

TEST DATA OF MGFS64805

Regulated DC Power Supply
December 6, 2016

Approved by : Takayuki Fukuda
Takayuki Fukuda Design Manager

Prepared by : Takaaki Sekiguchi
Takaaki Sekiguchi Design Engineer

COSEL CO.,LTD.

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Model		MGFS64805		Temperature 25°C																																																																														
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Object		+5V1.2A																																																																																
1.Graph		<ul style="list-style-type: none"> —△— Input Volt. 18V ---□--- Input Volt. 24V -·-·*·-·-·- Input Volt. 36V -·-·○-·-·- Input Volt. 48V -·-·◇-·-·- Input Volt. 76V 		2.Values																																																																														
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Model	MGFS64805	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+5V1.2A		

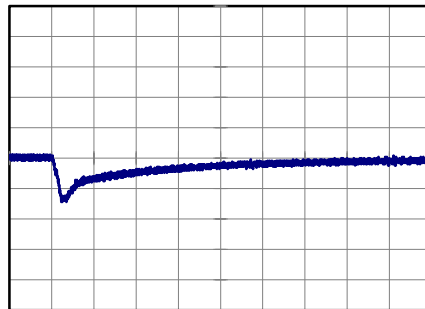
Input Volt. 48 V
Cycle 100 ms

t1, t2 = 100 μs

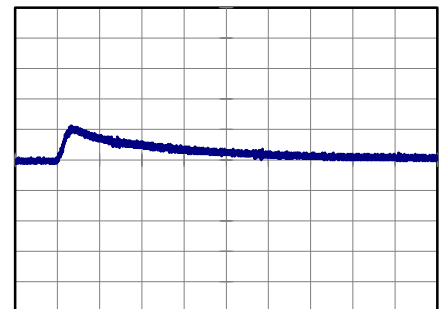


Min. Load (0A) ←→
Load 100% (1.2A)

200 mV/div



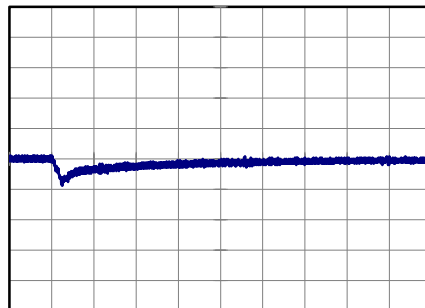
200 μs/div



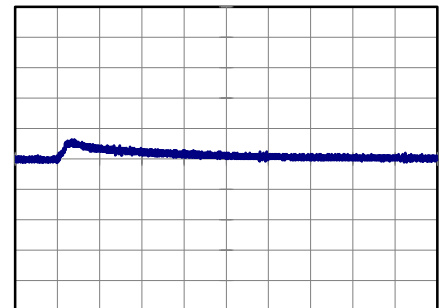
200 μs/div

Min. Load (0A) ←→
Load 50% (0.6A)

200 mV/div



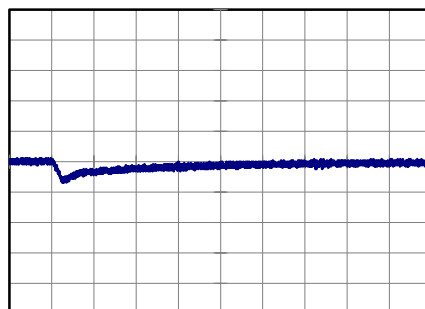
200 μs/div



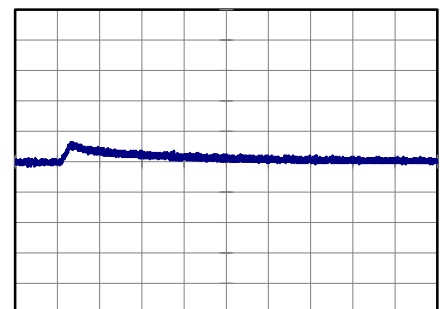
200 μs/div

Load 50% (0.6A) ←→
Load 100% (1.2A)

200 mV/div



200 μs/div



200 μs/div



<p>Model MGFS64805</p> <p>Item Ripple Voltage (by Load Current)</p> <p>Object +5V1.2A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure B</p>																																						
<p>1.Graph</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>—△— Input Volt. 18V</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. 18 [V]</th> <th>Input Volt. 76 [V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>5</td><td>15</td></tr> <tr><td>0.24</td><td>5</td><td>5</td></tr> <tr><td>0.48</td><td>5</td><td>10</td></tr> <tr><td>0.72</td><td>10</td><td>15</td></tr> <tr><td>0.96</td><td>20</td><td>10</td></tr> <tr><td>1.20</td><td>35</td><td>5</td></tr> <tr><td>1.32</td><td>45</td><td>10</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 Voltage [mV]		Input Volt. 18 [V]	Input Volt. 76 [V]	0.00	5	15	0.24	5	5	0.48	5	10	0.72	10	15	0.96	20	10	1.20	35	5	1.32	45	10	--	-	-	--	-	-	--	-	-	--	-	-
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<p>Fig.Complex Ripple Wave Form</p>																																								



<p>Model MGFS64805</p> <p>Item Ripple-Noise</p> <p>Object +5V1.2A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure B</p>																																						
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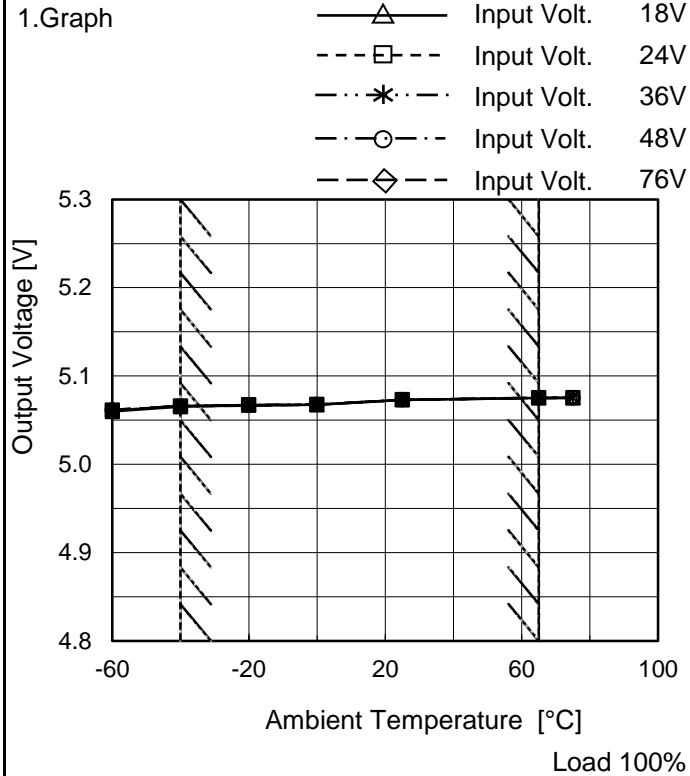


COSEL																																								
Model	MGFS64805																																							
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry Figure B																																						
Object	+5V1.2A																																							
<p>1.Graph</p> <p style="text-align: center;">Ambient Temperature [°C]</p> <p style="text-align: center;">Input Volt. 48V</p> <p>Measured by 100 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature.</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>5</td><td>10</td></tr> <tr><td>-40</td><td>10</td><td>10</td></tr> <tr><td>-20</td><td>10</td><td>10</td></tr> <tr><td>0</td><td>10</td><td>10</td></tr> <tr><td>25</td><td>10</td><td>10</td></tr> <tr><td>65</td><td>10</td><td>10</td></tr> <tr><td>75</td><td>10</td><td>10</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	5	10	-40	10	10	-20	10	10	0	10	10	25	10	10	65	10	10	75	10	10	--	-	-	--	-	-	--	-	-	--	-	-
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Model	MGFS64805
Item	Ambient Temperature Drift
Object	+5V1.2A

Testing Circuitry Figure A



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	5.060	5.061	5.062	5.062	5.061
-40	5.065	5.066	5.066	5.066	5.066
-20	5.067	5.067	5.067	5.067	5.066
0	5.067	5.068	5.068	5.068	5.068
25	5.073	5.073	5.073	5.073	5.073
65	5.075	5.075	5.075	5.075	5.075
75	5.075	5.075	5.075	5.075	5.075
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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



COSEL		
Model	MGFS64805	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V1.2A	

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 - 65°C

Input Voltage : 18 - 76V

Load Current : 0 - 1.2A

* 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

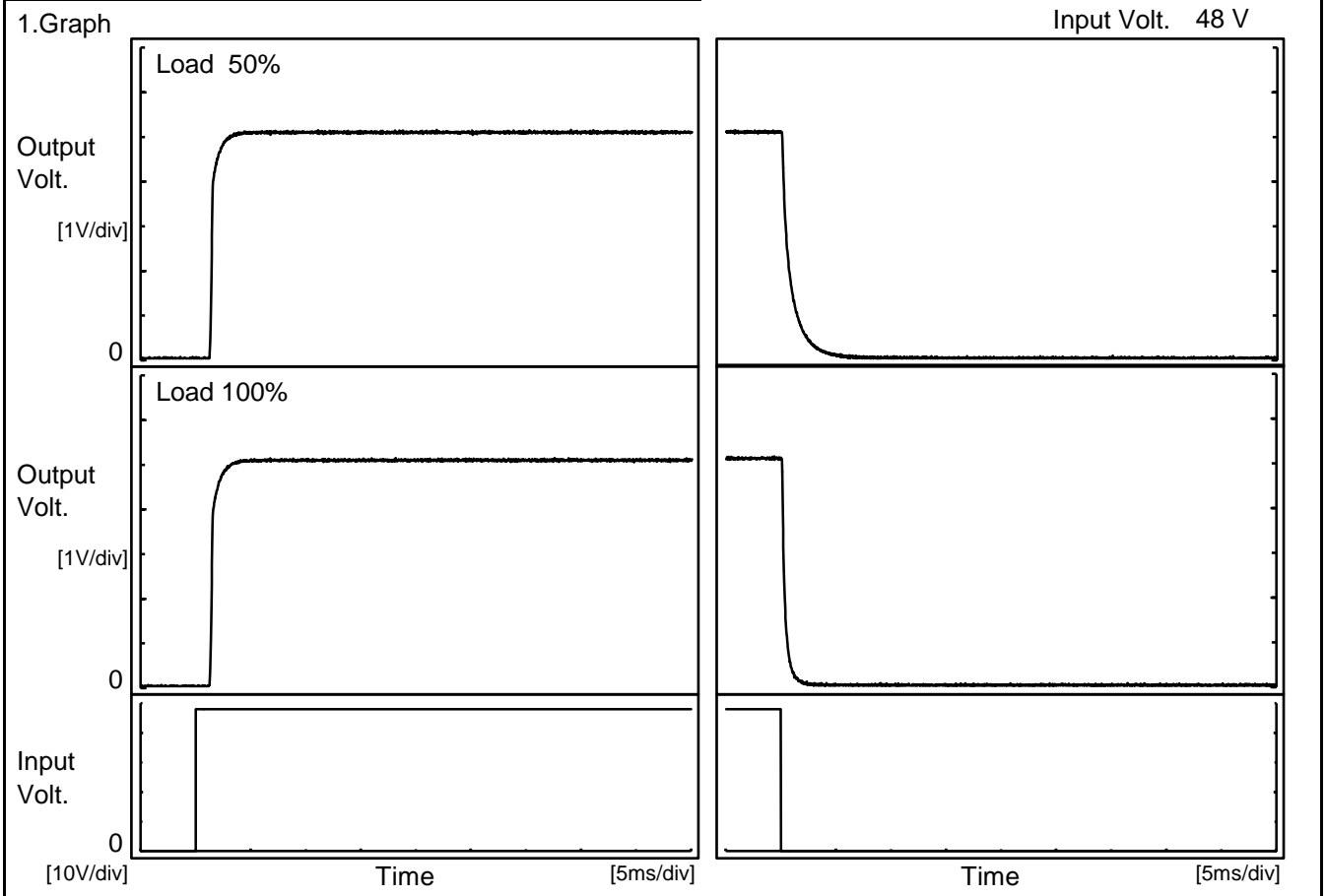
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	65	76	0	5.080	±8	±0.2
Minimum Voltage	-40	18	1.2	5.065		



COSEL																								
Model	MGFS64805																							
Item	Time Lapse Drift	Temperature 25°C Testing Circuitry Figure A																						
Object	+5V1.2A																							
<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>5.070</td></tr> <tr><td>0.5</td><td>5.073</td></tr> <tr><td>1.0</td><td>5.073</td></tr> <tr><td>2.0</td><td>5.073</td></tr> <tr><td>3.0</td><td>5.073</td></tr> <tr><td>4.0</td><td>5.073</td></tr> <tr><td>5.0</td><td>5.073</td></tr> <tr><td>6.0</td><td>5.073</td></tr> <tr><td>7.0</td><td>5.073</td></tr> <tr><td>8.0</td><td>5.073</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	5.070	0.5	5.073	1.0	5.073	2.0	5.073	3.0	5.073	4.0	5.073	5.0	5.073	6.0	5.073	7.0	5.073	8.0	5.073
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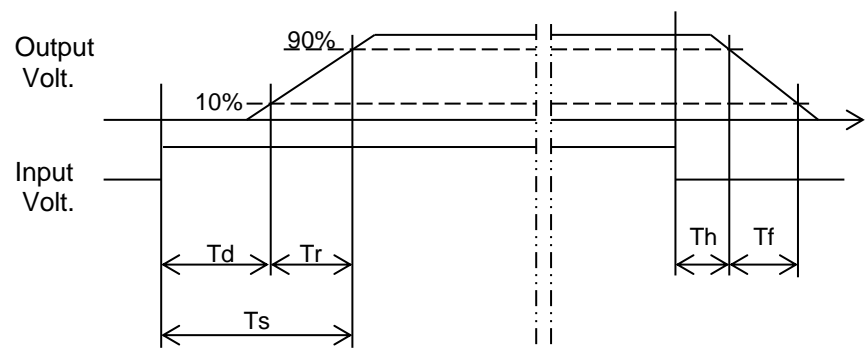
Model		MGFS64805	Temperature	25°C
Item		Rise and Fall Time	Testing Circuitry	Figure A
Object		+5V1.2A		



2.Values

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.4	0.7	2.1	0.2	2.2
100 %	1.4	0.7	2.1	0.1	0.7

[ms]





COSEL																																								
Model	MGFS64805																																							
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																						
Object	+5V1.2A																																							
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<p>Model MGFS64805</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																																																			
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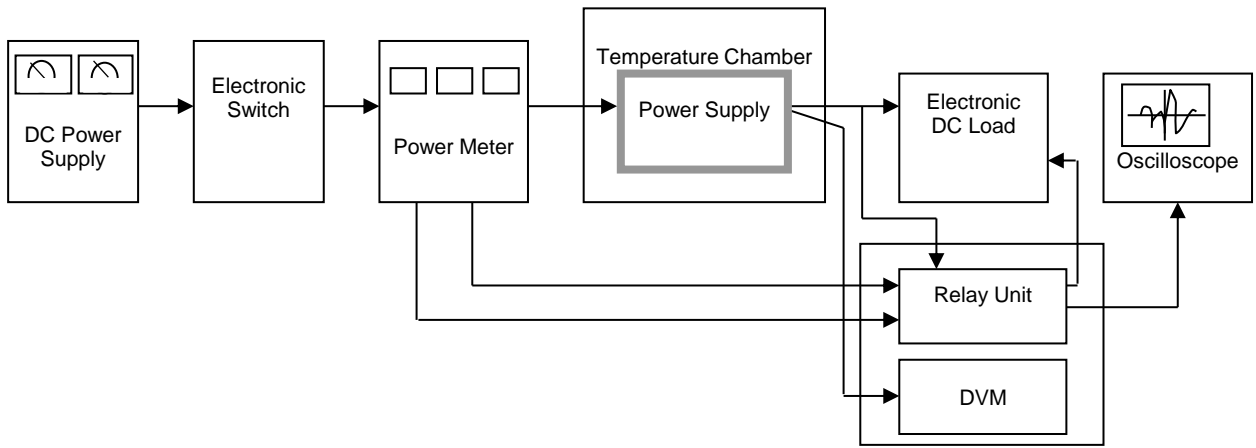


Figure A

Data Acquisition/Control Unit

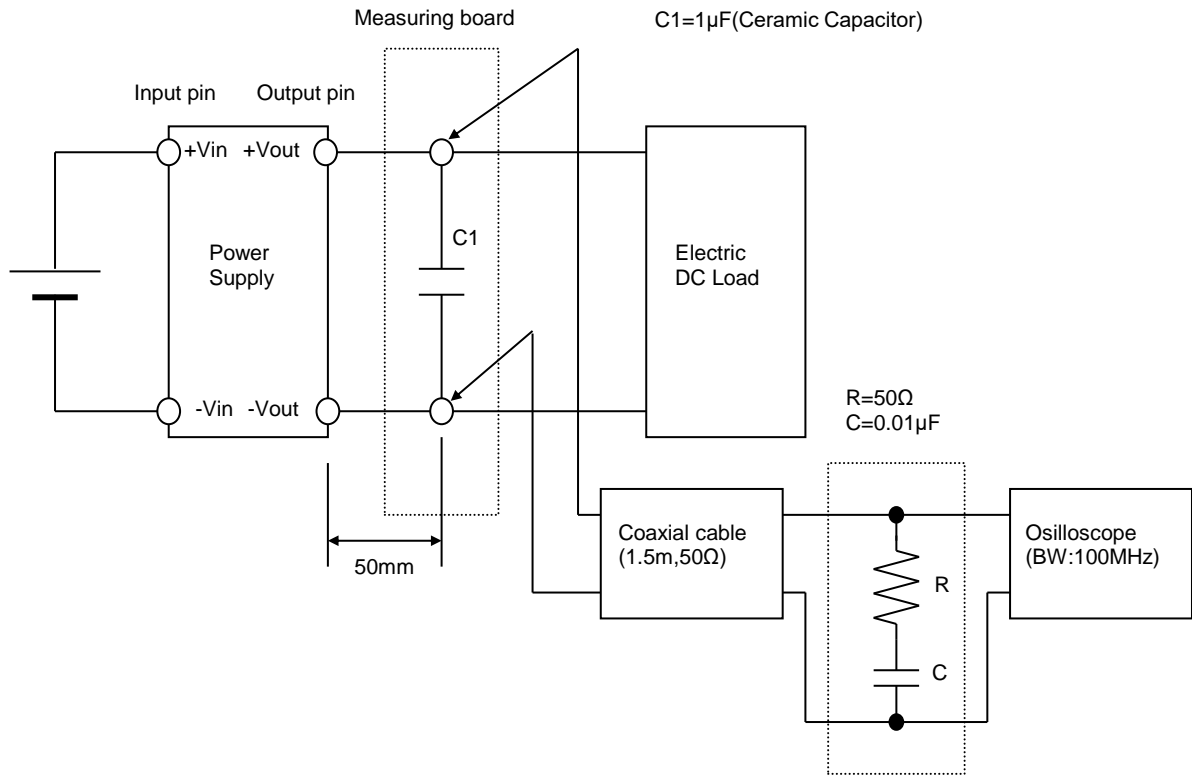


Figure B (Ripple and Ripple noise Characteristic)