参考資料

COSEL

TEST DATA OF MGS3483R3

Regulated DC Power Supply
August 19, 2016

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COSEL CO.,LTD.

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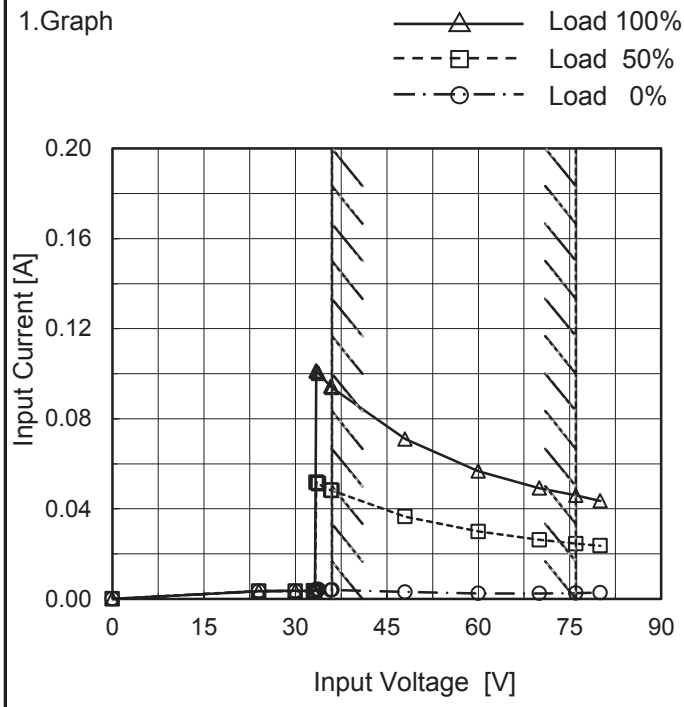
Model	MGS3483R3
Item	Input Current (by Input Voltage)
Object	————————

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
24.0	0.003	0.004	0.003
30.0	0.004	0.003	0.004
33.0	0.003	0.004	0.004
33.2	0.004	0.003	0.004
33.4	0.004	0.052	0.101
33.6	0.004	0.052	0.101
33.8	0.004	0.051	0.100
35.8	0.004	0.048	0.094
36.0	0.004	0.048	0.094
48.0	0.003	0.037	0.071
60.0	0.002	0.030	0.057
70.0	0.002	0.026	0.049
76.0	0.003	0.025	0.046
80.0	0.003	0.024	0.044
--	-	-	-
--	-	-	-
--	-	-	-

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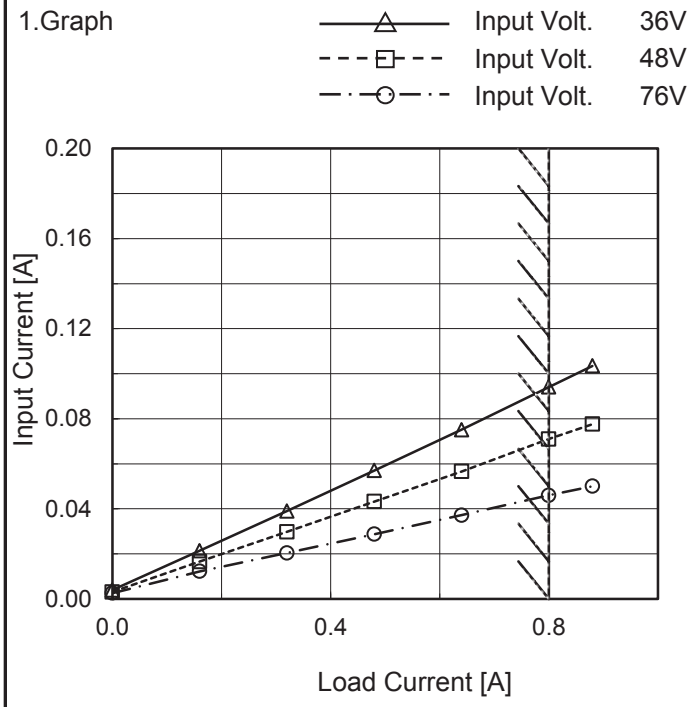
Model	MGS3483R3
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

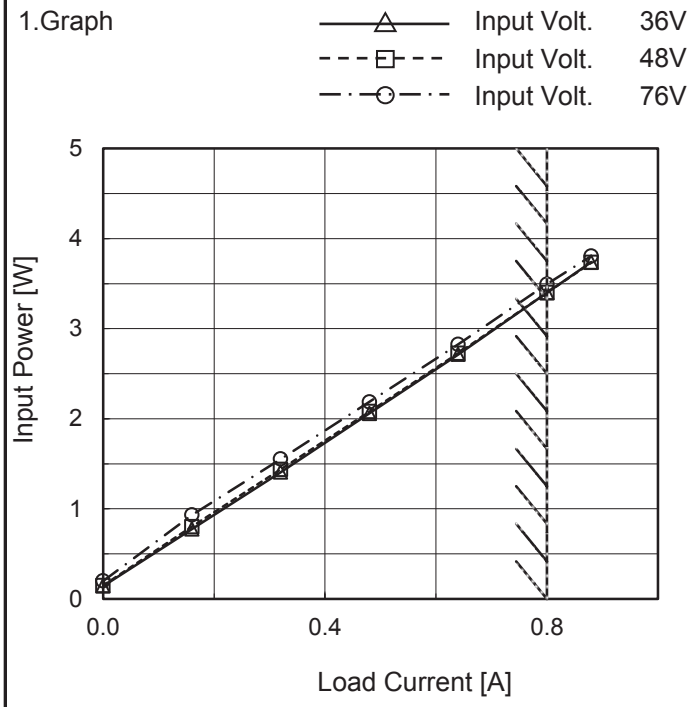
Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.004	0.003	0.003
0.16	0.021	0.017	0.012
0.32	0.039	0.030	0.020
0.48	0.057	0.043	0.029
0.64	0.075	0.057	0.037
0.80	0.094	0.071	0.046
0.88	0.104	0.078	0.050
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS3483R3
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]
0.00	0.14	0.15	0.20
0.16	0.78	0.80	0.93
0.32	1.41	1.44	1.55
0.48	2.06	2.08	2.19
0.64	2.71	2.73	2.83
0.80	3.40	3.40	3.49
0.88	3.74	3.73	3.81
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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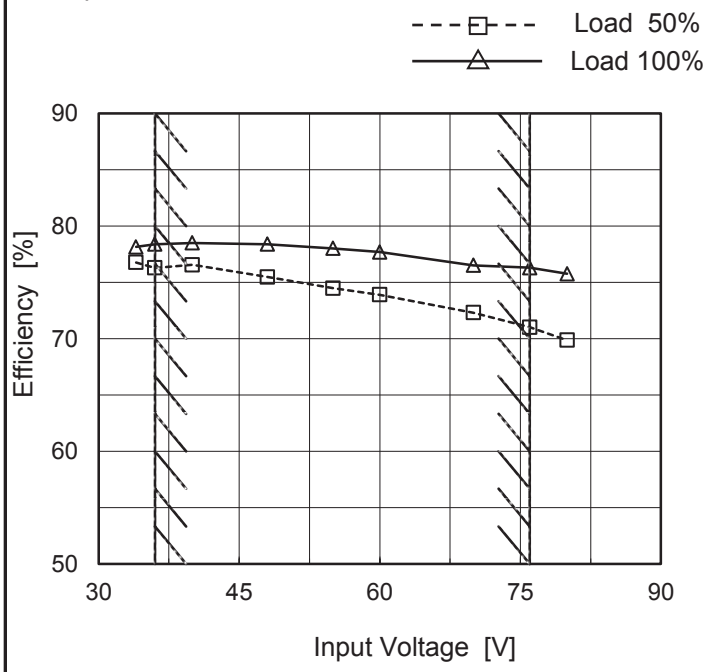
Model	MGS3483R3
Item	Efficiency (by Input Voltage)
Object	————————————

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	76.8	78.2
36	76.3	78.4
40	76.6	78.5
48	75.5	78.4
55	74.5	78.0
60	73.9	77.7
70	72.3	76.5
76	71.0	76.3
80	69.9	75.8

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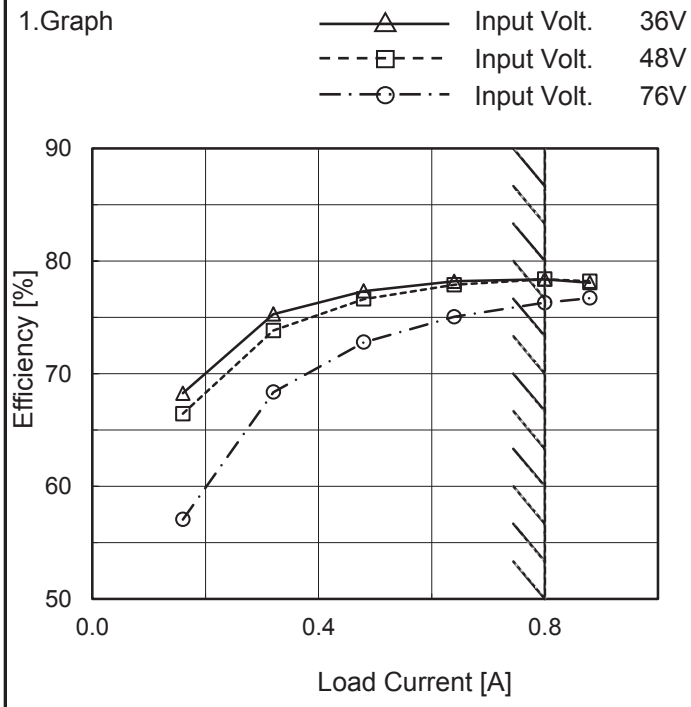
Model	MGS3483R3
Item	Efficiency (by Load Current)
Object	————————

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]
0.00	-	-	-
0.16	68.3	66.4	57.0
0.32	75.3	73.8	68.4
0.48	77.3	76.6	72.8
0.64	78.2	77.9	75.1
0.80	78.4	78.4	76.3
0.88	78.1	78.2	76.7
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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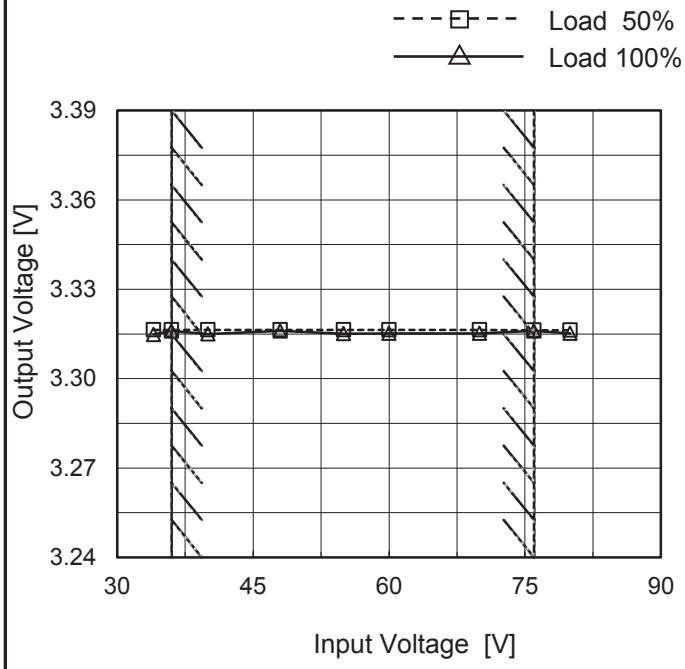
Model	MGS3483R3
Item	Line Regulation
Object	+3.3V0.8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

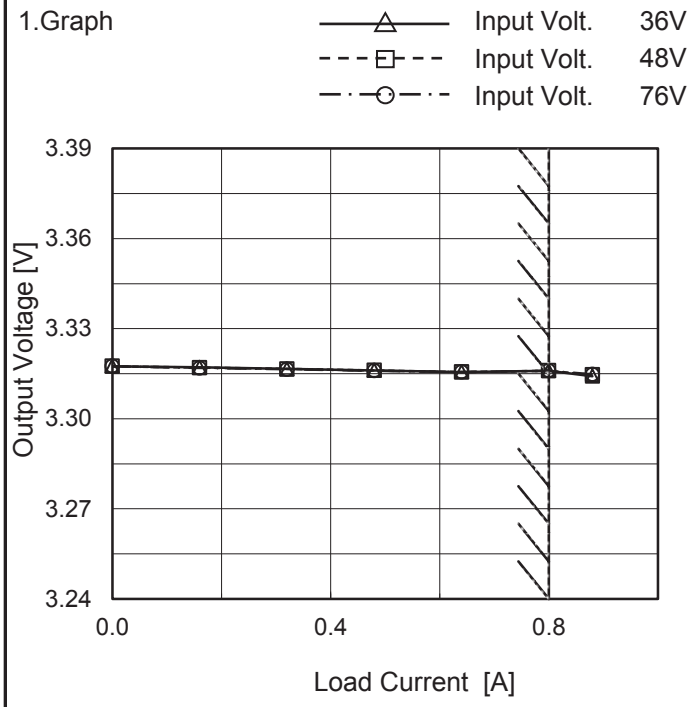
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	3.316	3.315
36	3.316	3.316
40	3.316	3.315
48	3.316	3.316
55	3.316	3.315
60	3.316	3.315
70	3.316	3.315
76	3.316	3.316
80	3.316	3.315

COSEL

Model	MGS3483R3
Item	Load Regulation
Object	+3.3V0.8A

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]
0.00	3.318	3.318	3.318
0.16	3.317	3.317	3.317
0.32	3.317	3.317	3.317
0.48	3.316	3.316	3.316
0.64	3.316	3.316	3.316
0.80	3.316	3.316	3.316
0.88	3.314	3.315	3.315
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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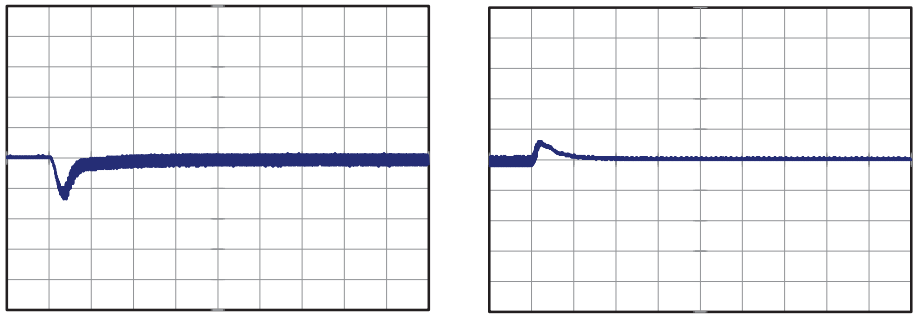
Model	MGS3483R3	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+3.3V0.8A	

Input Volt. 48 V
Cycle 100 ms

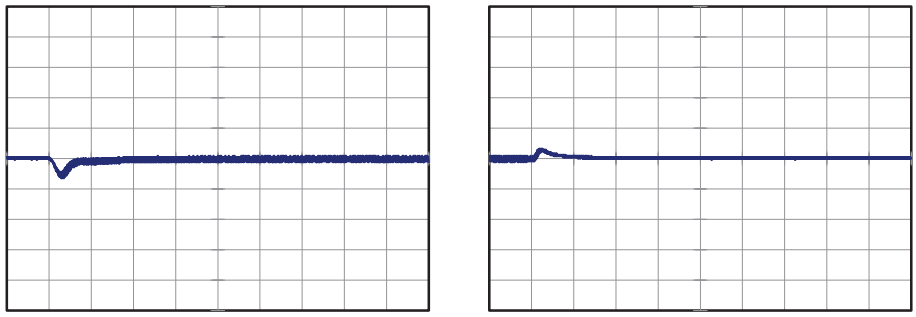
Min.Load (0A)←→
Load 100% (0.8A)



200 mV/div

100 μs/div 200 μs/div

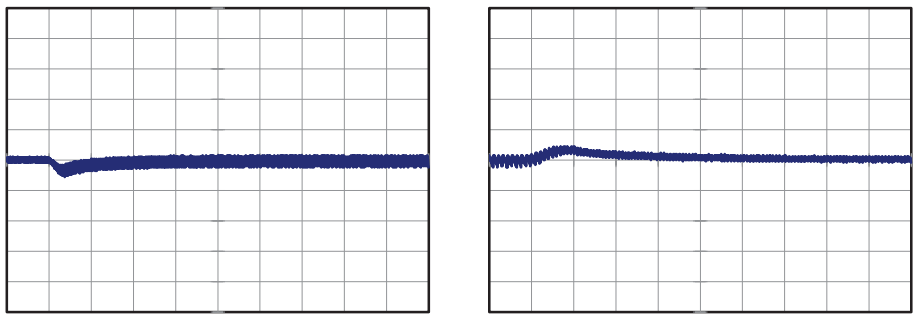
Min.Load (0A)←→
Load 50% (0.4A)



200 mV/div

100 μs/div 200 μs/div

Load 50% (0.4A)←→
Load 100% (0.8A)



200 mV/div

100 μs/div 200 μs/div

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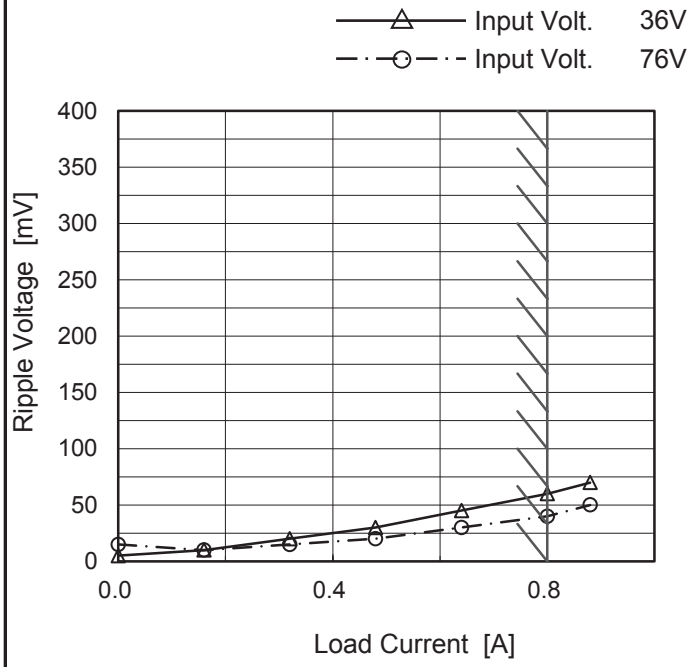
Model	MGS3483R3
Item	Ripple Voltage (by Load Current)
Object	+3.3V0.8A

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]

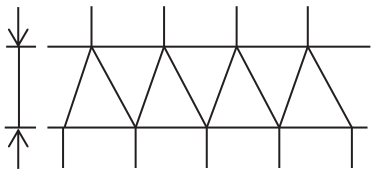


Fig.Complex Ripple Wave Form

2.Values

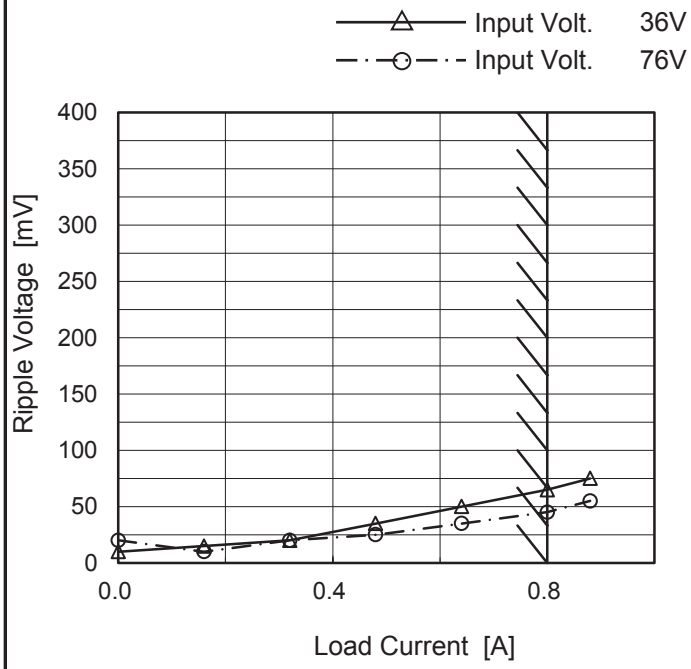
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	5	15
0.16	10	10
0.32	20	15
0.48	30	20
0.64	45	30
0.80	60	40
0.88	70	50
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS3483R3
Item	Ripple-Noise
Object	+3.3V0.8A

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]

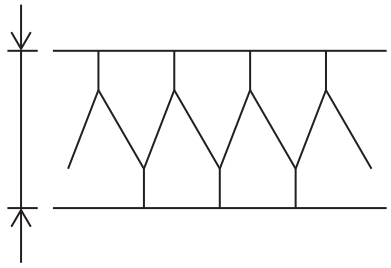


Fig.Complex Ripple Noise Wave Form

2.Values

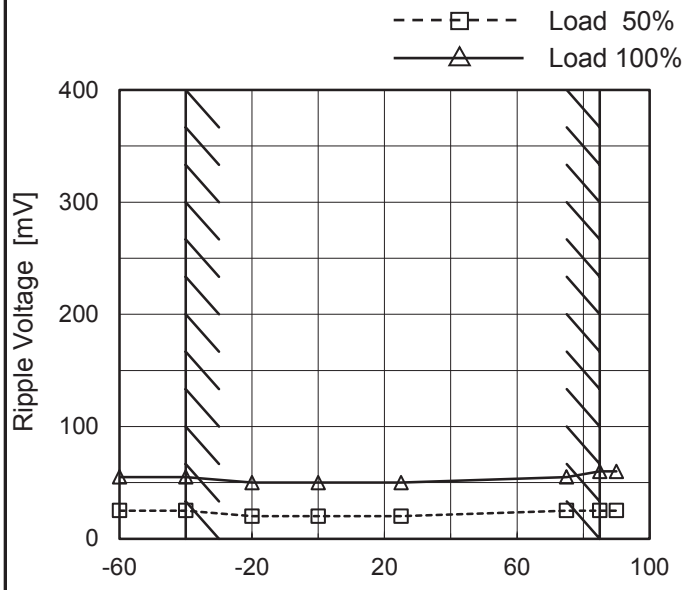
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	10	20
0.16	15	10
0.32	20	20
0.48	35	25
0.64	50	35
0.80	65	45
0.88	75	55
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS3483R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V0.8A

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	55
-40	25	55
-20	20	50
0	20	50
25	20	50
75	25	55
85	25	60
90	25	60
--	-	-
--	-	-
--	-	-

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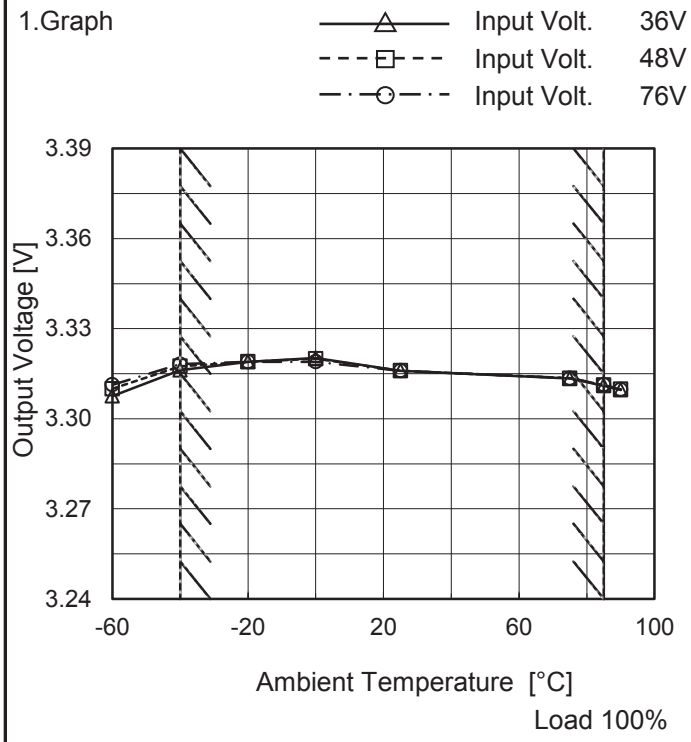
Model	MGS3483R3
Item	Ambient Temperature Drift
Object	+3.3V0.8A

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	3.308	3.310	3.311
-40	3.316	3.318	3.318
-20	3.319	3.319	3.319
0	3.320	3.320	3.319
25	3.316	3.316	3.316
75	3.313	3.314	3.314
85	3.311	3.311	3.311
90	3.310	3.310	3.310
--	-	-	-
--	-	-	-
--	-	-	-

Model	MGS3483R3	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V0.8A	

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 - 0.8A

* 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	0	36	0	3.326	±8	±0.2
Minimum Voltage	85	36	0.8	3.311		

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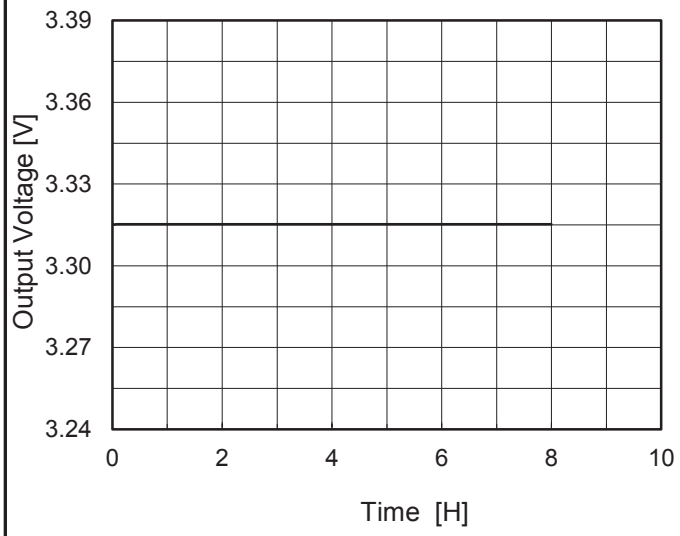
Model	MGS3483R3
Item	Time Lapse Drift
Object	+3.3V0.8A

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	3.315
0.5	3.315
1.0	3.315
2.0	3.315
3.0	3.315
4.0	3.315
5.0	3.315
6.0	3.315
7.0	3.315
8.0	3.315

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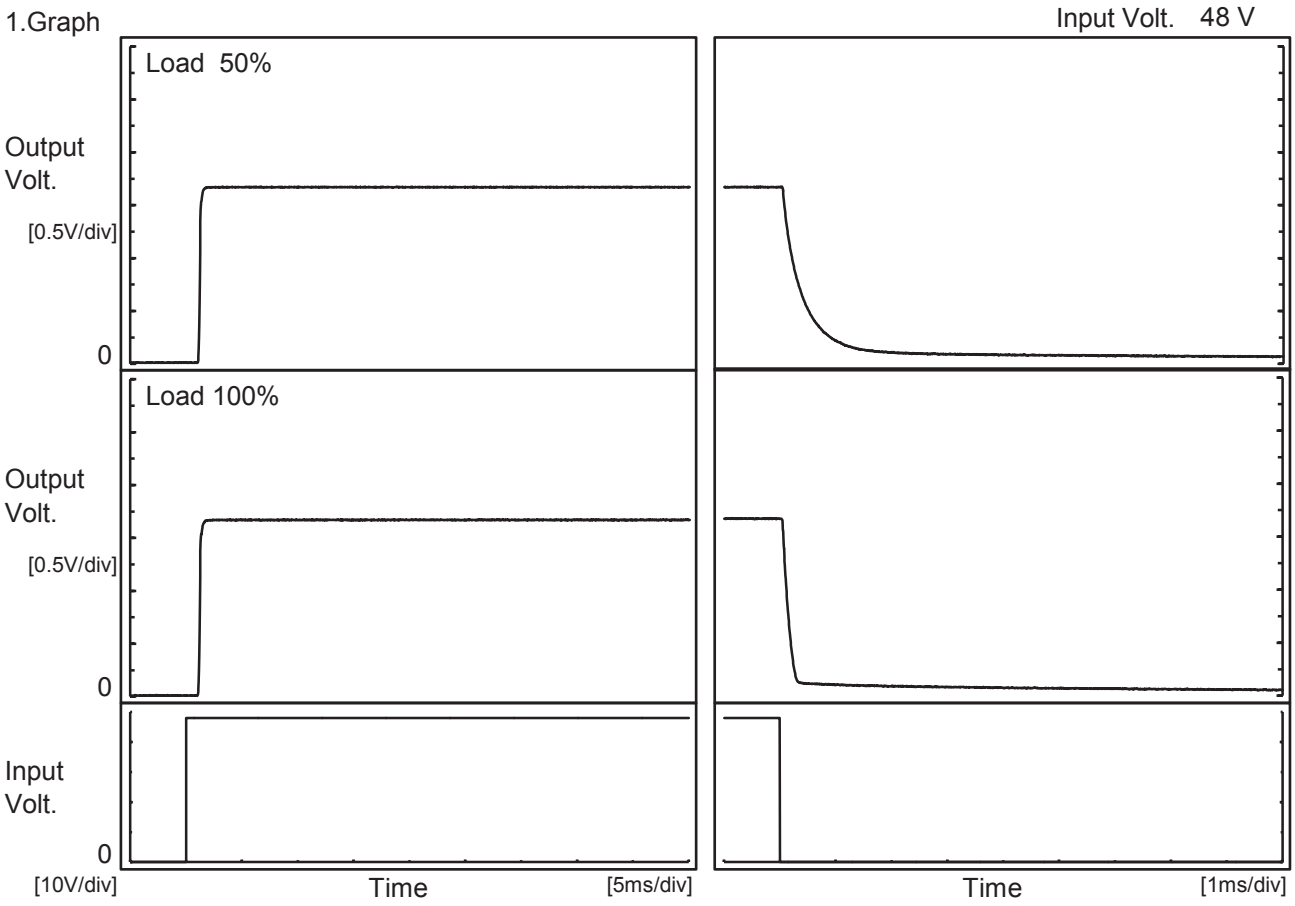
Model	MGS3483R3	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+3.3V0.8A	

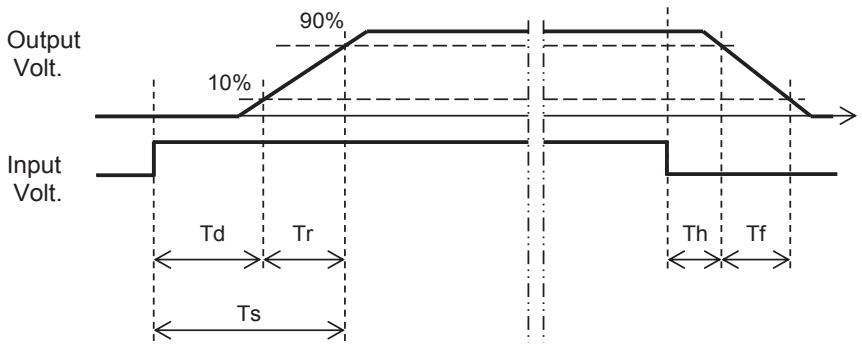
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.2	0.2	1.4	0.1	1.1
100 %	1.2	0.2	1.4	0.1	0.2

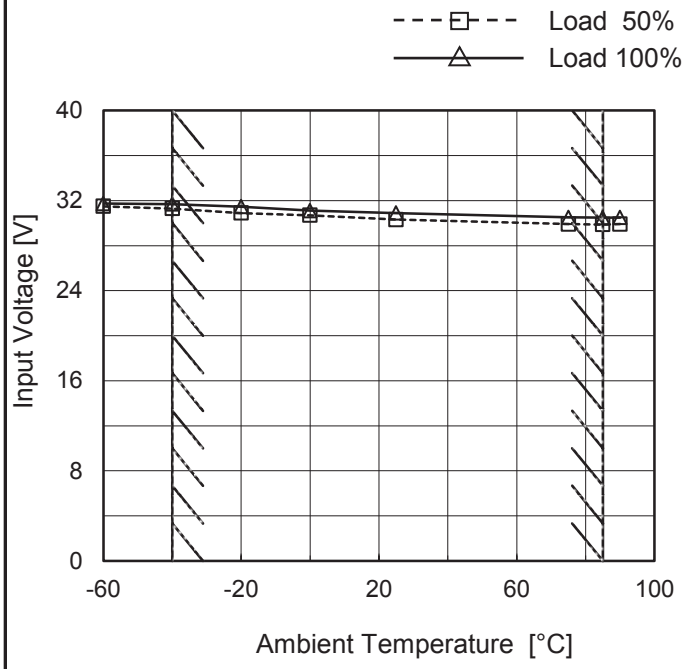


COSEL

Model	MGS3483R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V0.8A

Testing Circuitry Figure A

1.Graph



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

2.Values

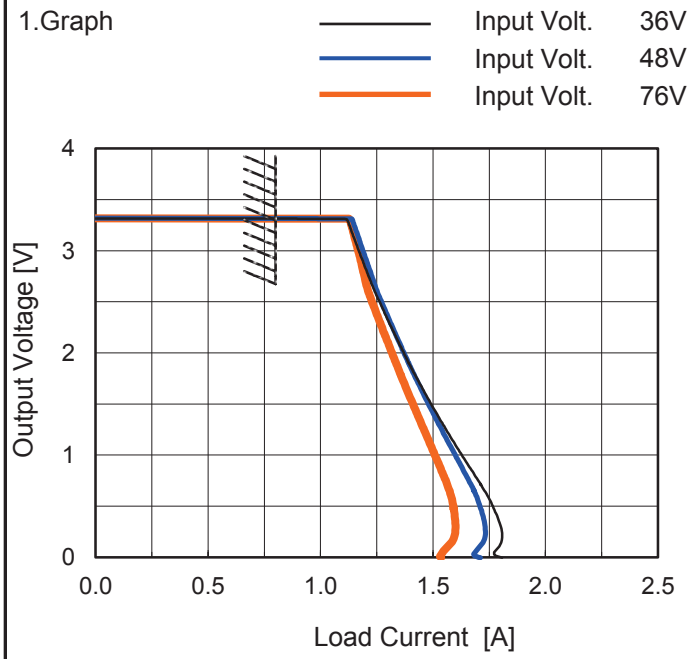
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	31.5	31.8
-40	31.3	31.7
-20	30.9	31.5
0	30.7	31.2
25	30.4	30.9
75	30.0	30.6
85	29.9	30.5
90	30.0	30.5
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS3483R3
Item	Overcurrent Protection
Object	+3.3V0.8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

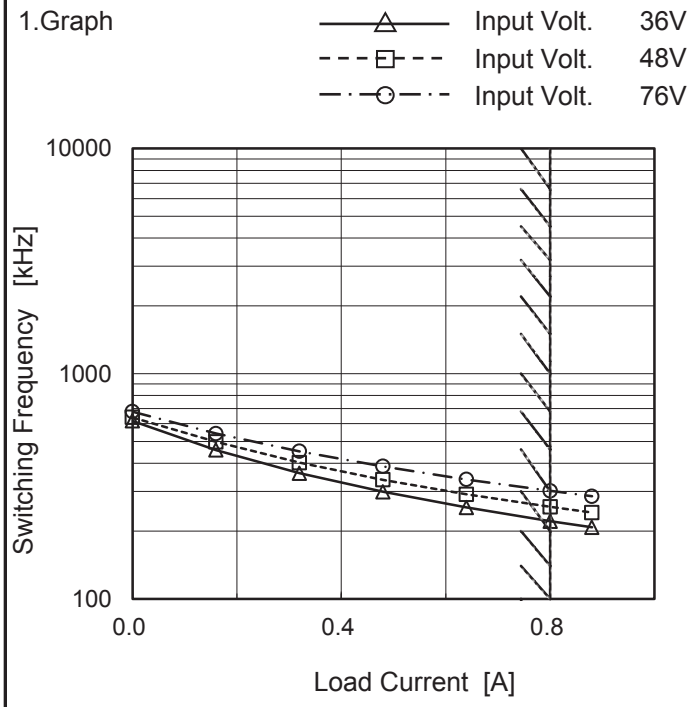
Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
3.30	0.83	0.83	0.83
3.14	1.15	1.17	1.15
2.97	1.18	1.19	1.17
2.64	1.23	1.24	1.21
2.31	1.30	1.31	1.26
1.98	1.37	1.37	1.32
1.65	1.45	1.45	1.38
1.32	1.54	1.52	1.44
0.99	1.63	1.60	1.51
0.66	1.72	1.68	1.57
0.33	1.80	1.73	1.60
0.00	1.81	1.71	1.54

COSEL

Model	MGS3483R3
Item	Switching Frequency (by Load Current)
Object	+3.3V0.8A

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]
0.00	617	640	678
0.16	458	498	543
0.32	361	402	452
0.48	299	338	388
0.64	255	291	339
0.80	221	256	302
0.88	208	242	286
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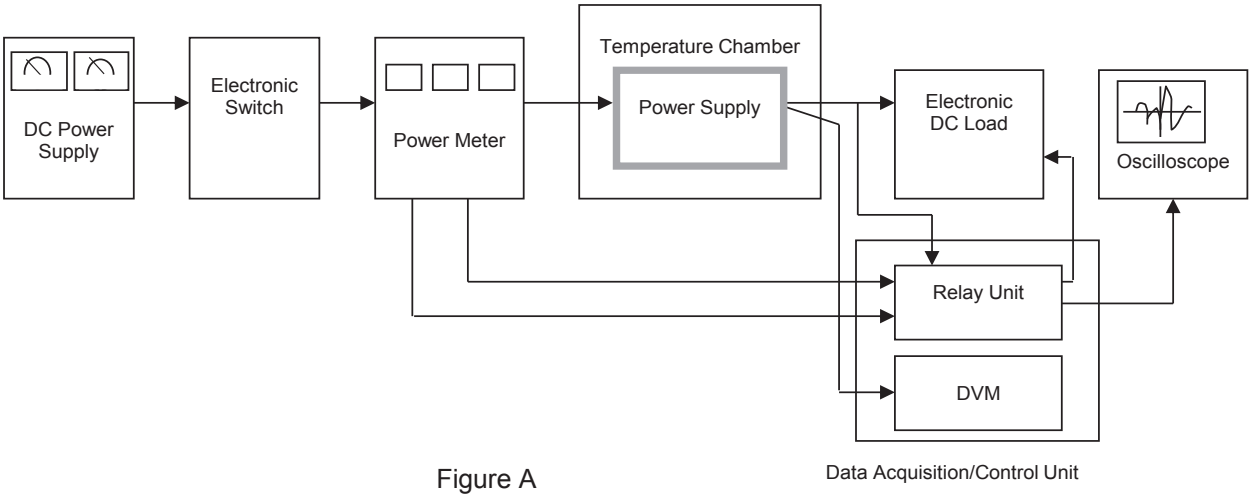

Figure A

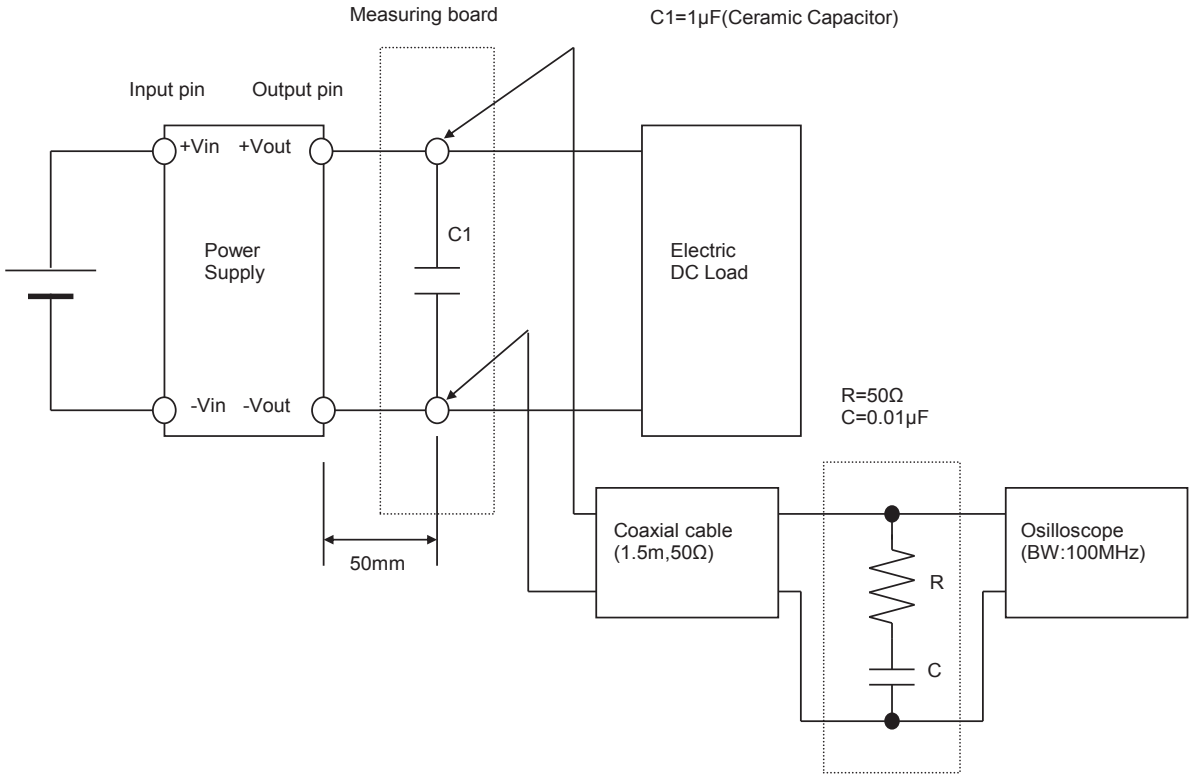

Figure B（Ripple and Ripple noise Characteristic）