

# TEST DATA OF MGFS30483R3

Regulated DC Power Supply  
November 19, 2010

Approved by : Kazunari Asano  
Kazunari Asano

Design Manager

Prepared by : Masashi Ueda  
Masashi Ueda

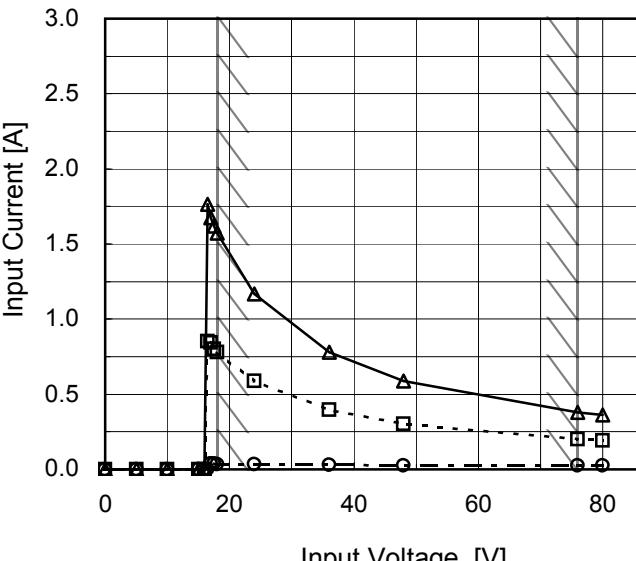
Design Engineer

**COSEL CO.,LTD.**

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Model	MGFS30483R3																																																																																	
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1.Graph	<p>Graph showing Input Power [W] vs Load Current [A] for MGFS30483R3 at 25°C. The graph shows five curves for input voltages 18V, 24V, 36V, 48V, and 76V. A slanted line indicates the rated load current range.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>18[V]</th> <th>24[V]</th> <th>36[V]</th> <th>48[V]</th> <th>76[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>0.69</td><td>0.81</td><td>1.03</td><td>1.25</td><td>1.77</td></tr> <tr><td>1.50</td><td>5.94</td><td>6.06</td><td>6.29</td><td>6.50</td><td>7.08</td></tr> <tr><td>3.00</td><td>11.27</td><td>11.35</td><td>11.56</td><td>11.80</td><td>12.41</td></tr> <tr><td>4.50</td><td>16.80</td><td>16.82</td><td>17.00</td><td>17.22</td><td>17.85</td></tr> <tr><td>6.00</td><td>22.47</td><td>22.39</td><td>22.56</td><td>22.75</td><td>23.42</td></tr> <tr><td>7.50</td><td>28.31</td><td>28.13</td><td>28.23</td><td>28.43</td><td>29.05</td></tr> <tr><td>8.25</td><td>31.30</td><td>31.03</td><td>31.10</td><td>31.28</td><td>31.95</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Load Current [A]	18[V]	24[V]	36[V]	48[V]	76[V]	0.00	0.69	0.81	1.03	1.25	1.77	1.50	5.94	6.06	6.29	6.50	7.08	3.00	11.27	11.35	11.56	11.80	12.41	4.50	16.80	16.82	17.00	17.22	17.85	6.00	22.47	22.39	22.56	22.75	23.42	7.50	28.31	28.13	28.23	28.43	29.05	8.25	31.30	31.03	31.10	31.28	31.95	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-					
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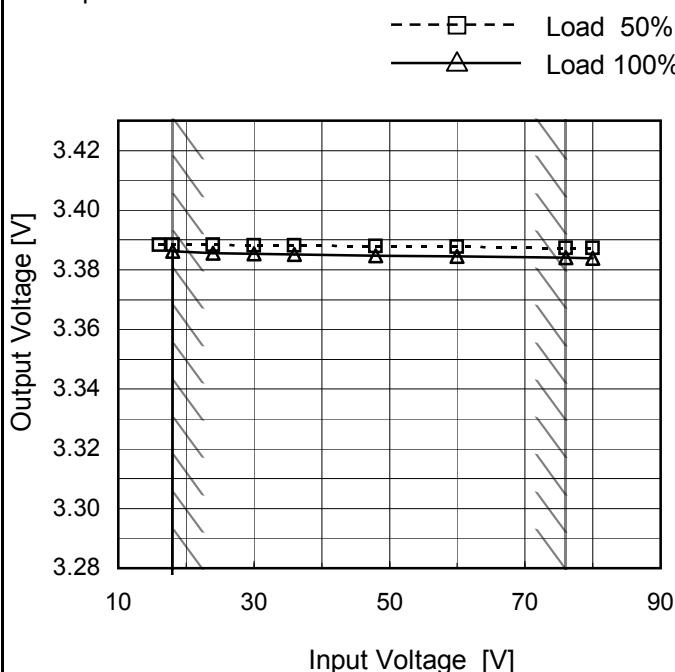
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<p>The graph plots Efficiency [%] on the y-axis (50 to 100) against Input Voltage [V] on the x-axis (10 to 90). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a general downward trend as input voltage increases. A slanted line on the graph indicates the rated input voltage range.</p> <table border="1"> <thead> <tr> <th>Input Voltage [V]</th> <th>Efficiency Load 50% [%]</th> <th>Efficiency Load 100% [%]</th> </tr> </thead> <tbody> <tr><td>15</td><td>90.5</td><td>89.5</td></tr> <tr><td>30</td><td>89.5</td><td>89.5</td></tr> <tr><td>50</td><td>88.0</td><td>88.5</td></tr> <tr><td>70</td><td>84.5</td><td>86.5</td></tr> <tr><td>80</td><td>83.5</td><td>86.5</td></tr> </tbody> </table>		Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	15	90.5	89.5	30	89.5	89.5	50	88.0	88.5	70	84.5	86.5	80	83.5	86.5														
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Note: Slanted line shows the range of the rated load current.																																																																									

Model	MGFS30483R3
Item	Line Regulation
Object	+3.3V7.5A

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph

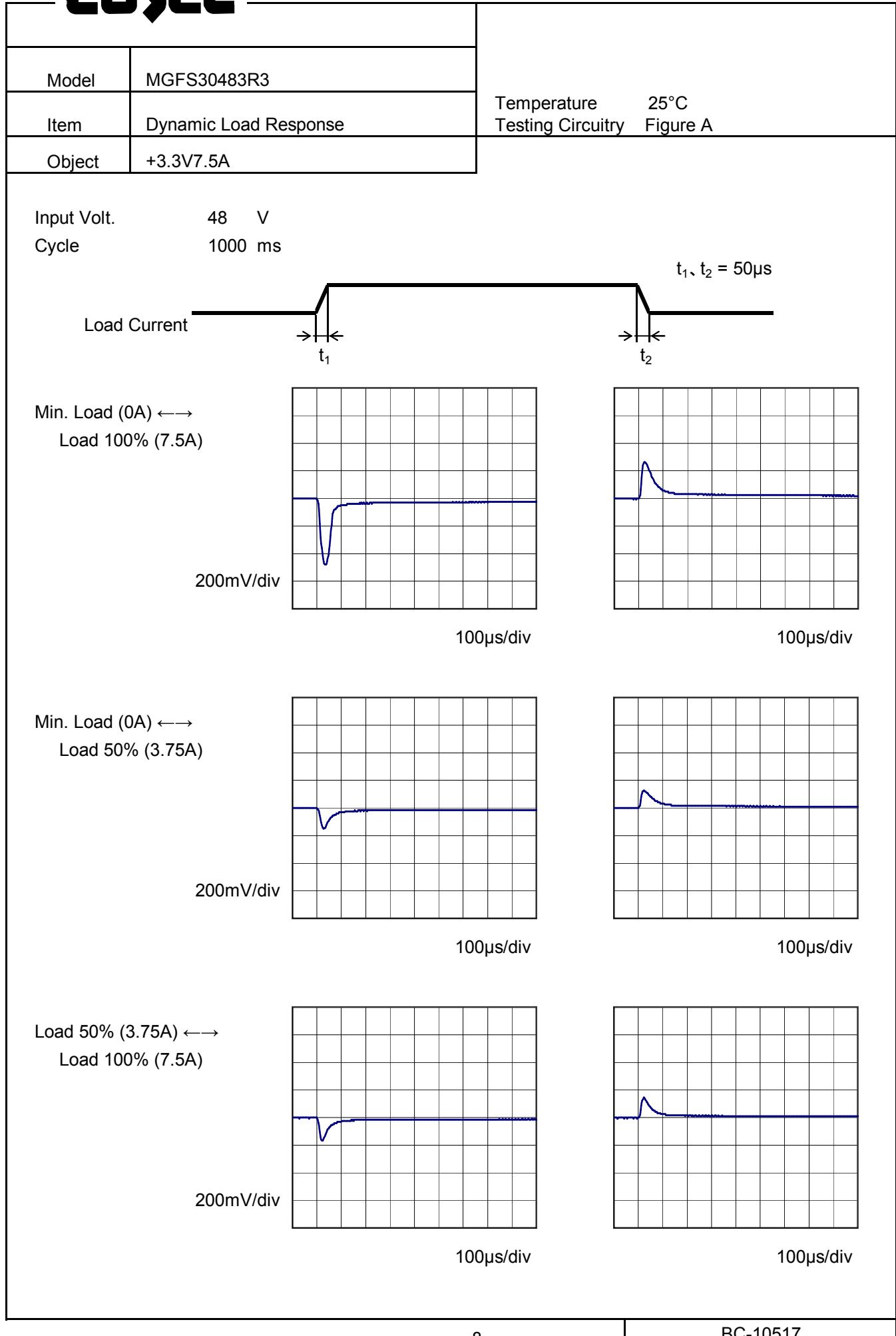


## 2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	3.388	0.002
18	3.388	3.386
24	3.388	3.386
30	3.388	3.385
36	3.388	3.385
48	3.388	3.385
60	3.388	3.384
76	3.387	3.384
80	3.387	3.384

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

Model	MGFS30483R3																																																																																	
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**COSEL**

**COSSEL**

Model	MGFS30483R3	Temperature	25°C																																						
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure B																																						
Object	+3.3V7.5A																																								
1.Graph		2.Values																																							
<p>Graph showing Ripple Voltage [mV] vs Load Current [A] for MGFS30483R3 at 25°C. The graph shows two curves: one for Input Volt. 18V (solid line with open circles) and one for Input Volt. 76V (dashed line with solid circles). Both curves show a constant ripple voltage of approximately 3 mV across the load current range from 0.0 to 8.0 A. A slanted line indicates the rated load current range.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 18 [V]</th> <th>Input Volt. 76 [V]</th> </tr> </thead> <tbody> <tr> <td>0.00</td> <td>3</td> <td>5</td> </tr> <tr> <td>1.50</td> <td>3</td> <td>5</td> </tr> <tr> <td>3.00</td> <td>3</td> <td>5</td> </tr> <tr> <td>4.50</td> <td>3</td> <td>5</td> </tr> <tr> <td>6.00</td> <td>3</td> <td>5</td> </tr> <tr> <td>7.50</td> <td>3</td> <td>5</td> </tr> <tr> <td>8.25</td> <td>3</td> <td>5</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> </tbody> </table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 18 [V]	Input Volt. 76 [V]	0.00	3	5	1.50	3	5	3.00	3	5	4.50	3	5	6.00	3	5	7.50	3	5	8.25	3	5	--	-	-	--	-	-	--	-	-	--	-	-
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<p>Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p>		<p>Diagram of a complex ripple wave form. It shows a series of sharp, triangular peaks and troughs, indicating a non-sinusoidal waveform.</p>																																							
<p>Ripple [mVp-p]</p>		<p>Fig.Complex Ripple Wave Form</p>																																							

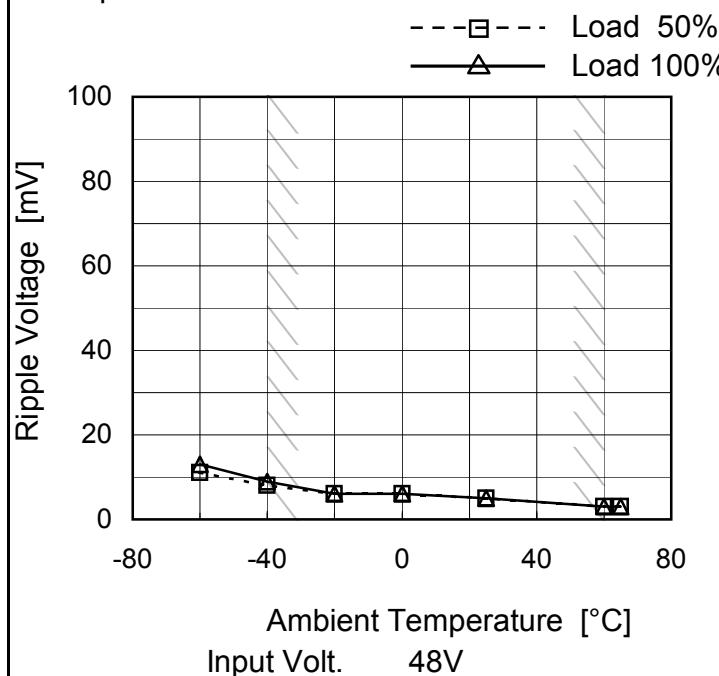
**COSEL**

Model	MGFS30483R3	Temperature	25°C																																						
Item	Ripple-Noise	Testing Circuitry	Figure B																																						
Object	+3.3V7.5A																																								
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<p>Fig.Complex Ripple Noise Wave Form</p>																																									

# COSEL

Model	MGFS30483R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V7.5A

## 1. Graph



Testing Circuitry Figure B

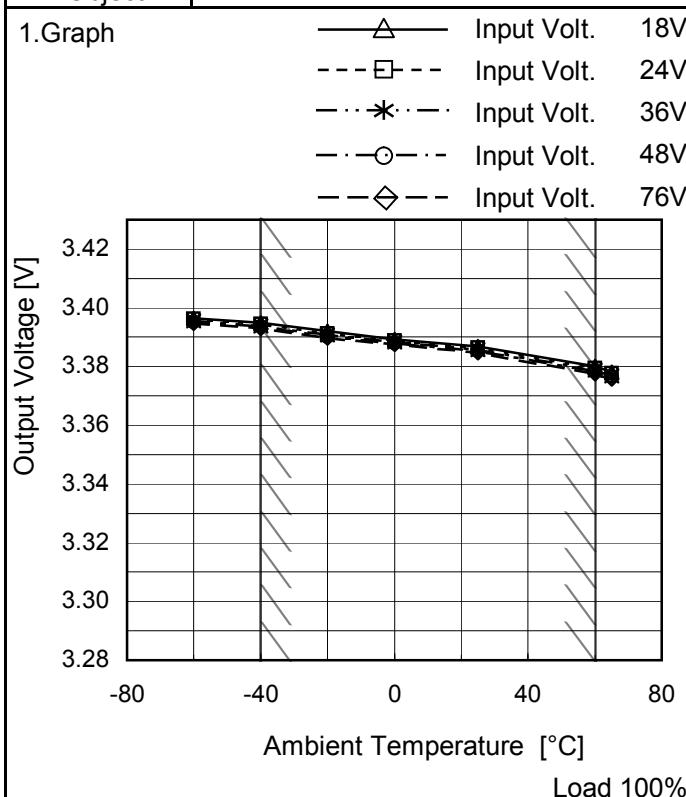
## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	11	13
-40	8	9
-20	6	6
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	MGFS30483R3
Item	Ambient Temperature Drift
Object	+3.3V7.5A



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

Testing Circuitry Figure A

## 2.Values

Ambient Temperature [°C]	Output Voltage [V]				
	18[V]	24[V]	36[V]	48[V]	76[V]
-60	3.396	3.396	3.396	3.395	3.395
-40	3.395	3.394	3.394	3.394	3.393
-20	3.392	3.391	3.391	3.390	3.390
0	3.389	3.389	3.388	3.388	3.387
25	3.387	3.386	3.386	3.385	3.385
60	3.380	3.380	3.379	3.378	3.378
65	3.378	3.378	3.377	3.377	3.376
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-



Model	MGFS30483R3	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+3.3V7.5A	

### 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 : 18 - 76V

Load Current : 0 - 7.5A

\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

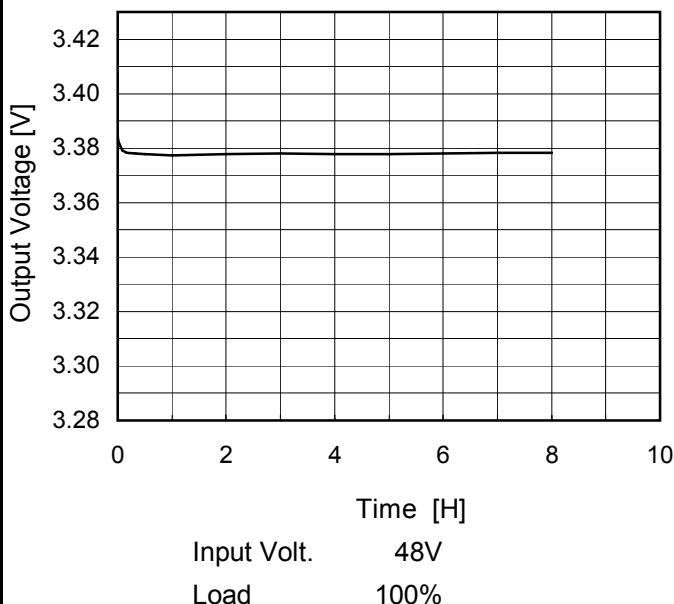
### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	36	0	3.399	±11	±0.3
Minimum Voltage	60	76	7.5	3.378		

**COSEL**

Model	MGFS30483R3
Item	Time Lapse Drift
Object	+3.3V7.5A

1. Graph



Temperature 25°C  
Testing Circuitry Figure A

2. Values

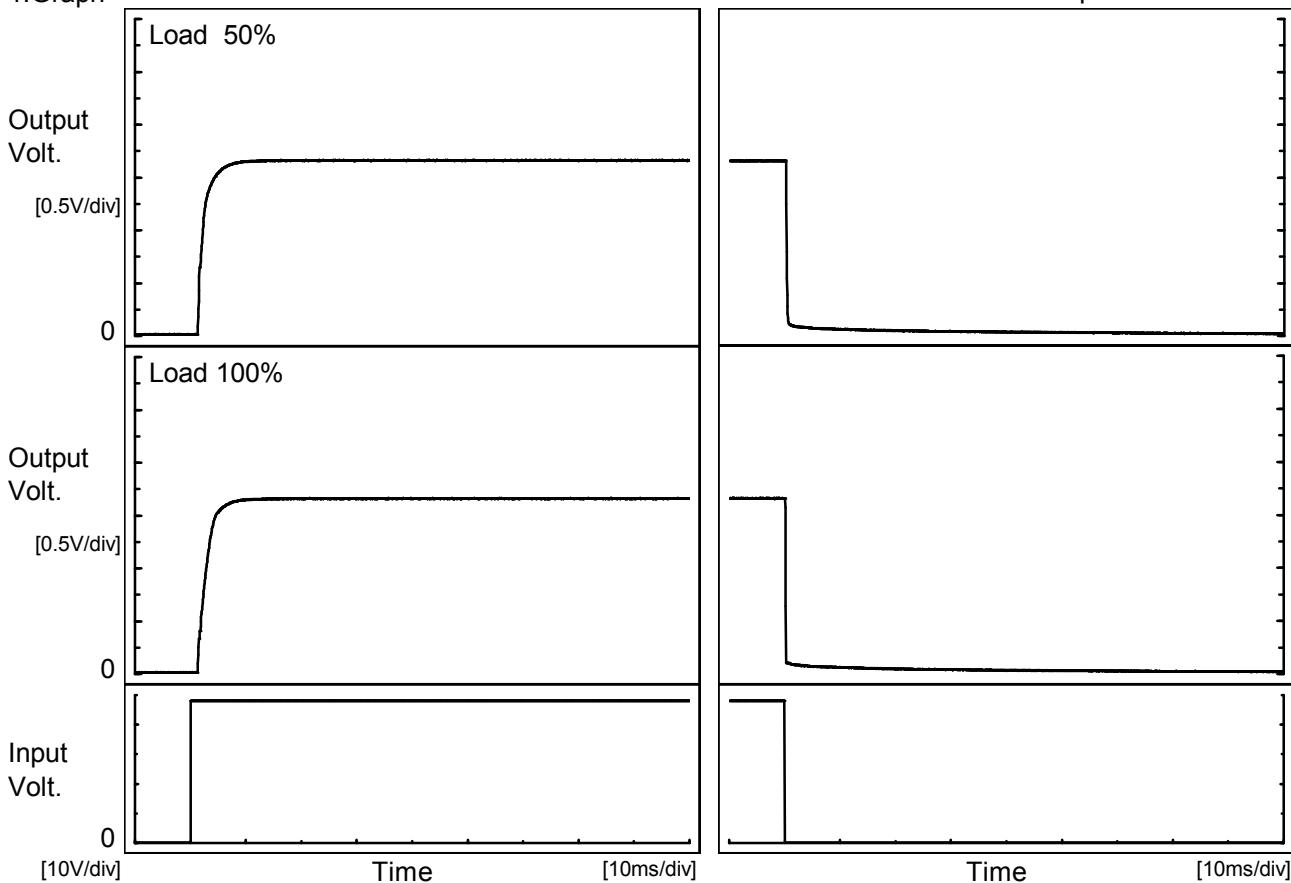
Time since start [H]	Output Voltage [V]
0.0	3.384
0.5	3.378
1.0	3.377
2.0	3.378
3.0	3.378
4.0	3.378
5.0	3.378
6.0	3.378
7.0	3.378
8.0	3.378

**COSEL**

Model	MGFS30483R3
Item	Rise and Fall Time
Object	+3.3V7.5A

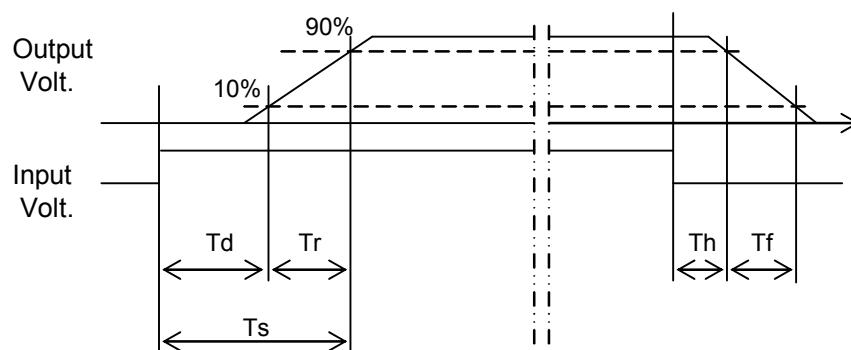
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

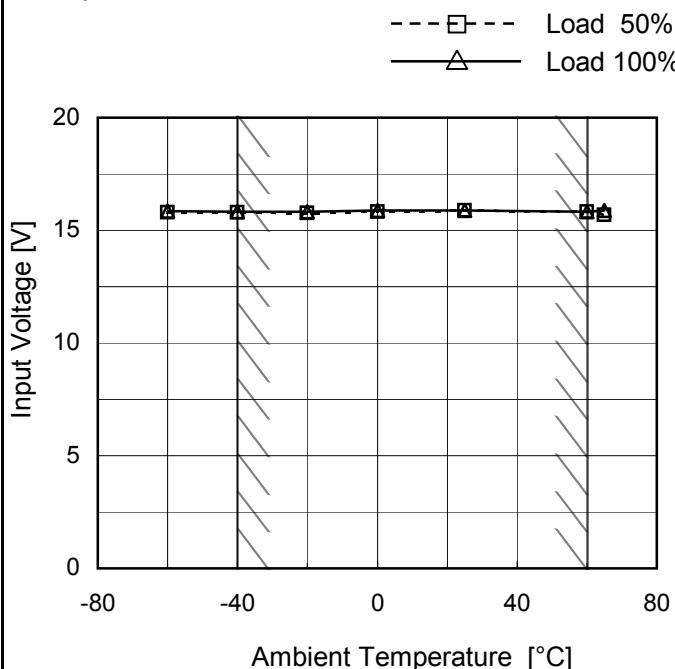
Load	Time	Td	Tr	Ts	Th	Tf
50 %		1.4	3.0	4.4	0.2	0.3
100 %		1.4	3.2	4.6	0.2	0.1



Model	MGFS30483R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V7.5A

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	15.8	15.9
-40	15.8	15.9
-20	15.8	15.9
0	15.9	15.9
25	15.9	15.9
60	15.9	15.9
65	15.7	15.9
--	-	-
--	-	-
--	-	-
--	-	-

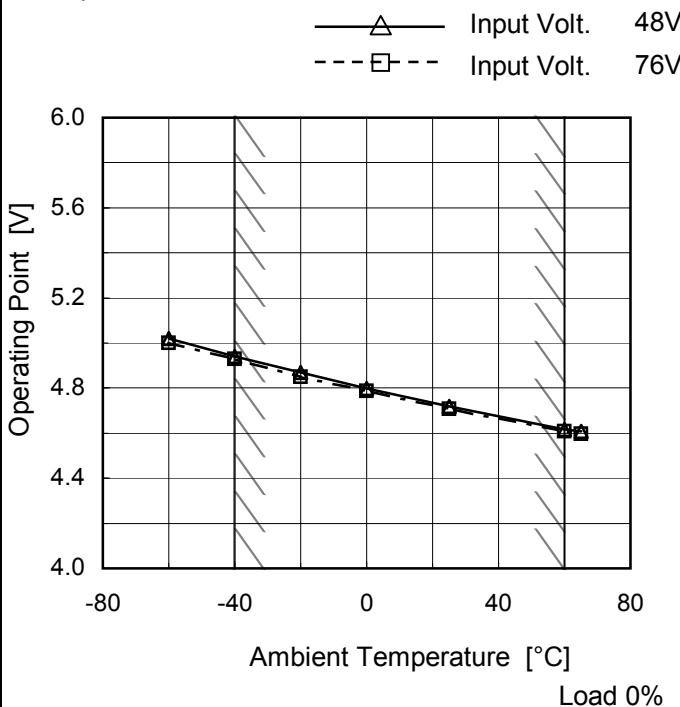
Model	MGFS30483R3	Temperature 25°C Testing Circuitry Figure A																																																																																							
Item	Overcurrent Protection																																																																																								
Object	+3.3V7.5A																																																																																								
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1.98	-	-	-	-	-																																																																																				
1.65	-	-	-	-	-																																																																																				
1.32	-	-	-	-	-																																																																																				
0.99	-	-	-	-	-																																																																																				
0.66	-	-	-	-	-																																																																																				
0.33	-	-	-	-	-																																																																																				
0.00	-	-	-	-	-																																																																																				

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

Intermittent operation occurs when overcurrent protection is activated.

Model	MGFS30483R3
Item	Oversupply Protection
Object	+3.3V7.5A

## 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	5.02	5.00
-40	4.94	4.93
-20	4.87	4.85
0	4.80	4.79
25	4.72	4.71
60	4.62	4.61
65	4.61	4.60
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

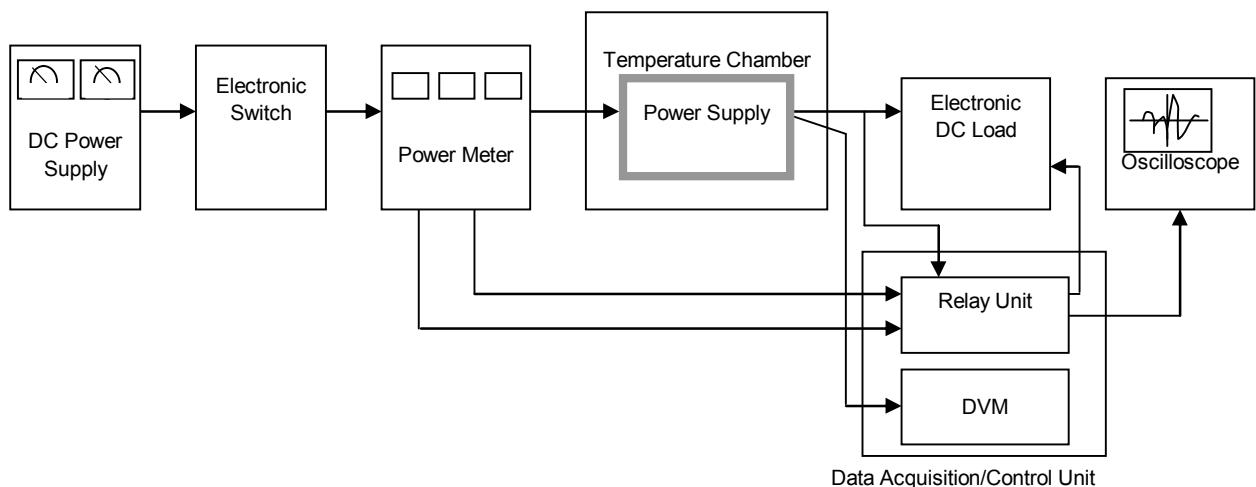


Figure A

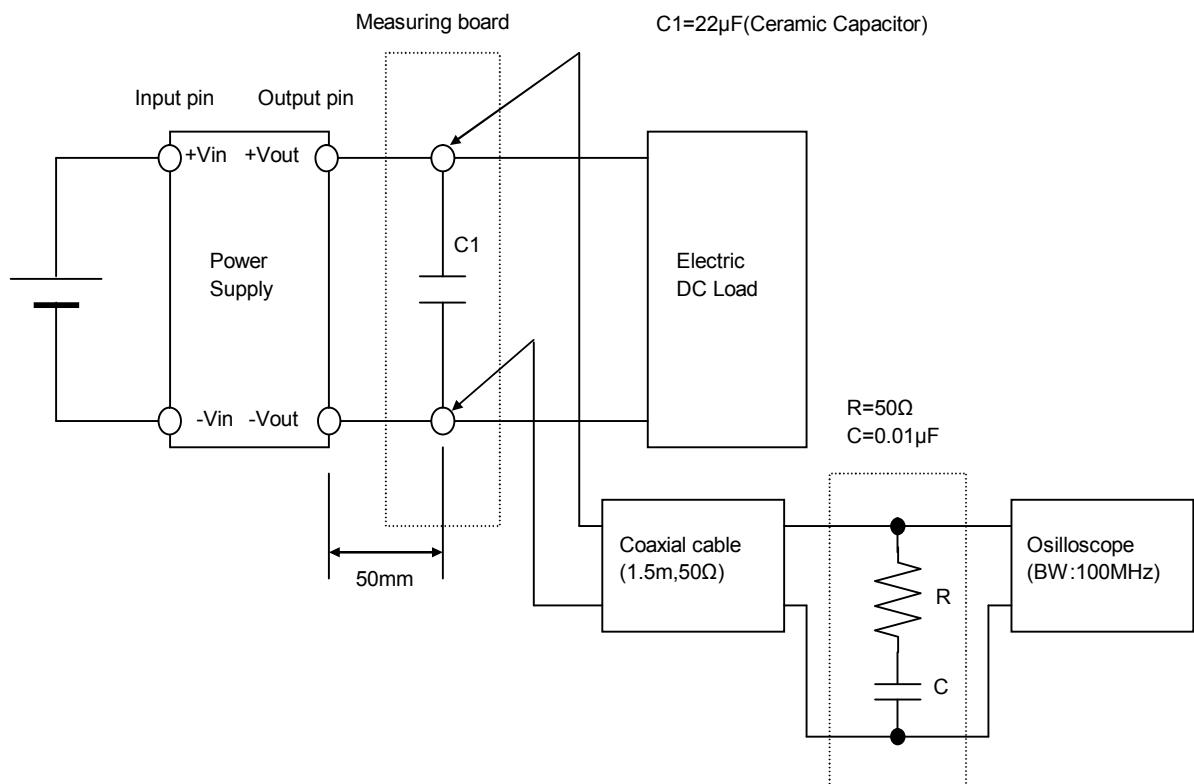


Figure B (Ripple and Ripple noise Characteristic)