

# TEST DATA OF MGFS64812

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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17	11.998	11.999																																
18	11.998	12.000																																
24	11.998	12.000																																
30	11.998	12.000																																
36	11.998	12.000																																
48	11.998	12.000																																
60	11.997	12.000																																
76	11.997	12.000																																
80	11.997	12.000																																





Model		MGFS64812		Temperature 25°C																																																																													
Item		Load Regulation		Testing Circuitry Figure A																																																																													
Object		+12V0.5A																																																																															
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<p>Note: Slanted line shows the range of the rated load current.</p>																																																																																	



Model	MGFS64812	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+12V0.5A		

Input Volt. 48 V  
Cycle 100 ms

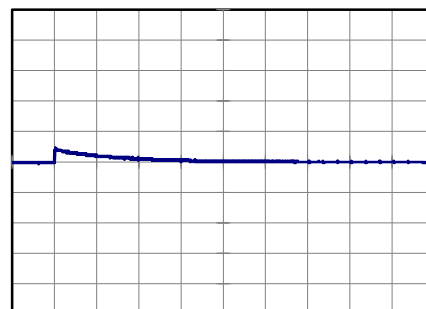
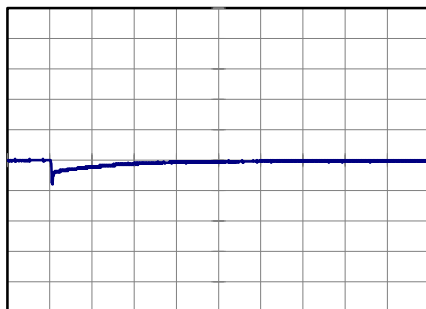
t1, t2 = 100 μs



Min. Load (0A) ←→  
Load 100% (0.5A)

500 mV/div

2 ms/div

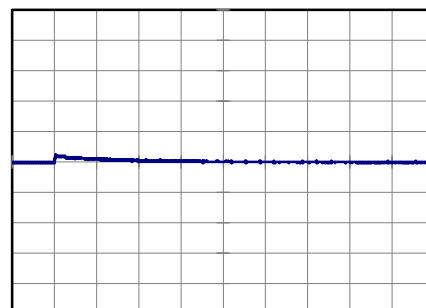
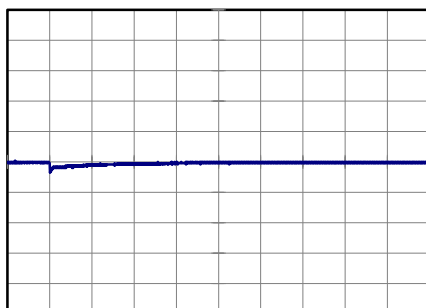


2 ms/div

Min. Load (0A) ←→  
Load 50% (0.25A)

500 mV/div

2 ms/div

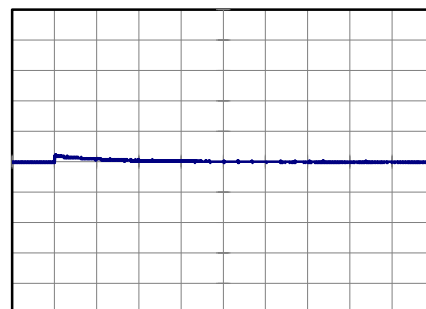
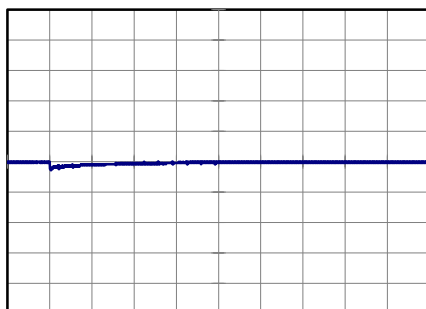


2 ms/div

Load 50% (0.25A) ←→  
Load 100% (0.5A)

500 mV/div

2 ms/div



2 ms/div



<b>COSEL</b>																																								
Model	MGFS64812																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	+12V0.5A																																							
<p>1.Graph</p>		<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>20</td></tr> <tr><td>0.10</td><td>5</td><td>5</td></tr> <tr><td>0.20</td><td>5</td><td>5</td></tr> <tr><td>0.30</td><td>5</td><td>5</td></tr> <tr><td>0.40</td><td>10</td><td>5</td></tr> <tr><td>0.50</td><td>15</td><td>5</td></tr> <tr><td>0.55</td><td>20</td><td>5</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	20	0.10	5	5	0.20	5	5	0.30	5	5	0.40	10	5	0.50	15	5	0.55	20	5	--	-	-	--	-	-	--	-	-	--	-	-
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<p>Ripple [mVp-p]</p>																																								
<p>Fig.Complex Ripple Wave Form</p>																																								



<p>Model MGFS64812</p> <p>Item Ripple-Noise</p> <p>Object +12V0.5A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure B</p>																																						
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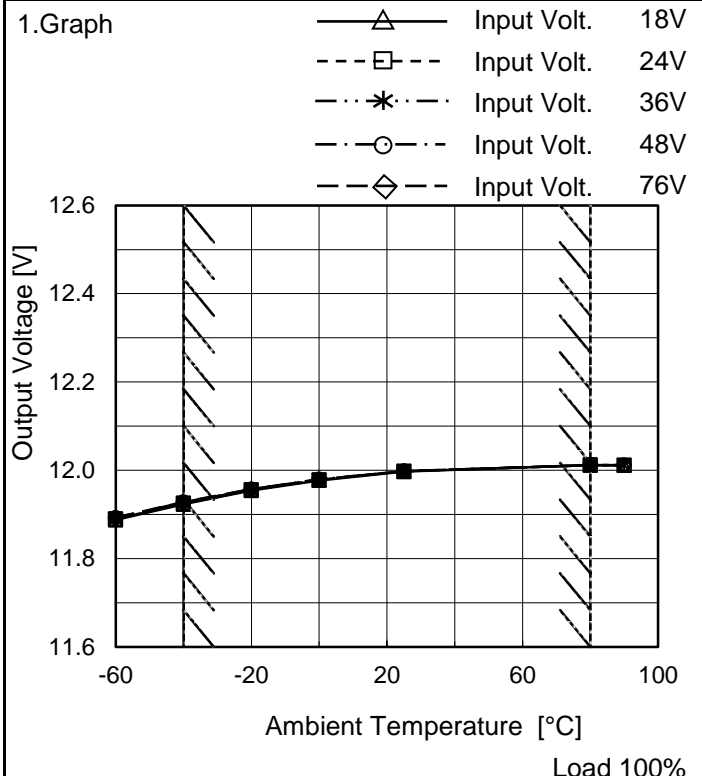


<b>COSEL</b>																																								
Model	MGFS64812																																							
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry Figure B																																						
Object	+12V0.5A																																							
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<p>Measured by 100 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature.</p>																																								



Model	MGFS64812
Item	Ambient Temperature Drift
Object	+12V0.5A

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	11.888	11.890	11.891	11.893	11.893
-40	11.923	11.925	11.926	11.928	11.928
-20	11.954	11.955	11.956	11.957	11.957
0	11.977	11.978	11.979	11.979	11.979
25	11.997	11.998	11.998	11.998	11.998
80	12.011	12.012	12.012	12.012	12.012
90	12.011	12.012	12.012	12.012	12.012
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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



<b>COSEL</b>		
Model	MGFS64812	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V0.5A	

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 - 80°C

Input Voltage : 18 - 76V

Load Current : 0 - 0.5A

\* 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	75	76	0	12.021	±49	±0.4
Minimum Voltage	-40	18	0.5	11.923		

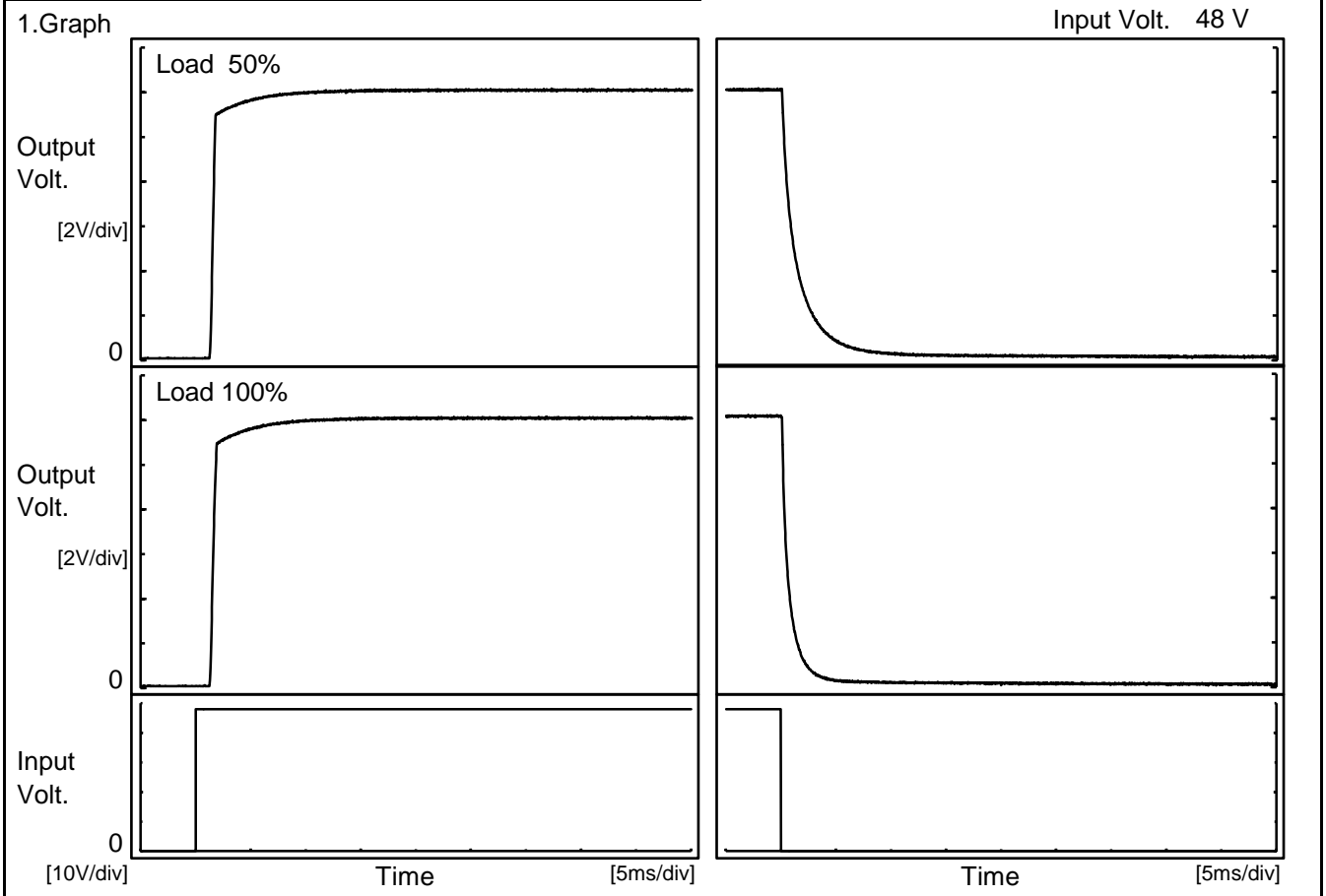


<b>COSEL</b>																								
Model	MGFS64812																							
Item	Time Lapse Drift	Temperature 25°C Testing Circuitry Figure A																						
Object	+12V0.5A																							
<p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p>Input Volt. 48V Load 100%</p>		<p>2.Values</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>11.993</td></tr> <tr><td>0.5</td><td>12.000</td></tr> <tr><td>1.0</td><td>12.000</td></tr> <tr><td>2.0</td><td>12.000</td></tr> <tr><td>3.0</td><td>12.000</td></tr> <tr><td>4.0</td><td>12.000</td></tr> <tr><td>5.0</td><td>12.000</td></tr> <tr><td>6.0</td><td>12.000</td></tr> <tr><td>7.0</td><td>12.000</td></tr> <tr><td>8.0</td><td>12.000</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	11.993	0.5	12.000	1.0	12.000	2.0	12.000	3.0	12.000	4.0	12.000	5.0	12.000	6.0	12.000	7.0	12.000	8.0	12.000
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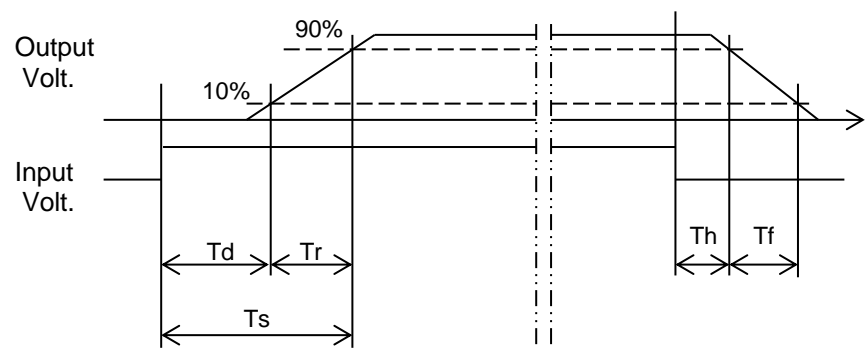
Model		MGFS64812	Temperature	25°C
Item		Rise and Fall Time	Testing Circuitry	Figure A
Object		+12V0.5A		



2.Values

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.4	0.4	1.8	0.2	3.7
100 %	1.4	0.6	2.0	0.1	1.9

[ms]





<b>COSEL</b>																																								
Model	MGFS64812																																							
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																						
Object	+12V0.5A																																							
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<p>Model MGFS64812</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																																																			
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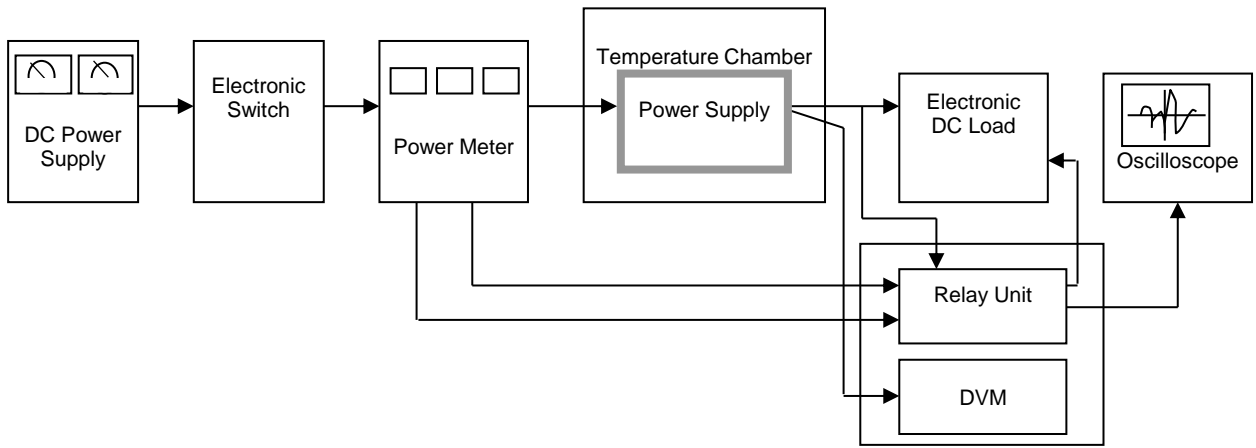


Figure A

Data Acquisition/Control Unit

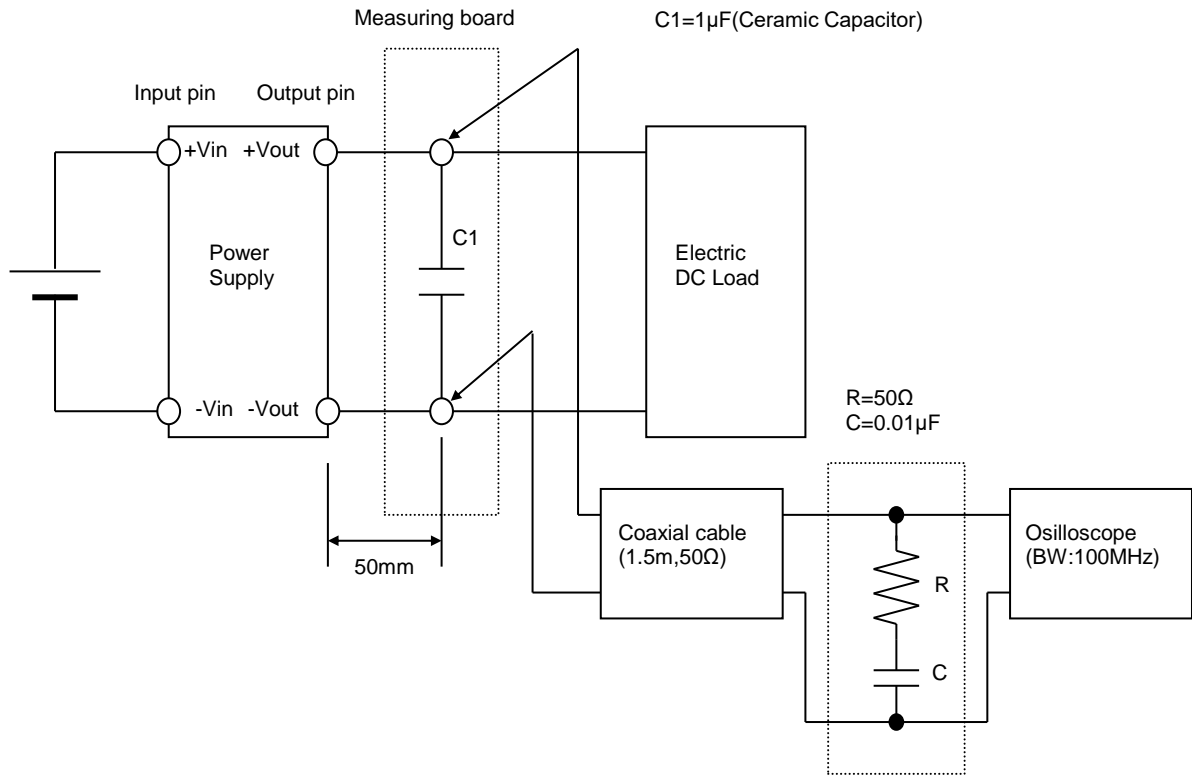


Figure B (Ripple and Ripple noise Characteristic)