

TEST DATA OF MGS30483R3

Regulated DC Power Supply

November 24, 2010

Approved by : Kazunari Asano
Kazunari Asano

Design Manager

Prepared by : Sho Saito
Sho Saito

Design Engineer

COSEL CO.,LTD.

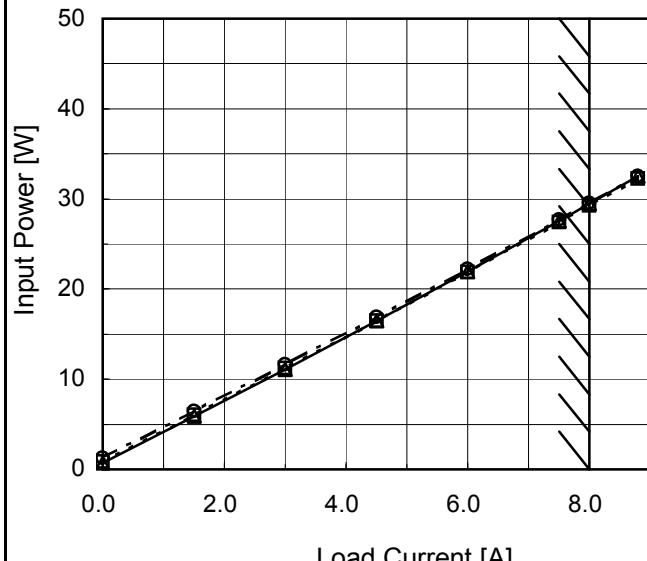
CONTENTS

1. Input Current (by Input Voltage)	1
2. Input Current (by Load Current)	2
3. Input Power (by Load Current)	3
4. Efficiency (by Input Voltage)	4
5. Efficiency (by Load Current)	5
6. Line Regulation	6
7. Load Regulation	7
8. Dynamic Load Response	8
9. Ripple Voltage (by Load Current)	9
10. Ripple-Noise	10
11. Ripple Voltage (by Ambient Temperature)	11
12. Ambient Temperature Drift	12
13. Output Voltage Accuracy	13
14. Time Lapse Drift	14
15. Rise and Fall Time	15
16. Minimum Input Voltage for Regulated Output Voltage	16
17. Overcurrent Protection	17
18. Overvoltage Protection	18
19. Figure of Testing Circuitry	19

(Final Page 19)

Model	MGS30483R3	Temperature Testing Circuitry 25°C Figure A																																																																																	
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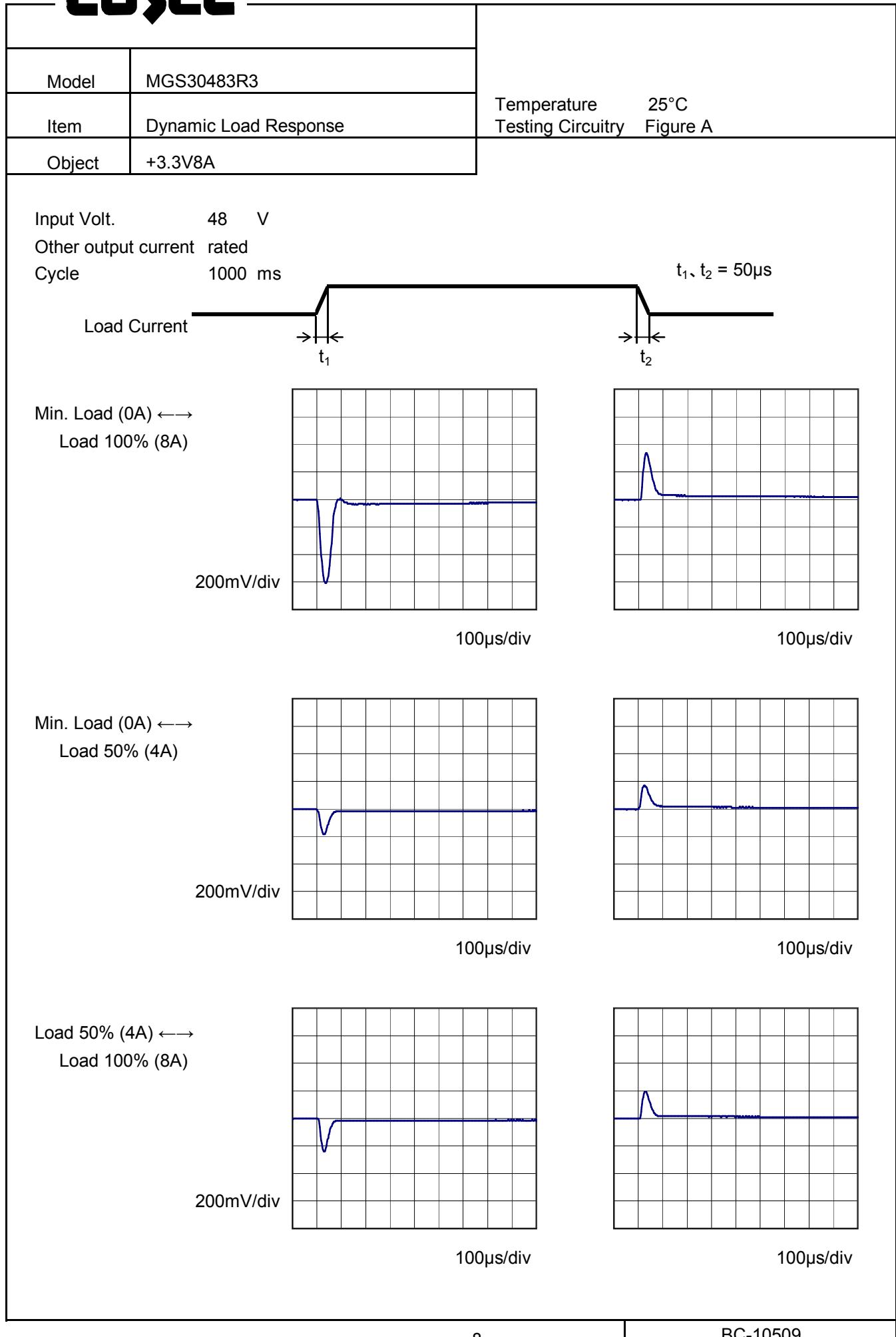
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<p>The graph plots Output Voltage [V] on the Y-axis (3.28 to 3.42) against Input Voltage [V] on the X-axis (20 to 80). Two sets of data points are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both sets of points show a constant output voltage of approximately 3.36V across the entire input voltage range. A slanted line on the graph indicates the rated input voltage range.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Output Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>33</td><td>3.359</td><td>3.358</td></tr> <tr><td>36</td><td>3.359</td><td>3.357</td></tr> <tr><td>40</td><td>3.359</td><td>3.357</td></tr> <tr><td>48</td><td>3.359</td><td>3.357</td></tr> <tr><td>55</td><td>3.359</td><td>3.357</td></tr> <tr><td>60</td><td>3.359</td><td>3.357</td></tr> <tr><td>70</td><td>3.359</td><td>3.357</td></tr> <tr><td>76</td><td>3.359</td><td>3.357</td></tr> <tr><td>80</td><td>3.359</td><td>3.357</td></tr> </tbody> </table>	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
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1.Graph	<p>—△— Input Volt. 36V - - -□- - Input Volt. 48V - - -○- - Input Volt. 76V</p> <table border="1"> <caption>Data points estimated from the graph</caption> <thead> <tr> <th>Load Current [A]</th> <th>Output Voltage [V] (36V)</th> <th>Output Voltage [V] (48V)</th> <th>Output Voltage [V] (76V)</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>3.360</td><td>3.360</td><td>3.360</td></tr> <tr><td>2.0</td><td>3.360</td><td>3.360</td><td>3.360</td></tr> <tr><td>4.0</td><td>3.360</td><td>3.360</td><td>3.360</td></tr> <tr><td>6.0</td><td>3.360</td><td>3.360</td><td>3.360</td></tr> <tr><td>8.0</td><td>3.360</td><td>3.360</td><td>3.360</td></tr> </tbody> </table>	Load Current [A]	Output Voltage [V] (36V)	Output Voltage [V] (48V)	Output Voltage [V] (76V)	0.0	3.360	3.360	3.360	2.0	3.360	3.360	3.360	4.0	3.360	3.360	3.360	6.0	3.360	3.360	3.360	8.0	3.360	3.360	3.360																													
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Load Current [A]	Output Voltage [V]																																																					
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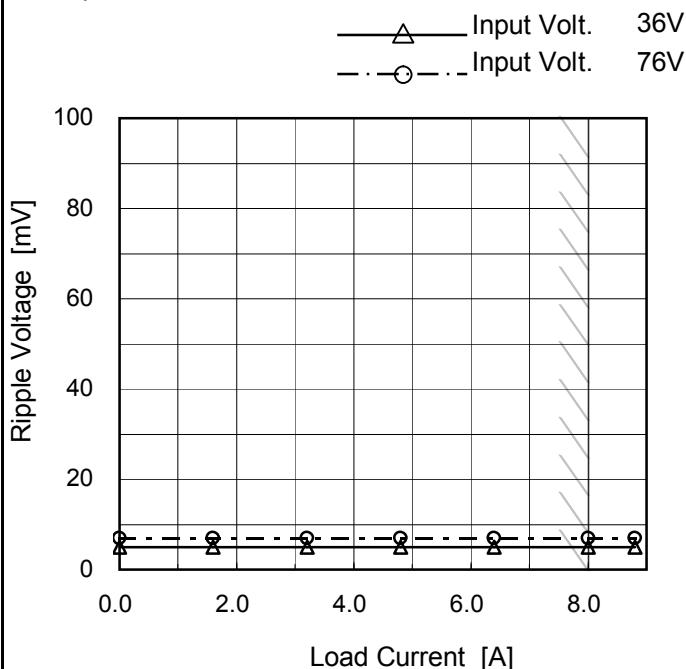
COSSEL

Model MGS30483R3

Item Ripple Voltage (by Load Current)

Object +3.3V8A

1. Graph

Temperature 25°C
Testing Circuitry Figure B

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
--	-	-
--	-	-
--	-	-
--	-	-

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]

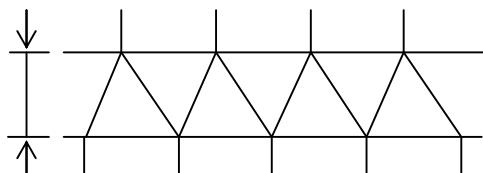


Fig.Complex Ripple Wave Form

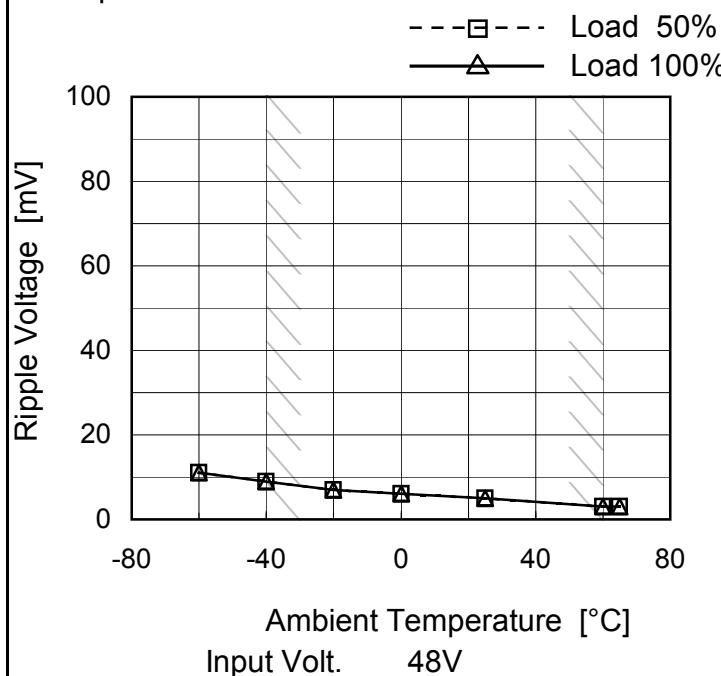
COSEL

Model	MGS30483R3	Temperature	25°C																																						
Item	Ripple-Noise	Testing Circuitry	Figure B																																						
Object	+3.3V8A	2.Values																																							
1.Graph																																									
	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple-Noise [mV]</th> </tr> <tr> <th>Input Volt. 36 [V]</th> <th>Input Volt. 76 [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>10</td><td>10</td></tr> <tr><td>1.6</td><td>10</td><td>10</td></tr> <tr><td>3.2</td><td>10</td><td>10</td></tr> <tr><td>4.8</td><td>10</td><td>10</td></tr> <tr><td>6.4</td><td>10</td><td>15</td></tr> <tr><td>8.0</td><td>10</td><td>15</td></tr> <tr><td>8.8</td><td>10</td><td>15</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>			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	--	-	-	--	-	-	--	-	-	--	-	-
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																																							
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	<p>Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p>																																								
	<p>Fig.Complex Ripple Noise Wave Form</p>																																								

COSEL

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

1. Graph



Testing Circuitry Figure B

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
--	-	-
--	-	-
--	-	-
--	-	-

Measured by 100 MHz Oscilloscope.

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

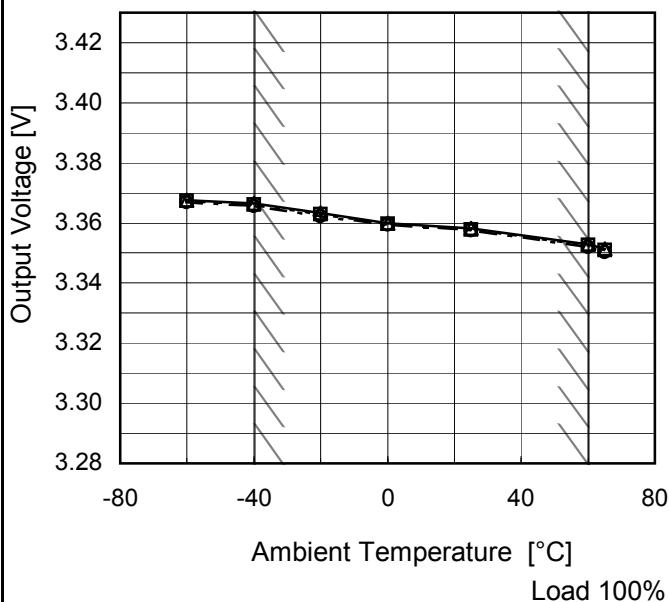
Model MGS30483R3

Item Ambient Temperature Drift

Object +3.3V8A

1.Graph

—△— Input Volt. 36V
 - - -□--- Input Volt. 48V
 - - -○--- Input Volt. 76V



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

Testing Circuitry Figure A

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
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model	MGS30483R3	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
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 = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2. Values

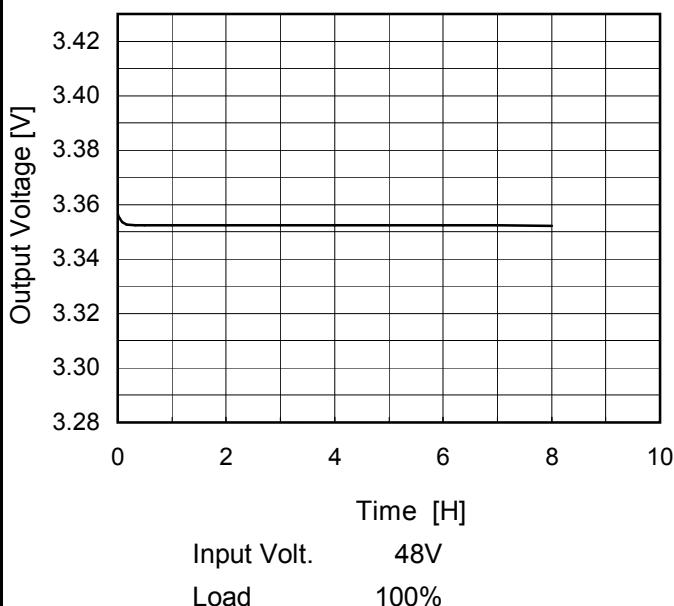
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	48	0	3.369	± 9	± 0.3
Minimum Voltage	60	76	8	3.352		

COSEL

Model	MGS30483R3
Item	Time Lapse Drift
Object	+3.3V8A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

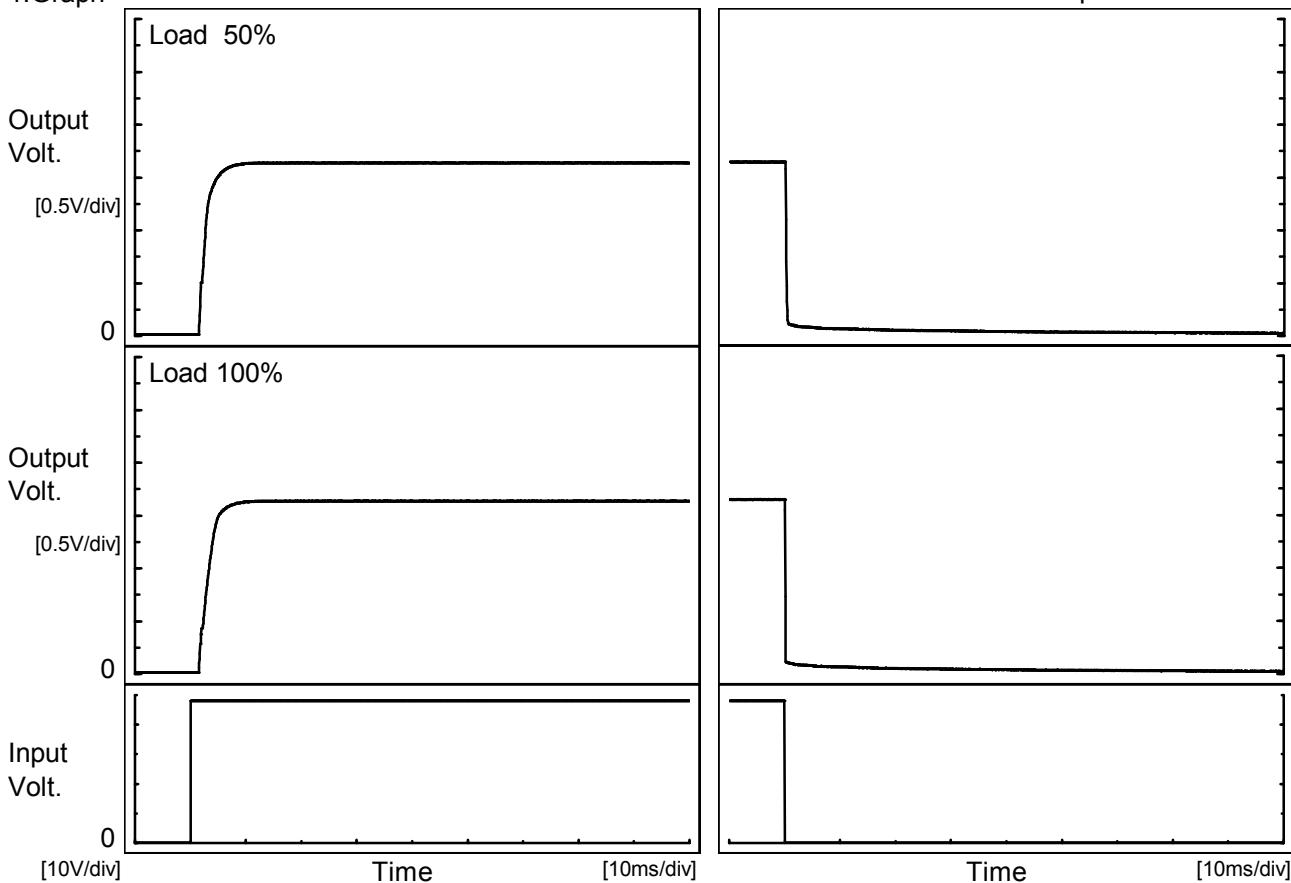
Time since start [H]	Output Voltage [V]
0.0	3.357
0.5	3.353
1.0	3.352
2.0	3.353
3.0	3.352
4.0	3.352
5.0	3.352
6.0	3.352
7.0	3.352
8.0	3.352

COSEL

Model	MGS30483R3
Item	Rise and Fall Time
Object	+3.3V8A

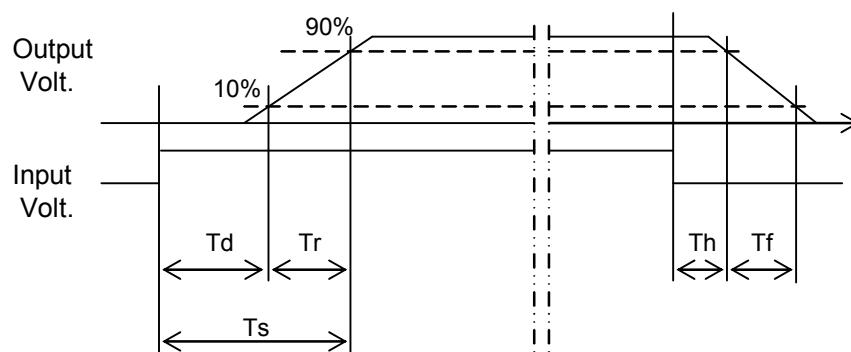
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

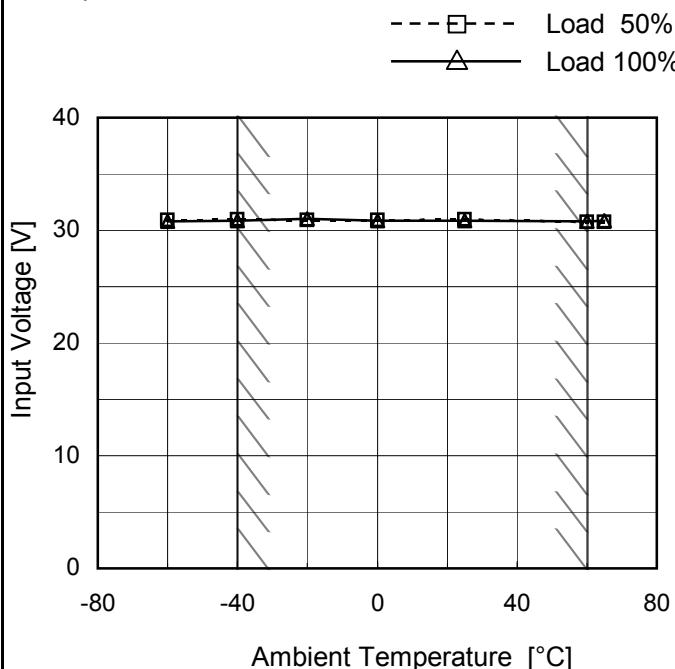
Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		1.7	3.1	4.8	0.1	0.3	
100 %		1.7	3.5	5.2	0.1	0.1	



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

Testing Circuitry Figure A

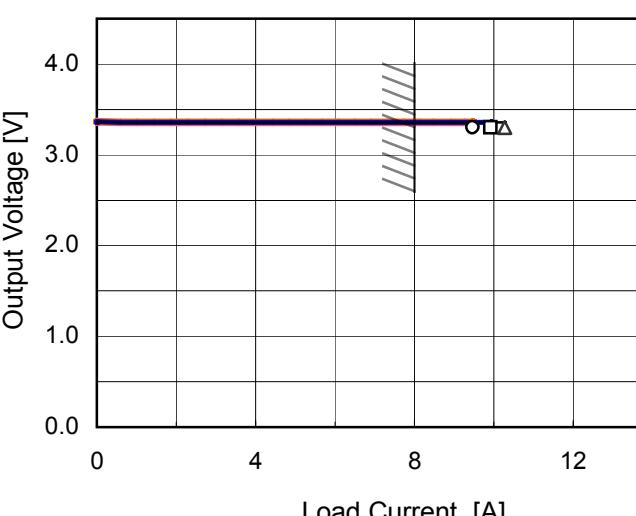
1. Graph



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

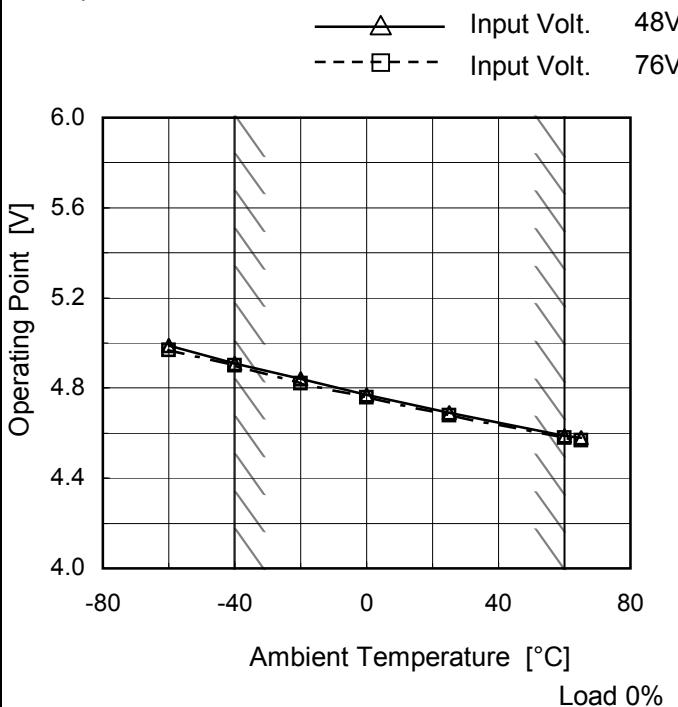
2. Values

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
--	-	-
--	-	-
--	-	-
--	-	-

Model	MGS30483R3	Temperature Testing Circuitry 25°C Figure A																																																							
Item	Overcurrent Protection																																																								
Object	+3.3V8A																																																								
1.Graph	<p>—△— Input Volt. 36V —□— Input Volt. 48V —○— Input Volt. 76V</p>  <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when overcurrent protection is activated.</p>	2.Values																																																							
		<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="3">Load Current [A]</th> </tr> <tr> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>3.30</td><td>10.28</td><td>9.93</td><td>9.47</td></tr> <tr><td>3.14</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>2.97</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>2.64</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>2.31</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>1.98</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>1.65</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>1.32</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.99</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.66</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.33</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	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	-	-	-
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0.33	-	-	-																																																						
0.00	-	-	-																																																						

Model	MGS30483R3
Item	Oversupply Protection
Object	+3.3V8A

1. Graph



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

Testing Circuitry Figure A

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
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

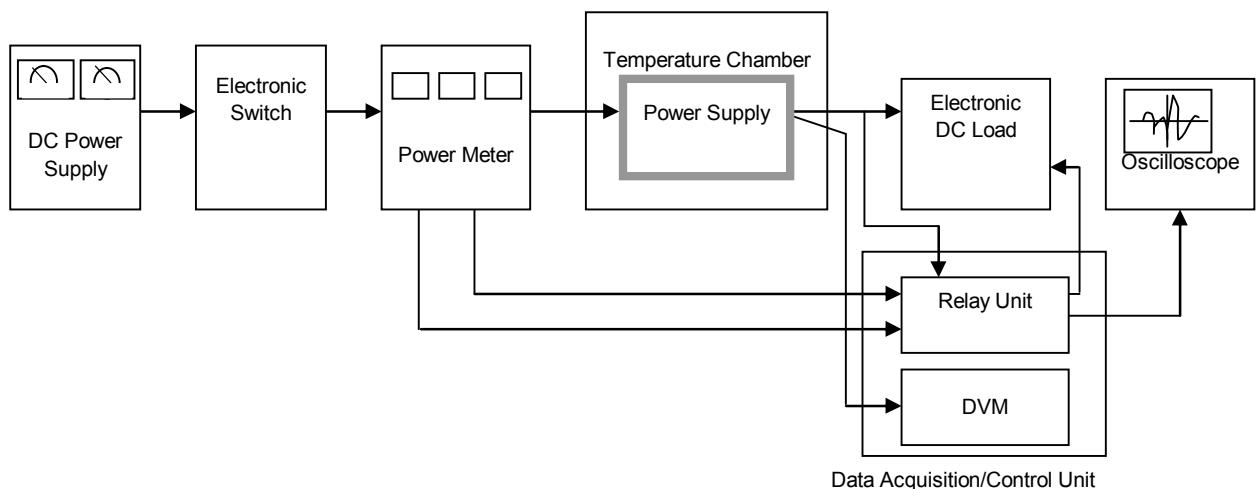


Figure A

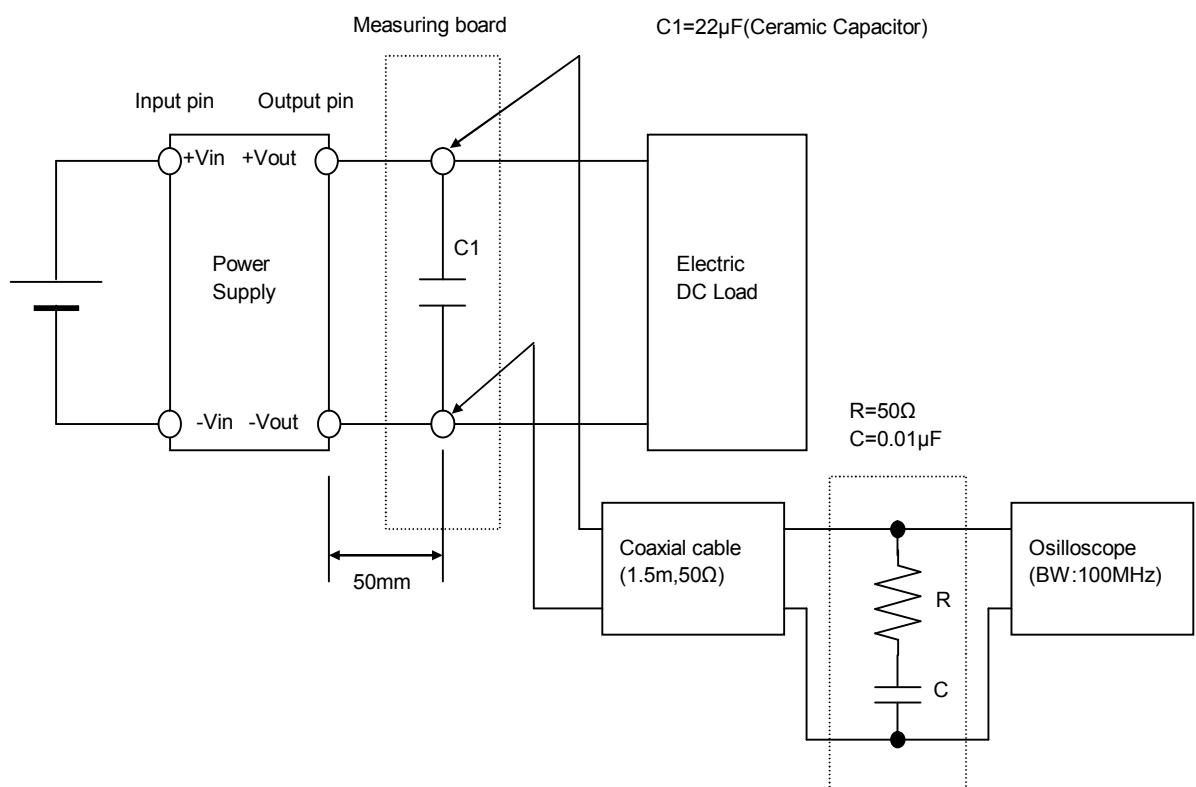


Figure B (Ripple and Ripple noise Characteristic)