COSEL

参考資料

TEST DATA OF MGS30483R3

Regulated DC Power Supply
November 24, 2010

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COSEL CO.,LTD.

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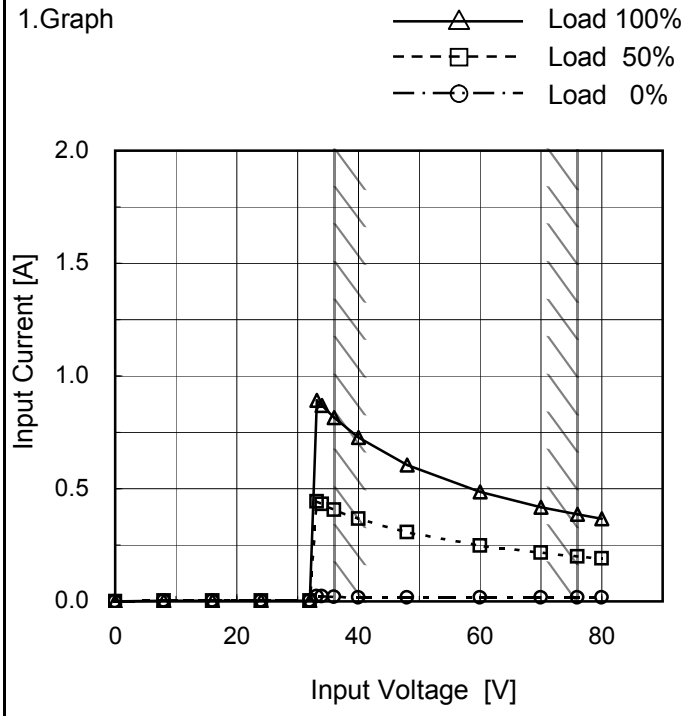
COSEL

Model	MGS30483R3
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

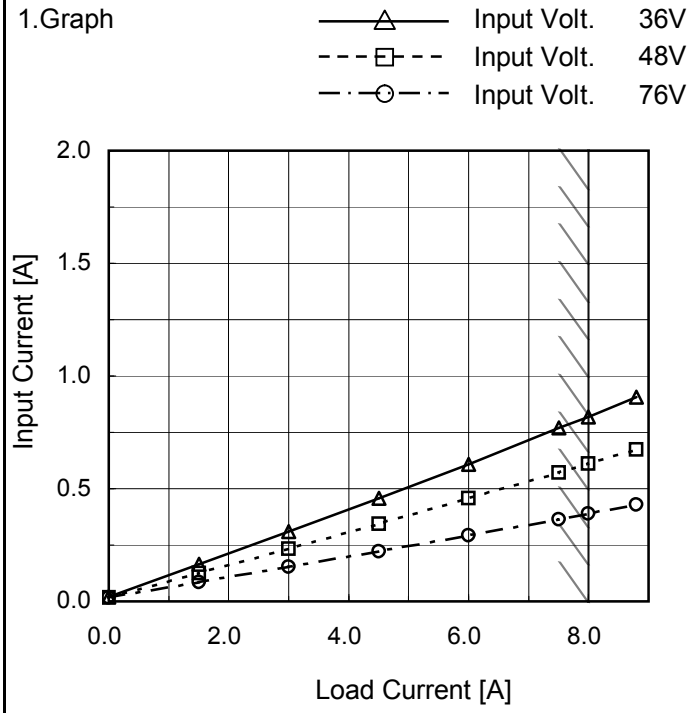
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
8.0	0.002	0.002	0.002
16.0	0.002	0.002	0.002
24.0	0.002	0.002	0.002
32.0	0.002	0.002	0.002
33.2	0.022	0.442	0.893
34.0	0.022	0.432	0.868
36.0	0.020	0.407	0.816
40.0	0.018	0.366	0.728
48.0	0.018	0.307	0.604
60.0	0.018	0.247	0.485
70.0	0.017	0.215	0.418
76.0	0.017	0.199	0.386
80.0	0.017	0.190	0.367
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS30483R3
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]
0.0	0.020	0.018	0.017
1.5	0.164	0.126	0.085
3.0	0.309	0.234	0.153
4.5	0.459	0.344	0.222
6.0	0.608	0.457	0.293
7.5	0.770	0.572	0.365
8.0	0.819	0.610	0.389
8.8	0.905	0.674	0.428
--	-	-	-
--	-	-	-
--	-	-	-

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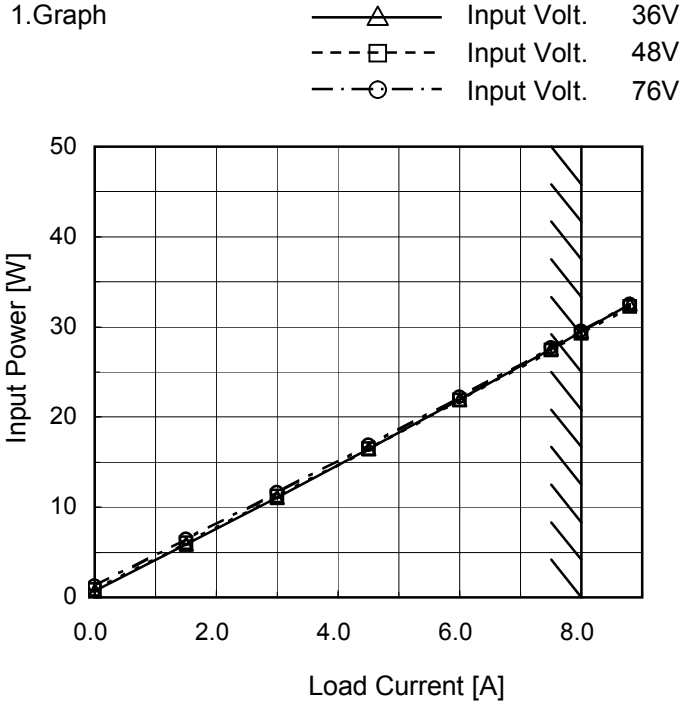
Model	MGS30483R3
Item	Input Power (by Load Current)
Object	————————

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]
0.0	0.73	0.88	1.31
1.5	5.89	6.03	6.47
3.0	11.09	11.20	11.63
4.5	16.46	16.49	16.89
6.0	21.92	21.90	22.26
7.5	27.57	27.40	27.73
8.0	29.48	29.25	29.55
8.8	32.56	32.26	32.53
--	-	-	-
--	-	-	-
--	-	-	-

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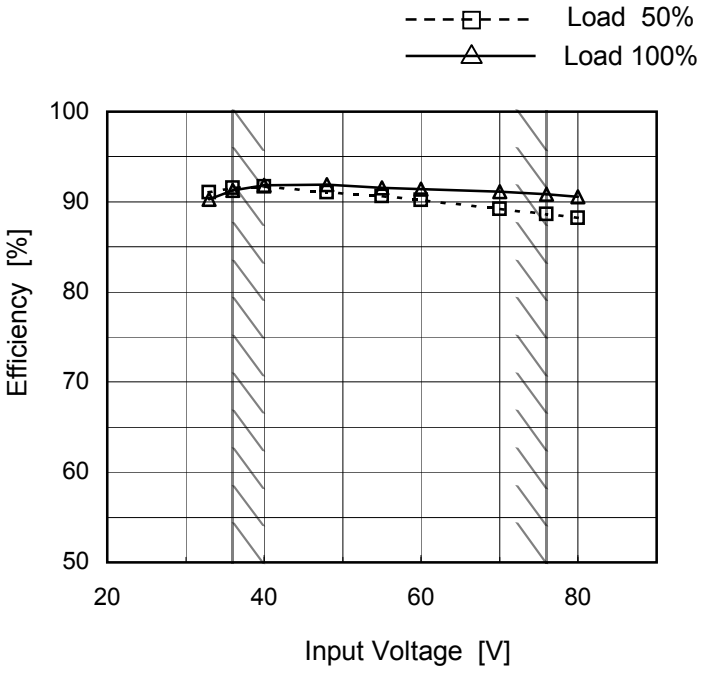
Model	MGS30483R3
Item	Efficiency (by Input Voltage)
Object	———————————

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%
33	91.0	90.3
36	91.6	91.2
40	91.7	91.8
48	91.0	91.9
55	90.6	91.6
60	90.2	91.4
70	89.2	91.1
76	88.6	90.8
80	88.2	90.5

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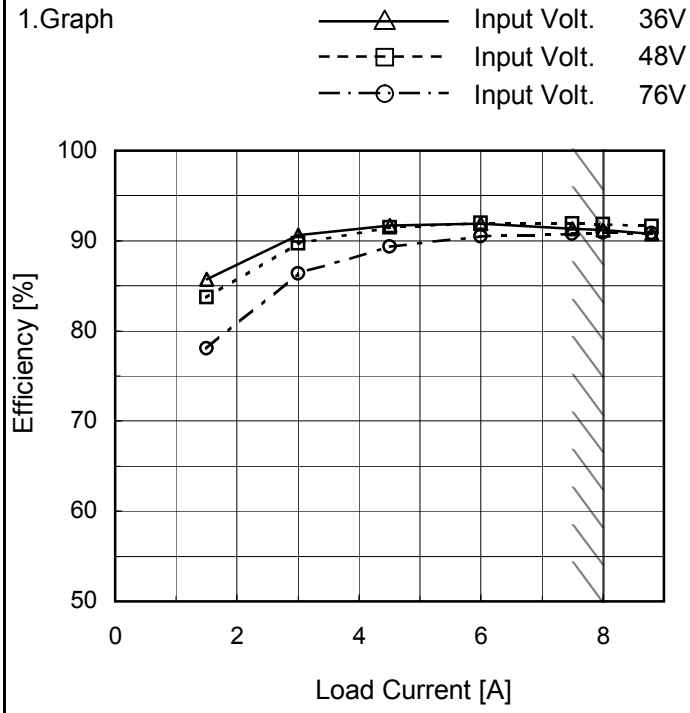
Model	MGS30483R3
Item	Efficiency (by Load Current)
Object	————————

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]
0.0	-	-	-
1.5	85.8	83.8	78.0
3.0	90.6	89.7	86.3
4.5	91.7	91.5	89.3
6.0	91.9	91.9	90.5
7.5	91.4	91.9	90.8
8.0	91.2	91.9	90.9
8.8	90.8	91.6	90.8
--	-	-	-
--	-	-	-
--	-	-	-

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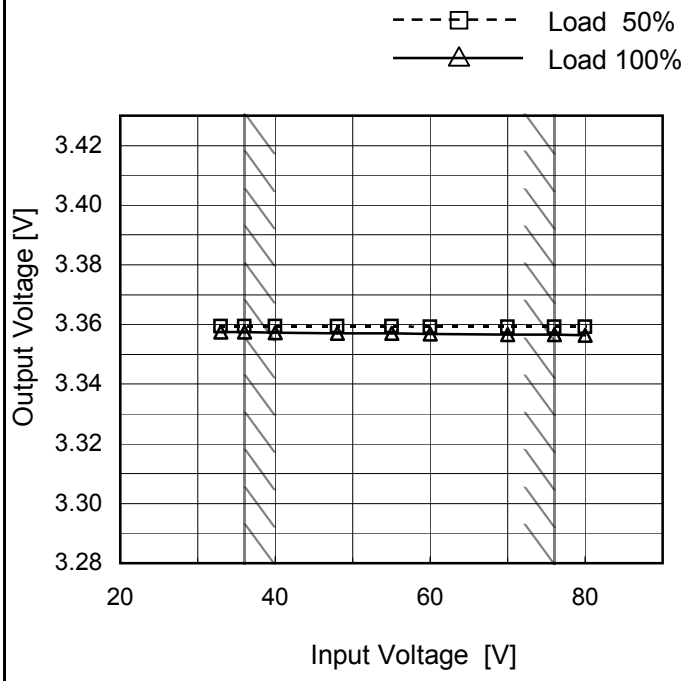
Model	MGS30483R3
Item	Line Regulation
Object	+3.3V8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

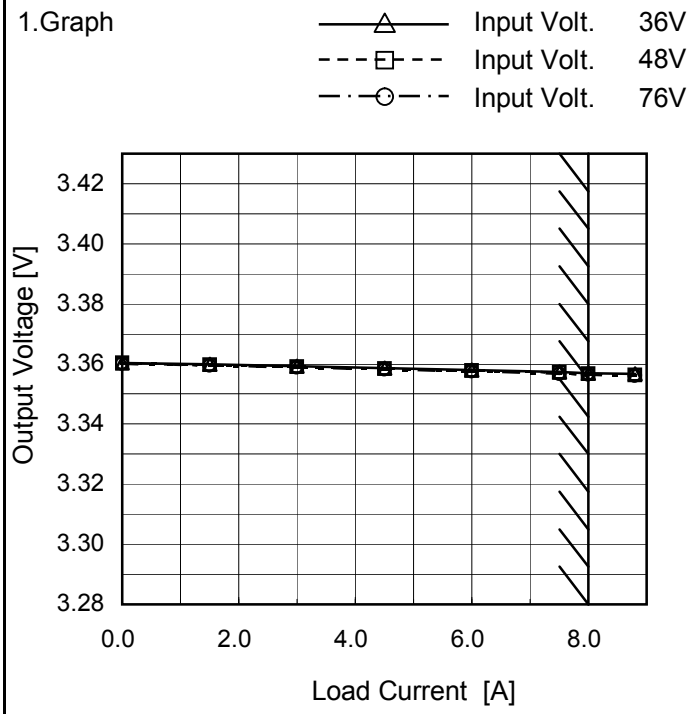
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	3.359	3.358
36	3.359	3.357
40	3.359	3.357
48	3.359	3.357
55	3.359	3.357
60	3.359	3.357
70	3.359	3.357
76	3.359	3.357
80	3.359	3.357

COSEL

Model	MGS30483R3
Item	Load Regulation
Object	+3.3V8A

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]
0.0	3.360	3.360	3.360
1.5	3.360	3.360	3.360
3.0	3.359	3.359	3.359
4.5	3.359	3.358	3.358
6.0	3.358	3.358	3.358
7.5	3.357	3.357	3.357
8.0	3.357	3.357	3.357
8.8	3.357	3.356	3.356
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MGS30483R3
Item	Dynamic Load Response
Object	+3.3V8A

Temperature 25°C
Testing Circuitry Figure A

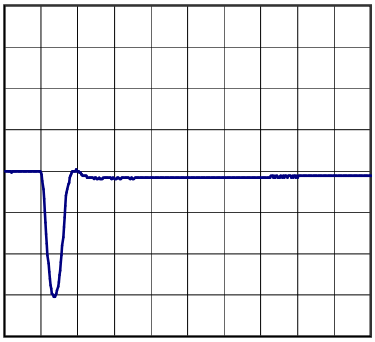
Input Volt. 48 V
Other output current rated
Cycle 1000 ms

t_1、t_2 = 50μs

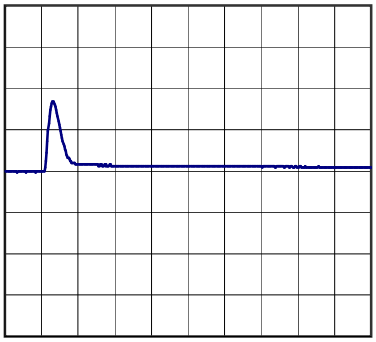
Load Current

Min. Load (0A) ⟷ Load 100% (8A)

200mV/div



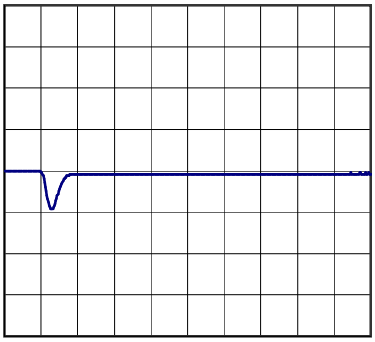
100μs/div



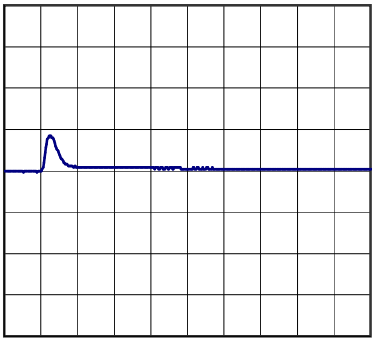
100μs/div

Min. Load (0A) ⟷ Load 50% (4A)

200mV/div



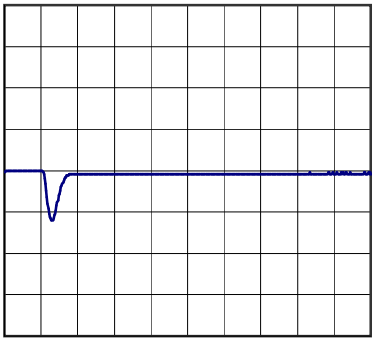
100μs/div



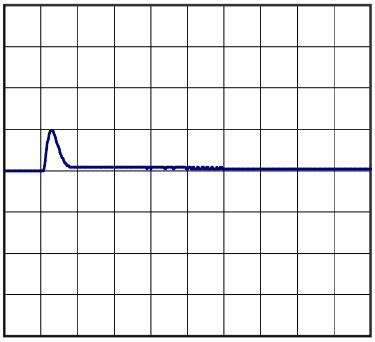
100μs/div

Load 50% (4A) ⟷ Load 100% (8A)

200mV/div



100μs/div



100μs/div

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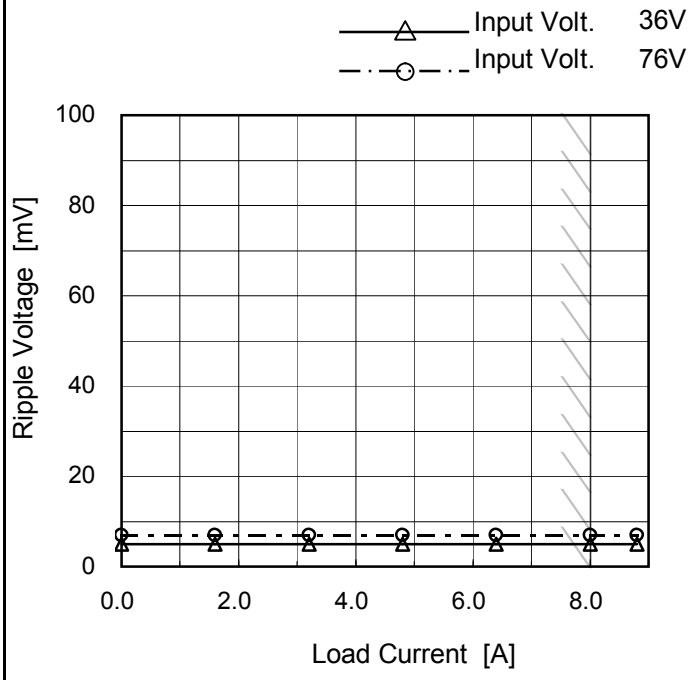
Model	MGS30483R3
Item	Ripple Voltage (by Load Current)
Object	+3.3V8A

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.

Ripple [mVp-p]

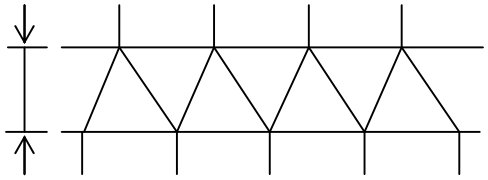


Fig.Complex Ripple Wave Form

2.Values

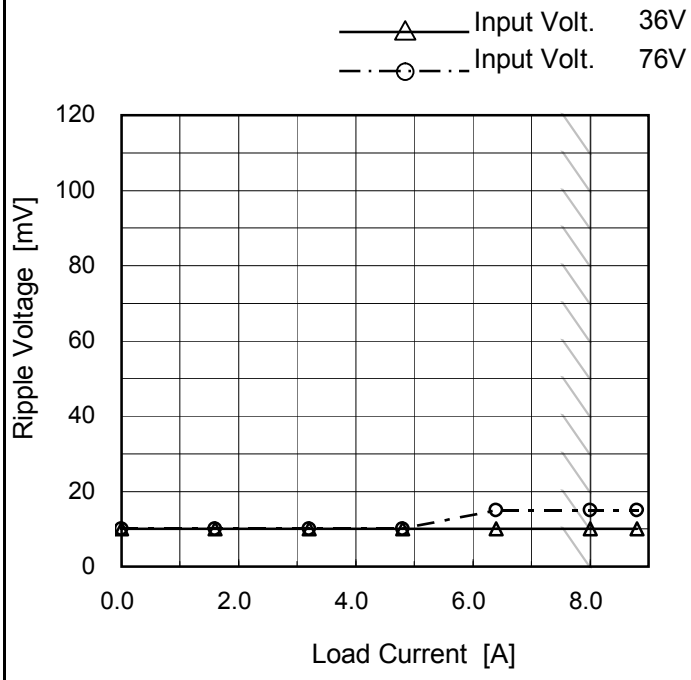
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	5	7
1.6	5	7
3.2	5	7
4.8	5	7
6.4	5	7
8.0	5	7
8.8	5	7
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS30483R3
Item	Ripple-Noise
Object	+3.3V8A

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.

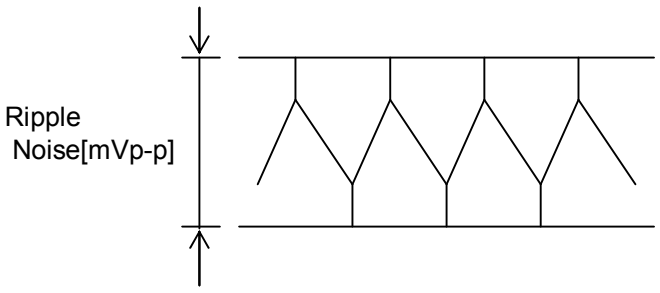


Fig.Complex Ripple Noise Wave Form

2.Values

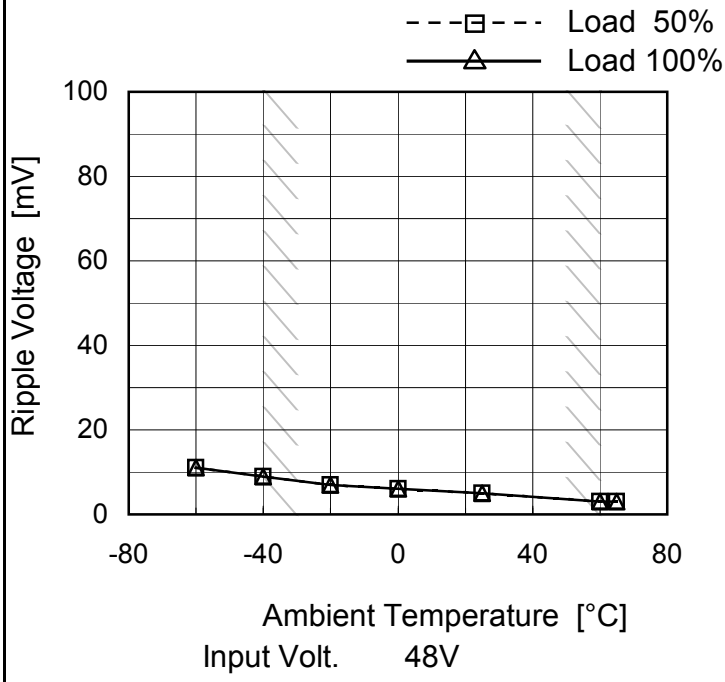
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	10	10
1.6	10	10
3.2	10	10
4.8	10	10
6.4	10	15
8.0	10	15
8.8	10	15
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS30483R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V8A

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

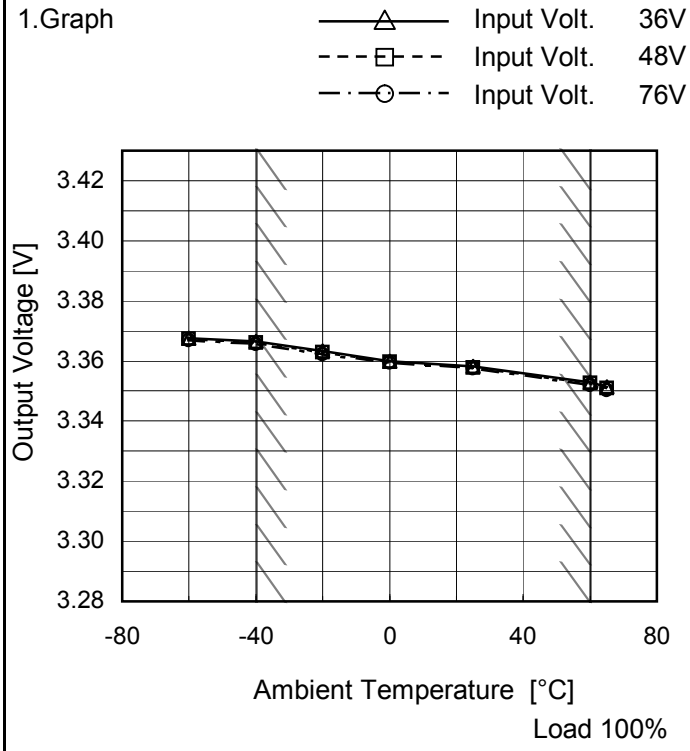
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	11	11
-40	9	9
-20	7	7
0	6	6
25	5	5
60	3	3
65	3	3
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS30483R3
Item	Ambient Temperature Drift
Object	+3.3V8A

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	3.368	3.367	3.367
-40	3.367	3.366	3.366
-20	3.363	3.363	3.362
0	3.360	3.360	3.359
25	3.358	3.358	3.358
60	3.353	3.353	3.352
65	3.351	3.351	3.350
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS30483R3	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V8A	

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 : 36 - 76V
Load Current : 0 - 8A

* 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	-40	48	0	3.369	±9	±0.3
Minimum Voltage	60	76	8	3.352		

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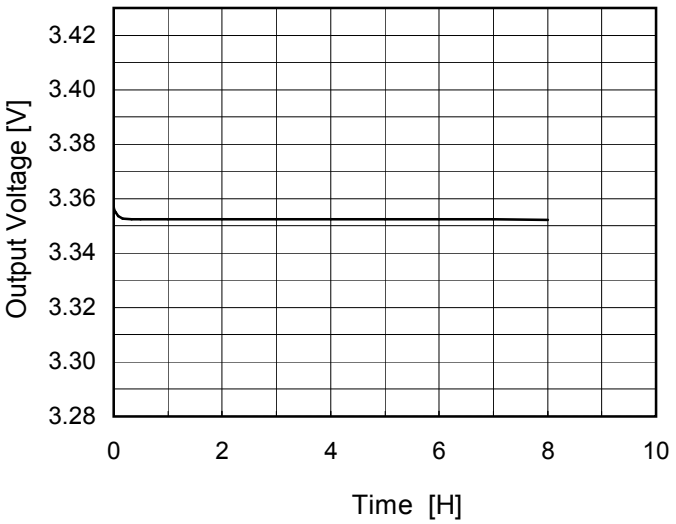
Model	MGS30483R3
Item	Time Lapse Drift
Object	+3.3V8A

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	3.357
0.5	3.353
1.0	3.352
2.0	3.353
3.0	3.352
4.0	3.352
5.0	3.352
6.0	3.352
7.0	3.352
8.0	3.352

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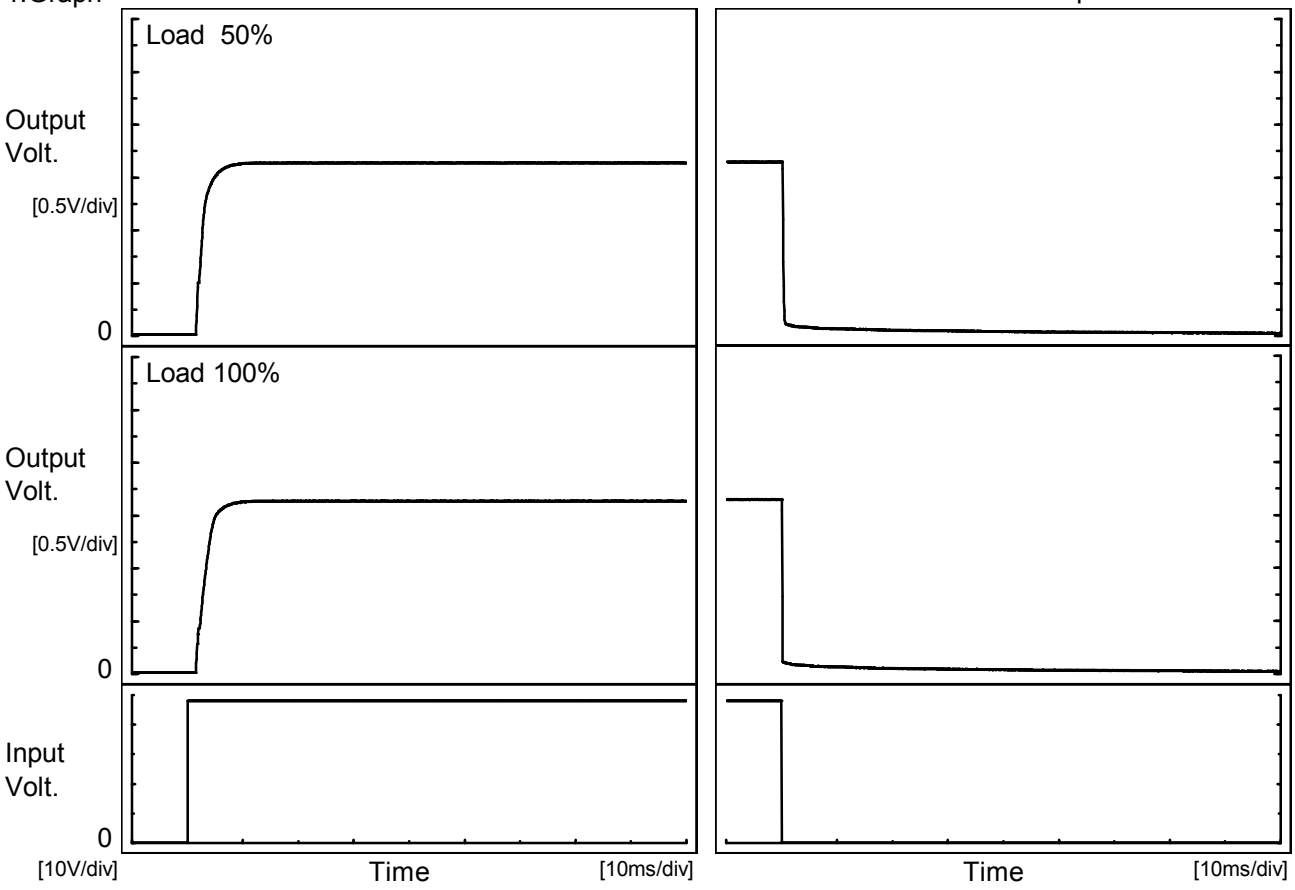
Model	MGS30483R3	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+3.3V8A	

1.Graph

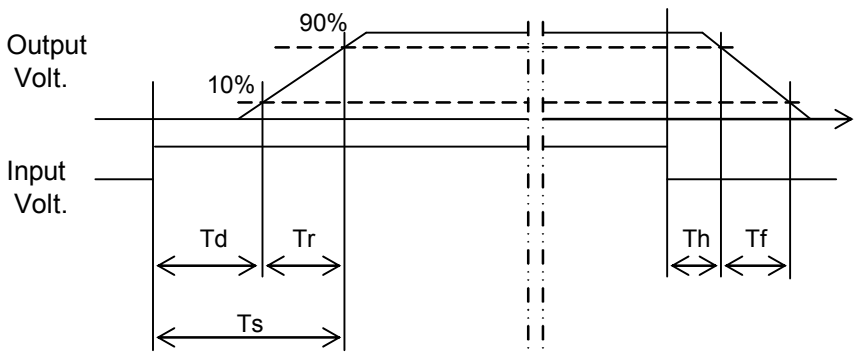
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.7	3.1	4.8	0.1	0.3
100 %	1.7	3.5	5.2	0.1	0.1

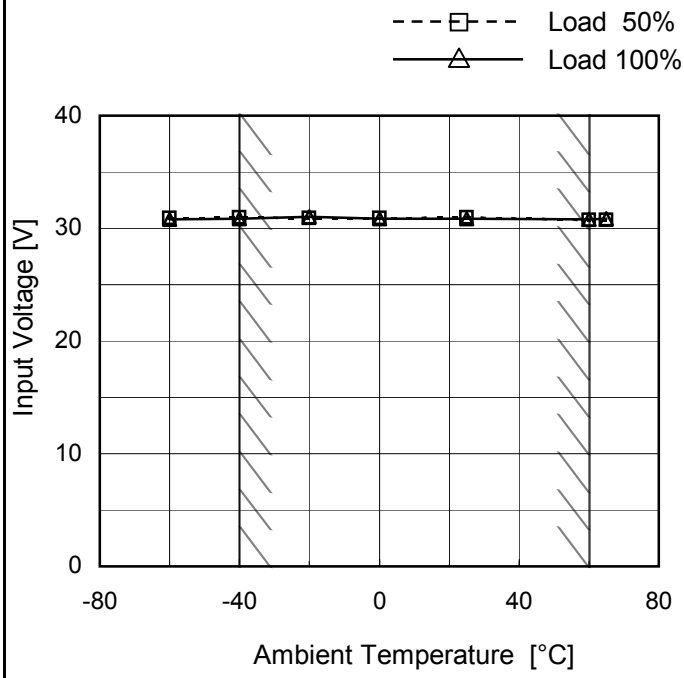


COSEL

Model	MGS30483R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V8A

Testing Circuitry Figure A

1.Graph



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

2.Values

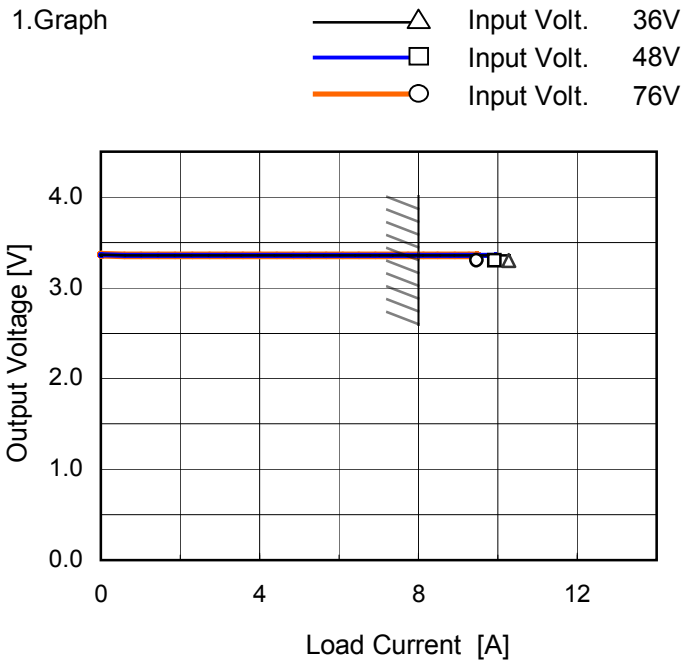
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	30.9	30.8
-40	31.0	30.9
-20	31.0	31.1
0	31.0	30.9
25	31.0	30.9
60	30.8	30.9
65	30.8	30.9
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS30483R3
Item	Overcurrent Protection
Object	+3.3V8A

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

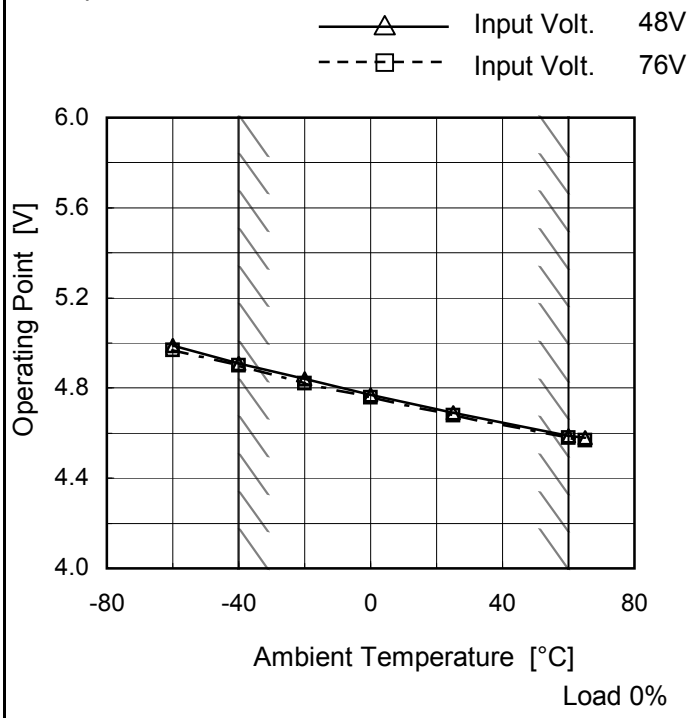
Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
3.30	10.28	9.93	9.47
3.14	-	-	-
2.97	-	-	-
2.64	-	-	-
2.31	-	-	-
1.98	-	-	-
1.65	-	-	-
1.32	-	-	-
0.99	-	-	-
0.66	-	-	-
0.33	-	-	-
0.00	-	-	-

COSEL

Model	MGS30483R3
Item	Overvoltage Protection
Object	+3.3V8A

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. 48[V]	Input Volt. 76[V]
-60	4.99	4.97
-40	4.91	4.90
-20	4.84	4.82
0	4.77	4.76
25	4.69	4.68
60	4.59	4.58
65	4.58	4.57
--	-	-
--	-	-
--	-	-
--	-	-

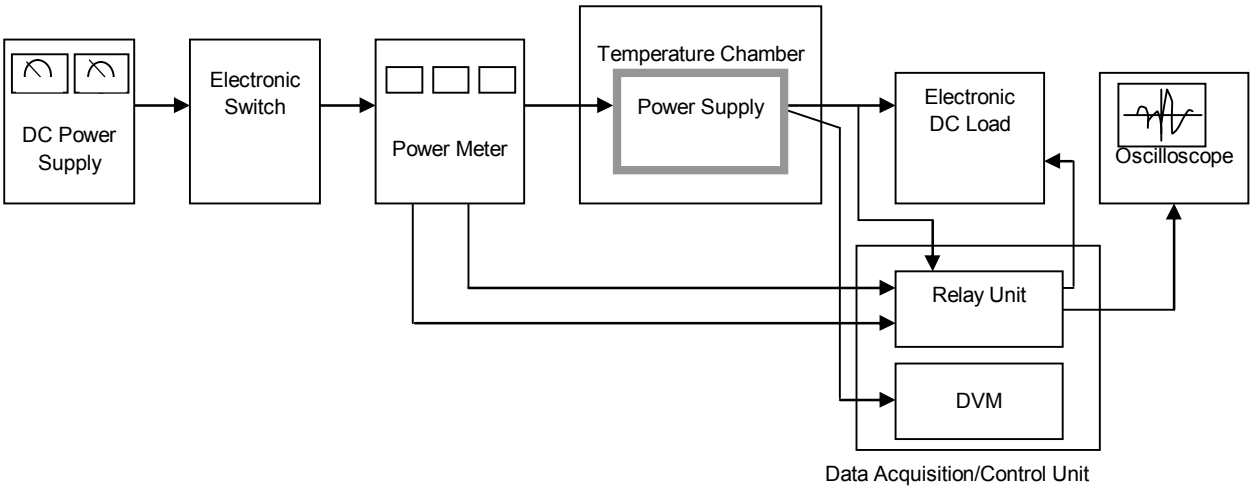


Figure A

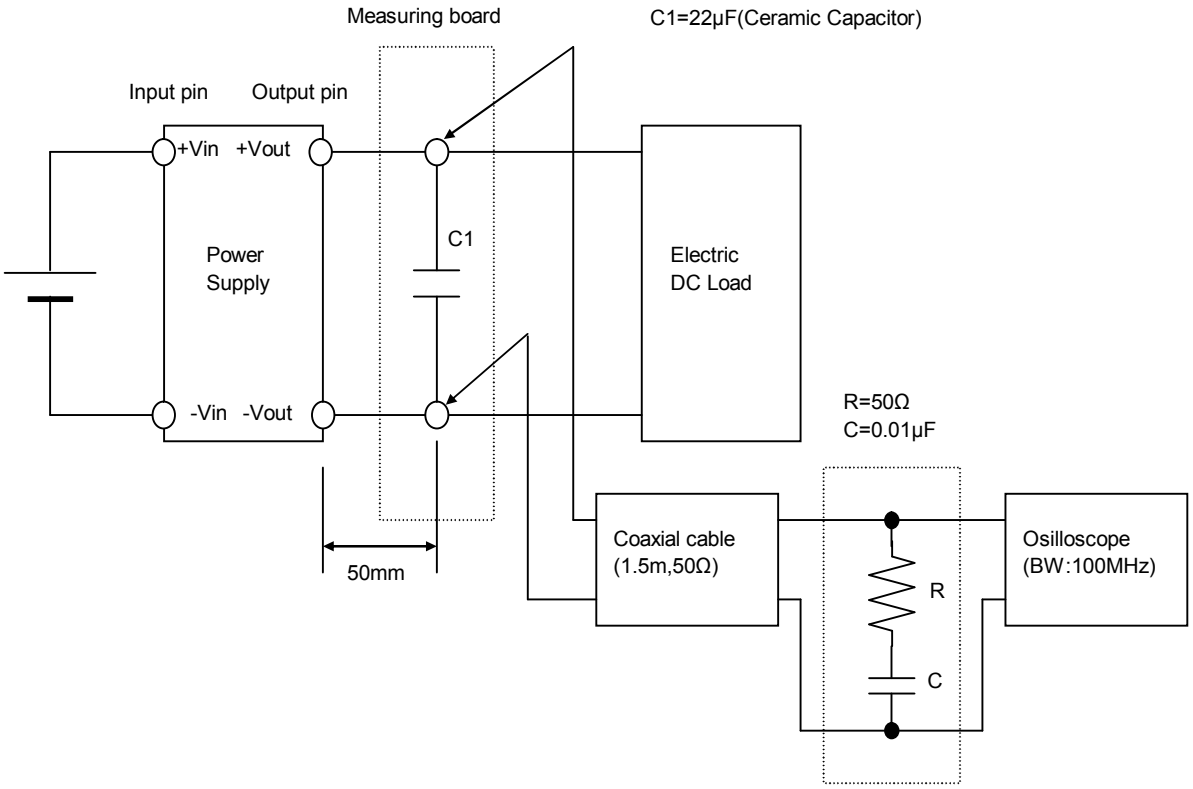


Figure B（Ripple and Ripple noise Characteristic）