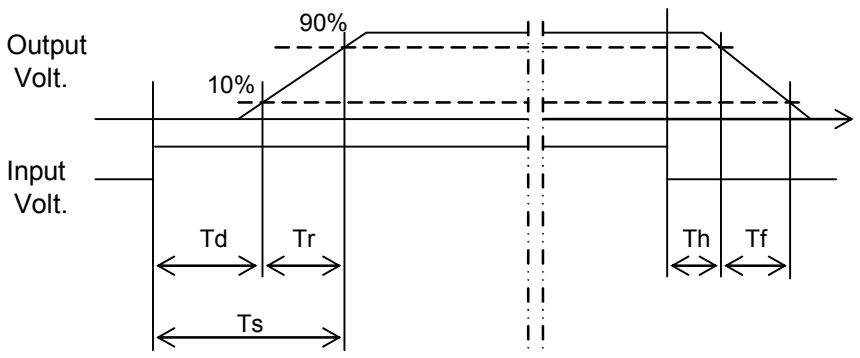
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	2.5	8.0	10.5	0.4	8.7
100 %	2.5	8.2	10.7	0.3	4.3



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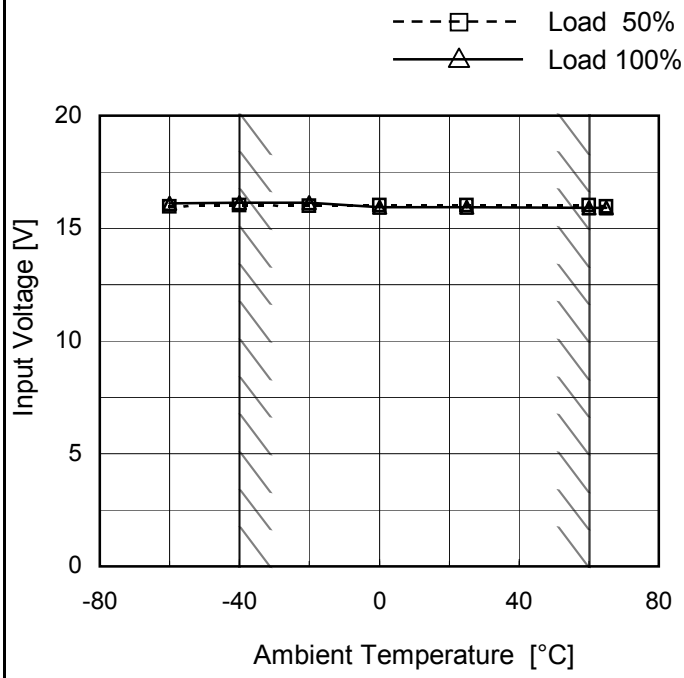
Model	MGFS154812
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V1.3A

Testing Circuitry Figure A

1.Graph



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

2.Values

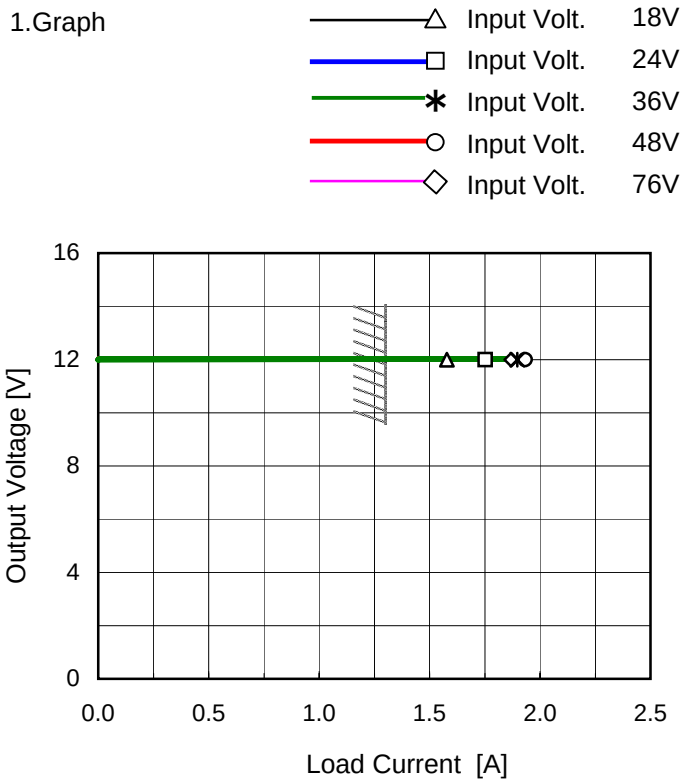
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	16.0	16.1
-40	16.1	16.2
-20	16.0	16.2
0	16.1	16.0
25	16.1	16.0
60	16.1	16.0
65	16.0	16.0
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGFS154812
Item	Overcurrent Protection
Object	+12V1.3A

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
12.0	1.578	1.752	1.897	1.934	1.869
11.4	-	-	-	-	-
10.8	-	-	-	-	-
9.6	-	-	-	-	-
8.4	-	-	-	-	-
7.2	-	-	-	-	-
6.0	-	-	-	-	-
4.8	-	-	-	-	-
3.6	-	-	-	-	-
2.4	-	-	-	-	-
1.2	-	-	-	-	-
0.0	-	-	-	-	-

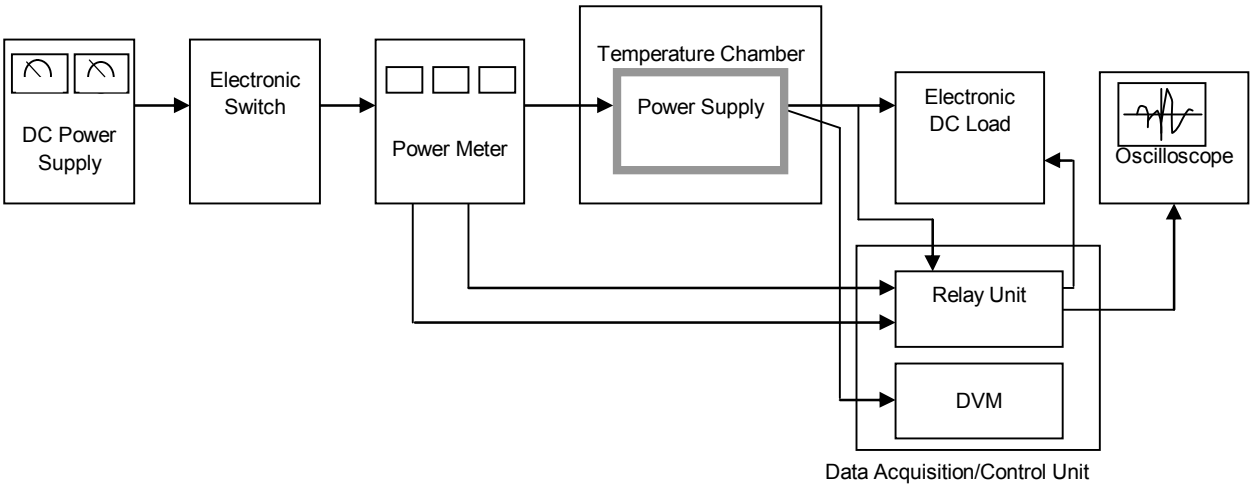


Figure A

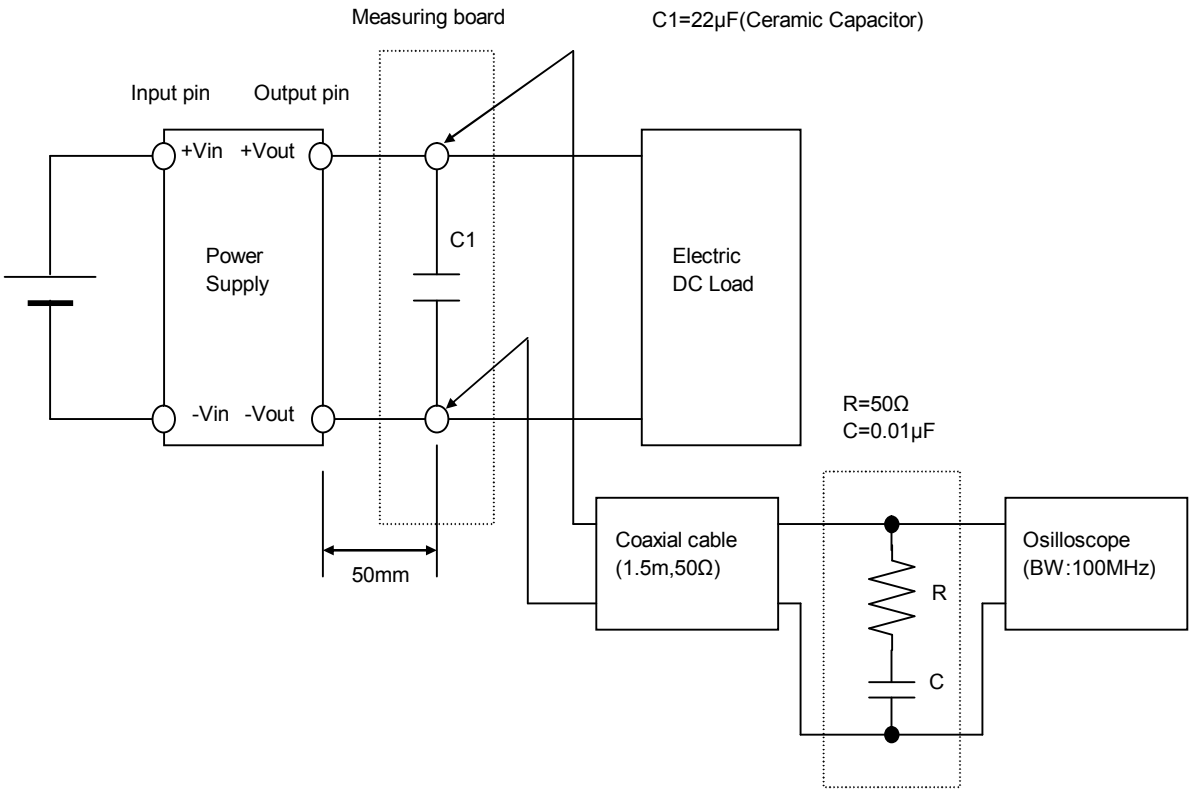


Figure B（Ripple and Ripple noise Characteristic）