

# TEST DATA OF MGFS154812

Regulated DC Power Supply

Approved by :

  
Kazunari Asano

Design Manager

Prepared by :

  
Yuichiro Ohashi

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.Figure of Testing Circuitry . . . . .	18

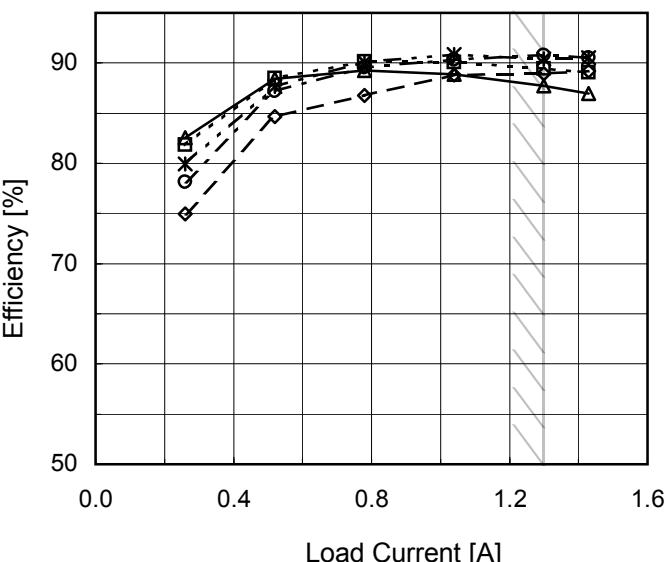
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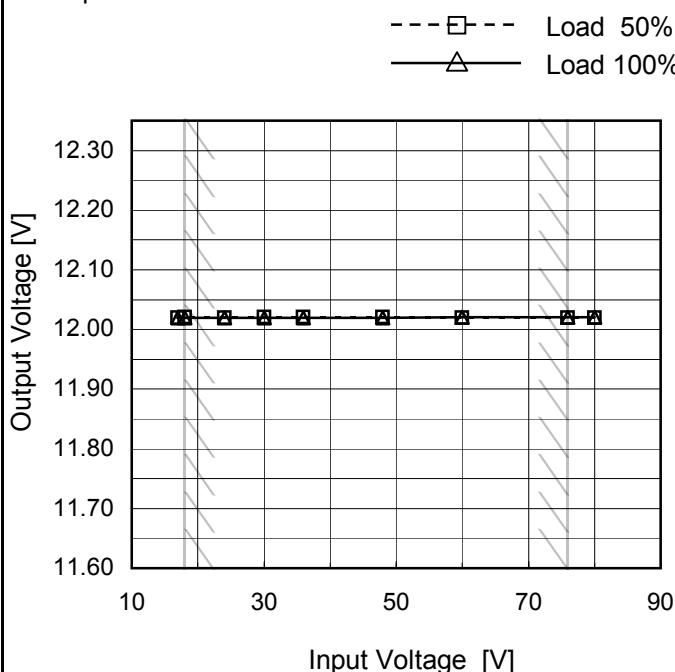
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	 <p>The graph plots Efficiency [%] on the Y-axis (50 to 90) against Load Current [A] on the X-axis (0.0 to 1.6). Five data series are shown for different input voltages: 18V (solid line with open triangles), 24V (dashed line with open squares), 36V (dash-dot line with asterisks), 48V (dash-dot-dot line with open circles), and 76V (long-dash line with open diamonds). All curves show efficiency increasing with load current and approaching a plateau around 90% efficiency. A diagonal hatched line represents the rated load current range, which is approximately between 0.4A and 1.2A.</p>																																																																																	
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Item	Line Regulation
Object	+12V1.3A

Temperature 25°C  
Testing Circuitry Figure A

## 1.Graph



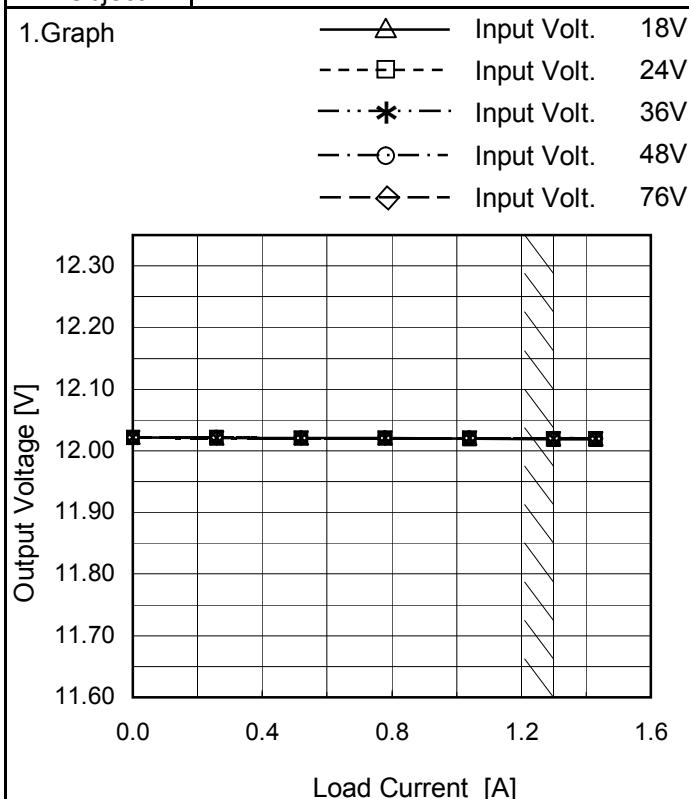
## 2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	12.020	12.019
18	12.020	12.019
24	12.020	12.020
30	12.020	12.020
36	12.020	12.020
48	12.020	12.020
60	12.020	12.020
76	12.020	12.020
80	12.020	12.020

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

Model	MGFS154812
Item	Load Regulation
Object	+12V1.3A

Temperature 25°C  
Testing Circuitry Figure A

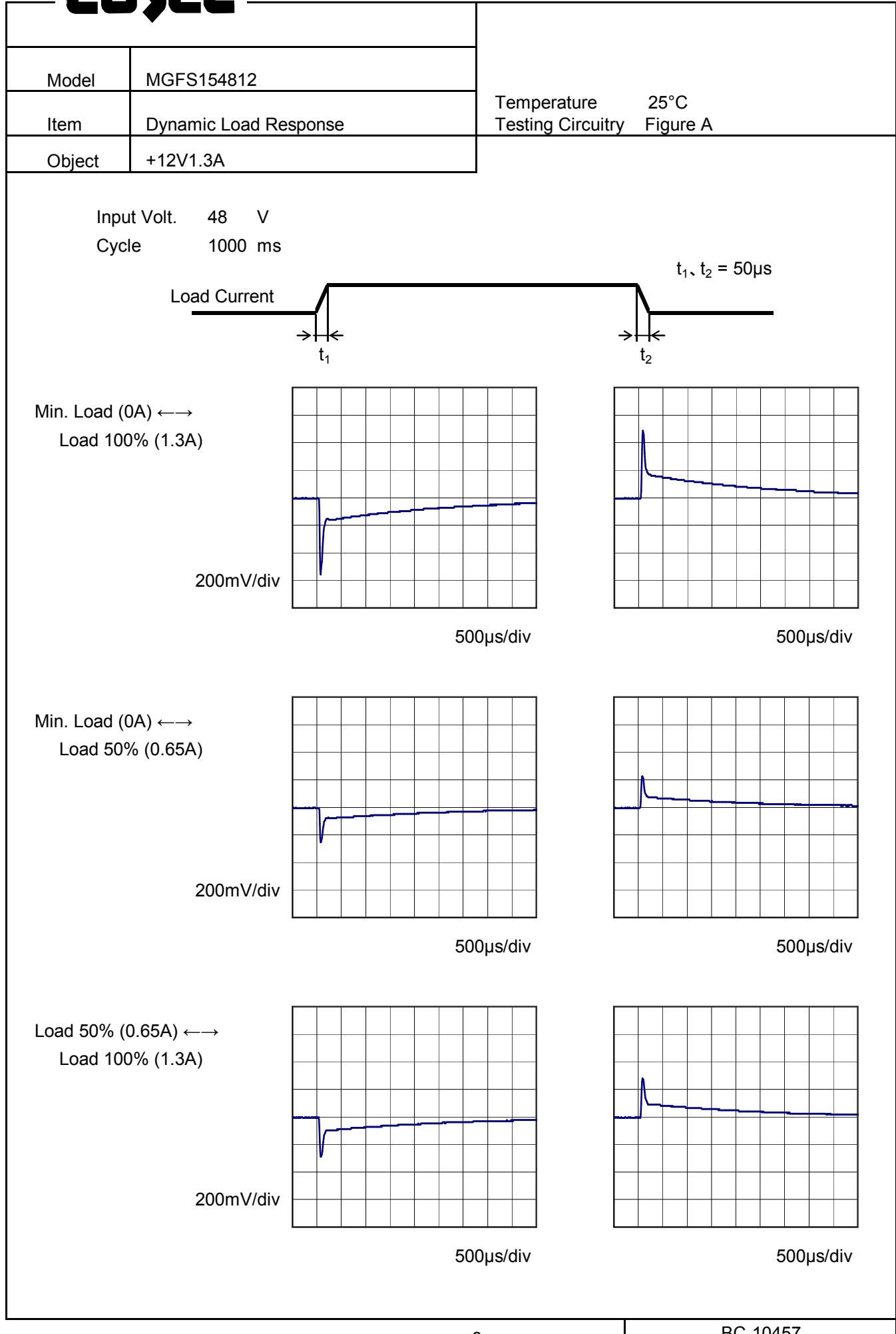


## 2.Values

Load Current [A]	Output Voltage [V]				
	18[V]	24[V]	36[V]	48[V]	76[V]
0.00	12.022	12.022	12.022	12.022	12.022
0.26	12.021	12.022	12.021	12.022	12.021
0.52	12.020	12.021	12.021	12.021	12.021
0.78	12.020	12.021	12.021	12.021	12.021
1.04	12.020	12.020	12.020	12.020	12.020
1.30	12.019	12.020	12.020	12.020	12.020
1.43	12.019	12.020	12.020	12.020	12.020
--	-	-	-	-	-
--	-	-	-	-	-
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--	-	-	-	-	-

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

**COSEL**



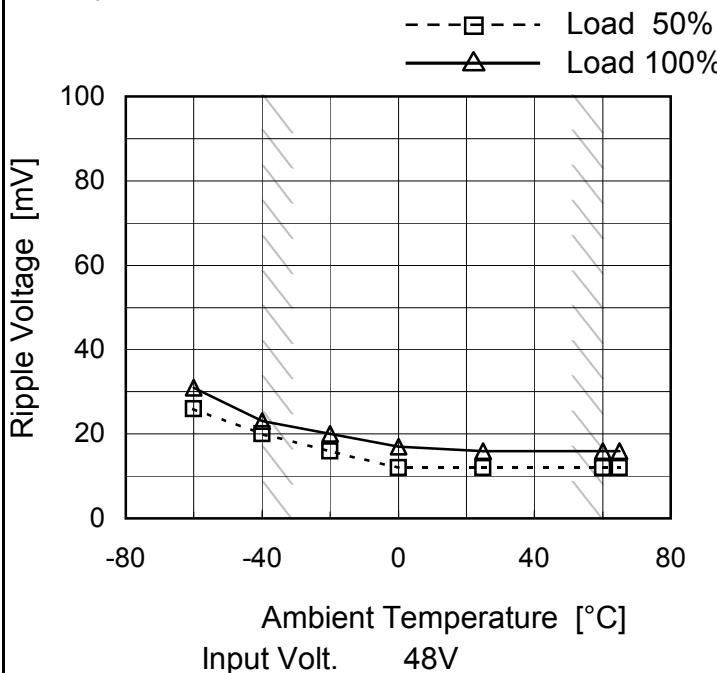
Model	MGFS154812																																							
Item	Ripple Voltage (by Load Current)	Temperature      25°C Testing Circuitry      Figure B																																						
Object	+12V1.3A																																							
1.Graph																																								
<p>Graph showing Ripple Voltage [mV] vs Load Current [A] for MGFS154812. The graph shows two curves: Input Volt. 18V (solid line with open triangle markers) and Input Volt. 76V (dashed line with open circle markers). The x-axis ranges from 0.0 to 1.6 A, and the y-axis ranges from 0 to 100 mV. A vertical slanted line at approximately 1.3 A indicates the rated load current range.</p>																																								
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Model	MGFS154812	Temperature Testing Circuitry	25°C Figure B																																						
Item	Ripple-Noise																																								
Object	+12V1.3A																																								
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Model	MGFS154812
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V1.3A

Testing Circuitry Figure B

## 1. Graph



## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	26	31
-40	20	23
-20	16	20
0	12	17
25	12	16
60	12	16
65	12	16
--	-	-
--	-	-
--	-	-
--	-	-

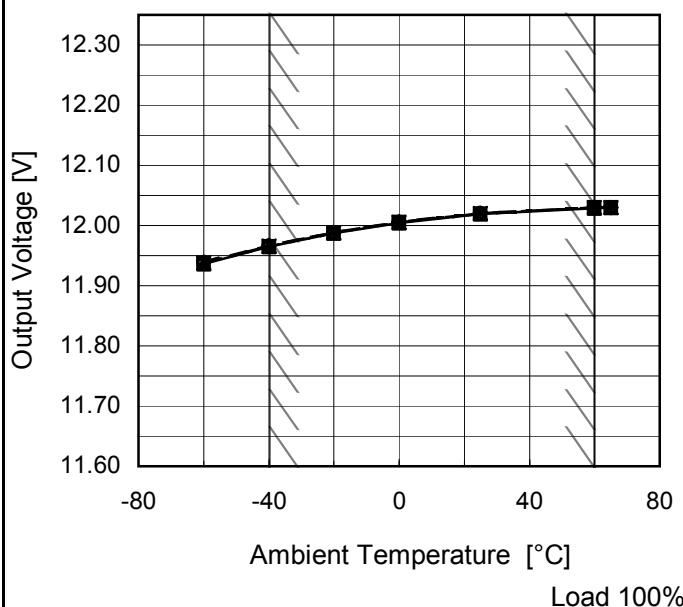
Measured by 100 MHz Oscilloscope.

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

Model	MGFS154812
Item	Ambient Temperature Drift
Object	+12V1.3A

## 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]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	11.937	11.937	11.938	11.939	11.939
-40	11.965	11.965	11.966	11.966	11.967
-20	11.987	11.987	11.988	11.988	11.989
0	12.004	12.005	12.006	12.006	12.006
25	12.019	12.020	12.020	12.020	12.020
60	12.029	12.030	12.030	12.030	12.030
65	12.029	12.030	12.030	12.030	12.030
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-



Model	MGFS154812	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+12V1.3A	

### 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 - 1.3A

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

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

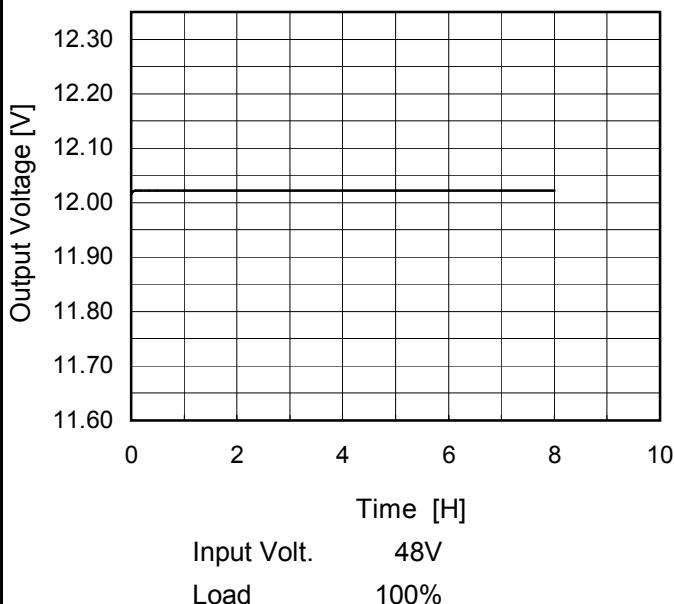
### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	24	0	12.032	±34	±0.3
Minimum Voltage	-40	18	1.3	11.965		

**COSEL**

Model	MGFS154812
Item	Time Lapse Drift
Object	+12V1.3A

1. Graph



Temperature 25°C  
Testing Circuitry Figure A

2. Values

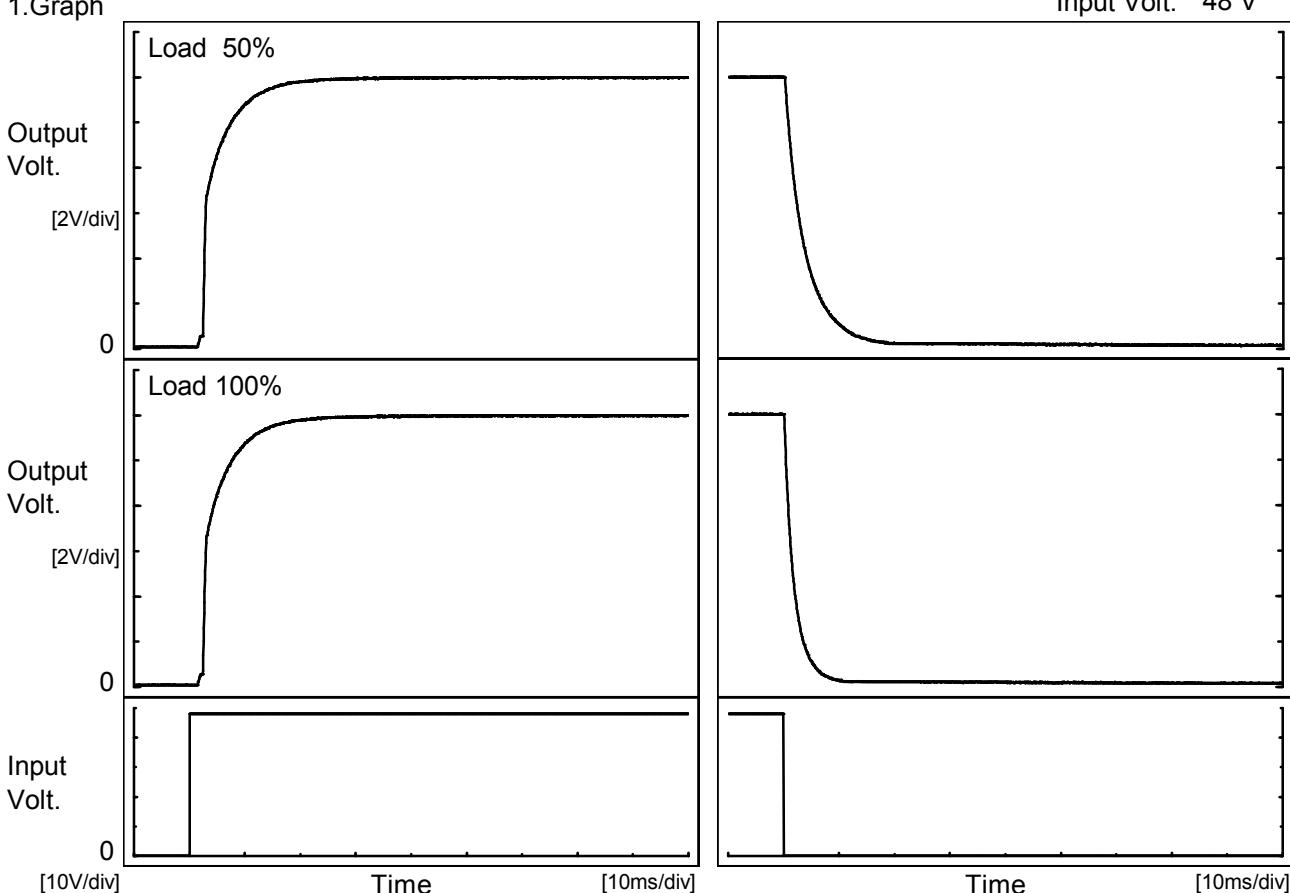
Time since start [H]	Output Voltage [V]
0.0	12.015
0.5	12.022
1.0	12.022
2.0	12.022
3.0	12.022
4.0	12.022
5.0	12.022
6.0	12.022
7.0	12.022
8.0	12.022

**COSEL**

Model	MGFS154812
Item	Rise and Fall Time
Object	+12V1.3A

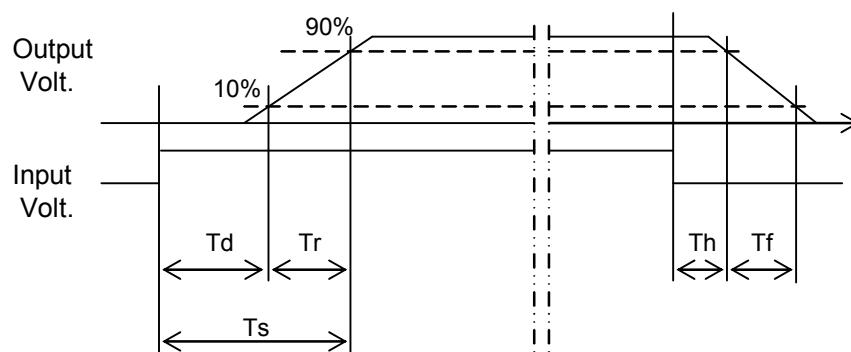
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

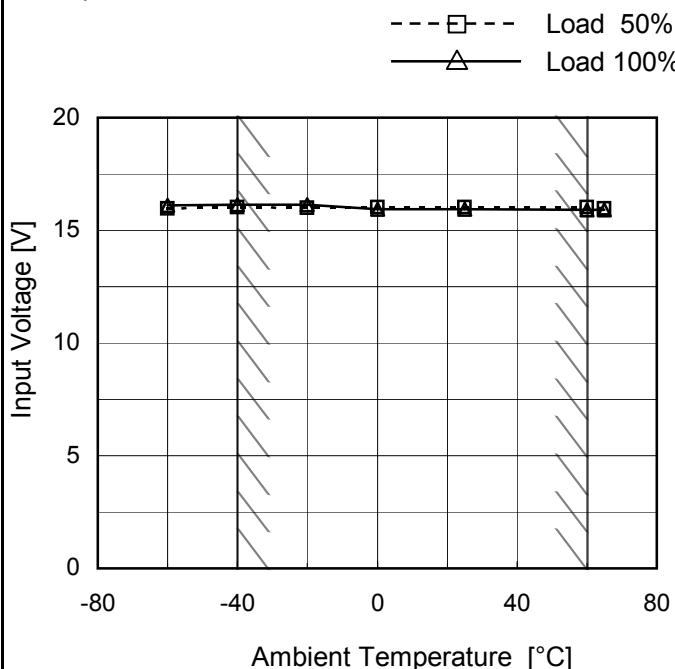
Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		2.5	8.0	10.5	0.4	8.7	
100 %		2.5	8.2	10.7	0.3	4.3	



Model	MGFS154812
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V1.3A

Testing Circuitry Figure A

## 1. Graph



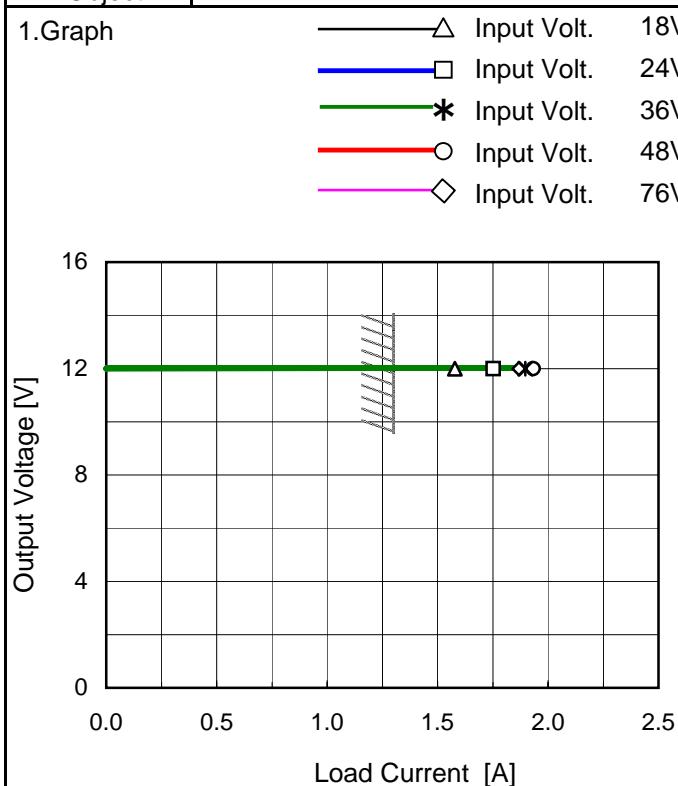
## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	16.0	16.1
-40	16.1	16.2
-20	16.0	16.2
0	16.1	16.0
25	16.1	16.0
60	16.1	16.0
65	16.0	16.0
--	-	-
--	-	-
--	-	-
--	-	-

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



Model	MGFS154812
Item	Overcurrent Protection
Object	+12V1.3A



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

Intermittent operation occurs when overcurrent protection is activated.

Temperature 25°C  
Testing Circuitry Figure A

## 2.Values

Output Voltage [V]	Load Current [A]				
	18[V]	24[V]	36[V]	48[V]	76[V]
12.0	1.578	1.752	1.897	1.934	1.869
11.4	-	-	-	-	-
10.8	-	-	-	-	-
9.6	-	-	-	-	-
8.4	-	-	-	-	-
7.2	-	-	-	-	-
6.0	-	-	-	-	-
4.8	-	-	-	-	-
3.6	-	-	-	-	-
2.4	-	-	-	-	-
1.2	-	-	-	-	-
0.0	-	-	-	-	-

COSEL

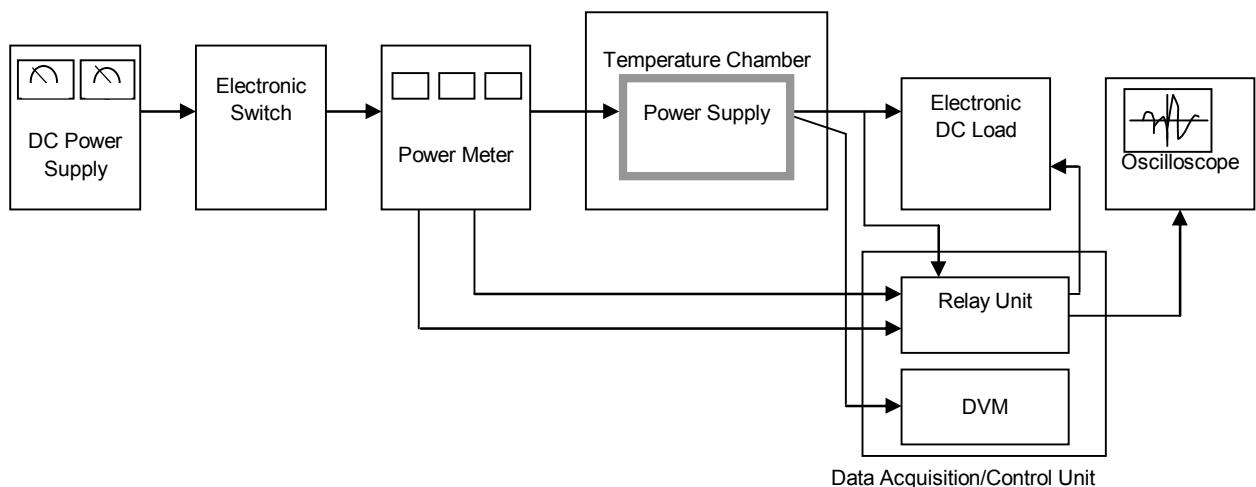


Figure A

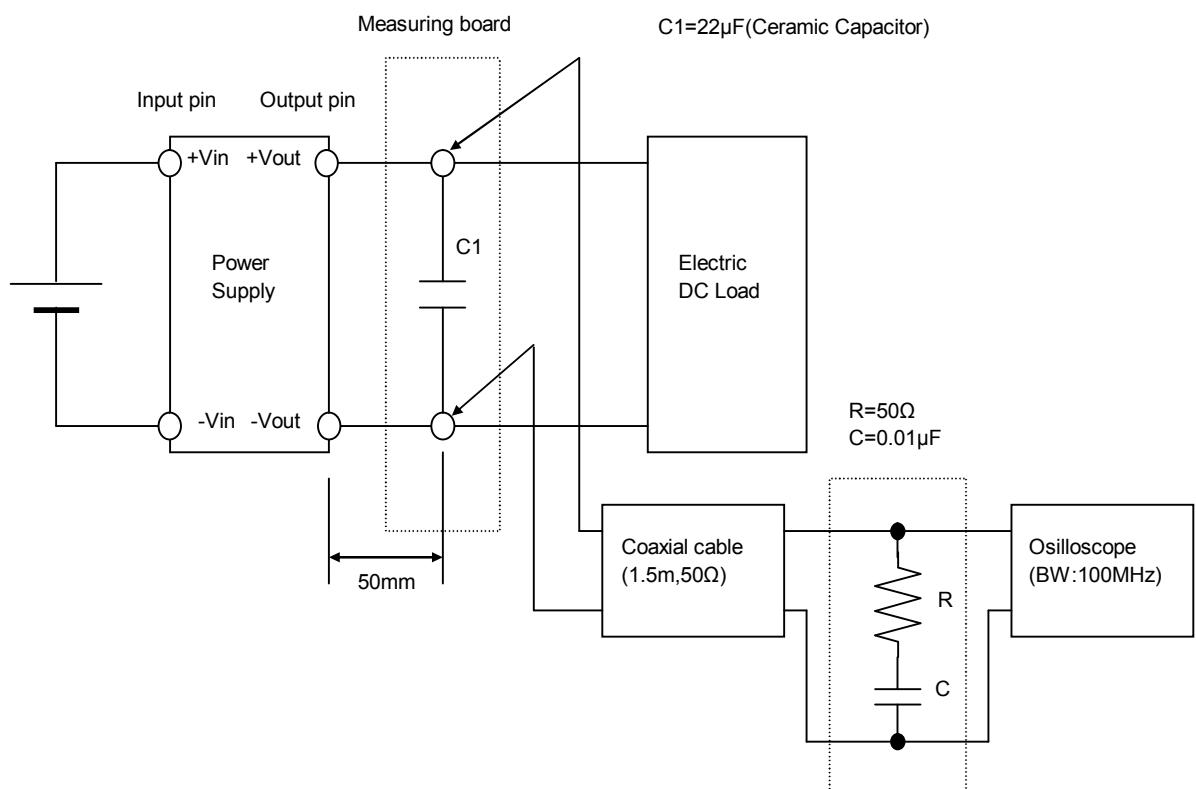


Figure B (Ripple and Ripple noise Characteristic)