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参考資料

TEST DATA OF MGFS302412

Regulated DC Power Supply
December 24, 2010

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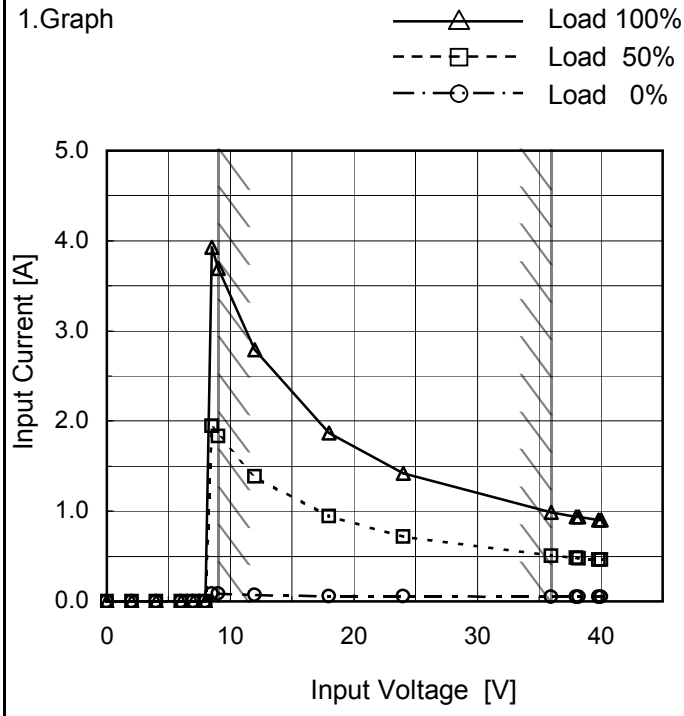
Model	MGFS302412
Item	Input Current (by Input Voltage)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

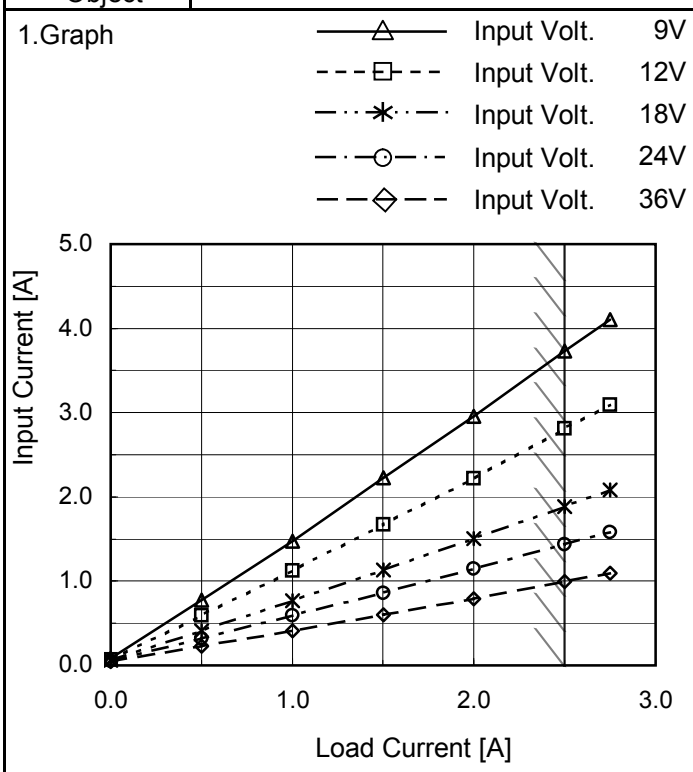
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.000	0.000	0.000
4.0	0.000	0.000	0.000
6.0	0.000	0.000	0.000
7.0	0.000	0.000	0.000
8.0	0.000	0.000	0.002
8.5	0.084	1.944	3.926
9.0	0.082	1.832	3.694
12.0	0.072	1.388	2.788
18.0	0.060	0.942	1.870
24.0	0.054	0.720	1.422
36.0	0.049	0.504	0.985
38.0	0.048	0.482	0.939
38.2	0.048	0.479	0.935
39.8	0.048	0.464	0.902
40.0	0.048	0.461	0.900
--	-	-	-
--	-	-	-

COSEL

Model	MGFS302412
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

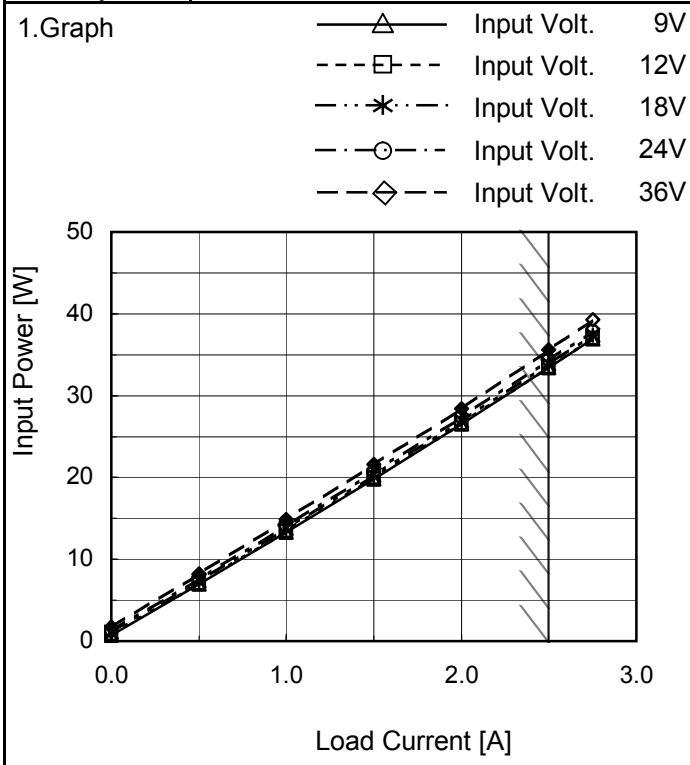
Load Current [A]	Input Current [A]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.081	0.070	0.059	0.053	0.048
0.50	0.776	0.591	0.409	0.318	0.229
1.00	1.473	1.121	0.765	0.589	0.414
1.50	2.226	1.675	1.132	0.862	0.600
2.00	2.954	2.218	1.502	1.146	0.792
2.50	3.732	2.811	1.886	1.433	0.992
2.75	4.107	3.092	2.084	1.584	1.093
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	MGFS302412
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

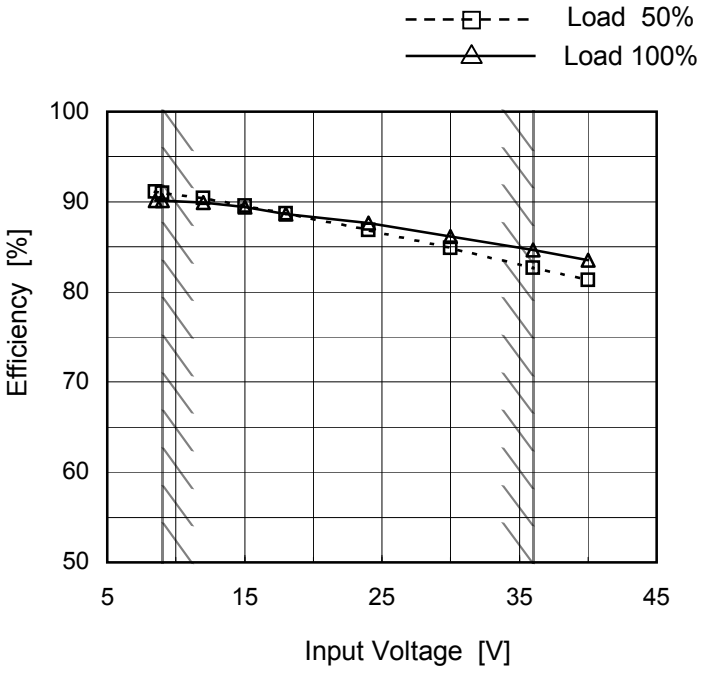
Load Current [A]	Input Power [W]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.72	0.84	1.06	1.27	1.75
0.50	6.94	7.07	7.33	7.61	8.23
1.00	13.28	13.43	13.74	14.08	14.88
1.50	19.83	19.92	20.26	20.64	21.58
2.00	26.52	26.64	26.95	27.38	28.43
2.50	33.39	33.48	33.90	34.34	35.60
2.75	36.93	37.01	37.40	37.90	39.30
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	MGFS302412
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%
8.5	91.1	90.1
9.0	91.0	90.1
12.0	90.4	89.9
15.0	89.6	89.4
18.0	88.7	88.6
24.0	86.8	87.7
30.0	84.9	86.2
36.0	82.7	84.6
40.0	81.3	83.5

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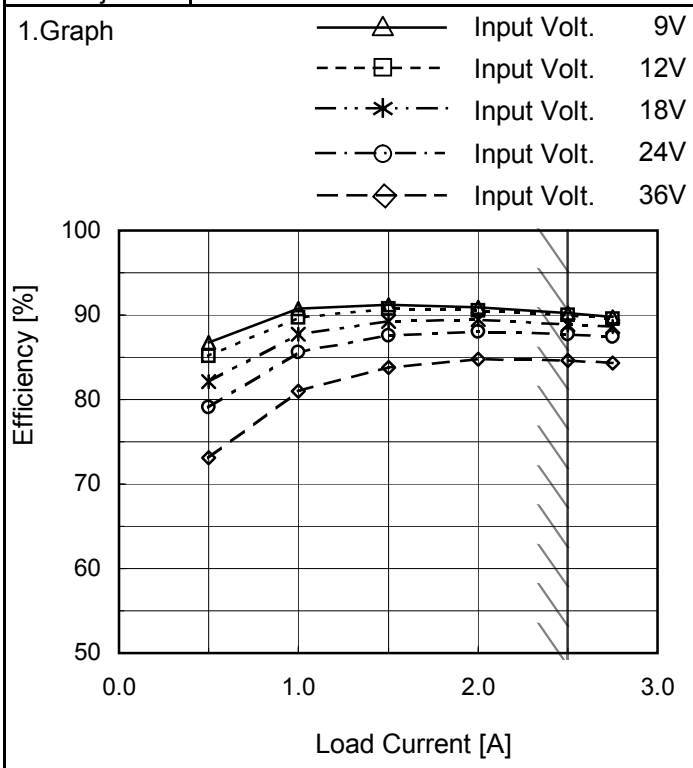
Model	MGFS302412
Item	Efficiency (by Load Current)
Object	————————

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-	-	-	-	-
0.50	86.7	85.1	82.1	79.1	73.1
1.00	90.7	89.7	87.7	85.6	81.0
1.50	91.2	90.8	89.2	87.6	83.8
2.00	90.9	90.5	89.5	88.1	84.8
2.50	90.2	90.0	88.9	87.8	84.7
2.75	89.7	89.6	88.6	87.5	84.3
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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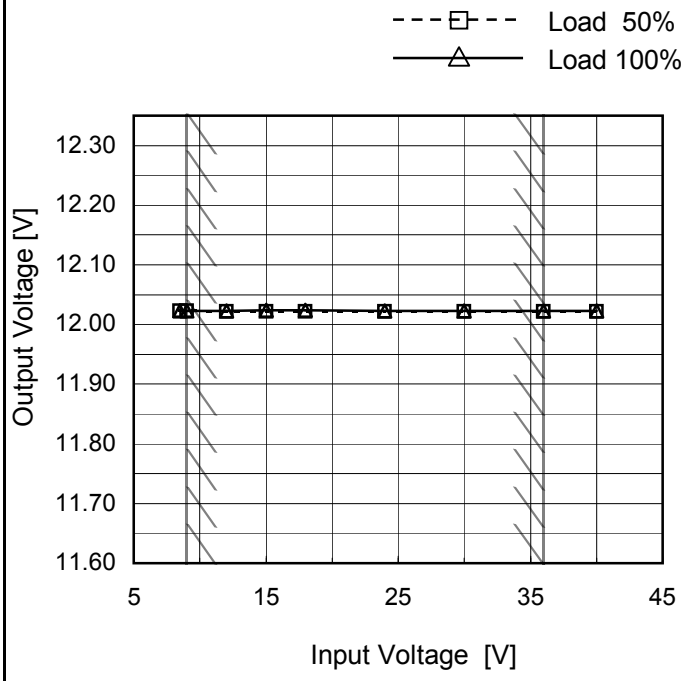
Model	MGFS302412
Item	Line Regulation
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

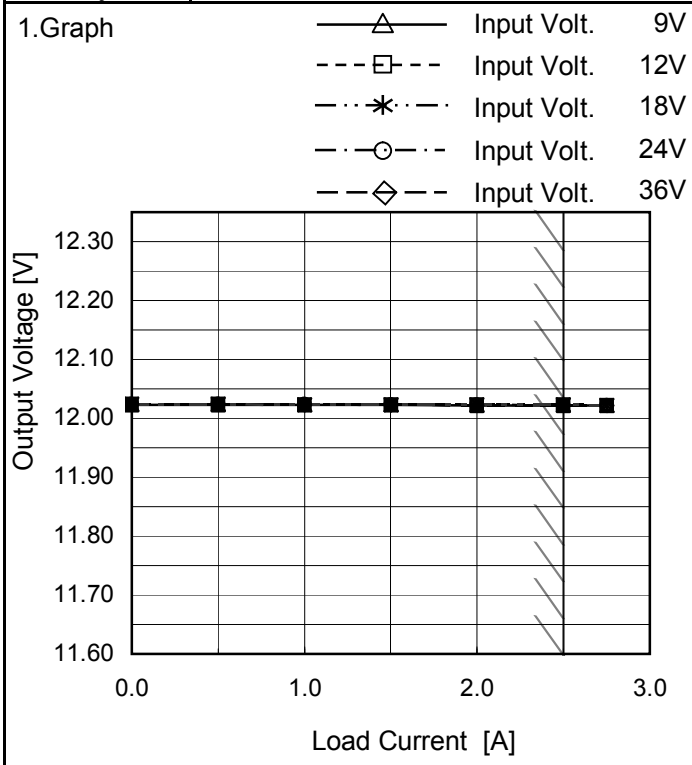
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.5	12.023	12.023
9.0	12.022	12.023
12.0	12.022	12.023
15.0	12.022	12.023
18.0	12.022	12.023
24.0	12.022	12.023
30.0	12.022	12.023
36.0	12.021	12.023
40.0	12.021	12.023

COSEL

Model	MGFS302412
Item	Load Regulation
Object	+12V2.5A

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	12.023	12.024	12.024	12.024	12.024
0.50	12.023	12.024	12.024	12.024	12.024
1.00	12.022	12.023	12.023	12.024	12.023
1.50	12.022	12.023	12.023	12.023	12.023
2.00	12.022	12.022	12.023	12.023	12.022
2.50	12.022	12.022	12.022	12.022	12.022
2.75	12.022	12.022	12.022	12.022	12.021
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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Model	MGFS302412
Item	Dynamic Load Response
Object	+12V2.5A

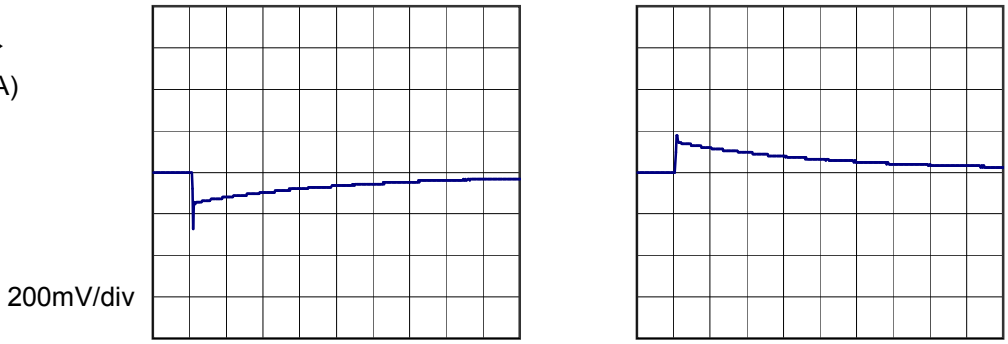
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 24 V
Cycle 1000 ms

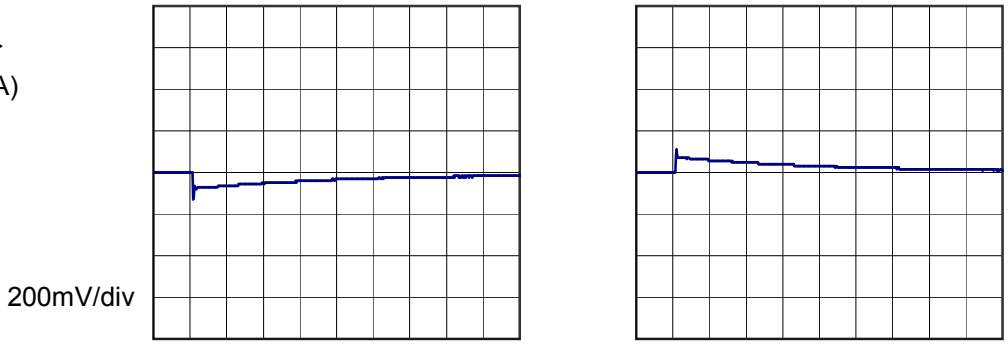
t_1、t_2 = 50μs

Load Current

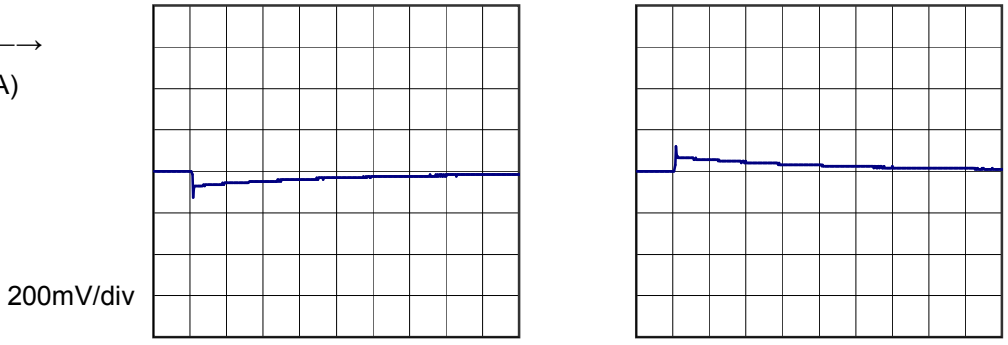
Min. Load (0A) ⟷
Load 100% (2.5A)



Min. Load (0A) ⟷
Load 50% (1.25A)



Load 50% (1.25A) ⟷
Load 100% (2.5A)



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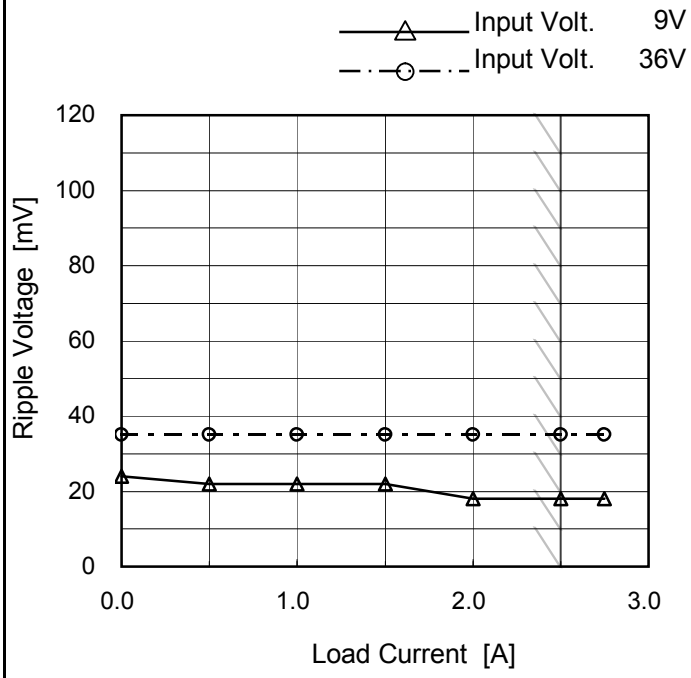
Model	MGFS302412
Item	Ripple Voltage (by Load Current)
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

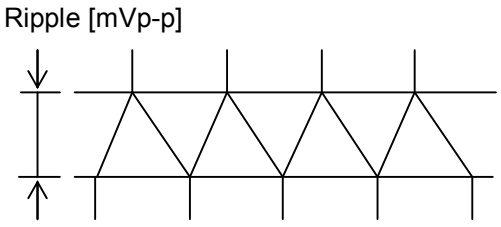


Fig.Complex Ripple Wave Form

2.Values

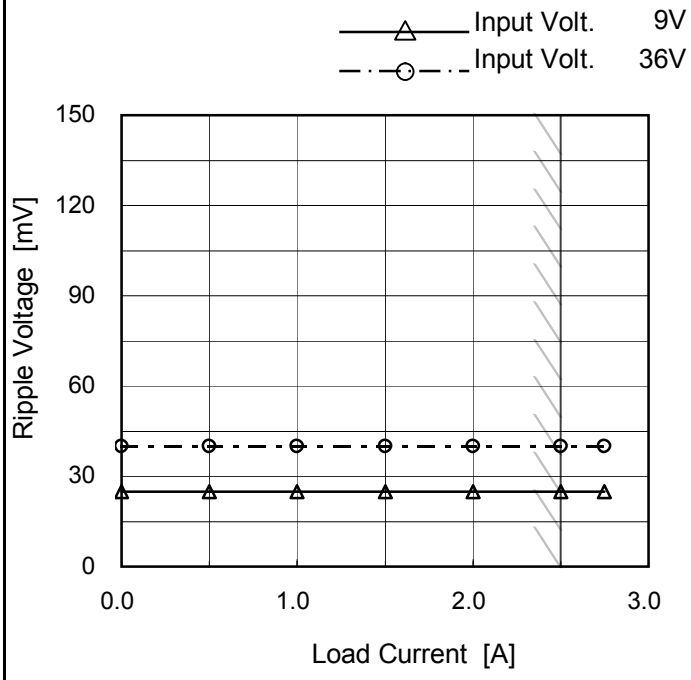
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 36 [V]
0.00	24	35
0.50	22	35
1.00	22	35
1.50	22	35
2.00	18	35
2.50	18	35
2.75	18	35
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGFS302412
Item	Ripple-Noise
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

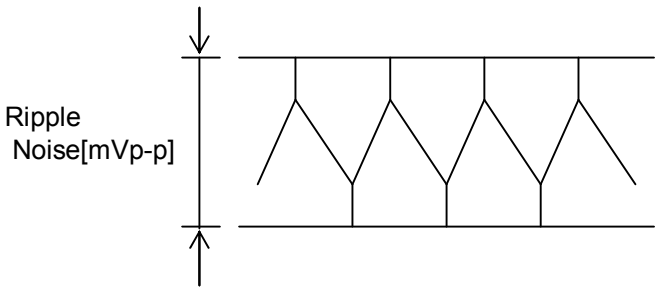


Fig.Complex Ripple Noise Wave Form

2.Values

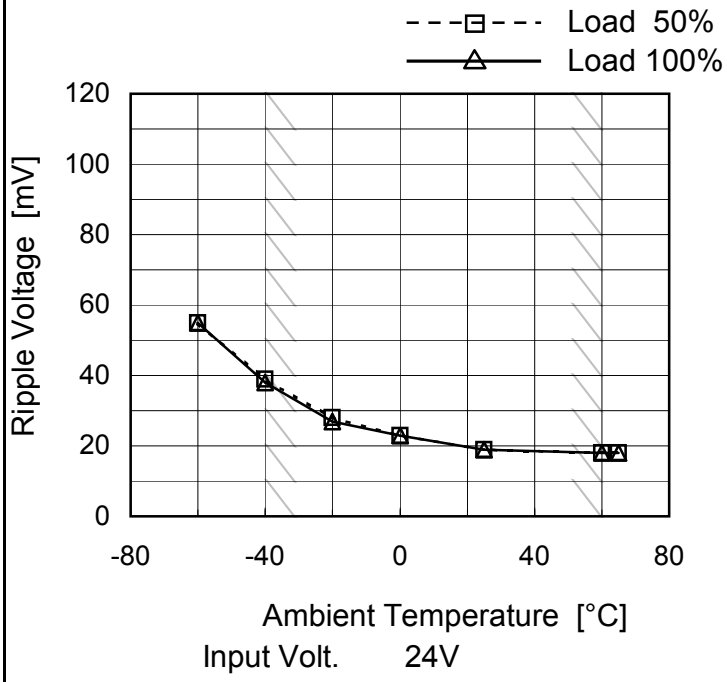
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 36 [V]
0.00	25	40
0.50	25	40
1.00	25	40
1.50	25	40
2.00	25	40
2.50	25	40
2.75	25	40
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGFS302412
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V2.5A

Testing Circuitry Figure B

1.Graph



Input Volt. 24V

Measured by 100 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

2.Values

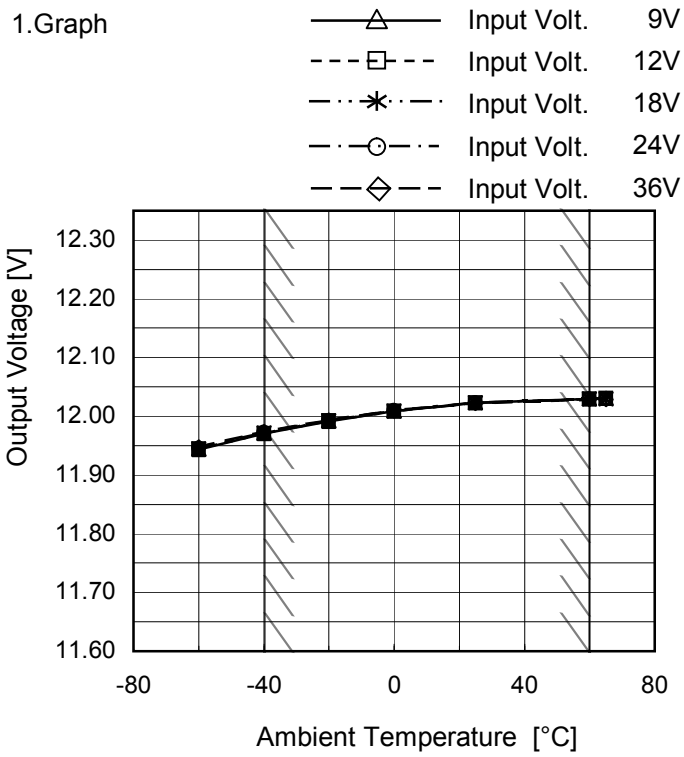
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	55	55
-40	39	38
-20	28	27
0	23	23
25	19	19
60	18	18
65	18	18
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGFS302412
Item	Ambient Temperature Drift
Object	+12V2.5A

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-60	11.944	11.945	11.945	11.946	11.948
-40	11.970	11.971	11.972	11.973	11.974
-20	11.992	11.992	11.992	11.993	11.993
0	12.009	12.009	12.009	12.009	12.010
25	12.023	12.023	12.023	12.023	12.022
60	12.030	12.030	12.030	12.029	12.028
65	12.030	12.030	12.030	12.030	12.028
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	MGFS302412	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V2.5A	

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 : 9 - 36V
Load Current : 0 - 2.5A

* 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

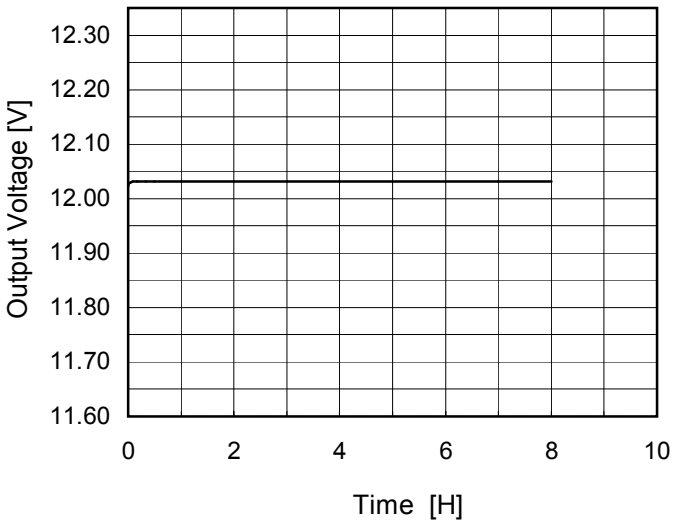
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	12	0	12.032	±31	±0.3
Minimum Voltage	-40	36	0	11.970		

COSEL

Model	MGFS302412
Item	Time Lapse Drift
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 24V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	12.023
0.5	12.032
1.0	12.032
2.0	12.031
3.0	12.031
4.0	12.031
5.0	12.031
6.0	12.031
7.0	12.031
8.0	12.031

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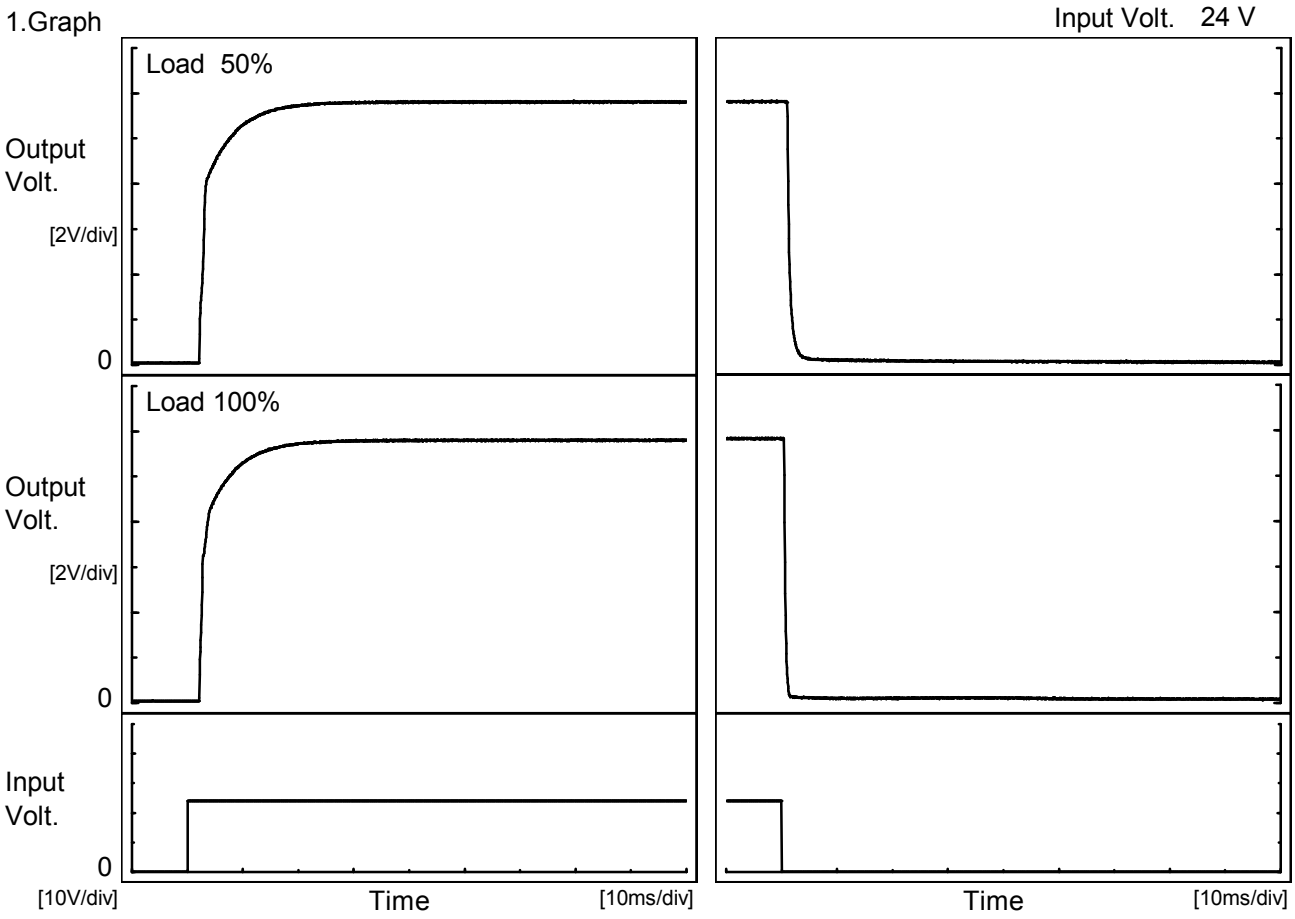
Model	MGFS302412	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+12V2.5A	

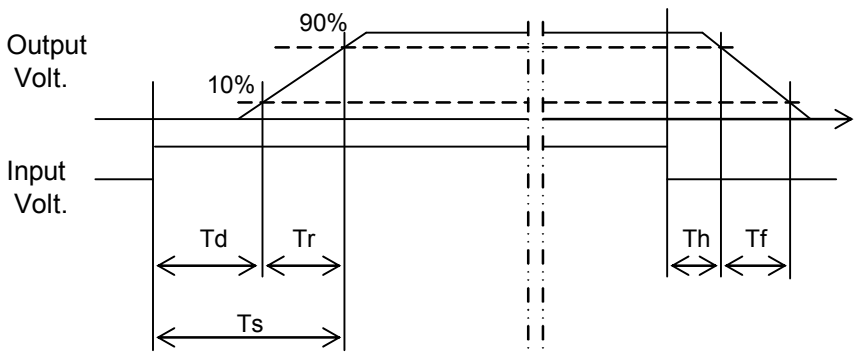
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	2.2	9.5	11.7	1.0	1.1
100 %	2.3	9.4	11.7	0.5	0.5

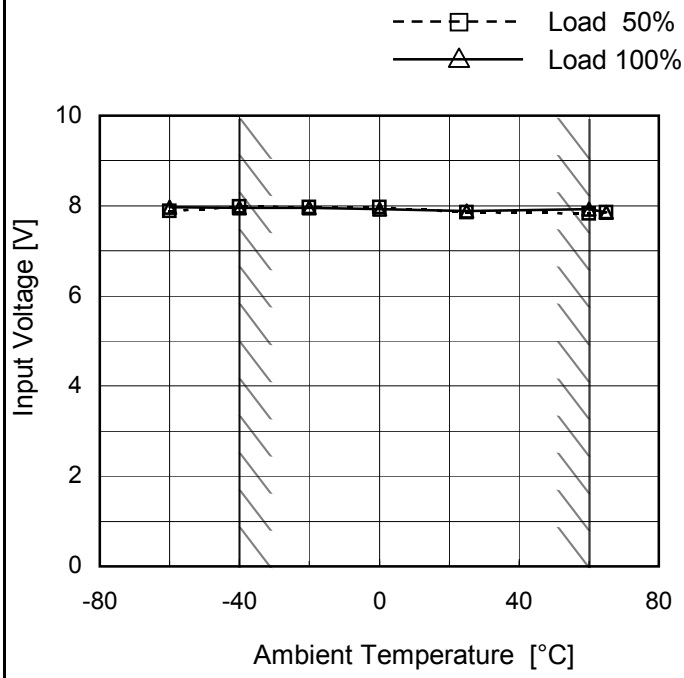


COSEL

Model	MGFS302412
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V2.5A

Testing Circuitry Figure A

1.Graph



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

2.Values

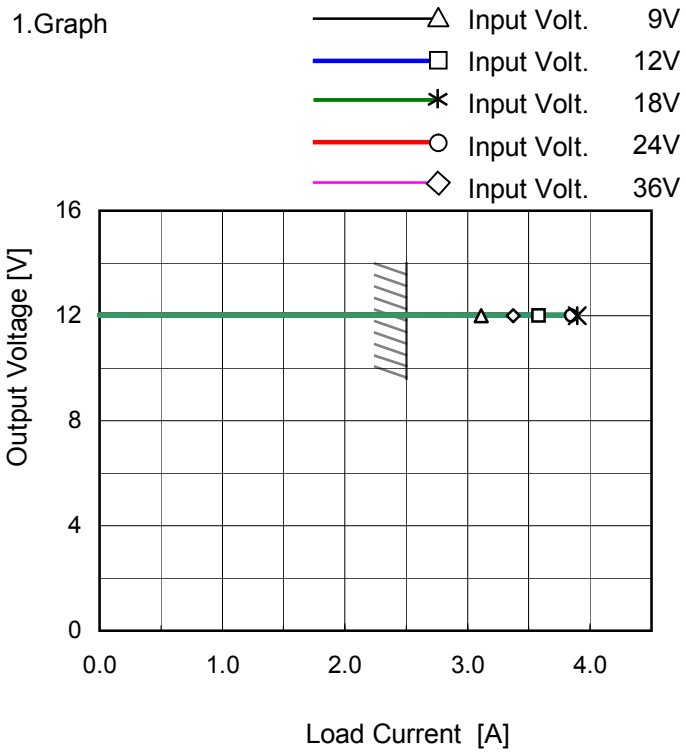
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	7.9	8.0
-40	8.0	8.0
-20	8.0	8.0
0	8.0	8.0
25	7.9	7.9
60	7.9	8.0
65	7.9	7.9
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGFS302412
Item	Overcurrent Protection
Object	+12V2.5A

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

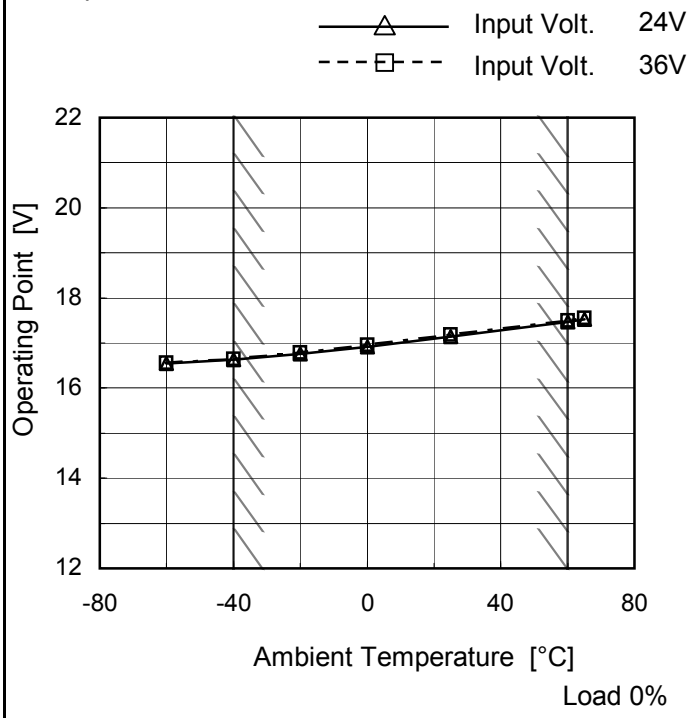
Output Voltage [V]	Load Current [A]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
12.0	3.111	3.580	3.895	3.845	3.373
11.4	-	-	-	-	-
10.8	-	-	-	-	-
9.6	-	-	-	-	-
8.4	-	-	-	-	-
7.2	-	-	-	-	-
6.0	-	-	-	-	-
4.8	-	-	-	-	-
3.6	-	-	-	-	-
2.4	-	-	-	-	-
1.2	-	-	-	-	-
0.0	-	-	-	-	-

COSEL

Model	MGFS302412
Item	Overvoltage Protection
Object	+12V2.5A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 24[V]	Input Volt. 36[V]
-60	16.54	16.56
-40	16.63	16.65
-20	16.75	16.79
0	16.91	16.95
25	17.15	17.18
60	17.47	17.50
65	17.52	17.56
--	-	-
--	-	-
--	-	-
--	-	-

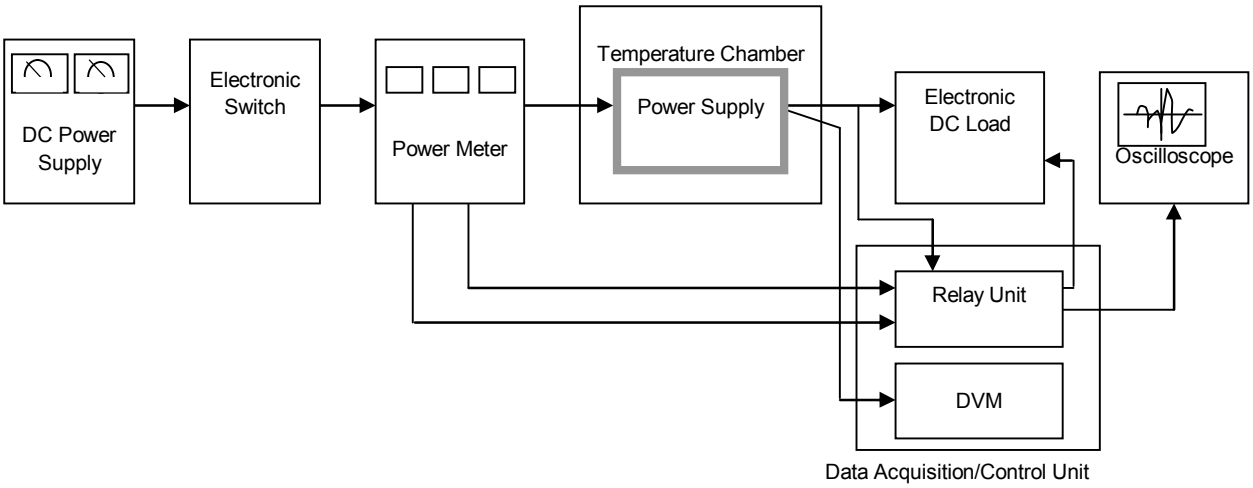


Figure A

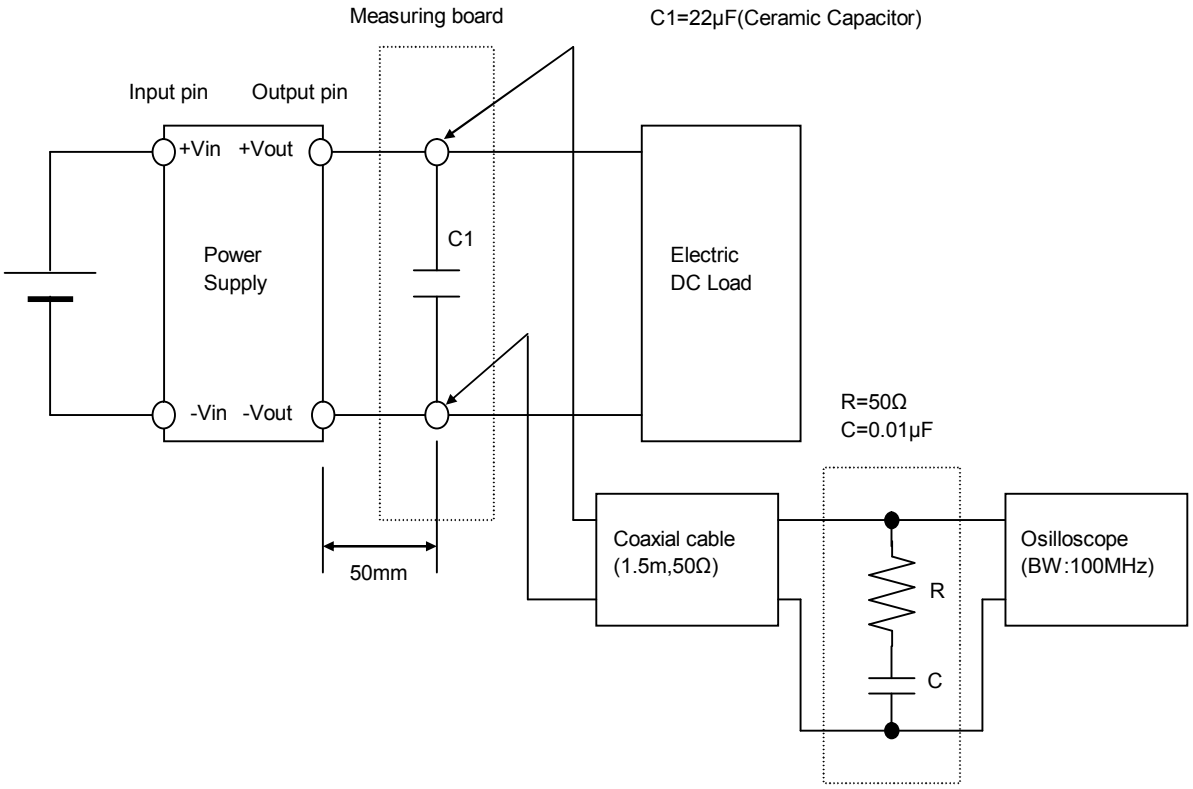


Figure B（Ripple and Ripple noise Characteristic）