

# TEST DATA OF MGFS3483R3

Regulated DC Power Supply  
January 11, 2017

Approved by : Takayuki Fukuda  
Takayuki Fukuda Design Manager

Prepared by : Takaaki Sekiguchi  
Takaaki Sekiguchi Design Engineer

**COSEL CO.,LTD.**

## CONTENTS

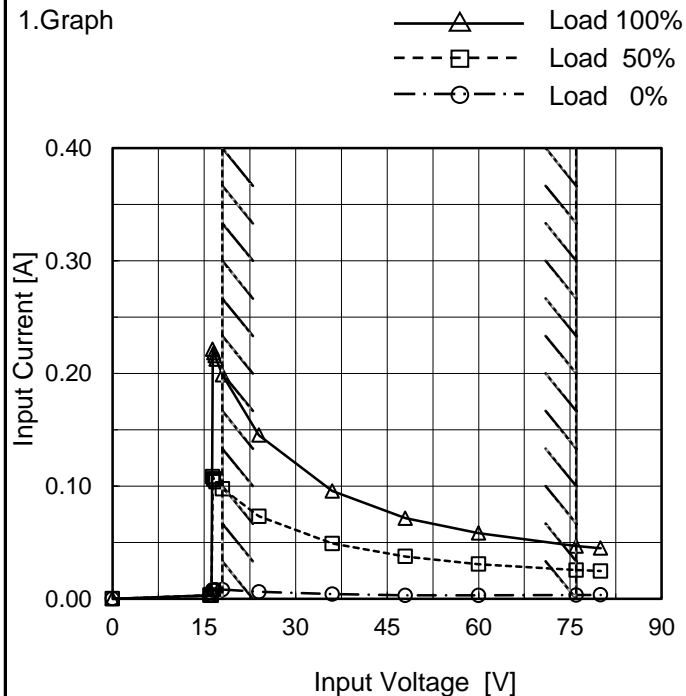
1.Input Current (by Input Voltage) . . . . .	1
2.Input Current (by Load Current) . . . . .	2
3.Input Power (by Load Current) . . . . .	3
4.Efficiency (by Input Voltage) . . . . .	4
5.Efficiency (by Load Current) . . . . .	5
6.Line Regulation . . . . .	6
7.Load Regulation . . . . .	7
8.Dynamic Load Response . . . . .	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.Switching frequency (by Load Current) . . . . .	18
19.Figure of Testing Circuitry . . . . .	19

(Final Page 19)



Model	MGFS3483R3
Item	Input Current (by Input Voltage)
Object	_____

Temperature 25°C  
Testing Circuitry Figure A



2.Values

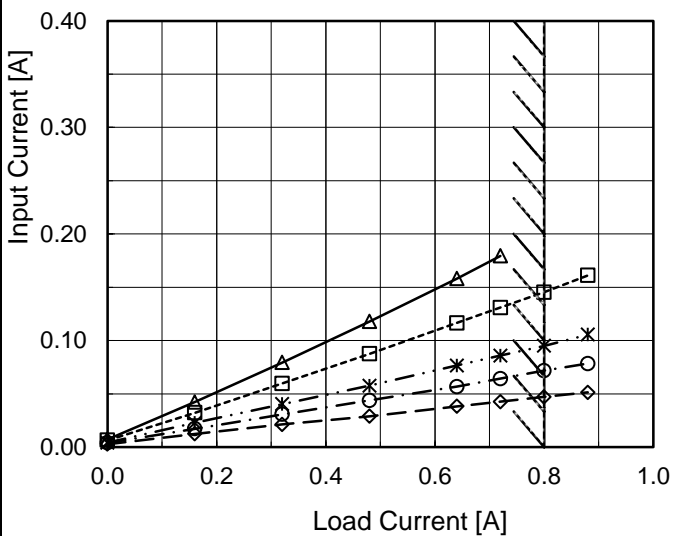
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
16.0	0.003	0.003	0.003
16.2	0.003	0.003	0.004
16.4	0.008	0.109	0.222
16.6	0.008	0.107	0.218
16.8	0.008	0.106	0.216
17.0	0.008	0.104	0.213
18.0	0.008	0.098	0.199
24.0	0.006	0.073	0.145
36.0	0.004	0.049	0.096
48.0	0.003	0.038	0.072
60.0	0.003	0.031	0.058
76.0	0.003	0.025	0.047
80.0	0.003	0.025	0.045
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model	MGFS3483R3
Item	Input Current (by Load Current)
Object	_____

Temperature 25°C  
Testing Circuitry Figure A

- 1.Graph
- △— Input Volt. 18V
  - Input Volt. 24V
  - \*·-·- Input Volt. 36V
  - Input Volt. 48V
  - ◇-- Input Volt. 76V



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

2.Values

Load Current [A]	Input Current [A]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.007	0.006	0.004	0.004	0.003
0.16	0.042	0.032	0.023	0.017	0.012
0.32	0.079	0.060	0.040	0.031	0.021
0.48	0.118	0.088	0.058	0.044	0.029
0.64	0.158	0.117	0.077	0.057	0.038
0.72	0.179	0.131	0.086	0.064	0.043
0.80	- ※	0.145	0.095	0.072	0.047
0.88	- ※	0.161	0.106	0.078	0.051
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.



Model		MGFS3483R3		Temperature 25°C																																																																														
Item		Input Power (by Load Current)		Testing Circuitry Figure A																																																																														
Object		_____																																																																																
1.Graph		<p>—△— Input Volt. 18V</p> <p>---□--- Input Volt. 24V</p> <p>-·-·*·-·-·- Input Volt. 36V</p> <p>-·-·○-·-·- Input Volt. 48V</p> <p>---◇--- Input Volt. 76V</p>		2.Values																																																																														
				<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Input Power [W]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>0.13</td><td>0.15</td><td>0.15</td><td>0.19</td><td>0.22</td></tr> <tr><td>0.16</td><td>0.76</td><td>0.77</td><td>0.82</td><td>0.83</td><td>0.95</td></tr> <tr><td>0.32</td><td>1.43</td><td>1.43</td><td>1.46</td><td>1.48</td><td>1.62</td></tr> <tr><td>0.48</td><td>2.12</td><td>2.10</td><td>2.08</td><td>2.11</td><td>2.20</td></tr> <tr><td>0.64</td><td>2.83</td><td>2.79</td><td>2.76</td><td>2.73</td><td>2.92</td></tr> <tr><td>0.72</td><td>3.21</td><td>3.14</td><td>3.09</td><td>3.09</td><td>3.25</td></tr> <tr><td>0.80</td><td>- ※</td><td>3.48</td><td>3.43</td><td>3.45</td><td>3.59</td></tr> <tr><td>0.88</td><td>- ※</td><td>3.86</td><td>3.80</td><td>3.77</td><td>3.91</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]	Input Power [W]					Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.00	0.13	0.15	0.15	0.19	0.22	0.16	0.76	0.77	0.82	0.83	0.95	0.32	1.43	1.43	1.46	1.48	1.62	0.48	2.12	2.10	2.08	2.11	2.20	0.64	2.83	2.79	2.76	2.73	2.92	0.72	3.21	3.14	3.09	3.09	3.25	0.80	- ※	3.48	3.43	3.45	3.59	0.88	- ※	3.86	3.80	3.77	3.91	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Current [A]	Input Power [W]																																																																																	
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																																													
0.00	0.13	0.15	0.15	0.19	0.22																																																																													
0.16	0.76	0.77	0.82	0.83	0.95																																																																													
0.32	1.43	1.43	1.46	1.48	1.62																																																																													
0.48	2.12	2.10	2.08	2.11	2.20																																																																													
0.64	2.83	2.79	2.76	2.73	2.92																																																																													
0.72	3.21	3.14	3.09	3.09	3.25																																																																													
0.80	- ※	3.48	3.43	3.45	3.59																																																																													
0.88	- ※	3.86	3.80	3.77	3.91																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
<p>Note: Slanted line shows the range of the rated load current.</p>				<p>※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.</p>																																																																														

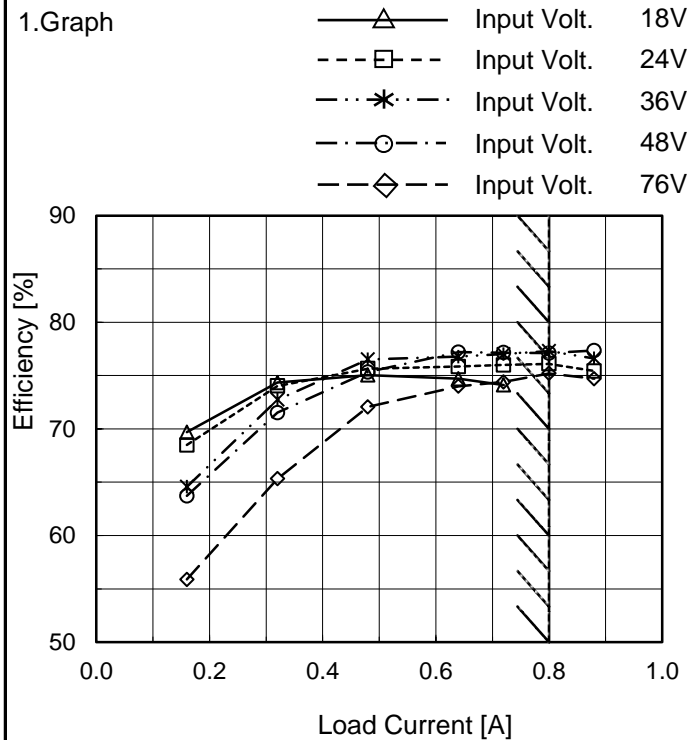


Model		MGFS3483R3		Temperature 25°C Testing Circuitry Figure A																																
Item		Efficiency (by Input Voltage)																																		
Object		_____		2.Values																																
<p>1.Graph</p> <p>---□--- Load 50% —△— Load 100%</p> <table border="1"> <caption>Efficiency Data from Graph</caption> <thead> <tr> <th>Input Voltage [V]</th> <th>Load 50% Efficiency [%]</th> <th>Load 100% Efficiency [%]</th> </tr> </thead> <tbody> <tr><td>17</td><td>74.4</td><td>74.1 ※1</td></tr> <tr><td>18</td><td>74.8</td><td>74.7 ※1</td></tr> <tr><td>24</td><td>75.3</td><td>76.1</td></tr> <tr><td>30</td><td>75.0</td><td>76.4</td></tr> <tr><td>36</td><td>74.3</td><td>77.3</td></tr> <tr><td>48</td><td>73.2</td><td>77.1</td></tr> <tr><td>60</td><td>72.3</td><td>77.0</td></tr> <tr><td>76</td><td>70.2</td><td>75.2</td></tr> <tr><td>80</td><td>68.6</td><td>74.8</td></tr> </tbody> </table>					Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]	17	74.4	74.1 ※1	18	74.8	74.7 ※1	24	75.3	76.1	30	75.0	76.4	36	74.3	77.3	48	73.2	77.1	60	72.3	77.0	76	70.2	75.2	80	68.6	74.8		
Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]																																		
17	74.4	74.1 ※1																																		
18	74.8	74.7 ※1																																		
24	75.3	76.1																																		
30	75.0	76.4																																		
36	74.3	77.3																																		
48	73.2	77.1																																		
60	72.3	77.0																																		
76	70.2	75.2																																		
80	68.6	74.8																																		
<p>Note: Slanted line shows the range of the rated input voltage.</p>				<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Efficiency [%]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>17</td><td>74.4</td><td>74.1 ※1</td></tr> <tr><td>18</td><td>74.8</td><td>74.7 ※1</td></tr> <tr><td>24</td><td>75.3</td><td>76.1</td></tr> <tr><td>30</td><td>75.0</td><td>76.4</td></tr> <tr><td>36</td><td>74.3</td><td>77.3</td></tr> <tr><td>48</td><td>73.2</td><td>77.1</td></tr> <tr><td>60</td><td>72.3</td><td>77.0</td></tr> <tr><td>76</td><td>70.2</td><td>75.2</td></tr> <tr><td>80</td><td>68.6</td><td>74.8</td></tr> </tbody> </table> <p>※1: Load 80%</p>	Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	17	74.4	74.1 ※1	18	74.8	74.7 ※1	24	75.3	76.1	30	75.0	76.4	36	74.3	77.3	48	73.2	77.1	60	72.3	77.0	76	70.2	75.2	80	68.6	74.8
Input Voltage [V]	Efficiency [%]																																			
	Load 50%	Load 100%																																		
17	74.4	74.1 ※1																																		
18	74.8	74.7 ※1																																		
24	75.3	76.1																																		
30	75.0	76.4																																		
36	74.3	77.3																																		
48	73.2	77.1																																		
60	72.3	77.0																																		
76	70.2	75.2																																		
80	68.6	74.8																																		



Model	MGFS3483R3
Item	Efficiency (by Load Current)
Object	_____

Temperature 25°C  
Testing Circuitry Figure A



2.Values

Load Current [A]	Efficiency [%]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	-	-	-	-	-
0.16	69.7	68.5	64.6	63.7	55.9
0.32	74.3	74.0	72.7	71.5	65.3
0.48	75.0	75.6	76.5	75.3	72.1
0.64	74.7	75.8	76.8	77.2	74.0
0.72	74.1	76.0	77.0	77.2	74.4
0.80	- ※	76.1	77.3	77.1	75.2
0.88	- ※	75.4	76.6	77.3	74.7
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.



<b>COSEL</b>																																			
Model	MGFS3483R3	Temperature	25°C																																
Item	Line Regulation	Testing Circuitry	Figure A																																
Object	+3.3V0.8A																																		
<p>1.Graph</p> <div style="text-align: right;"> <p>---□--- Load 50%</p> <p>—△— Load 100%</p> </div> <p>Note: Slanted line shows the range of the rated input voltage.</p>		<p>2.Values</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>17</td> <td>3.309</td> <td>- ※</td> </tr> <tr> <td>18</td> <td>3.309</td> <td>- ※</td> </tr> <tr> <td>24</td> <td>3.309</td> <td>3.307</td> </tr> <tr> <td>30</td> <td>3.309</td> <td>3.307</td> </tr> <tr> <td>36</td> <td>3.309</td> <td>3.308</td> </tr> <tr> <td>48</td> <td>3.309</td> <td>3.307</td> </tr> <tr> <td>60</td> <td>3.309</td> <td>3.307</td> </tr> <tr> <td>76</td> <td>3.308</td> <td>3.307</td> </tr> <tr> <td>80</td> <td>3.308</td> <td>3.307</td> </tr> </tbody> </table> <p>※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.</p>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	17	3.309	- ※	18	3.309	- ※	24	3.309	3.307	30	3.309	3.307	36	3.309	3.308	48	3.309	3.307	60	3.309	3.307	76	3.308	3.307	80	3.308	3.307
Input Voltage [V]	Output Voltage [V]																																		
	Load 50%	Load 100%																																	
17	3.309	- ※																																	
18	3.309	- ※																																	
24	3.309	3.307																																	
30	3.309	3.307																																	
36	3.309	3.308																																	
48	3.309	3.307																																	
60	3.309	3.307																																	
76	3.308	3.307																																	
80	3.308	3.307																																	



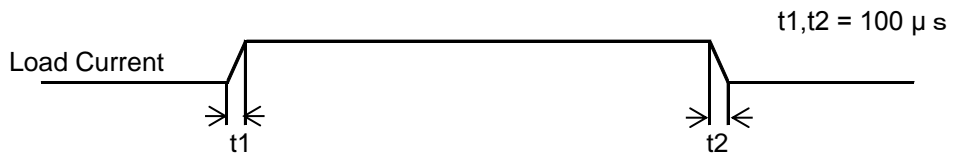


<p>Model MGFS3483R3</p>		<p>Temperature 25°C</p>																																																																														
<p>Item Load Regulation</p>		<p>Testing Circuitry Figure A</p>																																																																														
<p>Object +3.3V0.8A</p>																																																																																
<p>1.Graph</p> <p>                     —△— Input Volt. 18V                      ---□--- Input Volt. 24V                      -·*·-·- Input Volt. 36V                      -·○-·- Input Volt. 48V                      --◇-- Input Volt. 76V                 </p> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>3.310</td><td>3.310</td><td>3.310</td><td>3.310</td><td>3.310</td></tr> <tr><td>0.16</td><td>3.310</td><td>3.310</td><td>3.310</td><td>3.309</td><td>3.309</td></tr> <tr><td>0.32</td><td>3.309</td><td>3.309</td><td>3.309</td><td>3.309</td><td>3.309</td></tr> <tr><td>0.48</td><td>3.309</td><td>3.309</td><td>3.309</td><td>3.309</td><td>3.308</td></tr> <tr><td>0.64</td><td>3.308</td><td>3.308</td><td>3.308</td><td>3.308</td><td>3.308</td></tr> <tr><td>0.72</td><td>3.307</td><td>3.308</td><td>3.308</td><td>3.308</td><td>3.308</td></tr> <tr><td>0.80</td><td>- ※</td><td>3.308</td><td>3.308</td><td>3.308</td><td>3.308</td></tr> <tr><td>0.88</td><td>- ※</td><td>3.307</td><td>3.307</td><td>3.308</td><td>3.307</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> <p>※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.</p>		Load Current [A]	Output Voltage [V]					Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.00	3.310	3.310	3.310	3.310	3.310	0.16	3.310	3.310	3.310	3.309	3.309	0.32	3.309	3.309	3.309	3.309	3.309	0.48	3.309	3.309	3.309	3.309	3.308	0.64	3.308	3.308	3.308	3.308	3.308	0.72	3.307	3.308	3.308	3.308	3.308	0.80	- ※	3.308	3.308	3.308	3.308	0.88	- ※	3.307	3.307	3.308	3.307	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Current [A]	Output Voltage [V]																																																																															
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																																											
0.00	3.310	3.310	3.310	3.310	3.310																																																																											
0.16	3.310	3.310	3.310	3.309	3.309																																																																											
0.32	3.309	3.309	3.309	3.309	3.309																																																																											
0.48	3.309	3.309	3.309	3.309	3.308																																																																											
0.64	3.308	3.308	3.308	3.308	3.308																																																																											
0.72	3.307	3.308	3.308	3.308	3.308																																																																											
0.80	- ※	3.308	3.308	3.308	3.308																																																																											
0.88	- ※	3.307	3.307	3.308	3.307																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											

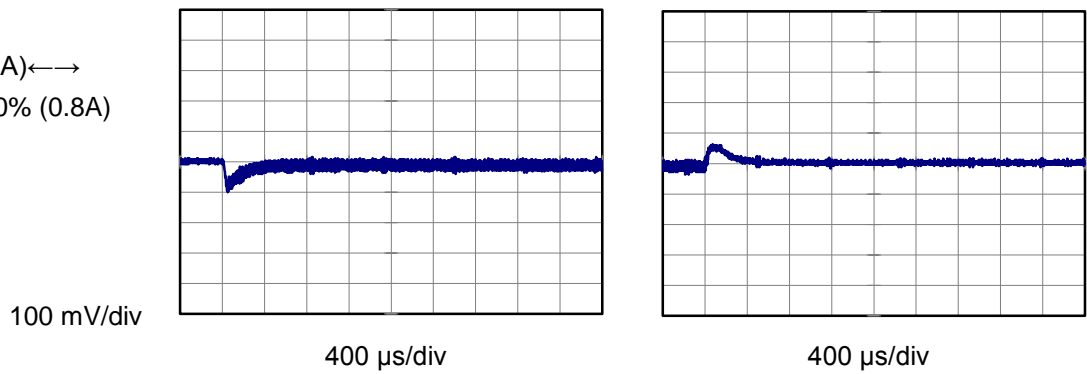


Model	MGFS3483R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V0.8A		

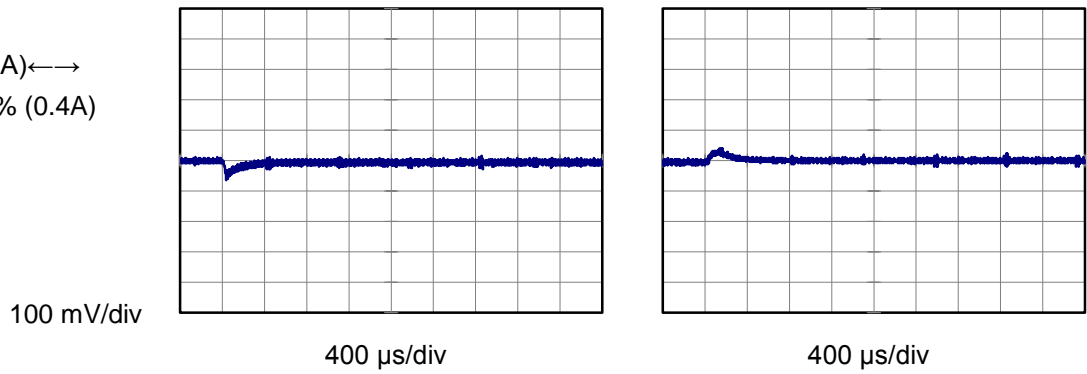
Input Volt. 48 V  
 Cycle 100 ms



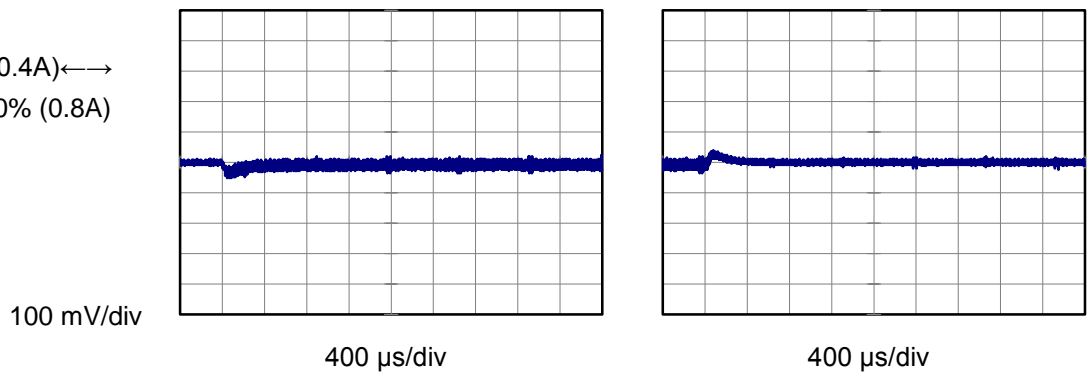
Min. Load (0A) ←→  
 Load 100% (0.8A)



Min. Load (0A) ←→  
 Load 50% (0.4A)



Load 50% (0.4A) ←→  
 Load 100% (0.8A)



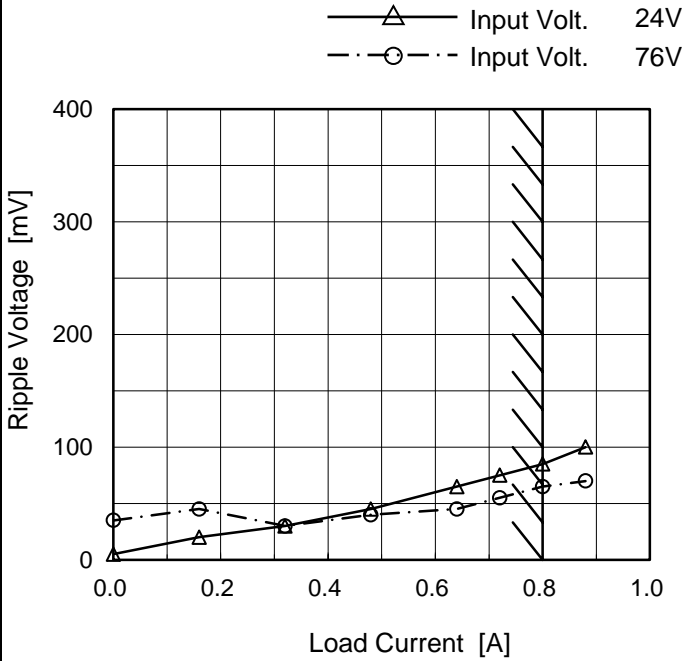


<p>Model MGFS3483R3</p>		<p>Temperature 25°C Testing Circuitry Figure B</p>																																						
<p>Item Ripple Voltage (by Load Current)</p>																																								
<p>Object +3.3V0.8A</p>																																								
<p>1.Graph</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>—△— Input Volt. 24V</p> <p>-·-○-·- Input Volt. 76V</p> </div> </div>		<p>2.Values</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. 24 [V]</th> <th>Input Volt. 76 [V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>5</td><td>20</td></tr> <tr><td>0.16</td><td>5</td><td>20</td></tr> <tr><td>0.32</td><td>20</td><td>10</td></tr> <tr><td>0.48</td><td>30</td><td>10</td></tr> <tr><td>0.64</td><td>40</td><td>20</td></tr> <tr><td>0.72</td><td>50</td><td>30</td></tr> <tr><td>0.80</td><td>60</td><td>35</td></tr> <tr><td>0.88</td><td>75</td><td>40</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 Voltage [mV]		Input Volt. 24 [V]	Input Volt. 76 [V]	0.00	5	20	0.16	5	20	0.32	20	10	0.48	30	10	0.64	40	20	0.72	50	30	0.80	60	35	0.88	75	40	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																							
	Input Volt. 24 [V]	Input Volt. 76 [V]																																						
0.00	5	20																																						
0.16	5	20																																						
0.32	20	10																																						
0.48	30	10																																						
0.64	40	20																																						
0.72	50	30																																						
0.80	60	35																																						
0.88	75	40																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
<p>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.</p>																																								
<p>Ripple [mVp-p]</p>																																								
<p>Fig.Complex Ripple Wave Form</p>																																								



Model	MGFS3483R3	Temperature	25°C
Item	Ripple-Noise	Testing Circuitry	Figure B
Object	+3.3V0.8A		

1.Graph



2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 24 [V]	Input Volt. 76 [V]
0.00	5	35
0.16	20	45
0.32	30	30
0.48	45	40
0.64	65	45
0.72	75	55
0.80	85	65
0.88	100	70
--	-	-
--	-	-
--	-	-

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]

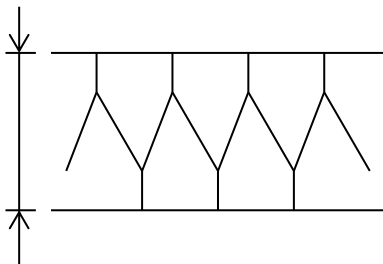


Fig.Complex Ripple Noise Wave Form

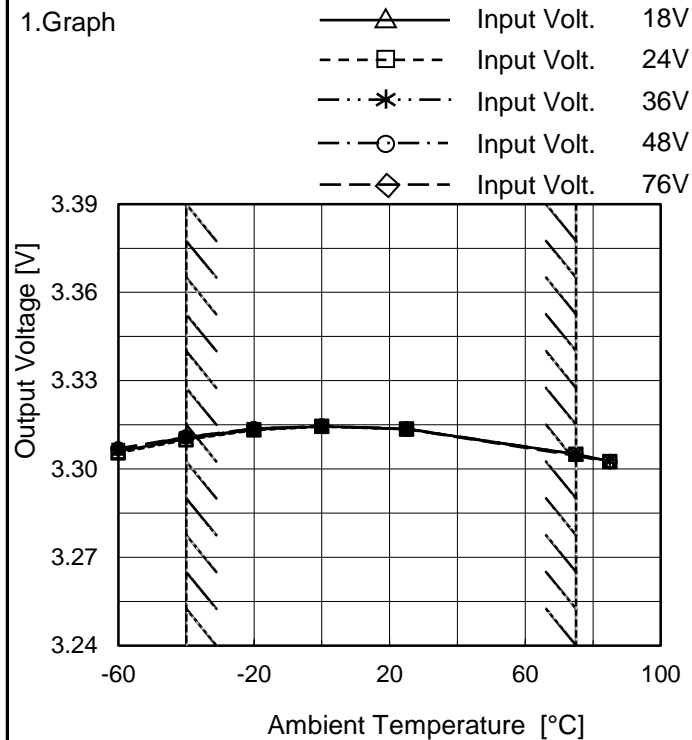


<b>COSEL</b>																																								
Model	MGFS3483R3																																							
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry Figure B																																						
Object	+3.3V0.8A																																							
<p>1.Graph</p> <p style="text-align: center;">Ambient Temperature [°C] Input Volt. 48V</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>-60</td><td>15</td><td>50</td></tr> <tr><td>-40</td><td>10</td><td>45</td></tr> <tr><td>-20</td><td>10</td><td>45</td></tr> <tr><td>0</td><td>10</td><td>40</td></tr> <tr><td>25</td><td>10</td><td>40</td></tr> <tr><td>75</td><td>10</td><td>40</td></tr> <tr><td>85</td><td>10</td><td>40</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>	Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	15	50	-40	10	45	-20	10	45	0	10	40	25	10	40	75	10	40	85	10	40	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																							
	Load 50%	Load 100%																																						
-60	15	50																																						
-40	10	45																																						
-20	10	45																																						
0	10	40																																						
25	10	40																																						
75	10	40																																						
85	10	40																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
<p>Measured by 100 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature.</p>																																								



Model	MGFS3483R3
Item	Ambient Temperature Drift
Object	+3.3V0.8A

Testing Circuitry Figure A



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

2. Values

Ambient Temperature [°C]	Output Voltage [V]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	3.306	3.305	3.307	3.307	3.307
-40	3.310	3.310	3.311	3.311	3.311
-20	3.313	3.313	3.314	3.314	3.314
0	3.315	3.314	3.315	3.315	3.315
25	3.314	3.314	3.314	3.314	3.314
75	3.305	3.305	3.305	3.305	3.305
85	3.303	3.303	3.303	3.302	3.302
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

Note: In case of Input Volt. 18V, Load 80%.  
Other case Load 100%.



<b>COSEL</b>		Testing Circuitry Figure A
Model	MGFS3483R3	
Item	Output Voltage Accuracy	
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 - 75°C

Input Voltage : 24 - 76V

Load Current : 0 - 0.8A

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

\* 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	24	0	3.317	±6	±0.2
Minimum Voltage	75	76	0.8	3.305		



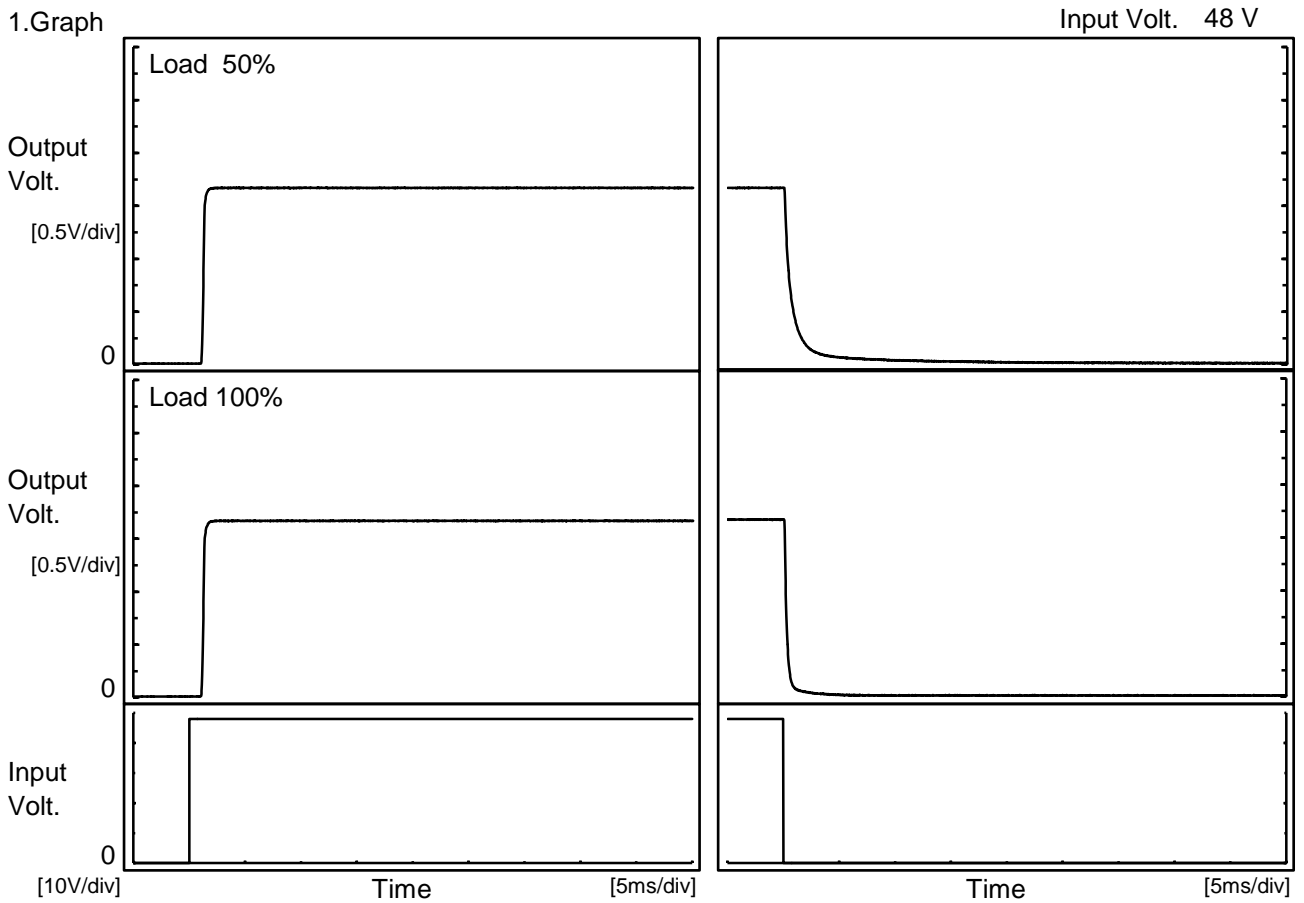
<b>COSEL</b>																									
Model	MGFS3483R3	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+3.3V0.8A																								
<p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p>Input Volt.     48V Load             100%</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>3.308</td></tr> <tr><td>0.5</td><td>3.308</td></tr> <tr><td>1.0</td><td>3.308</td></tr> <tr><td>2.0</td><td>3.308</td></tr> <tr><td>3.0</td><td>3.308</td></tr> <tr><td>4.0</td><td>3.308</td></tr> <tr><td>5.0</td><td>3.308</td></tr> <tr><td>6.0</td><td>3.308</td></tr> <tr><td>7.0</td><td>3.308</td></tr> <tr><td>8.0</td><td>3.308</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	3.308	0.5	3.308	1.0	3.308	2.0	3.308	3.0	3.308	4.0	3.308	5.0	3.308	6.0	3.308	7.0	3.308	8.0	3.308
Time since start [H]	Output Voltage [V]																								
0.0	3.308																								
0.5	3.308																								
1.0	3.308																								
2.0	3.308																								
3.0	3.308																								
4.0	3.308																								
5.0	3.308																								
6.0	3.308																								
7.0	3.308																								
8.0	3.308																								





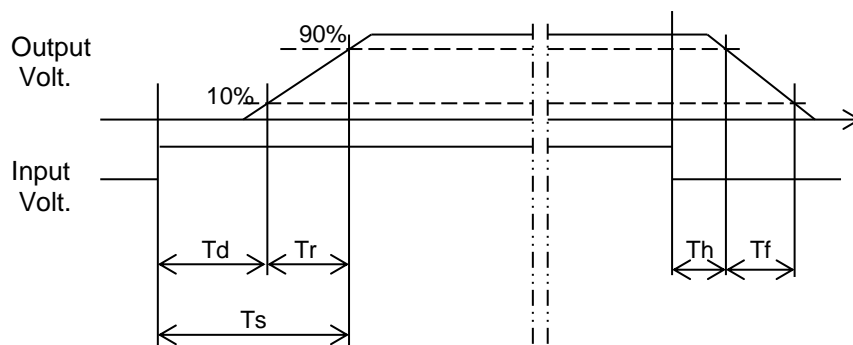
Model	MGFS3483R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V0.8A		

1.Graph



2.Values

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.2	0.2	1.4	0.2	1.9
100 %	1.2	0.2	1.4	0.1	0.5





<b>COSEL</b>																																								
Model	MGFS3483R3																																							
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																						
Object	+3.3V0.8A																																							
<p>1.Graph</p> <p style="text-align: right;">             ---□--- Load 50%              —△— Load 80%         </p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="2">Input Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 80%</th> </tr> </thead> <tbody> <tr><td>-60</td><td>14.7</td><td>14.7</td></tr> <tr><td>-40</td><td>14.6</td><td>14.6</td></tr> <tr><td>-20</td><td>14.6</td><td>14.6</td></tr> <tr><td>0</td><td>14.5</td><td>14.5</td></tr> <tr><td>25</td><td>14.4</td><td>14.4</td></tr> <tr><td>75</td><td>14.3</td><td>14.3</td></tr> <tr><td>85</td><td>14.3</td><td>14.2</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>	Ambient Temperature [°C]	Input Voltage [V]		Load 50%	Load 80%	-60	14.7	14.7	-40	14.6	14.6	-20	14.6	14.6	0	14.5	14.5	25	14.4	14.4	75	14.3	14.3	85	14.3	14.2	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Input Voltage [V]																																							
	Load 50%	Load 80%																																						
-60	14.7	14.7																																						
-40	14.6	14.6																																						
-20	14.6	14.6																																						
0	14.5	14.5																																						
25	14.4	14.4																																						
75	14.3	14.3																																						
85	14.3	14.2																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
<p>Note: Slanted line shows the range of the rated ambient temperature.</p>																																								



<b>COSEL</b>																																																																																									
Model	MGFS3483R3	Temperature 25°C																																																																																							
Item	Overcurrent Protection	Testing Circuitry Figure A																																																																																							
Object	+3.3V0.8A																																																																																								
<p>1.Graph</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> </div> <div style="width: 45%;"> <p>— Input Volt. 18V</p> <p>— Input Volt. 24V</p> <p>— Input Volt. 36V</p> <p>— Input Volt. 48V</p> <p>— Input Volt. 76V</p> </div> </div>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="5">Load Current [A]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>3.14</td><td>0.932</td><td>1.094</td><td>1.122</td><td>1.101</td><td>1.121</td></tr> <tr><td>2.97</td><td>0.963</td><td>1.125</td><td>1.150</td><td>1.124</td><td>1.138</td></tr> <tr><td>2.64</td><td>1.032</td><td>1.206</td><td>1.213</td><td>1.177</td><td>1.169</td></tr> <tr><td>2.31</td><td>1.115</td><td>1.288</td><td>1.278</td><td>1.232</td><td>1.216</td></tr> <tr><td>1.98</td><td>1.204</td><td>1.369</td><td>1.347</td><td>1.293</td><td>1.270</td></tr> <tr><td>1.65</td><td>1.302</td><td>1.458</td><td>1.420</td><td>1.357</td><td>1.323</td></tr> <tr><td>1.32</td><td>1.404</td><td>1.557</td><td>1.497</td><td>1.425</td><td>1.382</td></tr> <tr><td>0.99</td><td>1.523</td><td>1.664</td><td>1.583</td><td>1.495</td><td>1.439</td></tr> <tr><td>0.66</td><td>1.648</td><td>1.777</td><td>1.668</td><td>1.563</td><td>1.492</td></tr> <tr><td>0.33</td><td>1.772</td><td>1.871</td><td>1.721</td><td>1.601</td><td>1.510</td></tr> <tr><td>0.00</td><td>1.817</td><td>1.841</td><td>1.646</td><td>1.499</td><td>1.391</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>					Output Voltage [V]	Load Current [A]					Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	3.14	0.932	1.094	1.122	1.101	1.121	2.97	0.963	1.125	1.150	1.124	1.138	2.64	1.032	1.206	1.213	1.177	1.169	2.31	1.115	1.288	1.278	1.232	1.216	1.98	1.204	1.369	1.347	1.293	1.270	1.65	1.302	1.458	1.420	1.357	1.323	1.32	1.404	1.557	1.497	1.425	1.382	0.99	1.523	1.664	1.583	1.495	1.439	0.66	1.648	1.777	1.668	1.563	1.492	0.33	1.772	1.871	1.721	1.601	1.510	0.00	1.817	1.841	1.646	1.499	1.391	--	-	-	-	-	-
Output Voltage [V]	Load Current [A]																																																																																								
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																																																				
3.14	0.932	1.094	1.122	1.101	1.121																																																																																				
2.97	0.963	1.125	1.150	1.124	1.138																																																																																				
2.64	1.032	1.206	1.213	1.177	1.169																																																																																				
2.31	1.115	1.288	1.278	1.232	1.216																																																																																				
1.98	1.204	1.369	1.347	1.293	1.270																																																																																				
1.65	1.302	1.458	1.420	1.357	1.323																																																																																				
1.32	1.404	1.557	1.497	1.425	1.382																																																																																				
0.99	1.523	1.664	1.583	1.495	1.439																																																																																				
0.66	1.648	1.777	1.668	1.563	1.492																																																																																				
0.33	1.772	1.871	1.721	1.601	1.510																																																																																				
0.00	1.817	1.841	1.646	1.499	1.391																																																																																				
--	-	-	-	-	-																																																																																				
<p>Note: Slanted line shows the range of the rated load current.</p> <p>Maximum output current at minimum input Voltage is 80% of rated load current.</p> <p>Refer to instruction manuals for details of input derating.</p>																																																																																									



<p>Model MGFS3483R3</p>		<p>Temperature 25°C</p>																																																																														
<p>Item Switching frequency (by Load Current)</p>		<p>Testing Circuitry Figure A</p>																																																																														
<p>Object +3.3V0.8A</p>																																																																																
<p>1.Graph</p> <p>                     —△— Input Volt. 18V                      - - - □ - - - Input Volt. 24V                      - · · * · · - · - Input Volt. 36V                      - · · ○ · · - · - Input Volt. 48V                      - - ◇ - - Input Volt. 76V                 </p> <p>Switching Frequency [kHz]</p> <p>Load Current [A]</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Input Current [A]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr> <td>0.00</td> <td>558</td> <td>622</td> <td>693</td> <td>684</td> <td>711</td> </tr> <tr> <td>0.16</td> <td>371</td> <td>440</td> <td>526</td> <td>569</td> <td>615</td> </tr> <tr> <td>0.32</td> <td>274</td> <td>338</td> <td>422</td> <td>466</td> <td>518</td> </tr> <tr> <td>0.48</td> <td>218</td> <td>274</td> <td>350</td> <td>394</td> <td>448</td> </tr> <tr> <td>0.64</td> <td>179</td> <td>230</td> <td>300</td> <td>342</td> <td>394</td> </tr> <tr> <td>0.72</td> <td>165</td> <td>214</td> <td>281</td> <td>322</td> <td>373</td> </tr> <tr> <td>0.80</td> <td>- ※</td> <td>198</td> <td>262</td> <td>301</td> <td>352</td> </tr> <tr> <td>0.88</td> <td>- ※</td> <td>185</td> <td>247</td> <td>285</td> <td>334</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]	Input Current [A]					Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.00	558	622	693	684	711	0.16	371	440	526	569	615	0.32	274	338	422	466	518	0.48	218	274	350	394	448	0.64	179	230	300	342	394	0.72	165	214	281	322	373	0.80	- ※	198	262	301	352	0.88	- ※	185	247	285	334	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Current [A]	Input Current [A]																																																																															
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																																											
0.00	558	622	693	684	711																																																																											
0.16	371	440	526	569	615																																																																											
0.32	274	338	422	466	518																																																																											
0.48	218	274	350	394	448																																																																											
0.64	179	230	300	342	394																																																																											
0.72	165	214	281	322	373																																																																											
0.80	- ※	198	262	301	352																																																																											
0.88	- ※	185	247	285	334																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
<p>Note: Slanted line shows the range of the rated load current.</p> <p>When load current is low, MG operates intermittently, so switching frequency would not become constant.</p>		<p>※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.</p>																																																																														

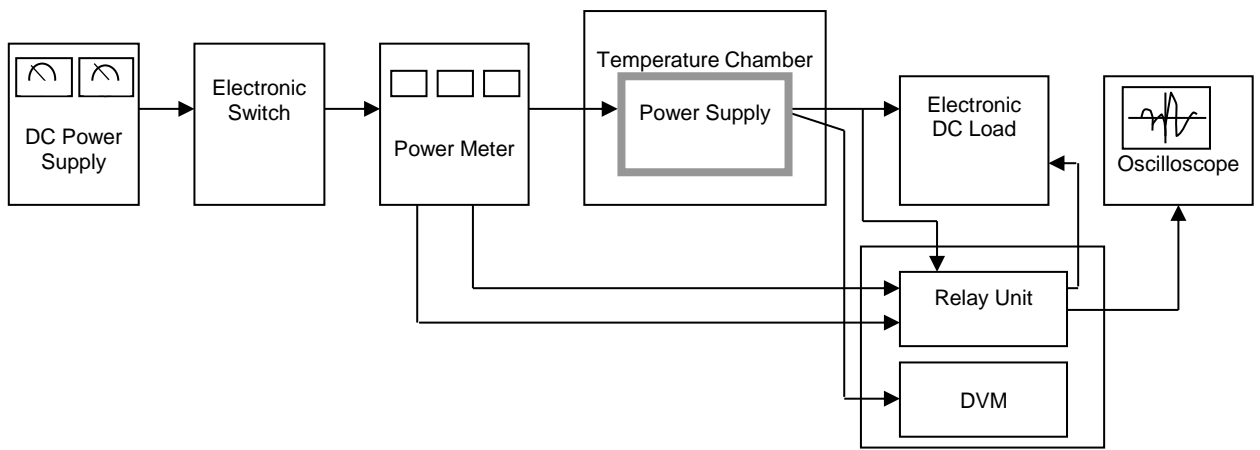


Figure A

Data Acquisition/Control Unit

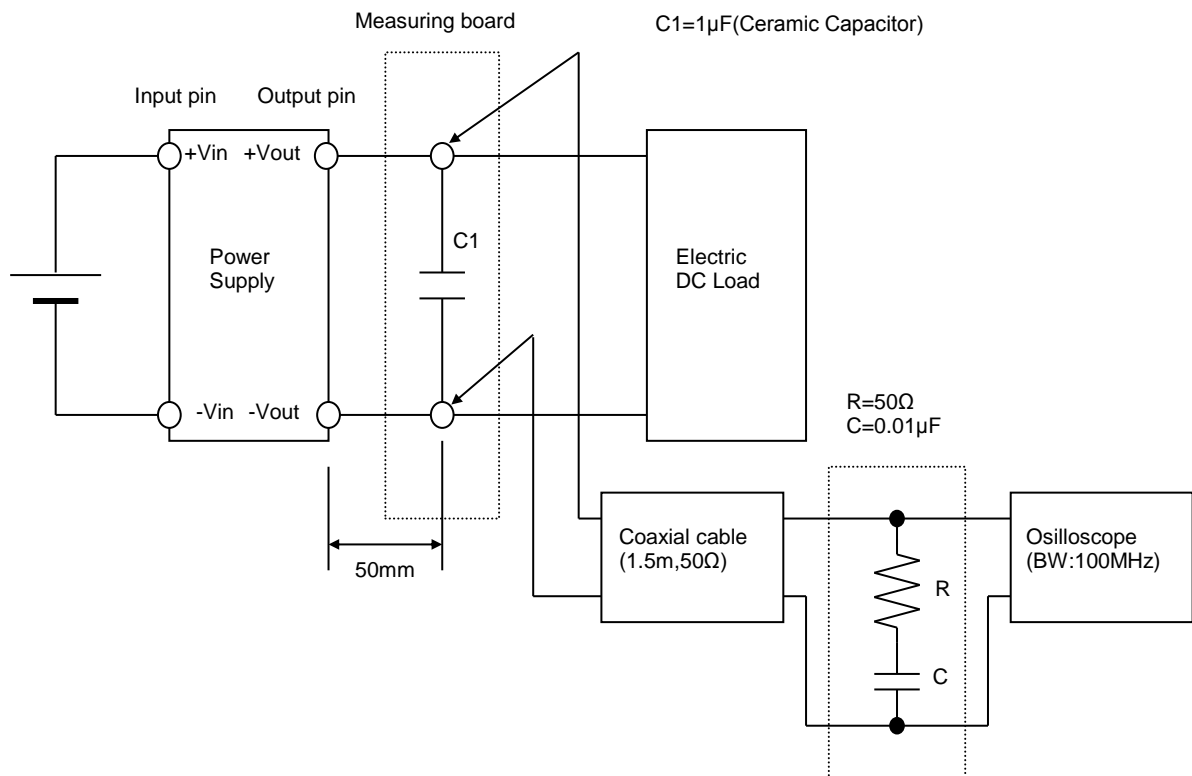


Figure B (Ripple and Ripple noise Characteristic)