参考資料

COSEL

TEST DATA OF MGS34812

Regulated DC Power Supply
August 22, 2016

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COSEL CO.,LTD.

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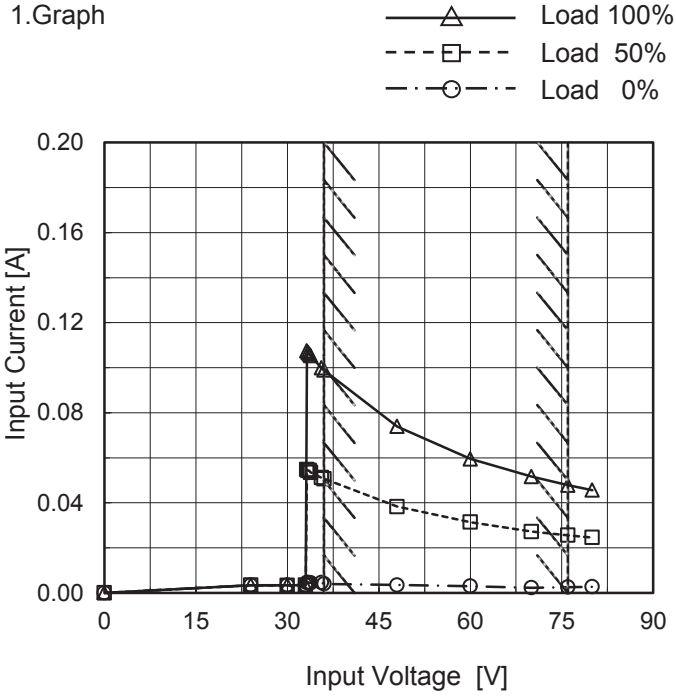


Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
24.0	0.003	0.003	0.003
30.0	0.003	0.003	0.003
33.0	0.004	0.004	0.003
33.2	0.005	0.055	0.108
33.4	0.005	0.054	0.107
33.6	0.005	0.054	0.106
33.8	0.005	0.054	0.105
35.6	0.005	0.051	0.100
36.0	0.004	0.051	0.099
48.0	0.004	0.038	0.074
60.0	0.003	0.031	0.060
70.0	0.002	0.027	0.052
76.0	0.003	0.026	0.048
80.0	0.003	0.025	0.046
--	-	-	-
--	-	-	-
--	-	-	-

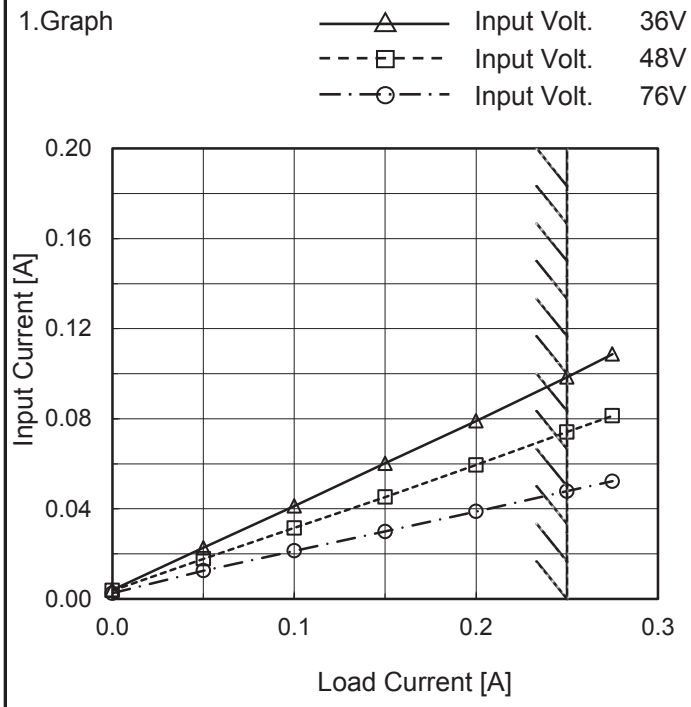
BC-10988

COSEL

Model	MGS34812
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]
0.000	0.004	0.004	0.003
0.050	0.023	0.018	0.013
0.100	0.041	0.032	0.021
0.150	0.060	0.045	0.030
0.200	0.079	0.060	0.039
0.250	0.099	0.074	0.048
0.275	0.109	0.081	0.052
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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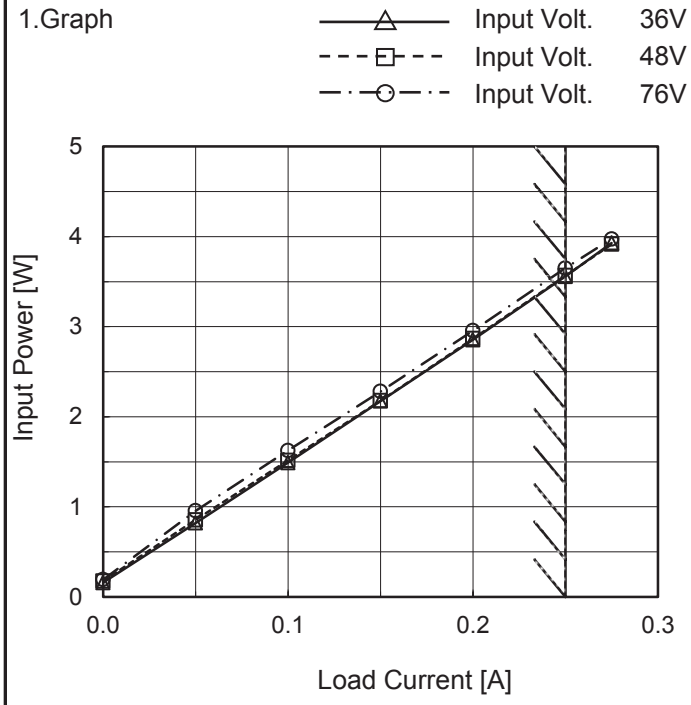
Model	MGS34812
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

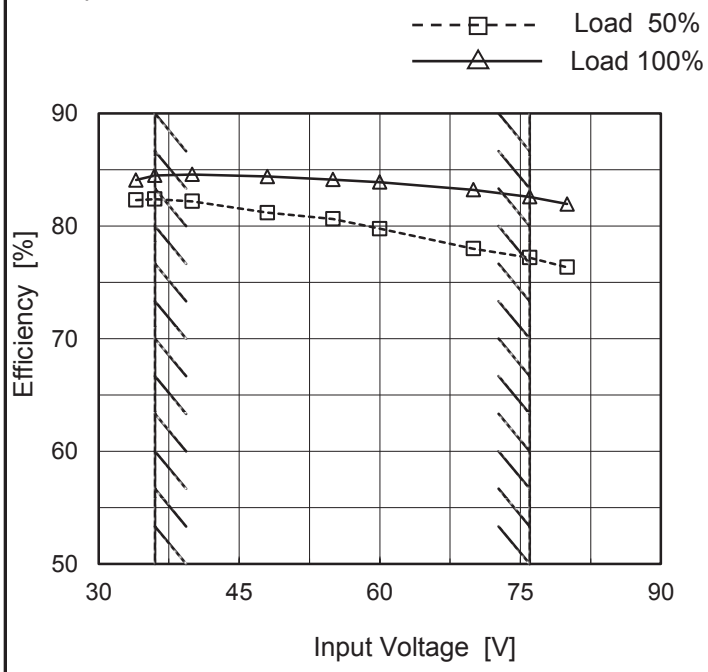
Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.000	0.16	0.18	0.19
0.050	0.82	0.86	0.96
0.100	1.49	1.52	1.63
0.150	2.17	2.18	2.28
0.200	2.85	2.87	2.96
0.250	3.56	3.57	3.65
0.275	3.93	3.91	3.97
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS34812
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	82.3	84.1
36	82.4	84.5
40	82.2	84.6
48	81.2	84.4
55	80.6	84.1
60	79.8	83.9
70	78.0	83.2
76	77.2	82.6
80	76.3	82.0

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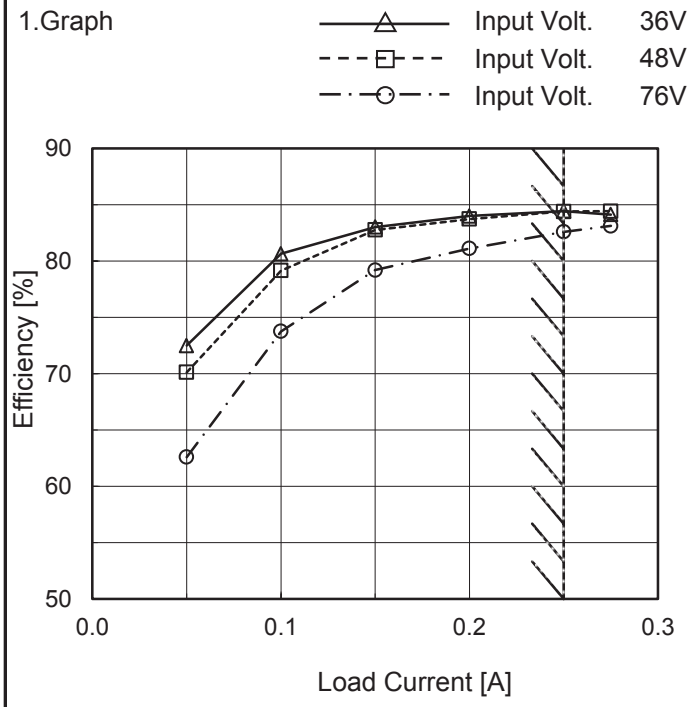
Model	MGS34812
Item	Efficiency (by Load Current)
Object	———————

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]
0.000	-	-	-
0.050	72.5	70.1	62.6
0.100	80.6	79.2	73.8
0.150	83.0	82.8	79.2
0.200	84.0	83.7	81.1
0.250	84.5	84.4	82.6
0.275	84.1	84.4	83.1
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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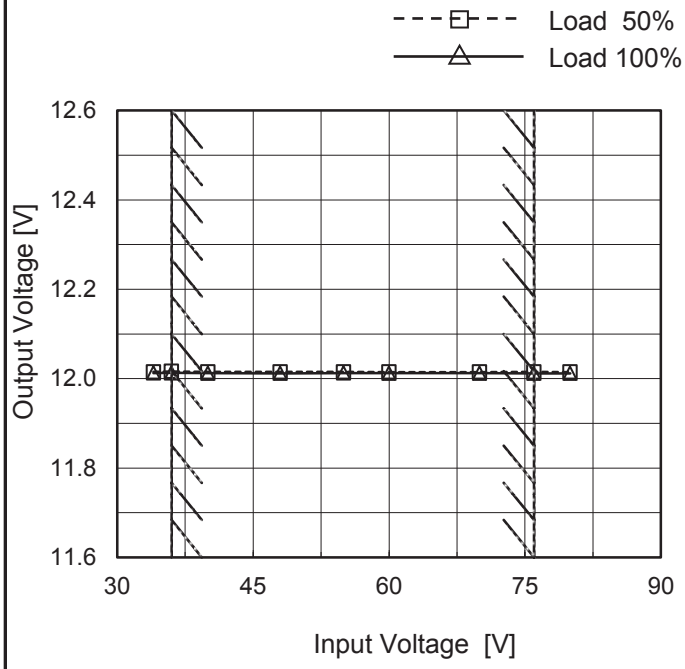
Model	MGS34812
Item	Line Regulation
Object	+12V0.25A

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	12.015	12.012
36	12.016	12.013
40	12.015	12.012
48	12.015	12.012
55	12.015	12.012
60	12.015	12.012
70	12.015	12.012
76	12.015	12.012
80	12.015	12.012

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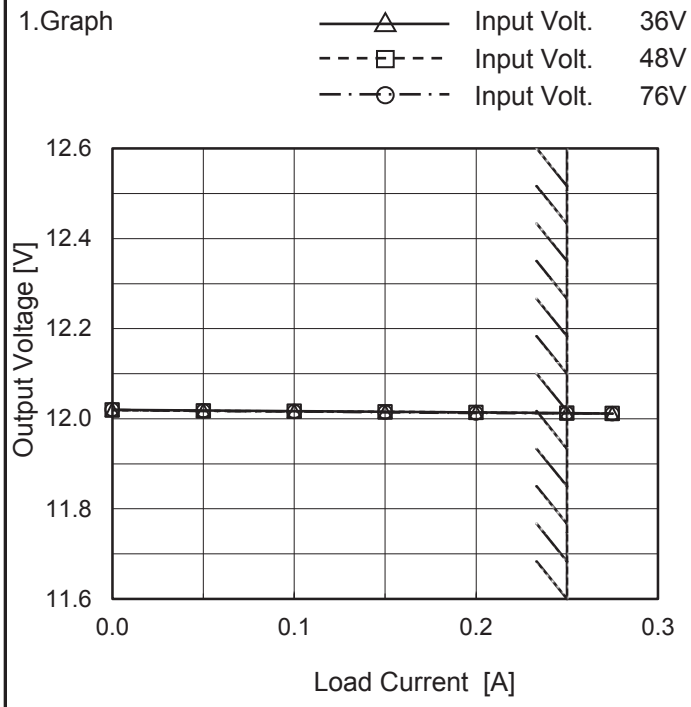
Model	MGS34812
Item	Load Regulation
Object	+12V0.25A

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]
0.000	12.020	12.019	12.020
0.050	12.018	12.018	12.017
0.100	12.017	12.016	12.016
0.150	12.015	12.015	12.014
0.200	12.014	12.014	12.013
0.250	12.013	12.012	12.012
0.275	12.012	12.012	12.011
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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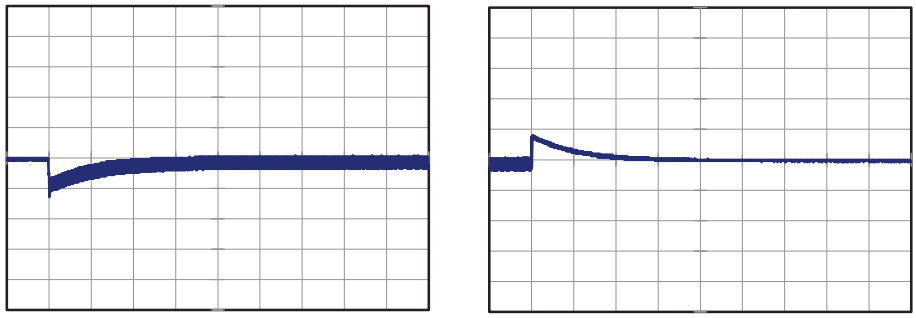
Model	MGS34812	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+12V0.25A	

Input Volt. 48 V
Cycle 100 ms

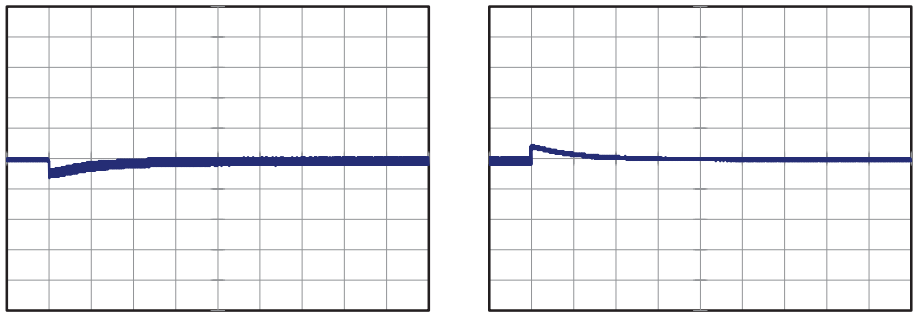
Min.Load (0A)←→
Load 100% (0.25A)



200 mV/div

4 ms/div 4 ms/div

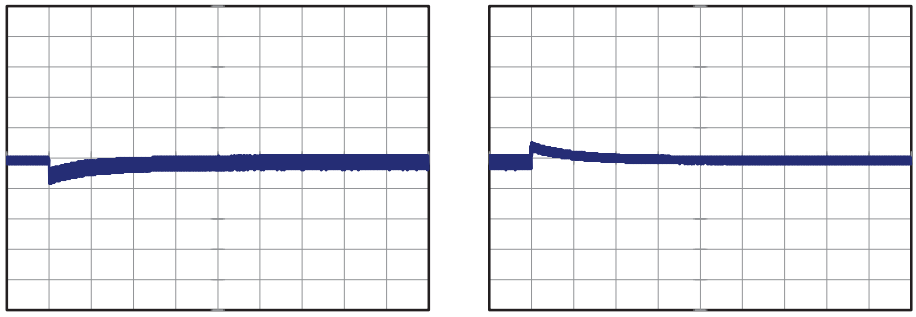
Min.Load (0A)←→
Load 50% (0.125A)



200 mV/div

4 ms/div 4 ms/div

Load 50% (0.125A)←→
Load 100% (0.25A)



200 mV/div

4 ms/div 4 ms/div

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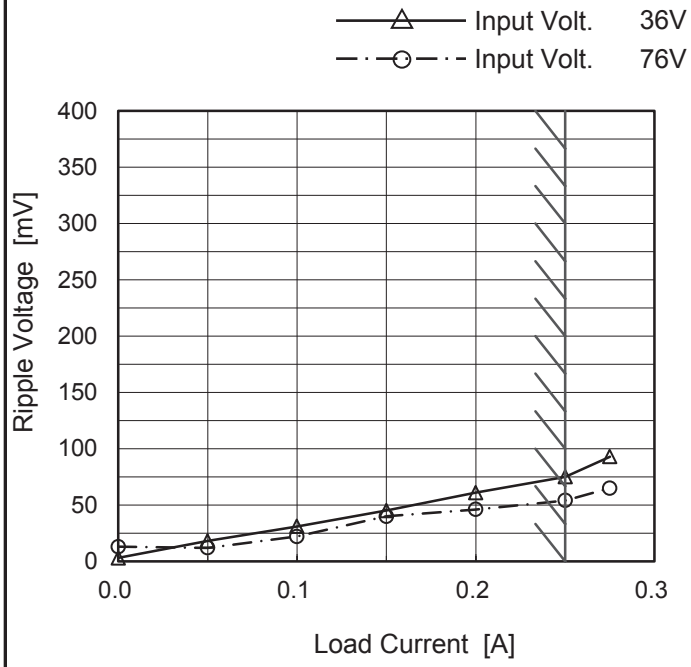
Model	MGS34812
Item	Ripple Voltage (by Load Current)
Object	+12V0.25A

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]

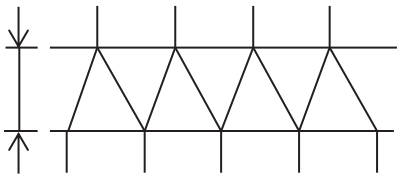


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.000	3	13
0.050	18	12
0.100	31	22
0.150	45	40
0.200	61	46
0.250	75	54
0.275	93	65
--	-	-
--	-	-
--	-	-
--	-	-

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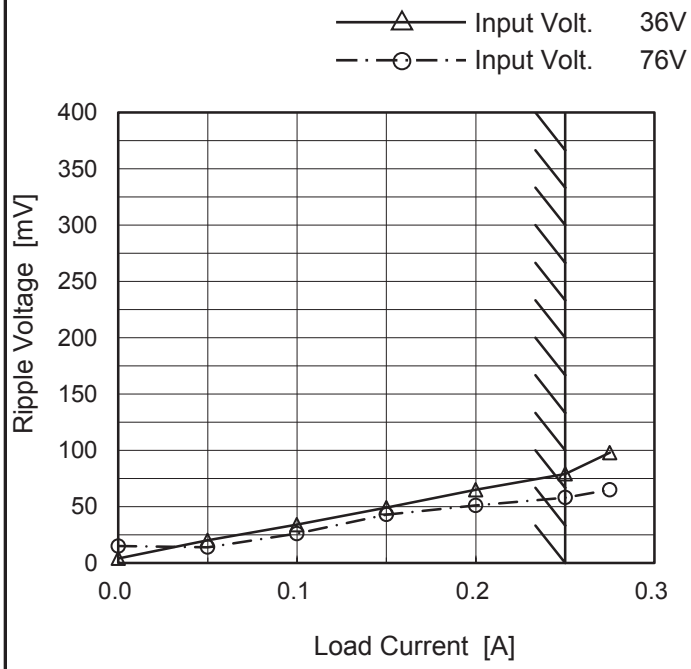
Model	MGS34812
Item	Ripple-Noise
Object	+12V0.25A

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.

Ripple Noise[mVp-p]

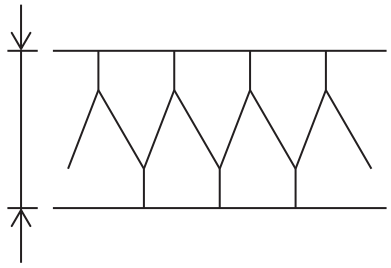


Fig.Complex Ripple Noise Wave Form

2.Values

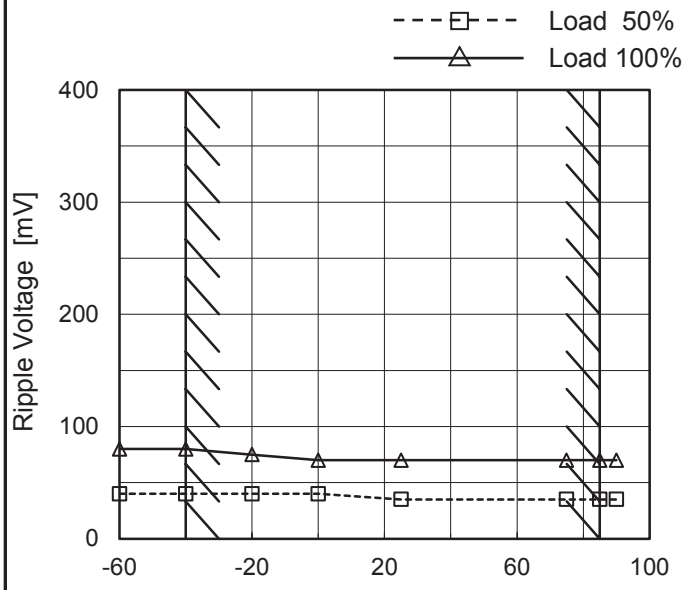
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.000	4	15
0.050	20	14
0.100	34	26
0.150	49	43
0.200	65	51
0.250	79	58
0.275	98	65
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS34812
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.25A

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

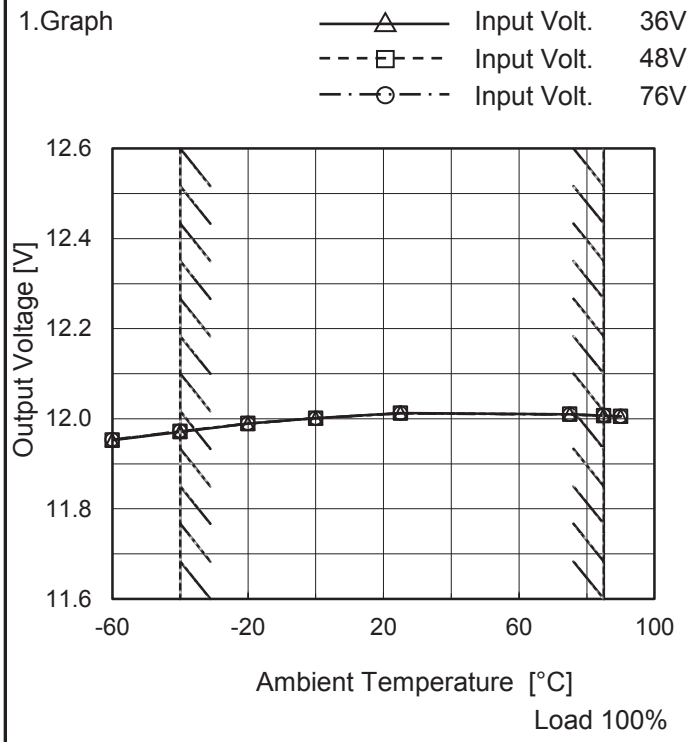
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	40	80
-40	40	80
-20	40	75
0	40	70
25	35	70
75	35	70
85	35	70
90	35	70
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS34812
Item	Ambient Temperature Drift
Object	+12V0.25A

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	11.952	11.953	11.953
-40	11.971	11.972	11.972
-20	11.989	11.990	11.990
0	12.001	12.001	12.001
25	12.013	12.012	12.012
75	12.010	12.010	12.009
85	12.007	12.007	12.007
90	12.005	12.005	12.005
--	-	-	-
--	-	-	-
--	-	-	-

Model	MGS34812	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V0.25A	

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 - 0.25A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - 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	75	76	0	12.019	±24	±0.2
Minimum Voltage	-40	36	0.25	11.971		

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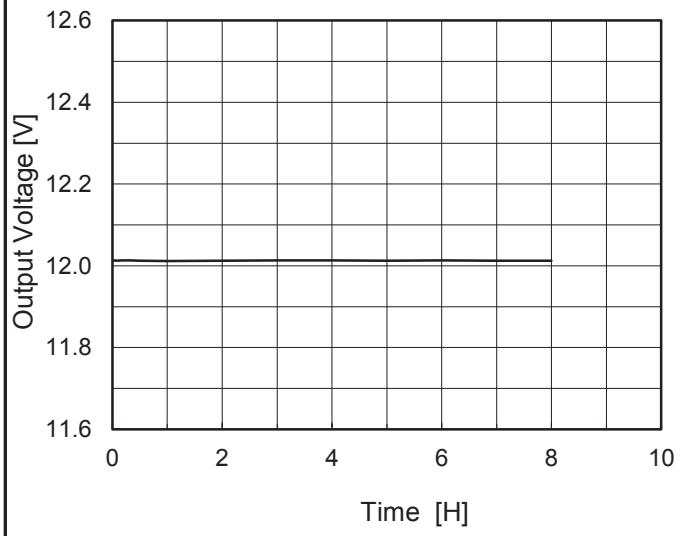
Model	MGS34812
Item	Time Lapse Drift
Object	+12V0.25A

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	12.012
0.5	12.012
1.0	12.012
2.0	12.013
3.0	12.013
4.0	12.013
5.0	12.012
6.0	12.013
7.0	12.013
8.0	12.013

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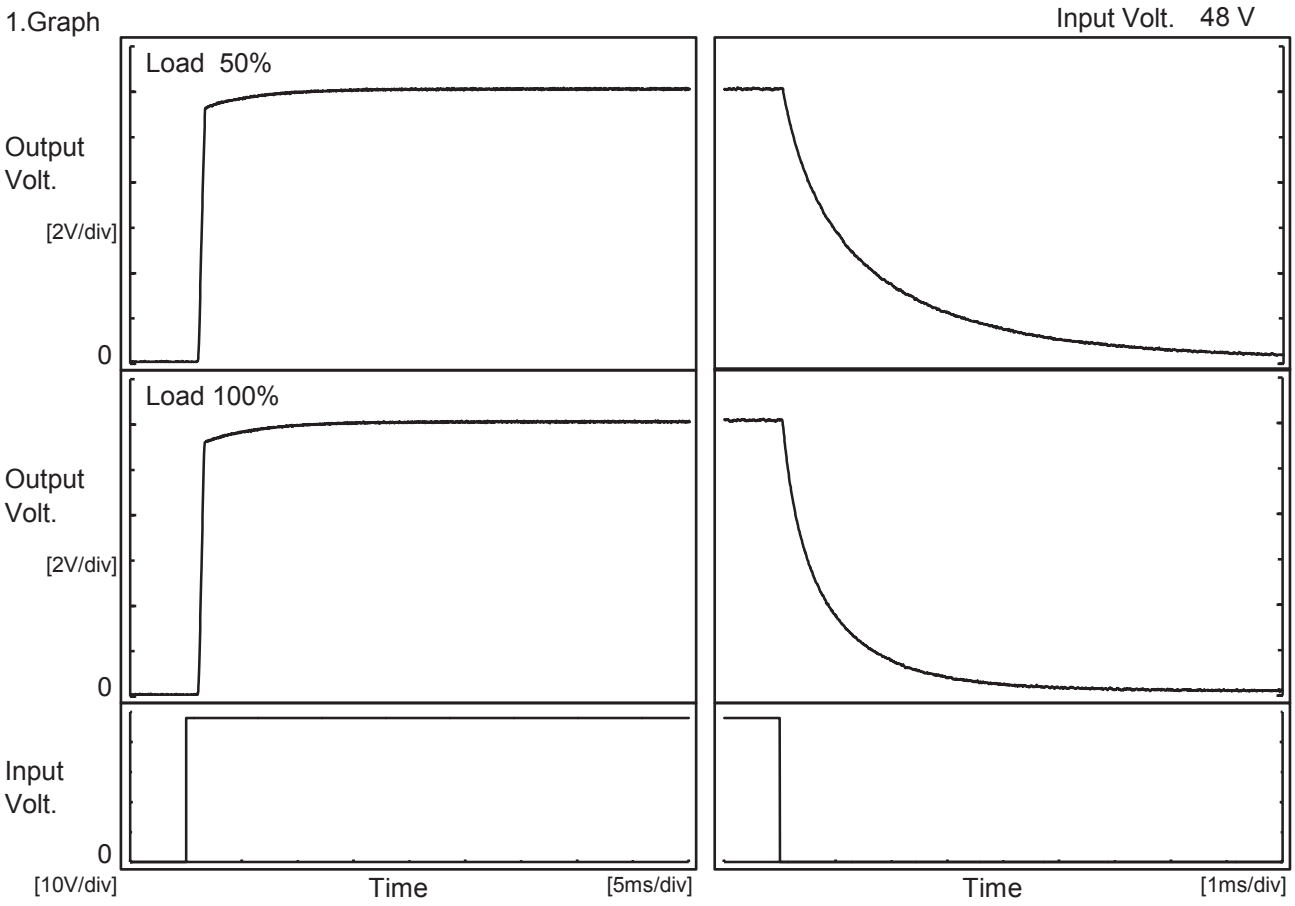
Model	MGS34812	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+12V0.25A	

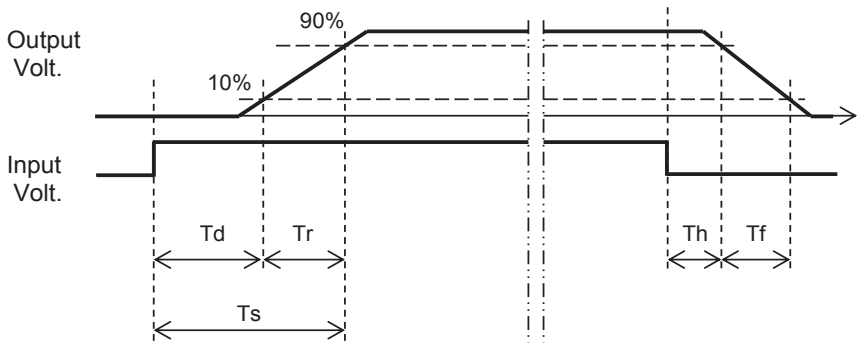
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.2	0.5	1.7	0.2	4.4
100 %	1.2	0.5	1.7	0.1	2.1

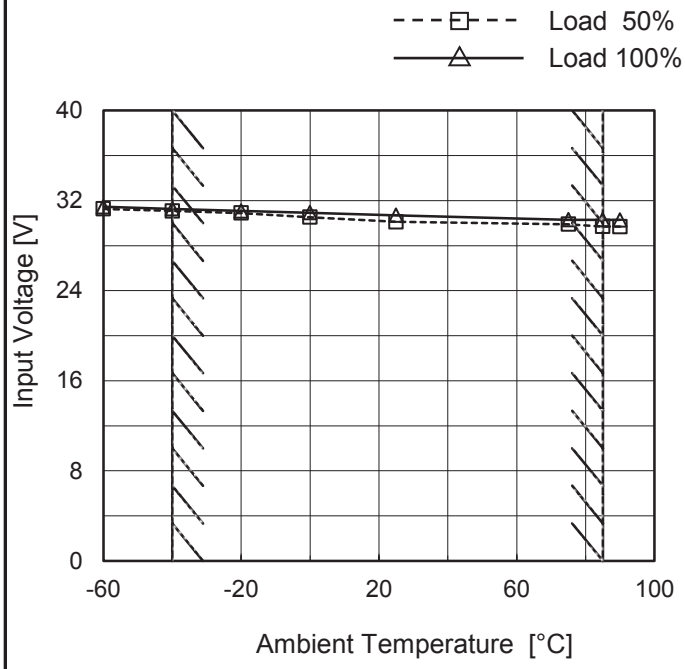


COSEL

Model	MGS34812
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V0.25A

Testing Circuitry Figure A

1.Graph



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

2.Values

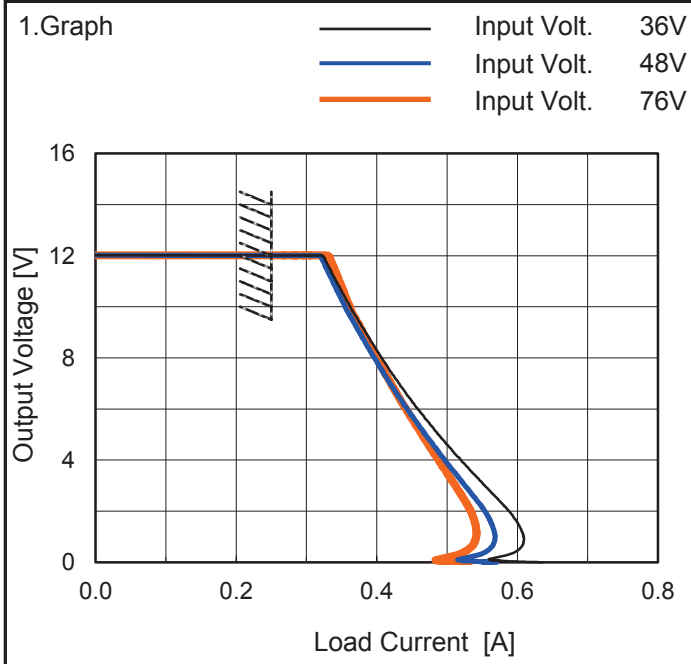
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	31.3	31.5
-40	31.1	31.3
-20	30.9	31.1
0	30.6	31.0
25	30.2	30.7
75	29.9	30.3
85	29.7	30.3
90	29.7	30.3
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS34812
Item	Overcurrent Protection
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
12.0	0.25	0.25	0.25
11.4	0.33	0.33	0.34
10.8	0.35	0.34	0.35
9.6	0.37	0.36	0.37
8.4	0.40	0.39	0.39
7.2	0.43	0.41	0.42
6.0	0.46	0.44	0.44
4.8	0.49	0.47	0.47
3.6	0.53	0.51	0.50
2.4	0.57	0.54	0.53
1.2	0.61	0.57	0.54
0.0	0.64	0.57	0.53

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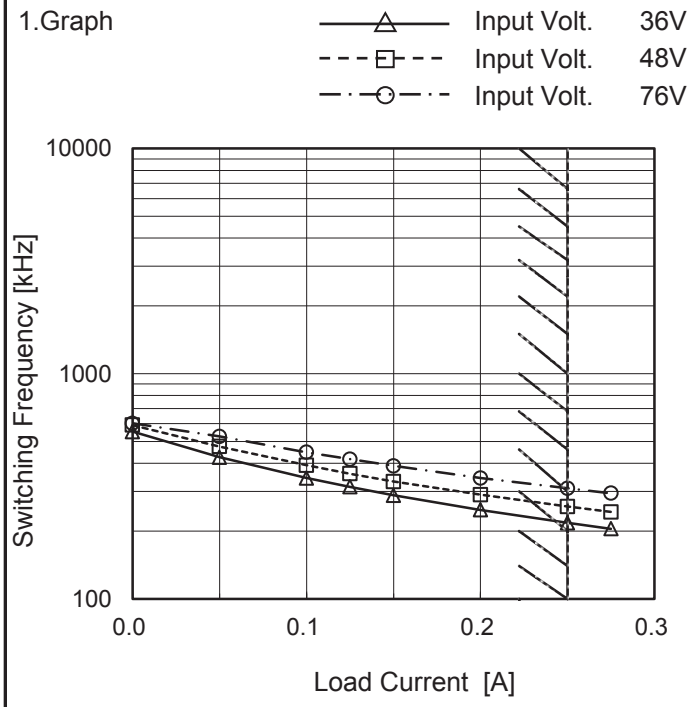
Model	MGS34812
Item	Switching Frequency (by Load Current)
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

-When load current is low, MG operates intermittently, so switching frequency would not become constant.

2.Values

Load Current [A]	Frequency [kHz]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.000	553	640	602
0.050	426	475	527
0.100	344	392	448
0.125	314	360	417
0.150	288	332	389
0.200	248	290	344
0.250	217	257	310
0.275	205	243	294
--	-	-	-
--	-	-	-
--	-	-	-

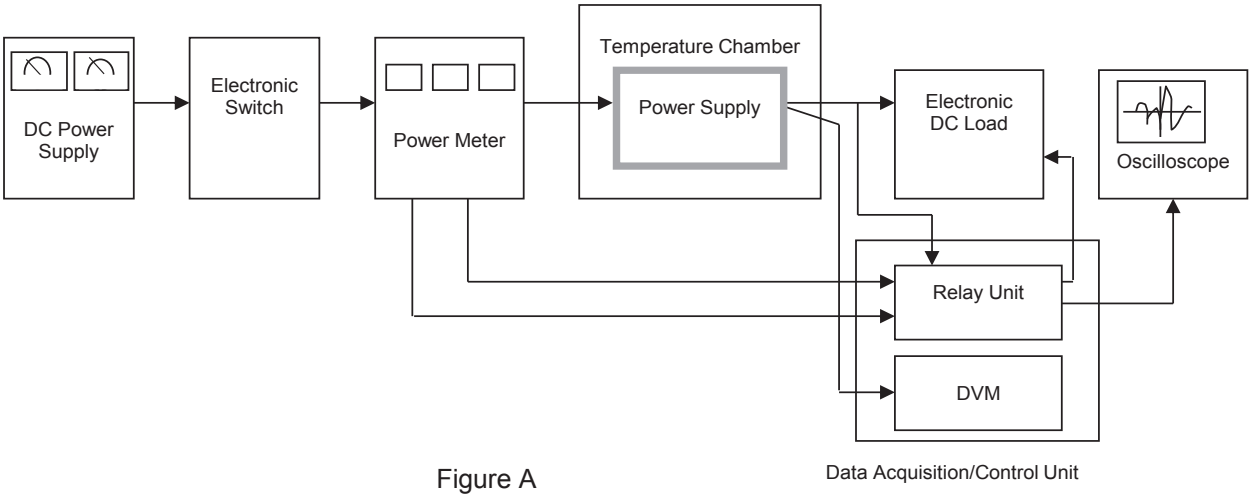


Figure A

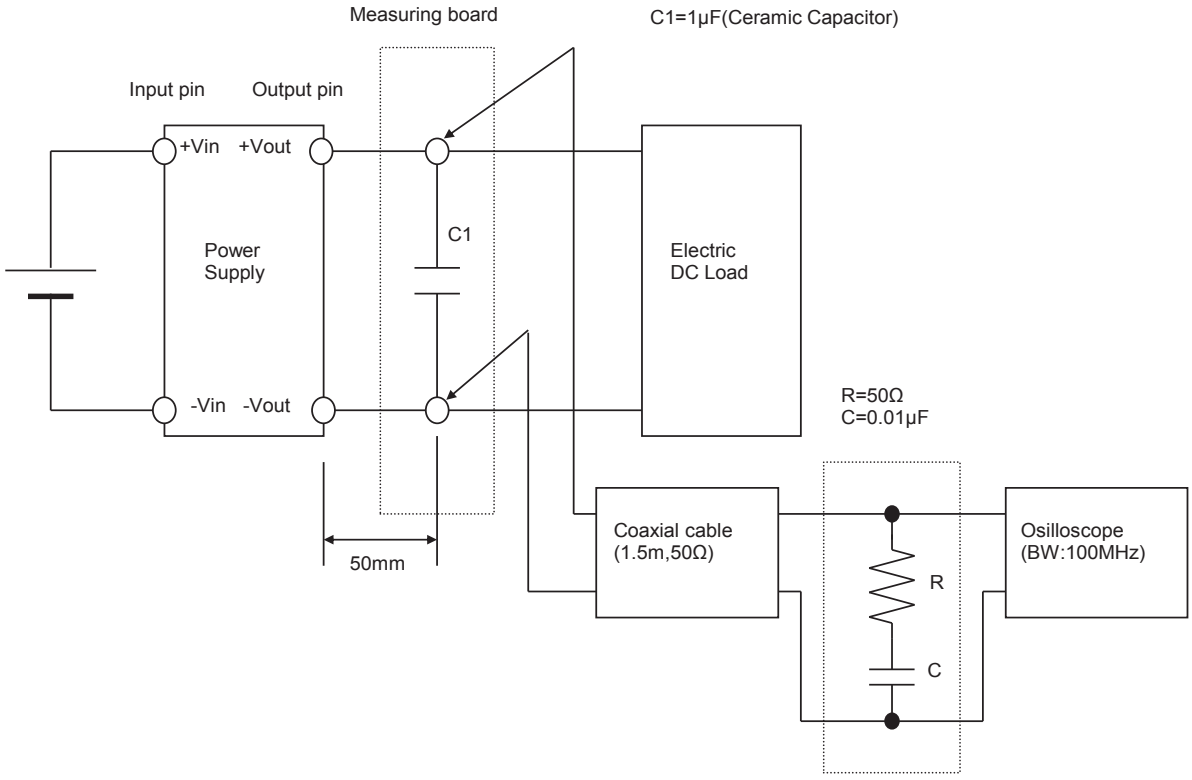


Figure B（Ripple and Ripple noise Characteristic）