

TEST DATA OF SUS62412 SUCS62412

Regulated DC Power Supply
Feb 17, 2005

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Tetsuo Sugimori Design Manager

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Yoshikazu Mizuno Design Engineer

COSEL CO.,LTD.



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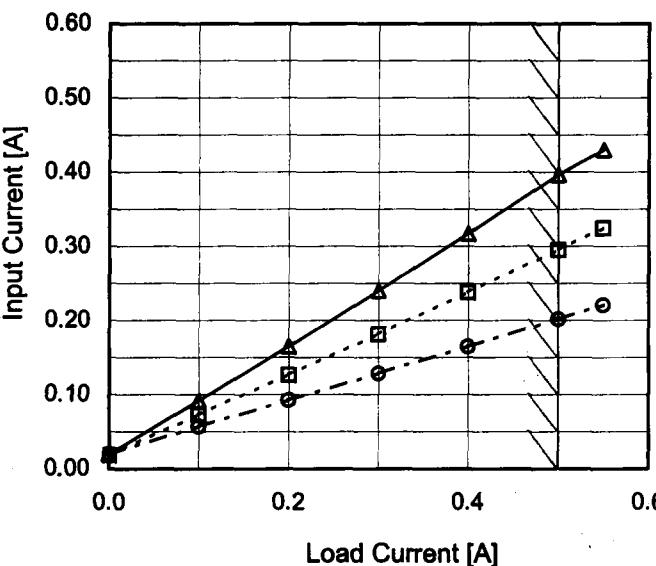
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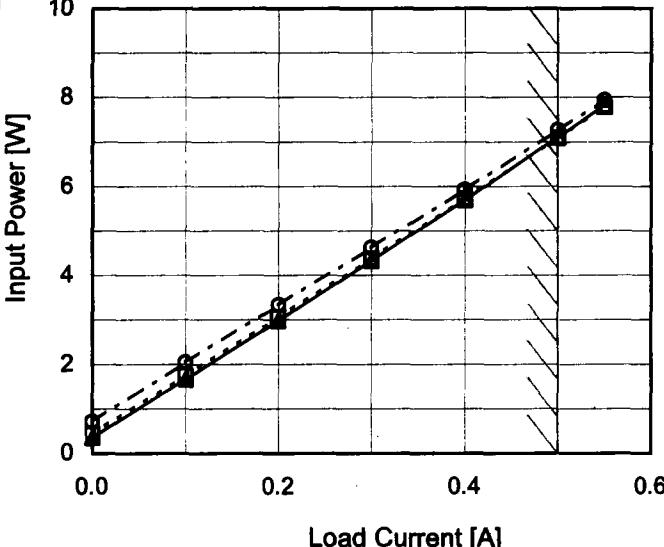
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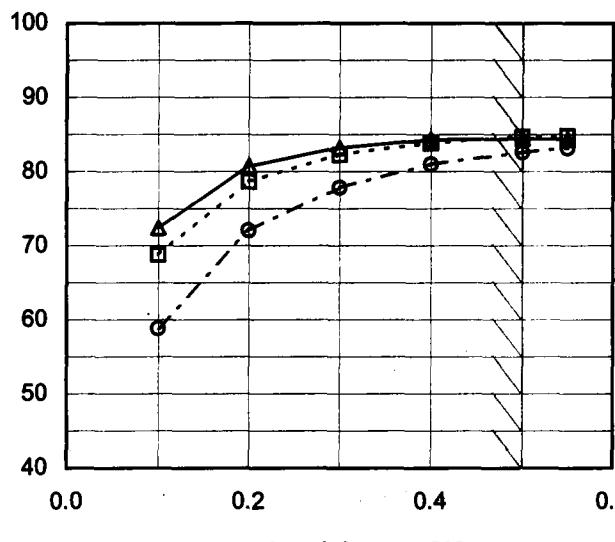
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Note:	Slanted line shows the range of the rated load current.		
2.Values			
Load Current [A]	Input Power [W]		
	18[V]	24[V]	36[V]
0.00	0.36	0.45	0.72
0.10	1.67	1.75	2.05
0.20	2.98	3.06	3.34
0.30	4.33	4.38	4.63
0.40	5.70	5.73	5.93
0.50	7.11	7.09	7.27
0.55	7.83	7.79	7.94
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

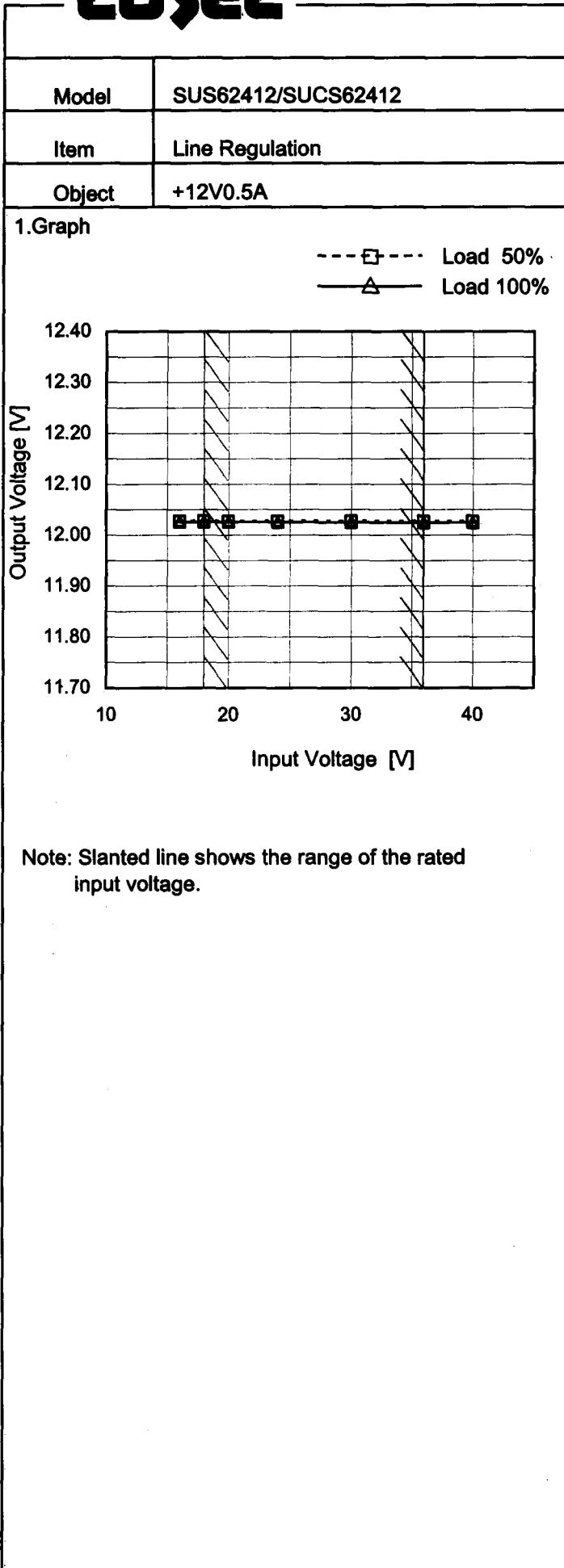
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<p>The graph plots Efficiency [%] on the Y-axis (40 to 100) against Input Voltage [V] on the X-axis (10 to 40). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show 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>16</td><td>82.5</td><td>84.2</td></tr> <tr><td>18</td><td>82.5</td><td>84.5</td></tr> <tr><td>20</td><td>82.1</td><td>84.9</td></tr> <tr><td>24</td><td>81.0</td><td>84.6</td></tr> <tr><td>30</td><td>78.5</td><td>83.9</td></tr> <tr><td>36</td><td>75.7</td><td>82.7</td></tr> <tr><td>40</td><td>73.4</td><td>81.6</td></tr> </tbody> </table>			Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	16	82.5	84.2	18	82.5	84.5	20	82.1	84.9	24	81.0	84.6	30	78.5	83.9	36	75.7	82.7	40	73.4	81.6								
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Temperature 25°C
Testing Circuitry Figure A

2. Values

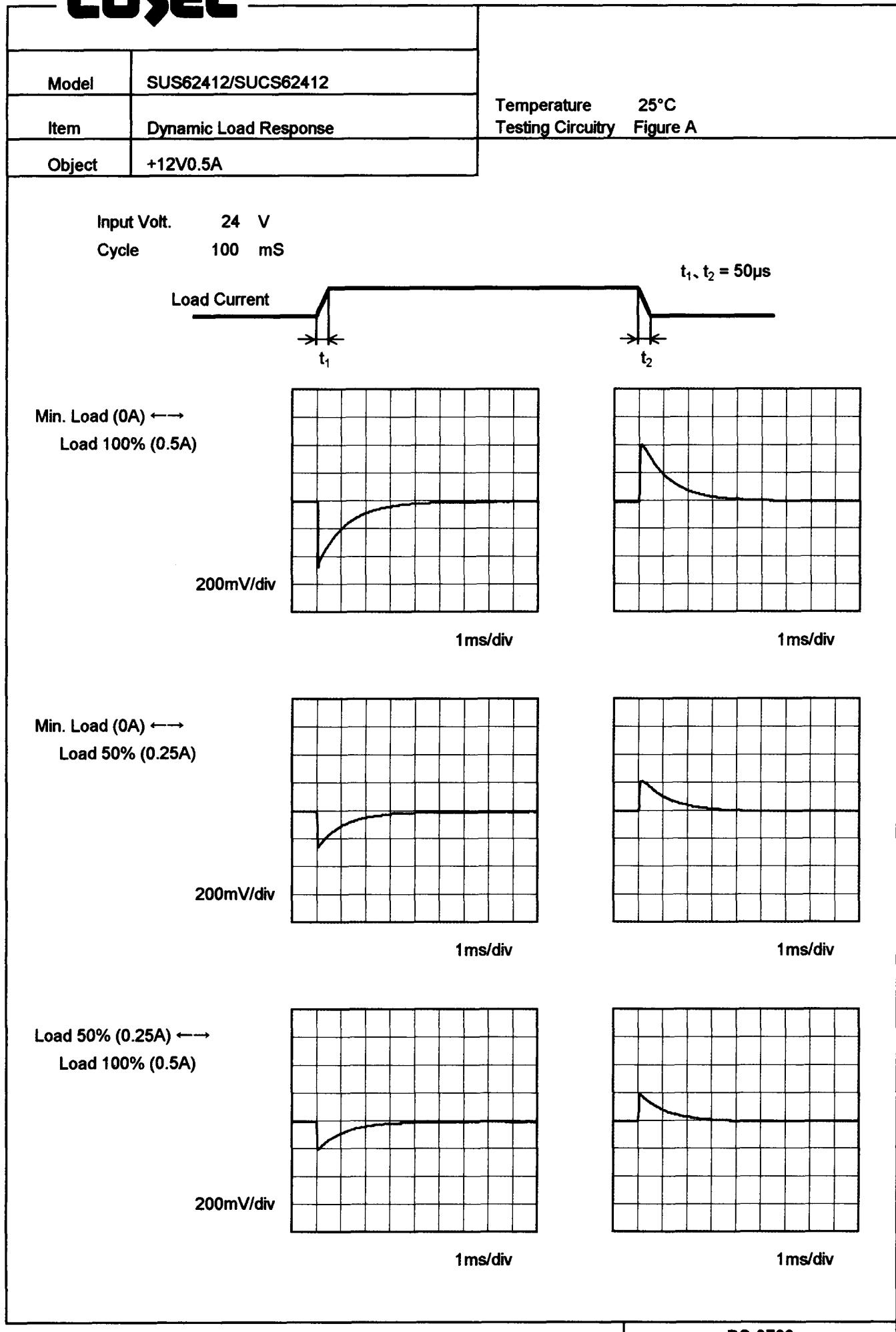
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	12.028	12.026
18	12.028	12.026
20	12.028	12.027
24	12.028	12.026
30	12.028	12.026
36	12.028	12.025
40	12.027	12.025
-	-	-
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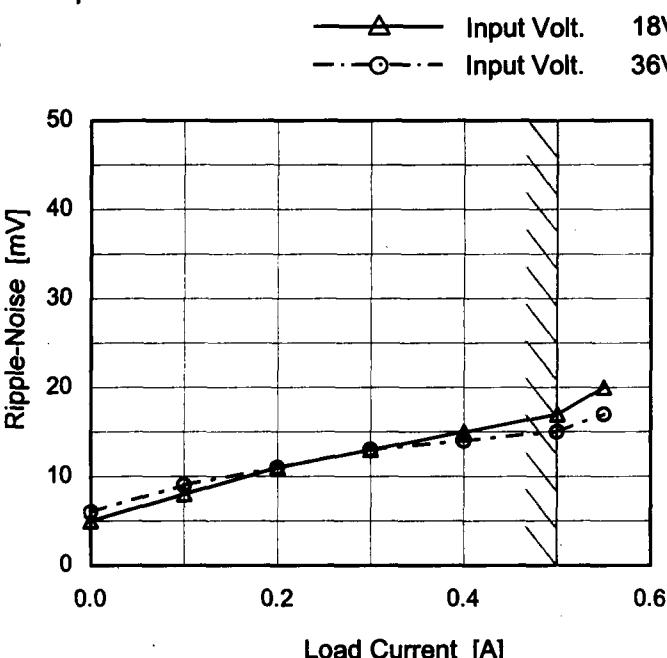
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<p>Measured by 100 MHz Oscilloscope. Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p>																																									
<p>Fig.Complex Ripple Wave Form</p>																																									

COSEL

Model	SUS62412/SUCS62412
Item	Ripple-Noise
Object	+12V0.5A

1. Graph



Measured by 100 MHz Oscilloscope.

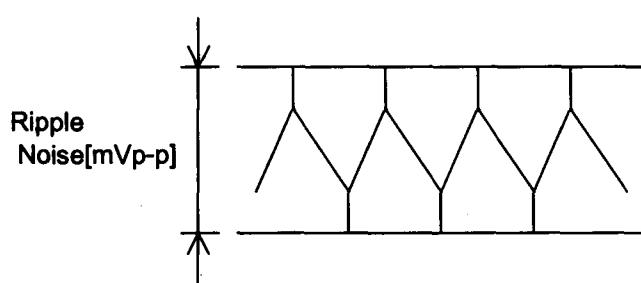
Ripple-Noise is shown as p-p in the figure below.

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

Temperature 25°C
Testing Circuitry Figure B

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	5	6
0.10	8	9
0.20	11	11
0.30	13	13
0.40	15	14
0.50	17	15
0.55	20	17
-	-	-
-	-	-
-	-	-
-	-	-



COSEL

Model	SUS62412/SUCS62412																																							
Item	Ripple Voltage (by Ambient Temp.)																																							
Object	+12V0.5A																																							
1. Graph																																								
<p>--- □ --- Load 50%</p> <p>— △ — Load 100%</p> <p>Ripple Voltage [mV]</p> <p>Ambient Temperature [°C]</p> <p>Input Volt. 24V</p>																																								
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COSEL

Model	SUS62412/SUCS62412																																																					
Item	Ambient Temperature Drift																																																					
Object	+12V0.5A																																																					
1. Graph																																																						
<p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p> <p>Legend:</p> <ul style="list-style-type: none"> Input Volt. 18V Input Volt. 24V Input Volt. 36V 																																																						
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Note: Slanted line shows the range of the rated ambient temperature.



Model	SUS62412/SUCS62412	
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 - 55°C

Input Voltage : 18 - 36V

Load Current : 0 - 0.5A

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

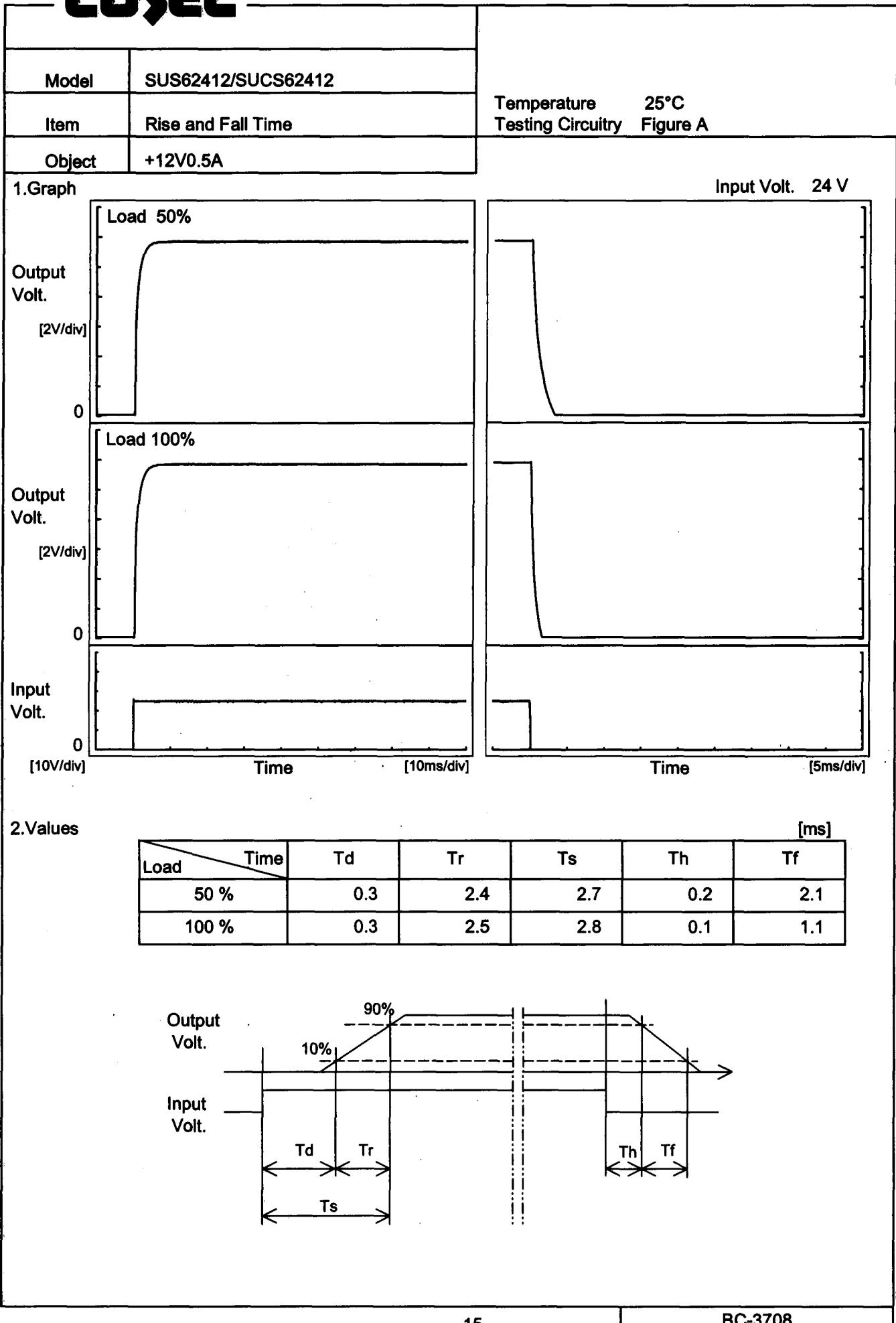
$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	36	0	12.032	±14	±0.1
Minimum Voltage	-40	18	0.5	12.004		

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Model	SUS62412/SUCS62412	Temperature Testing Circuitry 25°C Figure A																						
Item	Time Lapse Drift																							
Object	+12V0.5A																							
1.Graph		2.Values																						
<p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 24V</p> <p>Load 100%</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>12.030</td></tr> <tr><td>0.5</td><td>12.028</td></tr> <tr><td>1.0</td><td>12.028</td></tr> <tr><td>2.0</td><td>12.028</td></tr> <tr><td>3.0</td><td>12.028</td></tr> <tr><td>4.0</td><td>12.028</td></tr> <tr><td>5.0</td><td>12.028</td></tr> <tr><td>6.0</td><td>12.028</td></tr> <tr><td>7.0</td><td>12.028</td></tr> <tr><td>8.0</td><td>12.028</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	12.030	0.5	12.028	1.0	12.028	2.0	12.028	3.0	12.028	4.0	12.028	5.0	12.028	6.0	12.028	7.0	12.028	8.0	12.028
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COSEL

COSEL

<p>Model SUS62412/SUCCS62412</p> <p>Item Minimum Input Voltage for Regulated Output Voltage</p> <p>Object +12V0.5A</p>	Testing Circuitry Figure A																																						
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COSEL

Model	SUS62412/SUCS62412
Item	Overcurrent Protection
Object	+12V0.5A

1. Graph

Output Voltage [V]

Load Current [A]

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

Temperature 25°C
Testing Circuitry Figure A

2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
12.0	0.50	0.50	0.50
11.4	0.77	0.79	0.76
10.8	0.78	0.80	0.76
9.6	0.81	0.82	0.77
8.4	0.86	0.86	0.78
7.2	0.90	0.88	0.79
6.0	0.92	0.89	0.80
4.8	0.94	0.90	0.79
3.6	0.94	0.88	0.78
2.4	0.90	0.83	0.74
1.2	0.81	0.74	0.68
0.0	0.61	0.57	0.55

COSEL

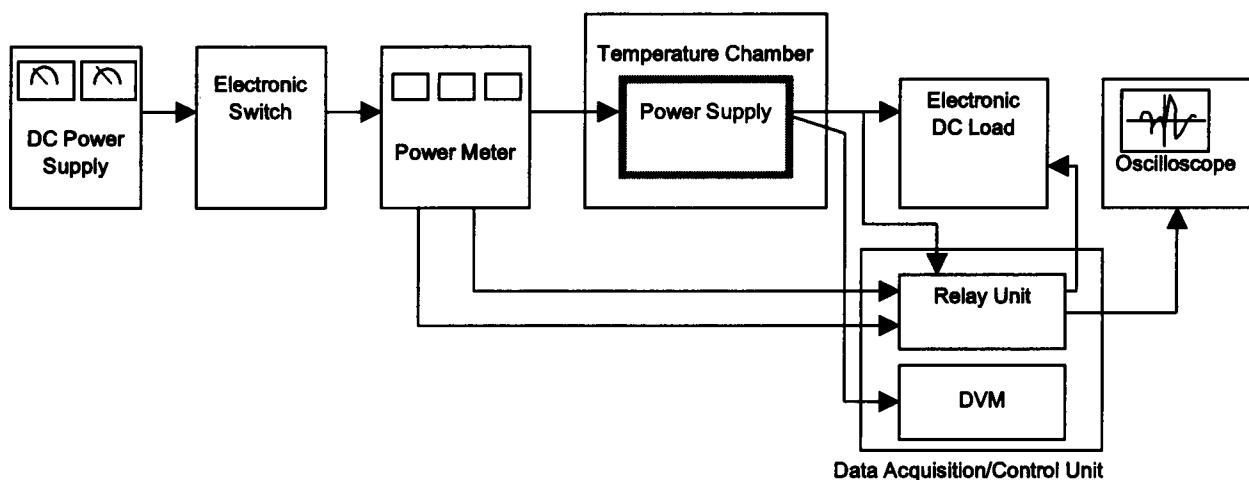


Figure A

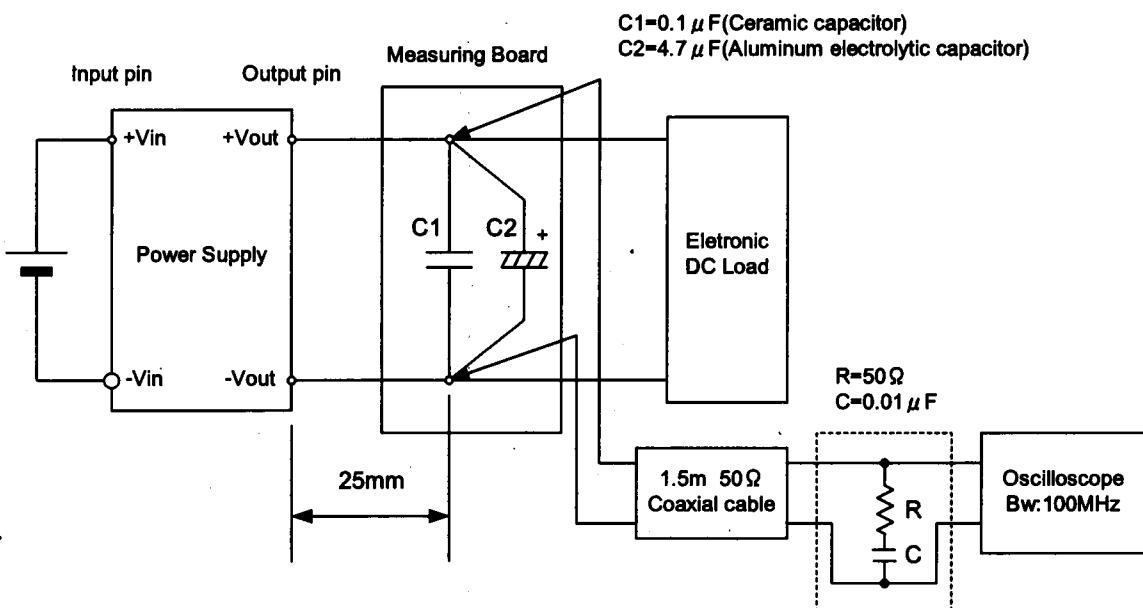


Figure B (Ripple and Ripple noise Characteristic)