

# TEST DATA OF MGFS304805

Regulated DC Power Supply  
January 6, 2011

Approved by : Kazunari Asano  
Kazunari Asano

Design Manager

Prepared by : Masashi Ueda  
Masashi Ueda

Design Engineer

**COSEL CO.,LTD.**

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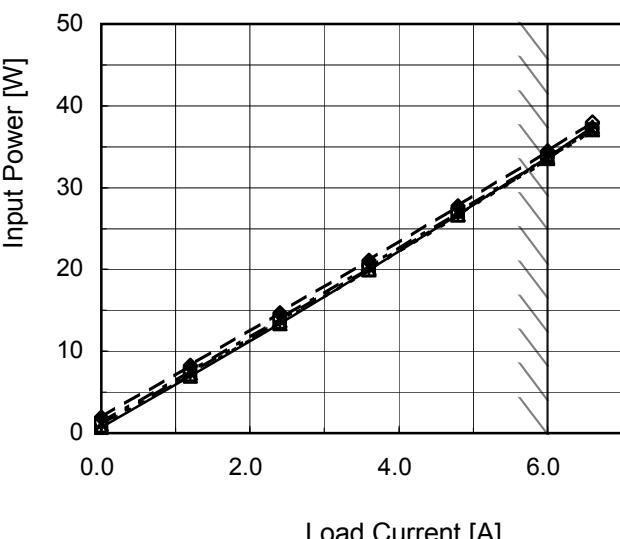
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<p>The graph plots Efficiency [%] on the y-axis (50 to 100) against Input Voltage [V] on the x-axis (10 to 90). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show 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>90.6</td><td>89.0</td></tr> <tr><td>30</td><td>90.9</td><td>89.5</td></tr> <tr><td>50</td><td>90.6</td><td>90.1</td></tr> <tr><td>70</td><td>90.0</td><td>90.1</td></tr> <tr><td>76</td><td>84.4</td><td>87.5</td></tr> <tr><td>80</td><td>83.9</td><td>87.1</td></tr> </tbody> </table>			Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	15	90.6	89.0	30	90.9	89.5	50	90.6	90.1	70	90.0	90.1	76	84.4	87.5	80	83.9	87.1											
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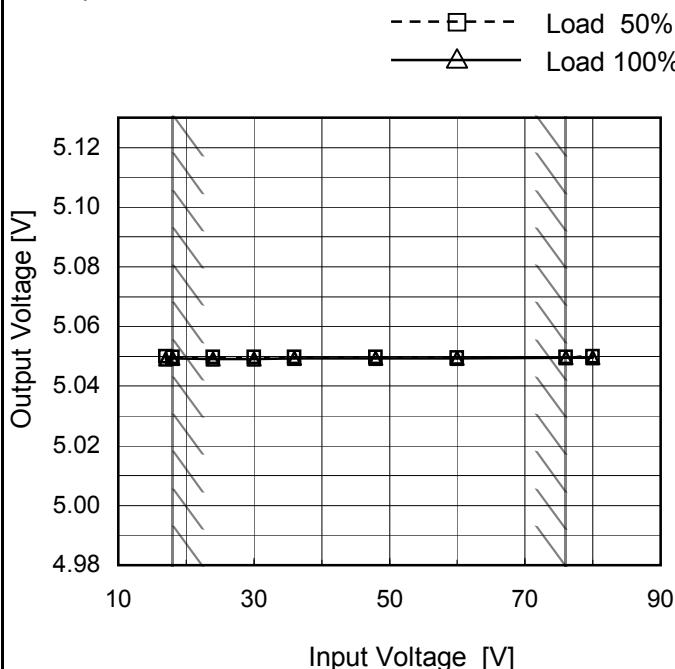
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Model	MGFS304805
Item	Line Regulation
Object	+5V6A

Temperature 25°C  
Testing Circuitry Figure A

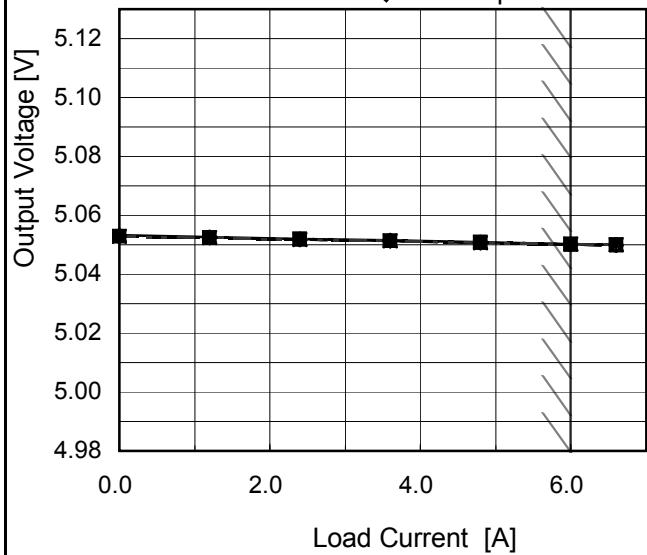
## 1. Graph

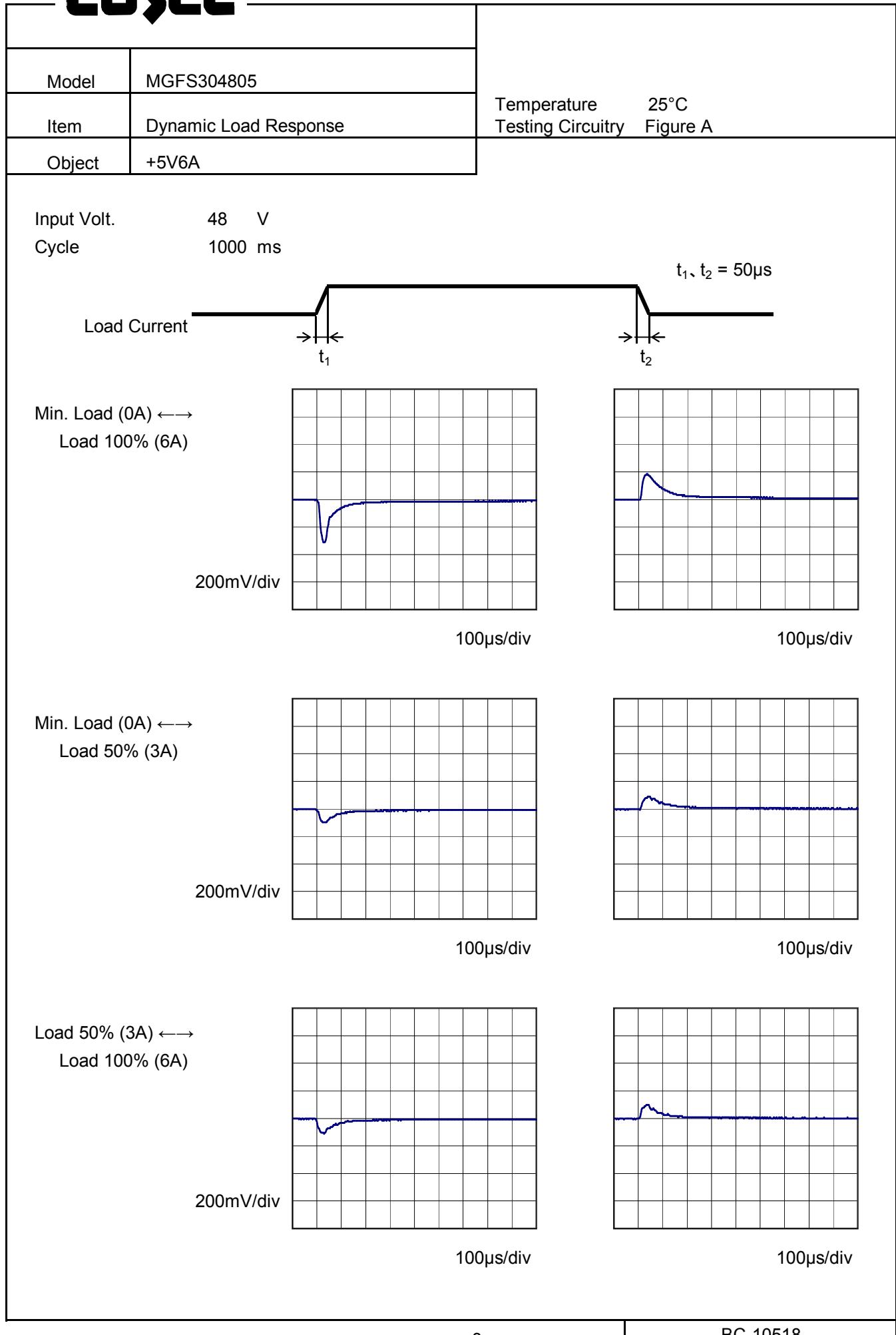


## 2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	5.050	5.049
18	5.050	5.049
24	5.050	5.049
30	5.050	5.049
36	5.050	5.049
48	5.050	5.049
60	5.050	5.049
76	5.050	5.050
80	5.050	5.050

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

Model	MGFS304805	Temperature 25°C Testing Circuitry Figure A																																																																																
Item	Load Regulation																																																																																	
Object	+5V6A																																																																																	
1.Graph	<p>—△— Input Volt. 18V      - - - □ - - Input Volt. 24V      - - * - - Input Volt. 36V      - - ○ - - Input Volt. 48V      - - ◇ - - Input Volt. 76V</p>  <table border="1"> <caption>Data points estimated from Graph</caption> <thead> <tr> <th>Load Current [A]</th> <th>Output Voltage [V] (18V)</th> <th>Output Voltage [V] (24V)</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>5.053</td><td>5.053</td><td>5.053</td><td>5.053</td><td>5.053</td></tr> <tr><td>1.2</td><td>5.053</td><td>5.052</td><td>5.052</td><td>5.052</td><td>5.052</td></tr> <tr><td>2.4</td><td>5.052</td><td>5.052</td><td>5.052</td><td>5.052</td><td>5.052</td></tr> <tr><td>3.6</td><td>5.052</td><td>5.051</td><td>5.051</td><td>5.051</td><td>5.051</td></tr> <tr><td>4.8</td><td>5.051</td><td>5.051</td><td>5.051</td><td>5.051</td><td>5.051</td></tr> <tr><td>6.0</td><td>5.050</td><td>5.050</td><td>5.050</td><td>5.050</td><td>5.050</td></tr> </tbody> </table>	Load Current [A]	Output Voltage [V] (18V)	Output Voltage [V] (24V)	Output Voltage [V] (36V)	Output Voltage [V] (48V)	Output Voltage [V] (76V)	0.0	5.053	5.053	5.053	5.053	5.053	1.2	5.053	5.052	5.052	5.052	5.052	2.4	5.052	5.052	5.052	5.052	5.052	3.6	5.052	5.051	5.051	5.051	5.051	4.8	5.051	5.051	5.051	5.051	5.051	6.0	5.050	5.050	5.050	5.050	5.050																																							
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Note:	Slanted line shows the range of the rated load current.																																																																																	

**COSEL**

**COSSEL**

Model	MGFS304805																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	+5V6A																																							
1.Graph																																								
<p>Input Volt. 18V Input Volt. 76V</p> <p>Ripple Voltage [mV]</p> <p>Load Current [A]</p>																																								
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Load Current [A]	Ripple Voltage [mV]																																							
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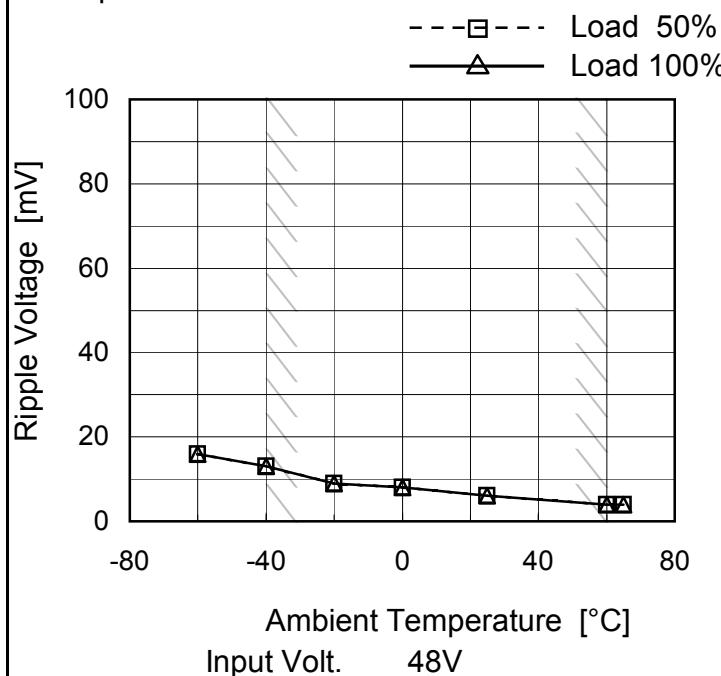


Model	MGFS304805	Temperature	25°C																																								
Item	Ripple-Noise	Testing Circuitry	Figure B																																								
Object	+5V6A	2. Values																																									
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Load Current [A]	Ripple-Noise [mV]																																										
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<p>Fig.Complex Ripple Noise Wave Form</p>																																											

# COSEL

Model	MGFS304805
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V6A

## 1. Graph



Testing Circuitry Figure B

## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	16	16
-40	13	13
-20	9	9
0	8	8
25	6	6
60	4	4
65	4	4
--	-	-
--	-	-
--	-	-
--	-	-

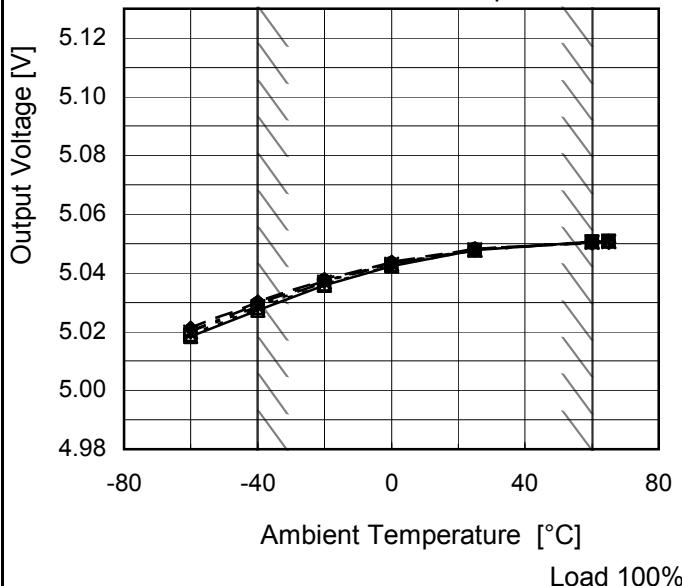
Measured by 100 MHz Oscilloscope.

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

Model	MGFS304805
Item	Ambient Temperature Drift
Object	+5V6A

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 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	5.018	5.019	5.020	5.020	5.021
-40	5.027	5.028	5.029	5.029	5.030
-20	5.036	5.036	5.037	5.037	5.038
0	5.042	5.043	5.043	5.043	5.044
25	5.048	5.048	5.048	5.048	5.048
60	5.051	5.051	5.051	5.051	5.050
65	5.051	5.051	5.051	5.051	5.050
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-



Model	MGFS304805	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+5V6A	

### 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 - 6A

\* 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

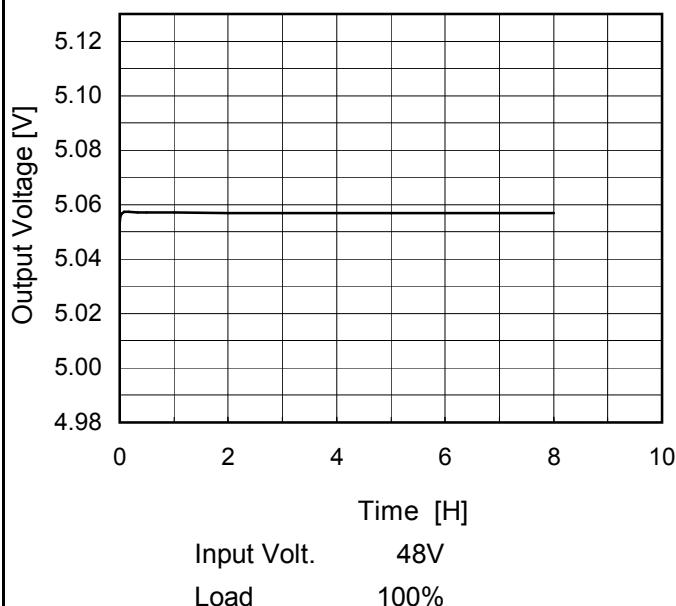
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	18	0	5.053	±13	±0.3
Minimum Voltage	-40	18	6	5.027		

**COSEL**

Model	MGFS304805
Item	Time Lapse Drift
Object	+5V6A

Temperature 25°C  
Testing Circuitry Figure A

1. Graph



2. Values

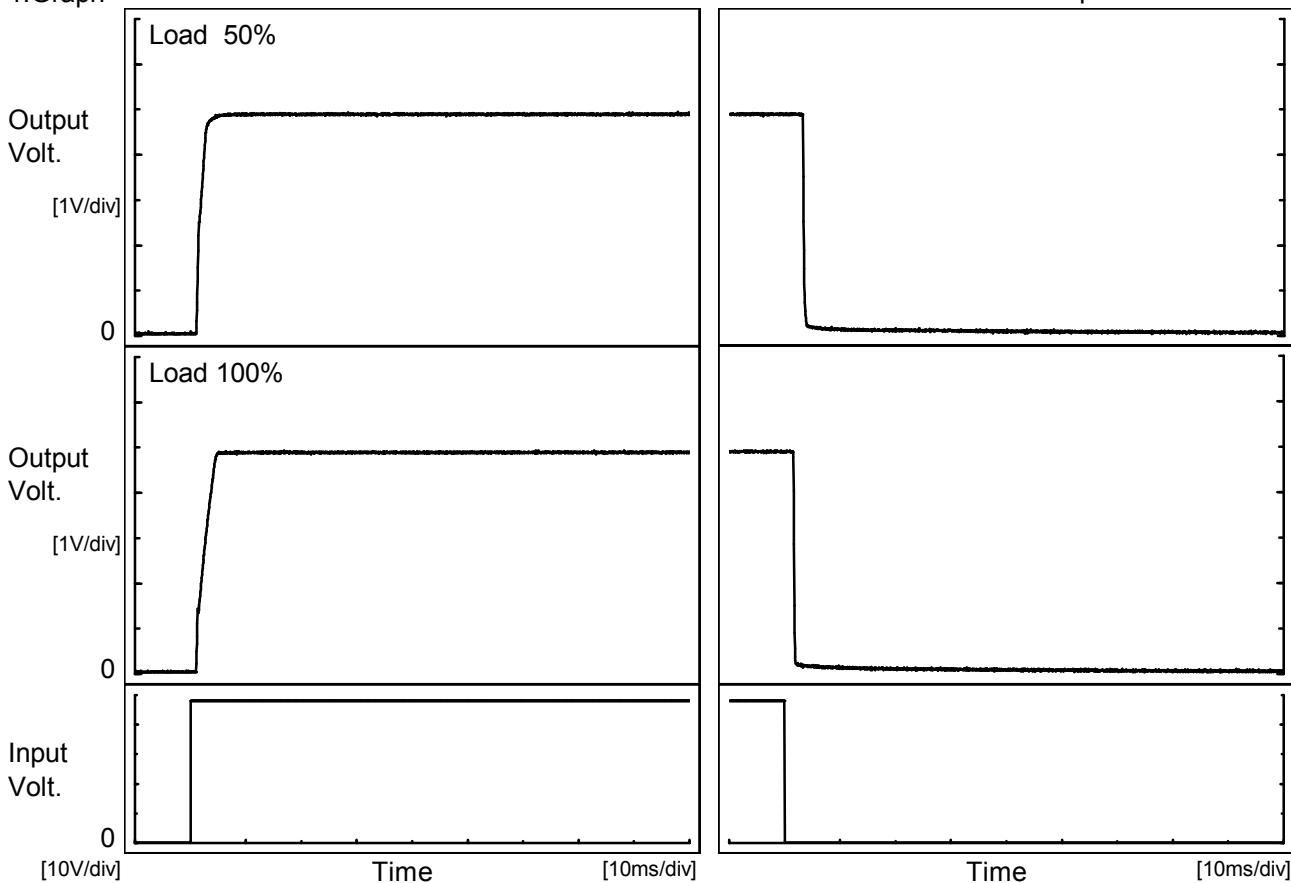
Time since start [H]	Output Voltage [V]
0.0	5.053
0.5	5.057
1.0	5.057
2.0	5.057
3.0	5.057
4.0	5.057
5.0	5.057
6.0	5.057
7.0	5.057
8.0	5.057

**COSEL**

Model	MGFS304805
Item	Rise and Fall Time
Object	+5V6A

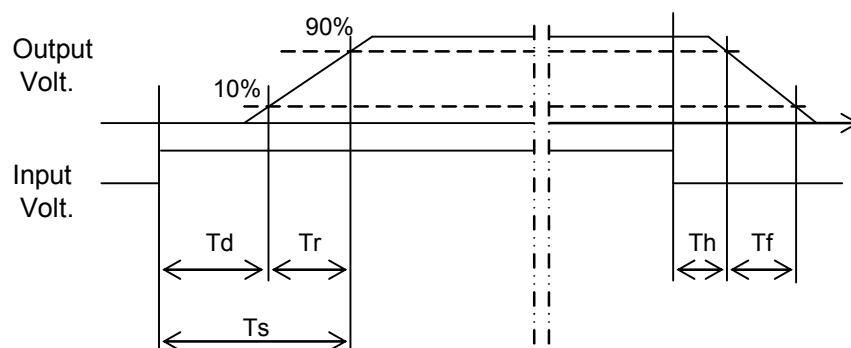
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

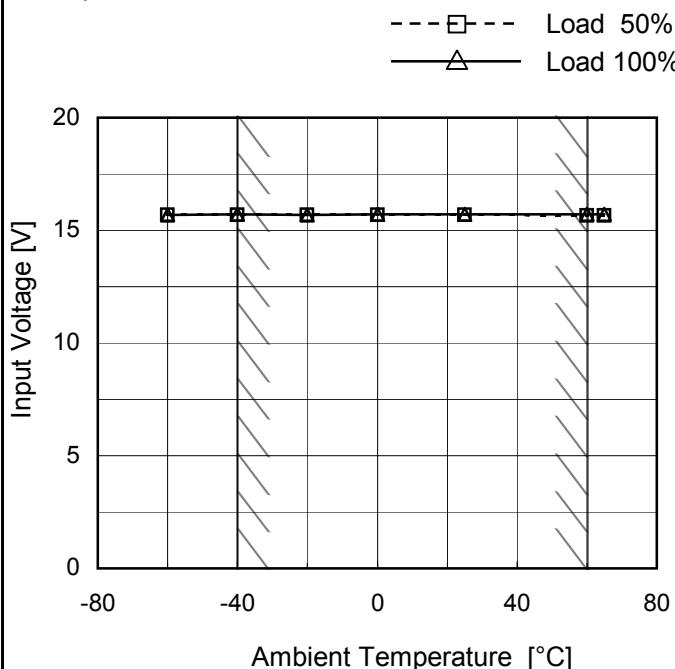
Load	Time	Td	Tr	Ts	Th	Tf
50 %		1.2	1.7	2.9	3.2	0.4
100 %		1.2	3.2	4.4	1.6	0.3



Model	MGFS304805
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V6A

## Testing Circuitry Figure A

## 1. Graph



## 2. Values

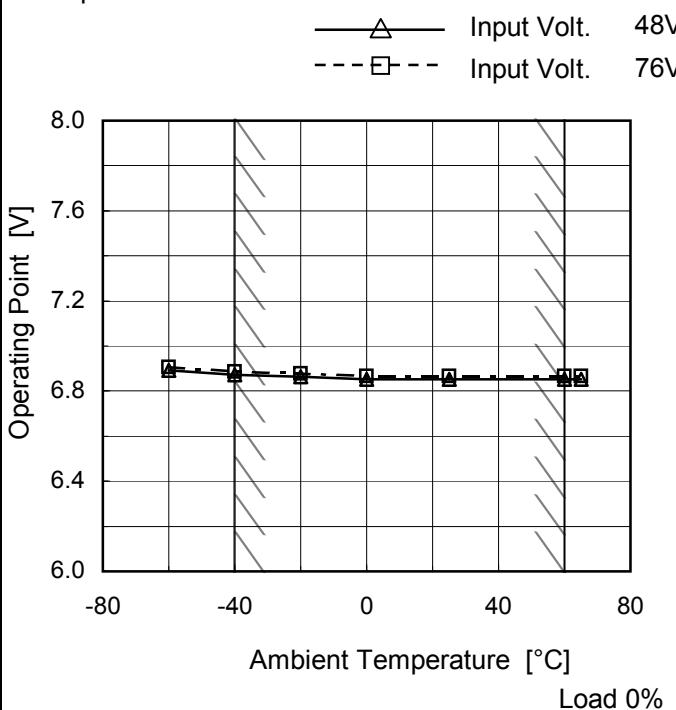
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	15.7	15.7
-40	15.7	15.7
-20	15.7	15.7
0	15.7	15.8
25	15.7	15.7
60	15.7	15.8
65	15.7	15.8
--	-	-
--	-	-
--	-	-
--	-	-

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

Model	MGFS304805	Temperature Testing Circuitry      25°C Figure A																																																																																							
Item	Overcurrent Protection																																																																																								
Object	+5V6A																																																																																								
1.Graph	<p>Output Voltage [V]</p> <p>Load Current [A]</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																																																																																							
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Model	MGFS304805
Item	Oversupply Protection
Object	+5V6A

## 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	6.89	6.91
-40	6.87	6.89
-20	6.86	6.88
0	6.85	6.87
25	6.85	6.87
60	6.85	6.87
65	6.85	6.87
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COSEL

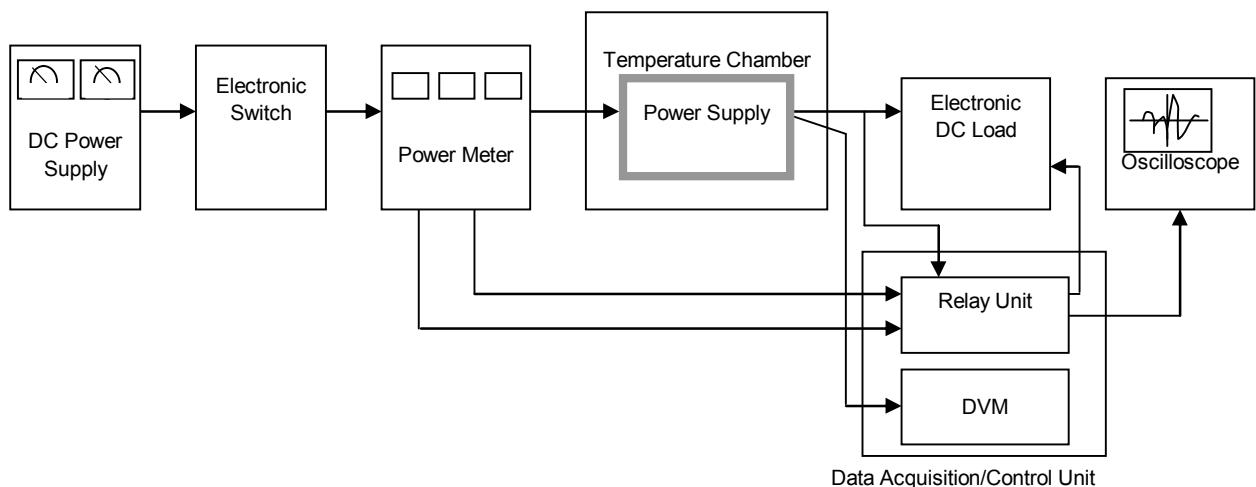


Figure A

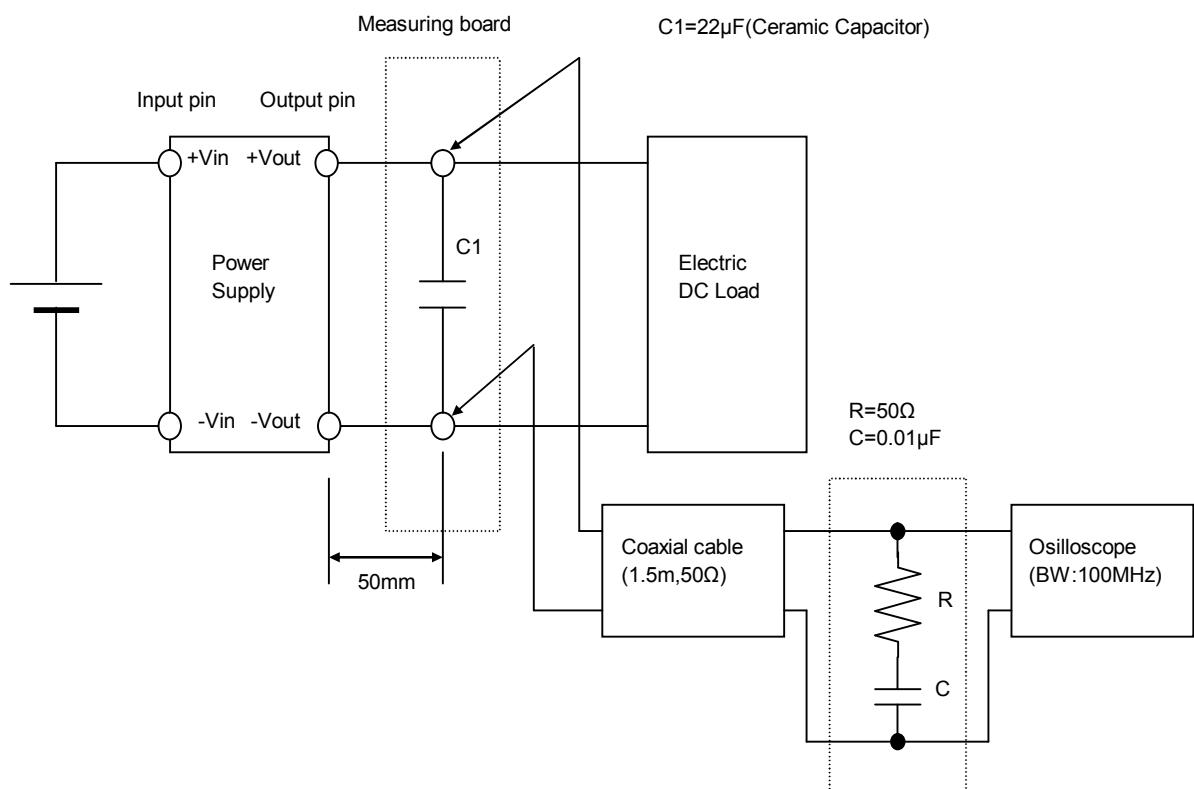


Figure B (Ripple and Ripple noise Characteristic)