

# TEST DATA OF SUS60515 SUCS60515

Regulated DC Power Supply  
Feb 22, 2005

Approved by : Tetsuo Sugimori  
Tetsuo Sugimori Design Manager

Prepared by : Yoshikazu Mizuno  
Yoshikazu Mizuno Design Engineer

**COSEL CO.,LTD.**



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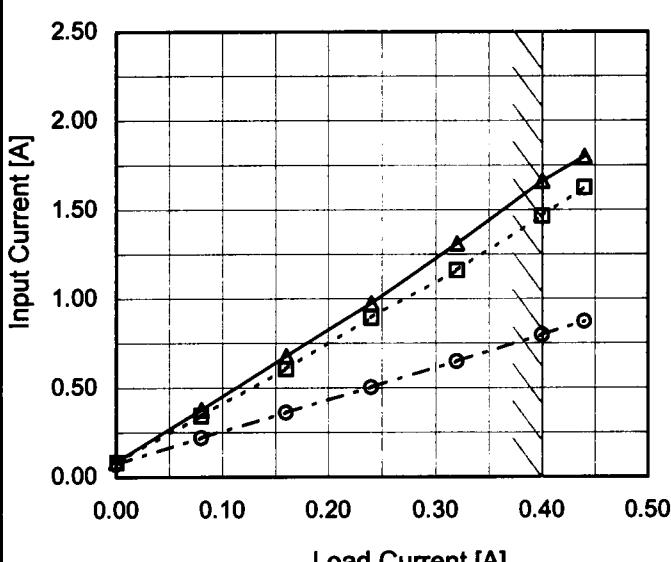
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Model	SUS60515/SUCS60515																																																																									
Item	Input Current (by Input Voltage)																																																																									
Object	_____																																																																									
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 <p>The graph plots Input Current [A] on the y-axis (0.00 to 2.50) against Load Current [A] on the x-axis (0.00 to 0.50). Three curves are shown for input voltages of 4.5V, 5V, and 9V. A slanted line at approximately 0.44A represents the rated load current range.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>4.5[V]</th> <th>5[V]</th> <th>9[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>0.087</td><td>0.082</td><td>0.072</td></tr> <tr><td>0.08</td><td>0.377</td><td>0.342</td><td>0.219</td></tr> <tr><td>0.16</td><td>0.678</td><td>0.608</td><td>0.360</td></tr> <tr><td>0.24</td><td>0.974</td><td>0.894</td><td>0.503</td></tr> <tr><td>0.32</td><td>1.311</td><td>1.160</td><td>0.649</td></tr> <tr><td>0.40</td><td>1.661</td><td>1.466</td><td>0.798</td></tr> <tr><td>0.44</td><td>1.799</td><td>1.625</td><td>0.873</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Load Current [A]	4.5[V]	5[V]	9[V]	0.00	0.087	0.082	0.072	0.08	0.377	0.342	0.219	0.16	0.678	0.608	0.360	0.24	0.974	0.894	0.503	0.32	1.311	1.160	0.649	0.40	1.661	1.466	0.798	0.44	1.799	1.625	0.873	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Temperature 25°C Testing Circuitry Figure A	
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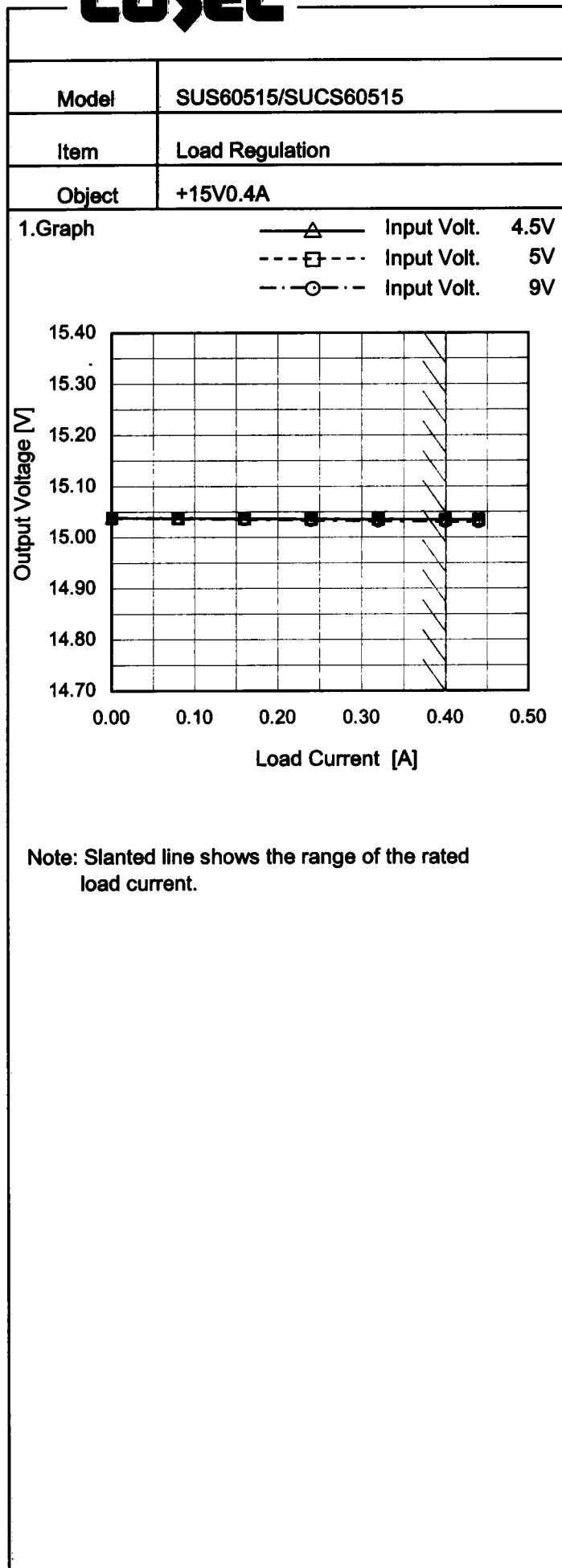
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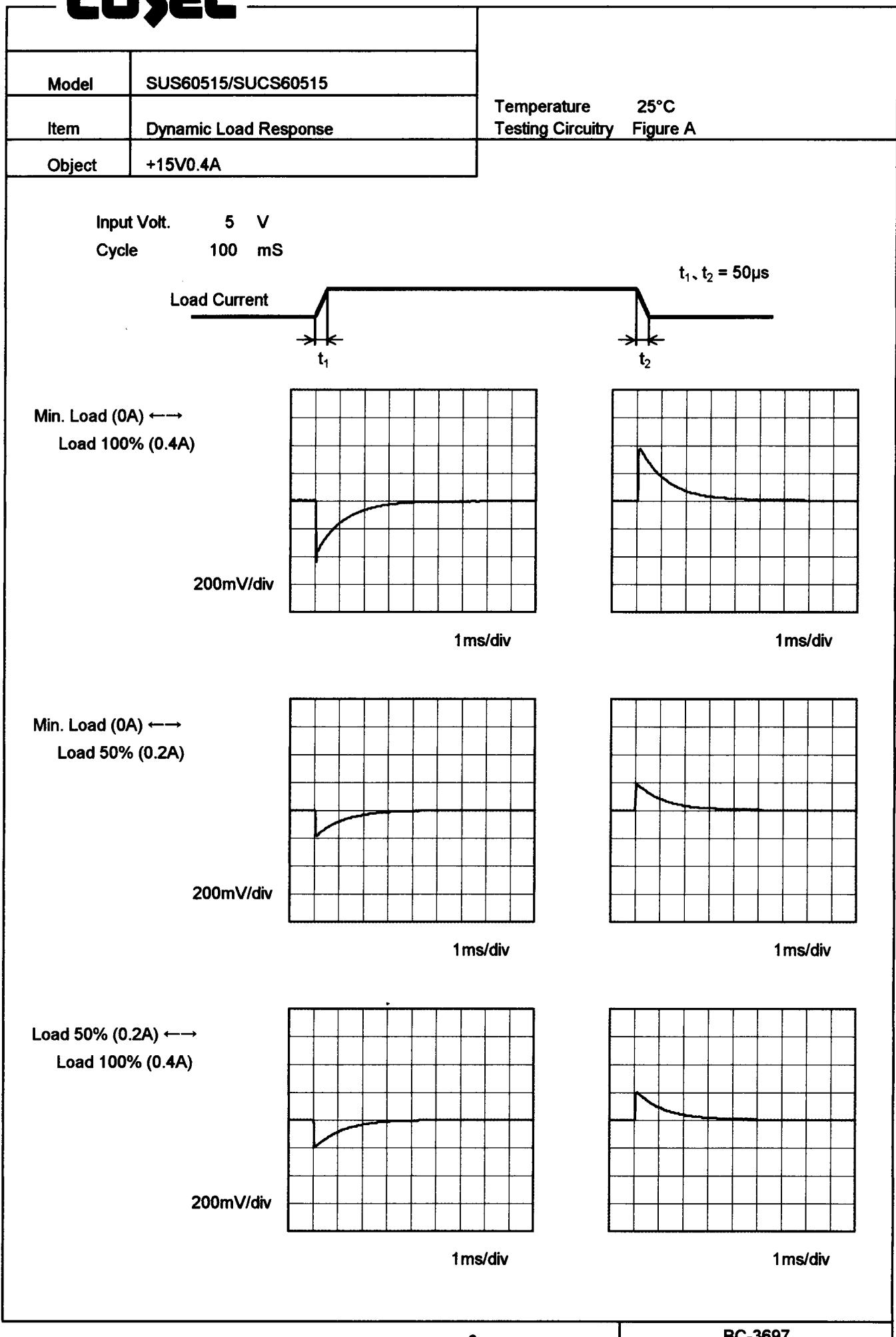
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Temperature 25°C  
Testing Circuitry Figure A

## 2. Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.00	15.038	15.039	15.038
0.08	15.038	15.037	15.036
0.16	15.037	15.037	15.035
0.24	15.036	15.036	15.033
0.32	15.035	15.036	15.032
0.40	15.035	15.035	15.030
0.44	15.034	15.034	15.030
-	-	-	-
-	-	-	-
-	-	-	-
--	-	-	-

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**COSEL**

Model	SUS60515/SUCS60515																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	+15V0.4A																																							
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**COSEL**

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Item	Ripple-Noise	Temperature 25°C Testing Circuitry Figure B																																						
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**COSEL**

<p><b>Model</b> SUS60515/SUCS60515</p> <p><b>Item</b> Ripple Voltage (by Ambient Temp.)</p> <p><b>Object</b> +15V0.4A</p> <p><b>1. Graph</b></p> <p style="text-align: center;">     - - - □ - - - Load 50%      — △ — Load 100%   </p> <p style="text-align: center;">Ripple Voltage [mV]</p> <p style="text-align: center;">Ambient Temperature [°C]</p> <p style="text-align: center;">Input Volt. 5V</p> <p>Measured by 100 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature.</p>	<p><b>Testing Circuitry Figure B</b></p> <p><b>2. Values</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: left; padding: 2px;">Ambient Temperature [°C]</th> <th colspan="2" style="text-align: center; padding: 2px;">Ripple Voltage [mV]</th> </tr> <tr> <th style="text-align: center; padding: 2px;">Load 50%</th> <th style="text-align: center; padding: 2px;">Load 100%</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">-60</td> <td style="text-align: center; padding: 2px;">3</td> <td style="text-align: center; padding: 2px;">7</td> </tr> <tr> <td style="padding: 2px;">-40</td> <td style="text-align: center; padding: 2px;">3</td> <td style="text-align: center; padding: 2px;">7</td> </tr> <tr> <td style="padding: 2px;">-20</td> <td style="text-align: center; padding: 2px;">3</td> <td style="text-align: center; padding: 2px;">6</td> </tr> <tr> <td style="padding: 2px;">0</td> <td style="text-align: center; padding: 2px;">2</td> <td style="text-align: center; padding: 2px;">6</td> </tr> <tr> <td style="padding: 2px;">25</td> <td style="text-align: center; padding: 2px;">2</td> <td style="text-align: center; padding: 2px;">5</td> </tr> <tr> <td style="padding: 2px;">55</td> <td style="text-align: center; padding: 2px;">2</td> <td style="text-align: center; padding: 2px;">3</td> </tr> <tr> <td style="padding: 2px;">60</td> <td style="text-align: center; padding: 2px;">2</td> <td style="text-align: center; padding: 2px;">3</td> </tr> <tr> <td style="padding: 2px;">—</td> <td style="text-align: center; padding: 2px;">—</td> <td style="text-align: center; padding: 2px;">—</td> </tr> <tr> <td style="padding: 2px;">—</td> <td style="text-align: center; padding: 2px;">—</td> <td style="text-align: center; padding: 2px;">—</td> </tr> <tr> <td style="padding: 2px;">—</td> <td style="text-align: center; padding: 2px;">—</td> <td style="text-align: center; padding: 2px;">—</td> </tr> <tr> <td style="padding: 2px;">—</td> <td style="text-align: center; padding: 2px;">—</td> <td style="text-align: center; padding: 2px;">—</td> </tr> </tbody> </table>	Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	3	7	-40	3	7	-20	3	6	0	2	6	25	2	5	55	2	3	60	2	3	—	—	—	—	—	—	—	—	—	—	—	—
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**COSEL**

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Model	SUS60515/SUCS60515	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V0.4A	

### 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 : 4.5 - 9V

Load Current : 0 - 0.4A

\* 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	4.5	0	15.038	±23	±0.2
Minimum Voltage	-40	4.5	0.4	14.993		

**COSEL**

Model	SUS60515/SUUCS60515	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+15V0.4A																								
1.Graph																									
<p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 5V Load 100%</p>																									
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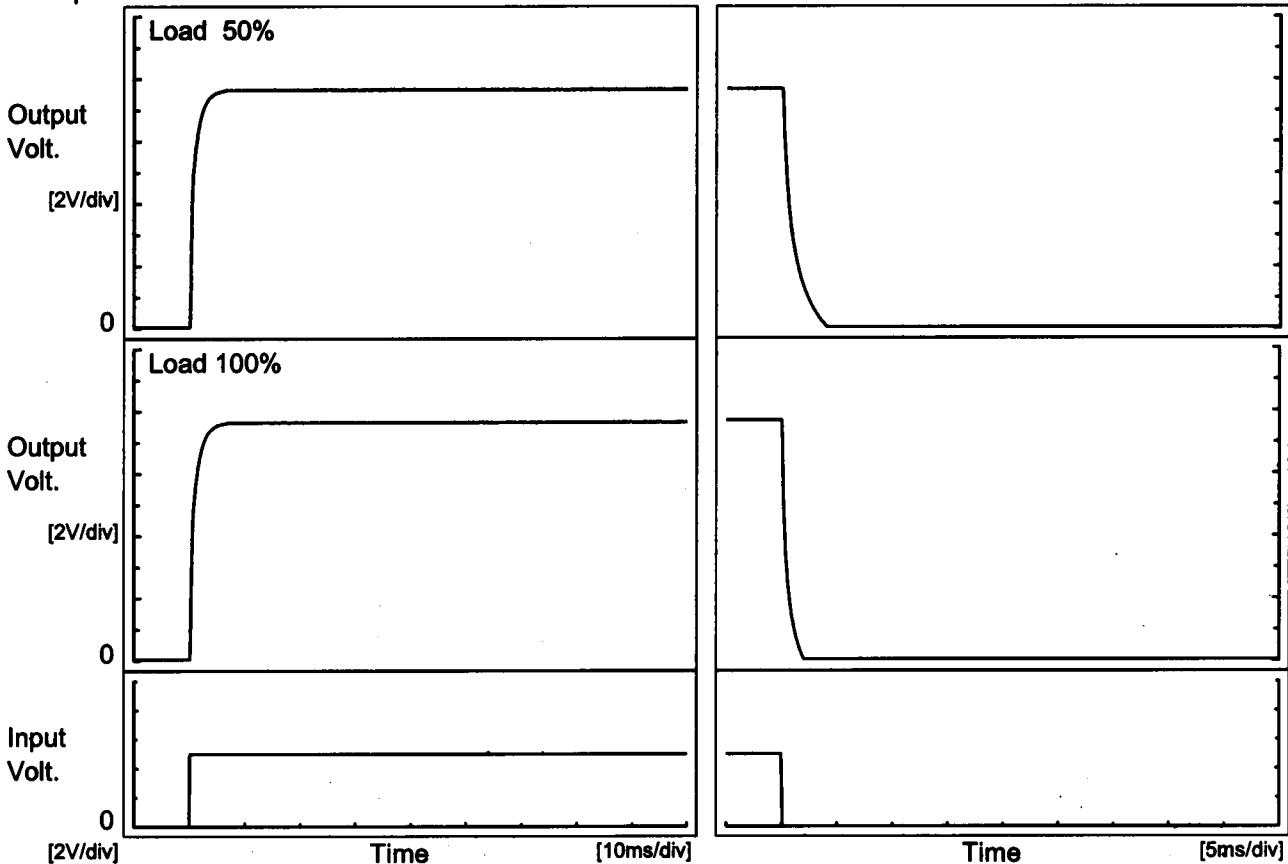
Model SUS60515/SUCS60515

Item Rise and Fall Time

Object +15V0.4A

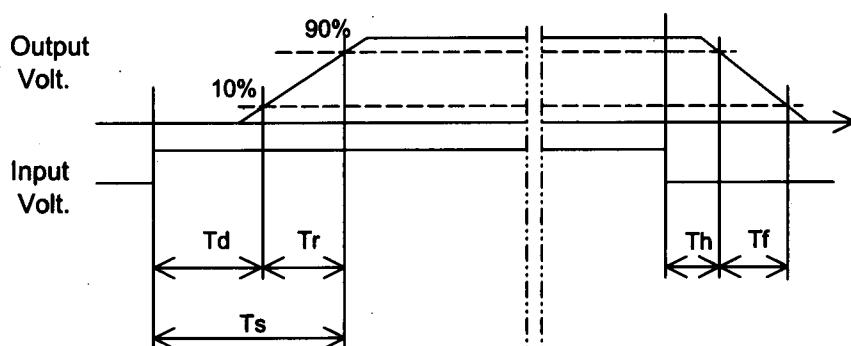
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		0.2	2.0	2.2	0.1	2.5	
100 %		0.2	2.1	2.3	0.1	1.2	



**COSEL**

Model	SUS60515/SUCS60515																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																							
Object	+15V0.4A																																							
1. Graph																																								
<p>Input Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Legend:</p> <ul style="list-style-type: none"> <li>Load 50% (Dashed line with open squares)</li> <li>Load 100% (Solid line with solid squares)</li> </ul>																																								
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# COSEL

Model	SUS60515/SUCS60515	Temperature Testing Circuitry	25°C Figure A
Item	Overcurrent Protection		
Object	+15V0.4A		
1.Graph	<p>Input Volt. 4.5V Input Volt. 5V Input Volt. 9V</p> <p>The graph plots Output Voltage [V] on the y-axis (0 to 20) against Load Current [A] on the x-axis (0.0 to 1.2). Three curves are shown for different input voltages: 4.5V (top), 5V (middle), and 9V (bottom). All curves show a sharp drop in output voltage as load current increases beyond approximately 0.4A. A slanted line is drawn across the graph, starting from the 4.5V curve at ~0.4A and ending at the 9V curve at ~0.6A, representing the range of the rated load current.</p>		
2.Values			
Output Voltage [V]	Load Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
15.0	0.40	0.40	0.40
14.3	0.54	0.57	0.57
13.5	0.55	0.58	0.58
12.0	0.57	0.60	0.58
10.5	0.60	0.62	0.58
9.0	0.62	0.64	0.59
7.5	0.63	0.65	0.59
6.0	0.65	0.66	0.59
4.5	0.65	0.65	0.58
3.0	0.62	0.63	0.56
1.5	0.57	0.57	0.52
0.0	0.87	0.93	0.94

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

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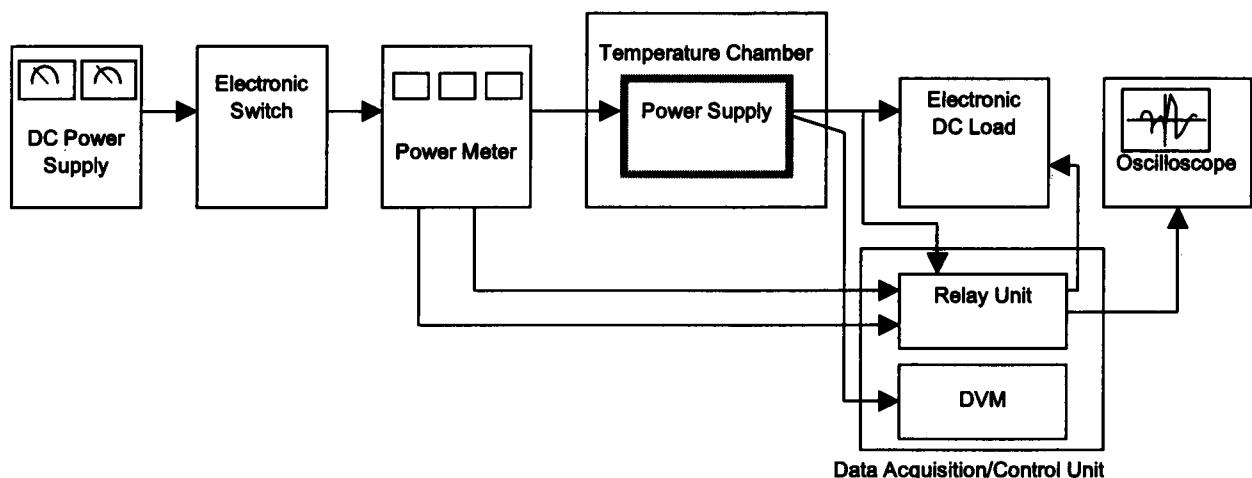


Figure A

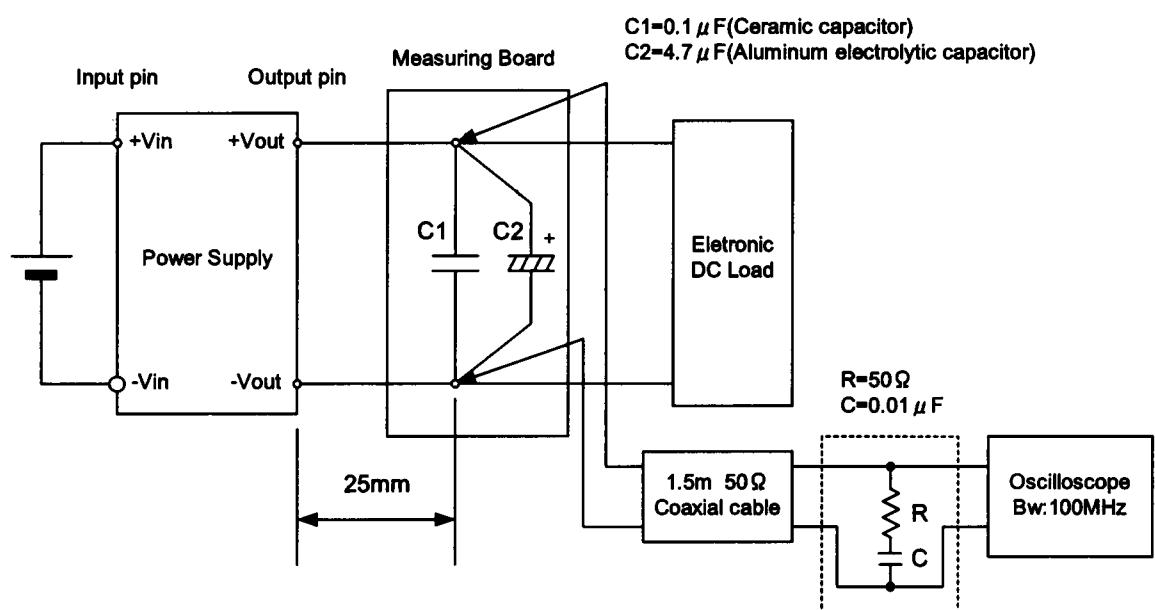


Figure B (Ripple and Ripple noise Characteristic)