

# TEST DATA OF SUS61212 SU CS61212

Regulated DC Power Supply  
Feb 18, 2005

Approved by : Tetsuo Sugimori  
Tetsuo Sugimori Design Manager

Prepared by : Yoshikazu Mizuno  
Yoshikazu Mizuno Design Engineer

**COSEL CO.,LTD.**



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<p>The graph plots Efficiency [%] on the Y-axis (40 to 100) against Input Voltage [V] on the X-axis (6 to 22). 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>8</td><td>82.5</td><td>83.8</td></tr> <tr><td>9</td><td>82.4</td><td>84.5</td></tr> <tr><td>10</td><td>82.2</td><td>84.9</td></tr> <tr><td>12</td><td>81.1</td><td>84.9</td></tr> <tr><td>15</td><td>78.5</td><td>83.8</td></tr> <tr><td>18</td><td>75.0</td><td>82.3</td></tr> <tr><td>20</td><td>72.4</td><td>80.9</td></tr> <tr><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>			Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	8	82.5	83.8	9	82.4	84.5	10	82.2	84.9	12	81.1	84.9	15	78.5	83.8	18	75.0	82.3	20	72.4	80.9	-	-	-	-	-	-		
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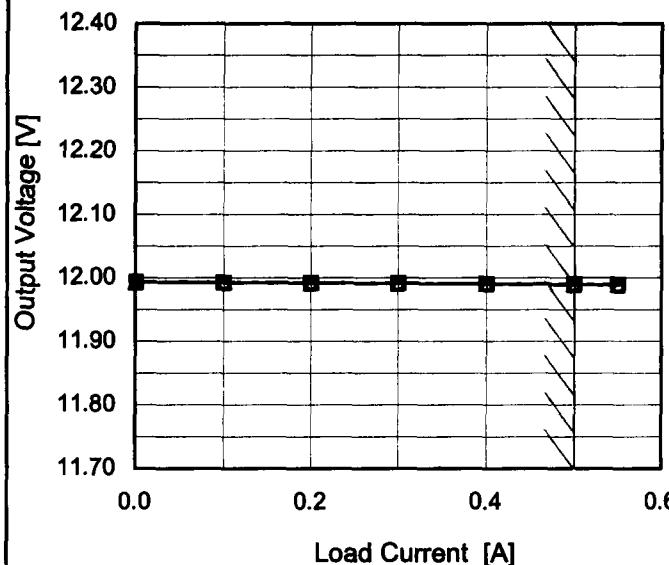
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Item	Line Regulation																														
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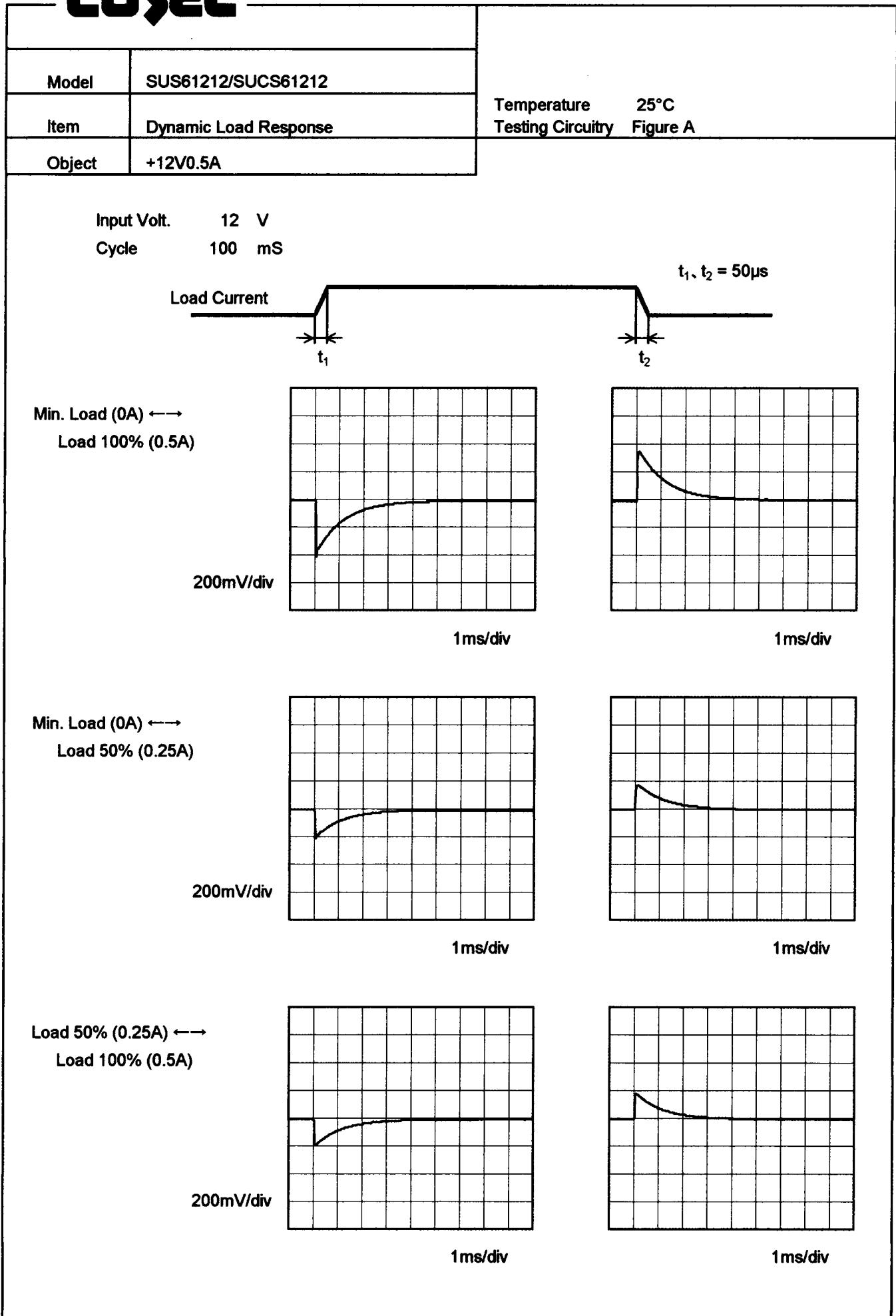
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Note: Slanted line shows the range of the rated load current.

**COSEL**



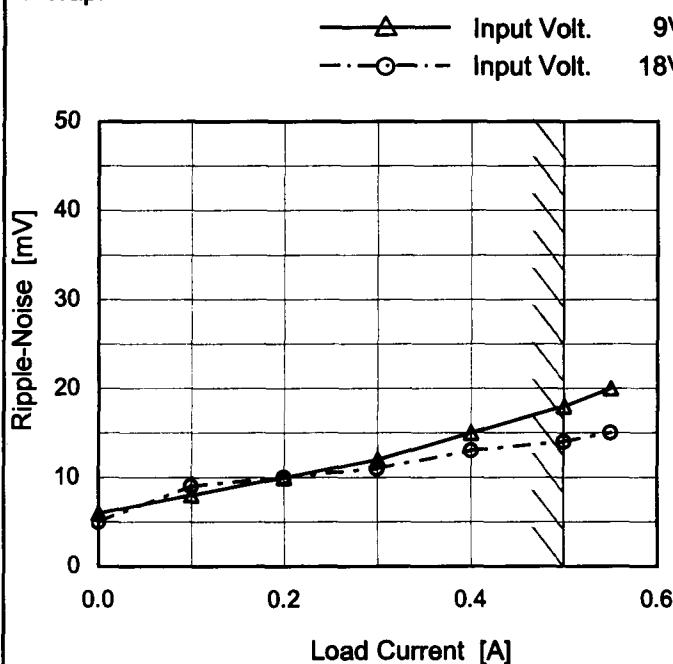
# COSEL

Model	SUS61212/SUCS61212	Temperature	25°C																																						
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure B																																						
Object	<b>+12V0.5A</b>																																								
1.Graph	<p style="text-align: center;">           Legend: Input Volt. 9V (solid line with triangle), Input Volt. 18V (dashed line with circle)       </p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (9V)</th> <th>Ripple Voltage [mV] (18V)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>4</td><td>4</td></tr> <tr><td>0.10</td><td>4</td><td>4</td></tr> <tr><td>0.20</td><td>4</td><td>4</td></tr> <tr><td>0.30</td><td>4</td><td>4</td></tr> <tr><td>0.40</td><td>4</td><td>4</td></tr> <tr><td>0.50</td><td>5</td><td>4</td></tr> <tr><td>0.55</td><td>6</td><td>4</td></tr> </tbody> </table>			Load Current [A]	Ripple Voltage [mV] (9V)	Ripple Voltage [mV] (18V)	0.00	4	4	0.10	4	4	0.20	4	4	0.30	4	4	0.40	4	4	0.50	5	4	0.55	6	4														
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Note: Slanted line shows the range of the rated load current.																																									
Ripple [mVp-p]																																									
Fig.Complex Ripple Wave Form																																									

# COSEL

Model	SUS61212/SUCS61212
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. 9 [V]	Input Volt. 18 [V]
0.00	6	5
0.10	8	9
0.20	10	10
0.30	12	11
0.40	15	13
0.50	18	14
0.55	20	15
-	-	-
-	-	-
--	-	-
--	-	-

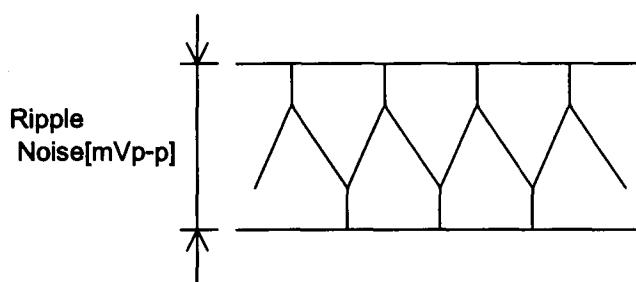
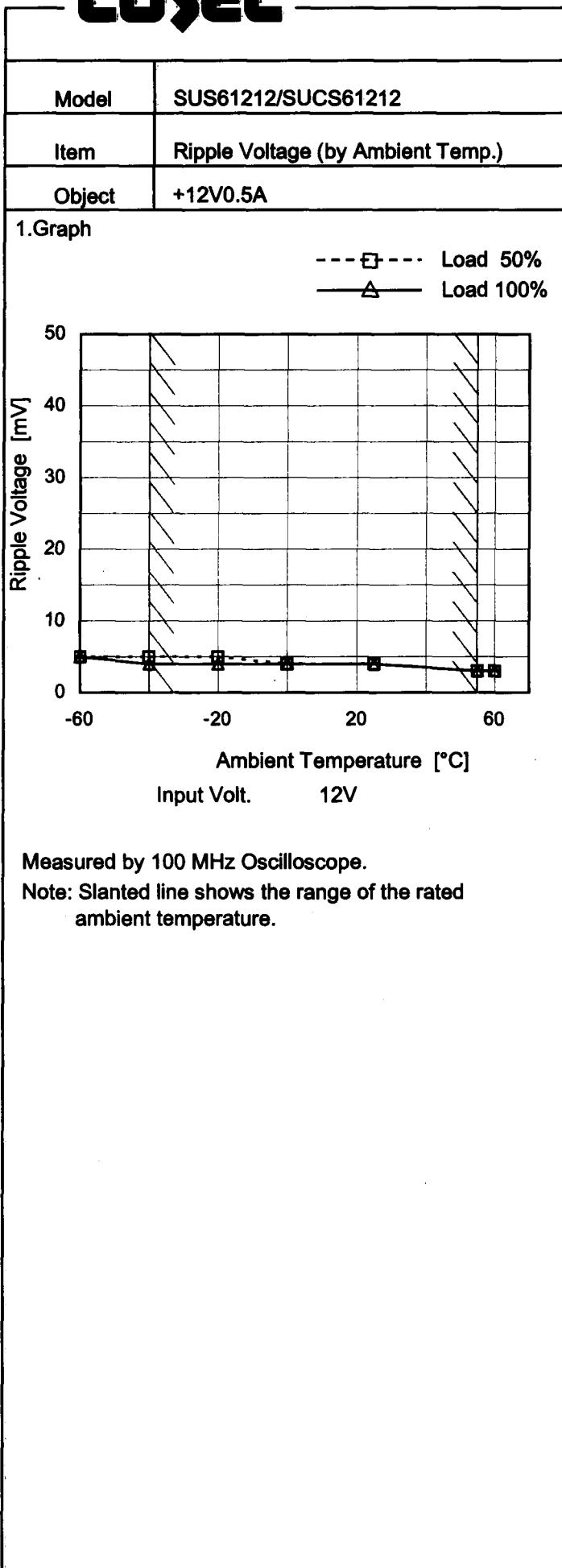


Fig.Complex Ripple Noise Wave Form

**COSEL**

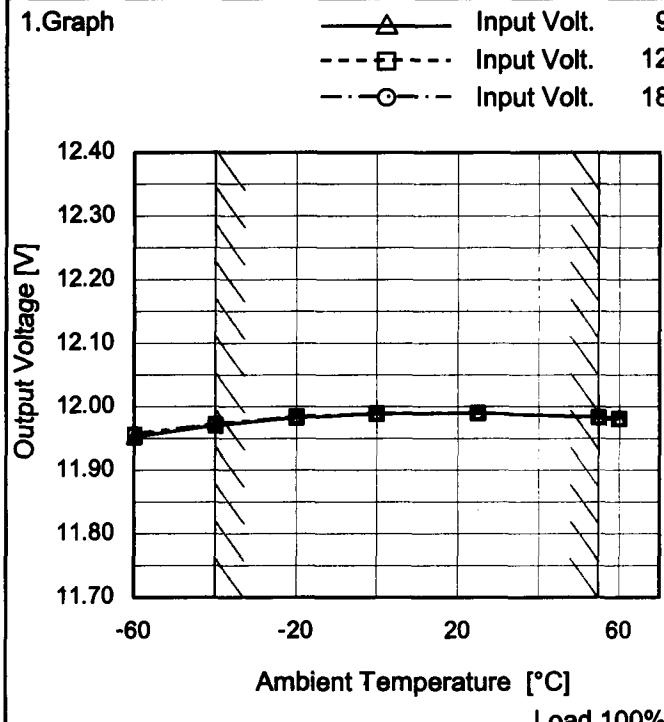


## Testing Circuitry Figure B

## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	5	5
-40	5	4
-20	5	4
0	4	4
25	4	4
55	3	3
60	3	3
-	-	-
-	-	-
-	-	-
-	-	-

**COSEL**

Model	SUS61212/SUCS61212																																																					
Item	Ambient Temperature Drift																																																					
Object	+12V0.5A																																																					
1.Graph	Input Volt. 9V Input Volt. 12V Input Volt. 18V																																																					
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Note: Slanted line shows the range of the rated ambient temperature.



Model	SUS61212/SUCS61212	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
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 : 9 - 18V

Load Current : 0 - 0.5A

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

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

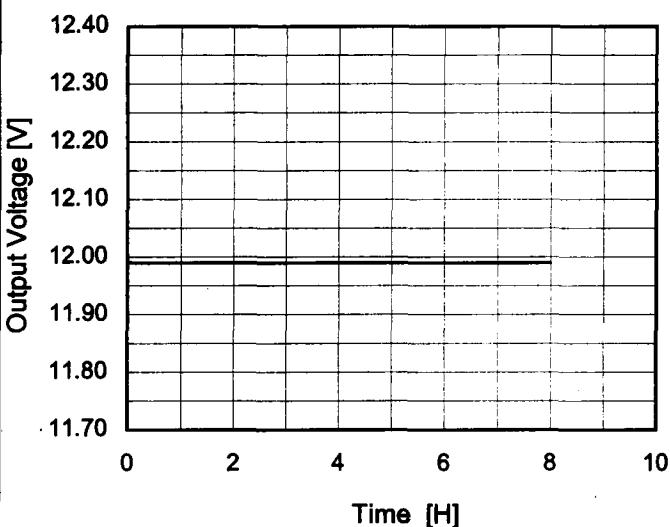
### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	18	0	11.995	$\pm 12$	$\pm 0.1$
Minimum Voltage	-40	9	0.5	11.971		

**COSEL**

Model	SUS61212/SUCCS61212
Item	Time Lapse Drift
Object	+12V0.5A

## 1. Graph

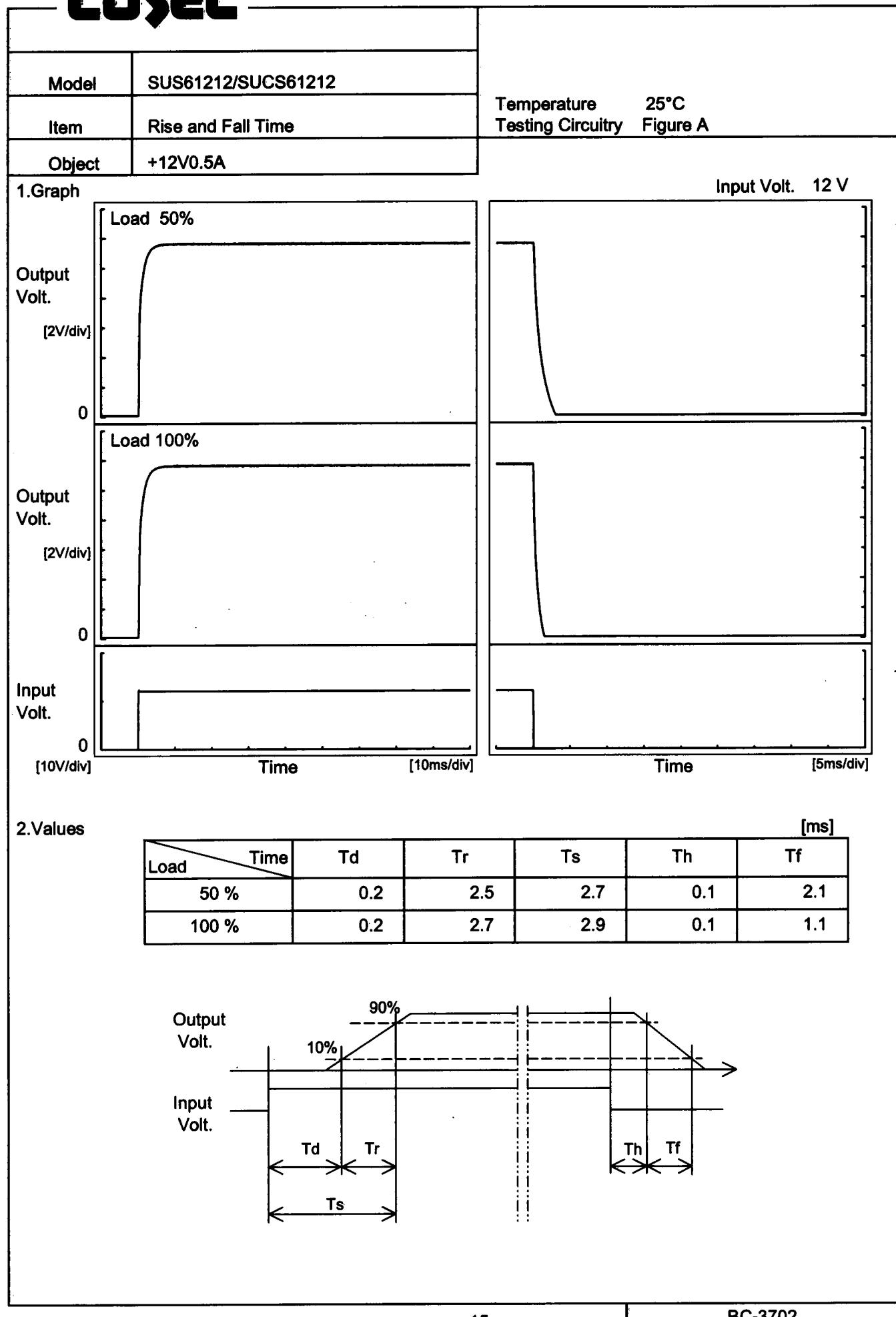


Input Volt.      12V  
Load            100%

Temperature      25°C  
Testing Circuitry      Figure A

## 2. Values

Time since start [H]	Output Voltage [V]
0.0	11.992
0.5	11.990
1.0	11.990
2.0	11.990
3.0	11.990
4.0	11.990
5.0	11.990
6.0	11.990
7.0	11.990
8.0	11.990

**COSEL**

**COSEL**

<p><b>Model</b></p> <p><b>Item</b></p> <p><b>Object</b></p>	SUS61212/SUCS61212	<p>Testing Circuitry Figure A</p>																																						
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	+12V0.5A																																							
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**COSEL**

Model	SUS61212/SUCS61212	Temperature	25°C																																																							
Item	Overcurrent Protection	Testing Circuitry	Figure A																																																							
Object	+12V0.5A																																																									
1. Graph		2. Values																																																								
<p>The graph plots Output Voltage [V] on the Y-axis (0 to 12) against Load Current [A] on the X-axis (0.0 to 1.2). Three curves represent different input voltages: 9V (top), 12V (middle), and 18V (bottom). All curves show a sharp drop in output voltage as load current increases beyond a certain point. A slanted line is drawn across the graph, starting from approximately (0.4, 12) and ending at (0.8, 0). This line marks the range of the rated load current.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="3">Load Current [A]</th> </tr> <tr> <th>Input Volt. 9[V]</th> <th>Input Volt. 12[V]</th> <th>Input Volt. 18[V]</th> </tr> </thead> <tbody> <tr><td>12.0</td><td>0.50</td><td>0.50</td><td>0.50</td></tr> <tr><td>11.4</td><td>0.67</td><td>0.72</td><td>0.73</td></tr> <tr><td>10.8</td><td>0.68</td><td>0.73</td><td>0.73</td></tr> <tr><td>9.6</td><td>0.72</td><td>0.76</td><td>0.76</td></tr> <tr><td>8.4</td><td>0.75</td><td>0.80</td><td>0.80</td></tr> <tr><td>7.2</td><td>0.79</td><td>0.83</td><td>0.82</td></tr> <tr><td>6.0</td><td>0.82</td><td>0.85</td><td>0.84</td></tr> <tr><td>4.8</td><td>0.85</td><td>0.87</td><td>0.86</td></tr> <tr><td>3.6</td><td>0.87</td><td>0.88</td><td>0.86</td></tr> <tr><td>2.4</td><td>0.86</td><td>0.86</td><td>0.84</td></tr> <tr><td>1.2</td><td>0.81</td><td>0.80</td><td>0.79</td></tr> <tr><td>0.0</td><td>0.72</td><td>0.70</td><td>0.72</td></tr> </tbody> </table>		Output Voltage [V]	Load Current [A]			Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	12.0	0.50	0.50	0.50	11.4	0.67	0.72	0.73	10.8	0.68	0.73	0.73	9.6	0.72	0.76	0.76	8.4	0.75	0.80	0.80	7.2	0.79	0.83	0.82	6.0	0.82	0.85	0.84	4.8	0.85	0.87	0.86	3.6	0.87	0.88	0.86	2.4	0.86	0.86	0.84	1.2	0.81	0.80	0.79	0.0	0.72	0.70	0.72
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COSEL

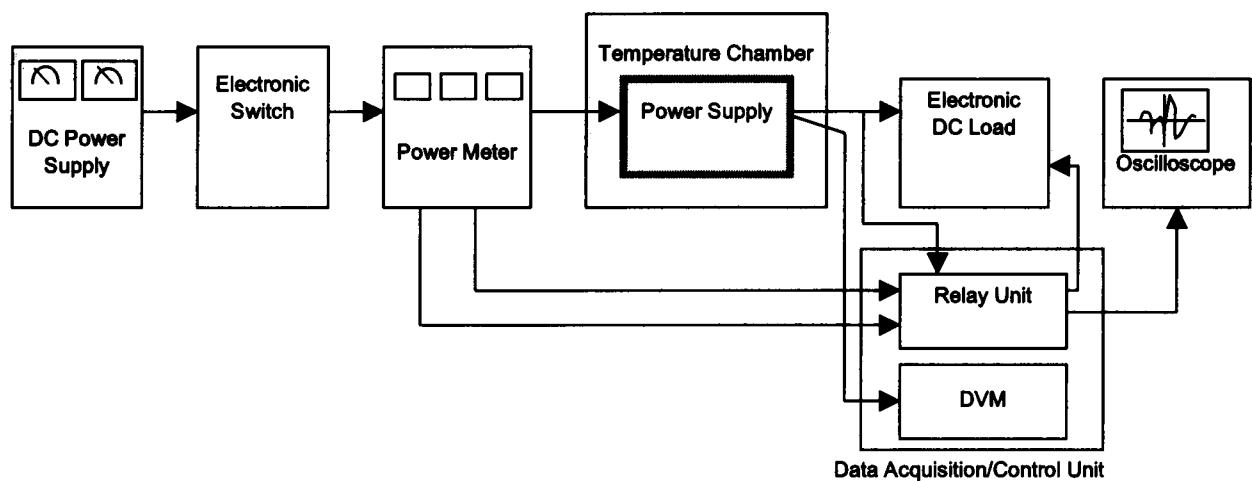


Figure A

