



# TEST DATA OF SUS100515 SU CS100515

Regulated DC Power Supply  
Mar 28, 2005

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Yoshimichi Hirokawa Design Engineer

**COSEL CO.,LTD.**



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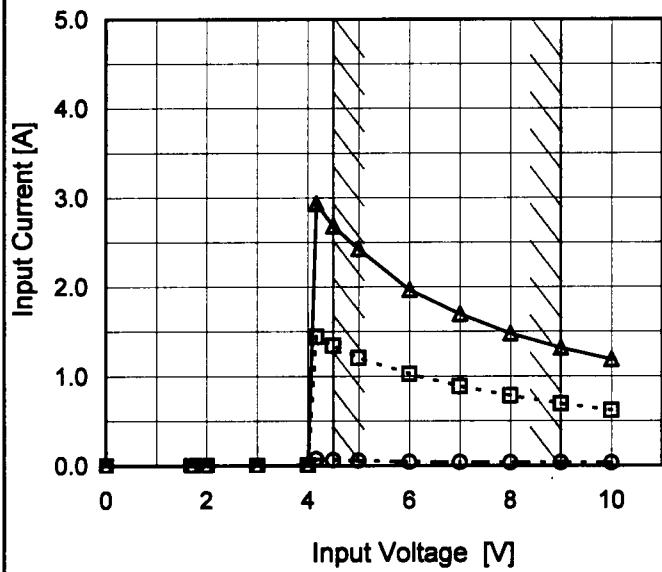
Model	SUS100515/SUCCS100515
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Item	Input Current (by Input Voltage)
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Object	_____
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## 1. Graph

—△— Load 100%  
 - -□-- Load 50%  
 - -○-- Load 0%



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

 Temperature 25°C  
 Testing Circuitry Figure A

## 2. Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.00	0.000	0.000	0.000
1.70	0.000	0.000	0.000
2.00	0.000	0.000	0.000
3.00	0.000	0.000	0.000
4.00	0.004	0.006	0.005
4.16	0.074	1.445	2.938
4.50	0.066	1.344	2.683
5.00	0.056	1.207	2.428
6.00	0.044	1.027	1.967
7.00	0.040	0.889	1.700
8.00	0.036	0.783	1.480
9.00	0.036	0.694	1.319
10.00	0.033	0.618	1.190
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--	-	-	-
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--	-	-	-
--	-	-	-

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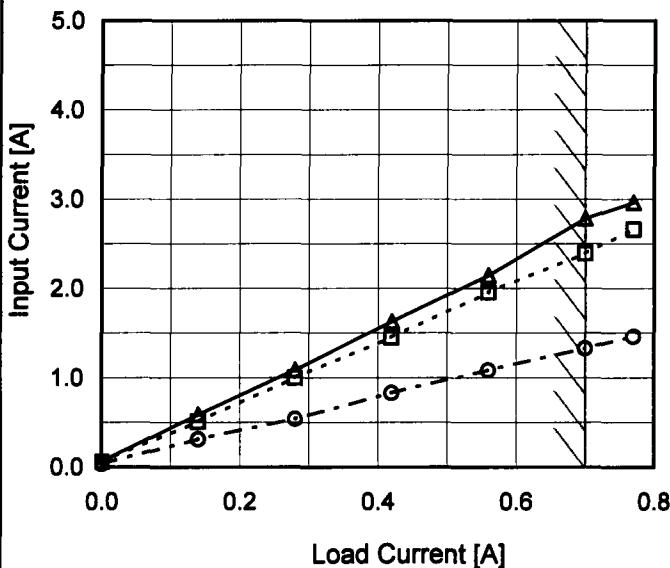
Model SUS100515/SUCCS100515

Item Input Current (by Load Current)

Object \_\_\_\_\_

1. Graph

—△— Input Volt. 4.5V  
 - - □ - - Input Volt. 5V  
 - - ○ - - Input Volt. 9V



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

Temperature 25°C  
 Testing Circuitry Figure A

2. Values

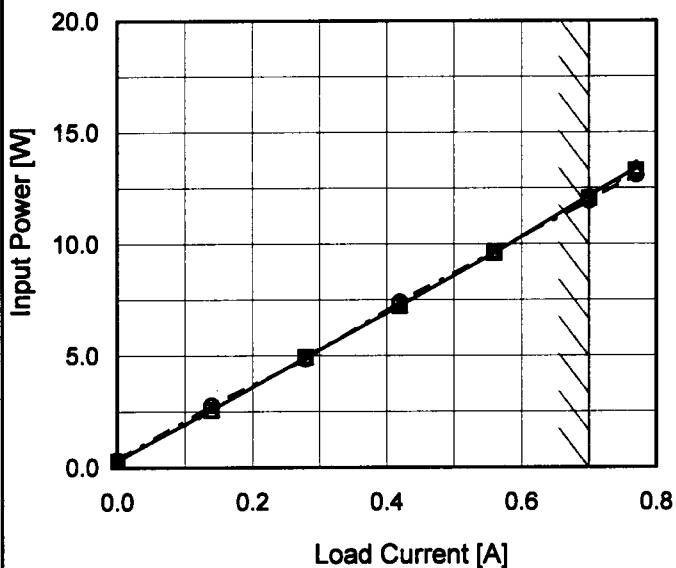
Load Current [A]	Input Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.00	0.066	0.057	0.037
0.14	0.589	0.510	0.313
0.28	1.087	0.999	0.540
0.42	1.630	1.451	0.830
0.56	2.147	1.958	1.084
0.70	2.785	2.392	1.330
0.77	2.963	2.662	1.462
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

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Model	SUS100515/SUCS100515
Item	Input Power (by Load Current)
Object	_____

## 1.Graph

—△— Input Volt. 4.5V  
 - -□--- Input Volt. 5V  
 - -○--- Input Volt. 9V



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

 Temperature 25°C  
 Testing Circuitry Figure A

## 2.Values

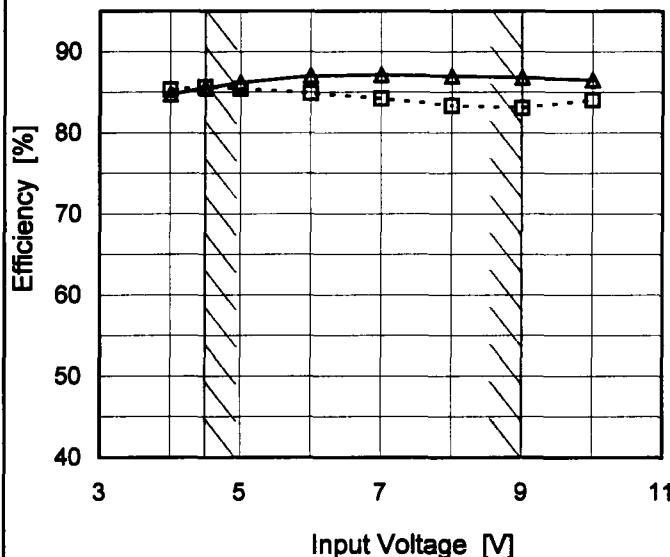
Load Current [A]	Input Power [W]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.00	0.30	0.29	0.33
0.14	2.59	2.55	2.79
0.28	4.92	4.94	4.84
0.42	7.24	7.23	7.41
0.56	9.60	9.59	9.65
0.70	12.17	12.03	11.93
0.77	13.39	13.28	13.09
-	-	-	-
-	-	-	-
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**COSEL**

Model	SUS100515/SUCS100515
Item	Efficiency (by Input Voltage)
Object	_____

## 1. Graph

--- □--- Load 50%  
 —△— Load 100%



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

Temperature 25°C  
Testing Circuitry Figure A

## 2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
4.0	85.3	84.7
4.5	85.6	85.5
5.0	85.4	86.2
6.0	84.9	87.0
7.0	84.2	87.1
8.0	83.4	87.0
9.0	83.1	86.8
10.0	84.1	86.5
--	-	-

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Model	SUS100515/SUCCS100515	Temperature	25°C																																																			
Item	Efficiency (by Load Current)	Testing Circuitry	Figure A																																																			
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Model	SUS100515/SUCCS100515																																	
Item	Line Regulation	Temperature 25°C Testing Circuitry Figure A																																
Object	+15V0.7A																																	
1. Graph																																		
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Input Voltage [V]	Output Voltage [V]																																	
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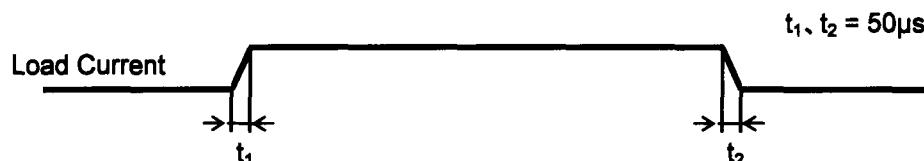
**COSEL**

Model SUS100515/SUCS100515

Temperature 25°C  
Testing Circuitry Figure A

Item Dynamic Load Response

Object +15V0.7A

Input Volt. 5 V  
Cycle 100 mSMin. Load (0A) ↔  
Load 100% (0.7A)

200mV/div

500μs/div

500μs/div

Min. Load (0A) ↔  
Load 50% (0.35A)

200mV/div

500μs/div

500μs/div

Load 50% (0.35A) ↔  
Load 100% (0.7A)

200mV/div

500μs/div

500μs/div

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Model	SUS100515/SUCS100515	Temperature 25°C																																			
Item	Ripple Voltage (by Load Current)	Testing Circuitry Figure B																																			
Object	+15V0.7A																																				
1. Graph		2. Values																																			
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The graph shows two sets of data points: Input Volt. 4.5V (solid line with triangle markers) and Input Volt. 9V (dashed line with circle markers). The x-axis represents Load Current [A] from 0.0 to 0.8. The y-axis represents Ripple Voltage [mV] from 0 to 80. A slanted line indicates the range of the rated load current.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (Input Volt. 4.5V)</th> <th>Ripple Voltage [mV] (Input Volt. 9V)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>3</td><td>3</td></tr> <tr><td>0.14</td><td>3</td><td>3</td></tr> <tr><td>0.28</td><td>4</td><td>3</td></tr> <tr><td>0.42</td><td>5</td><td>4</td></tr> <tr><td>0.56</td><td>6</td><td>5</td></tr> <tr><td>0.70</td><td>8</td><td>6</td></tr> <tr><td>0.77</td><td>9</td><td>7</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>		Load Current [A]	Ripple Voltage [mV] (Input Volt. 4.5V)	Ripple Voltage [mV] (Input Volt. 9V)	0.00	3	3	0.14	3	3	0.28	4	3	0.42	5	4	0.56	6	5	0.70	8	6	0.77	9	7	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV] (Input Volt. 4.5V)	Ripple Voltage [mV] (Input Volt. 9V)																																			
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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> <p>Ripple [mVp-p]</p> <p>The diagram shows a complex ripple wave form consisting of multiple triangular cycles. Two horizontal lines indicate the peak-to-peak voltage range of the ripple. An arrow pointing down indicates the positive half-cycle, and an arrow pointing up indicates the negative half-cycle.</p>																																					

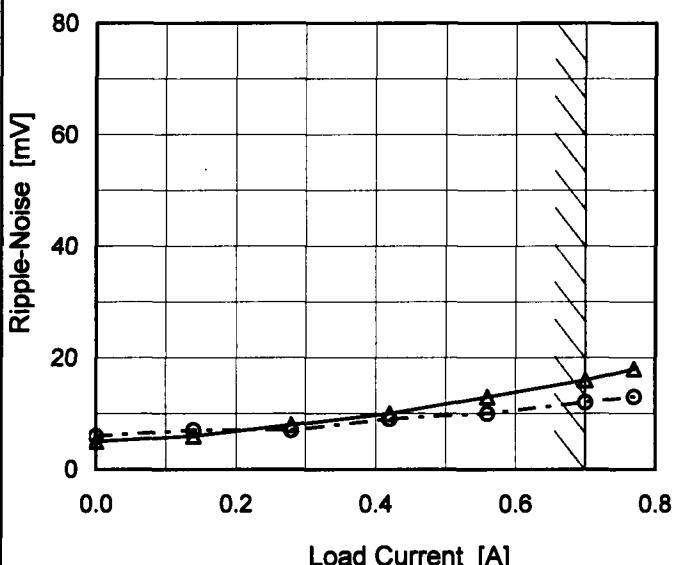
COSEL

Model	SUS100515/SUCS100515
Item	Ripple-Noise
Object	+15V0.7A

Temperature 25°C  
Testing Circuitry Figure B

## 1. Graph

—▲— Input Volt. 4.5V  
- - ○ - - Input Volt. 9V



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.

## 2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 4.5 [V]	Input Volt. 9 [V]
0.00	5	6
0.14	6	7
0.28	8	7
0.42	10	9
0.56	13	10
0.70	16	12
0.77	18	13
--	-	-
--	-	-
--	-	-
--	-	-

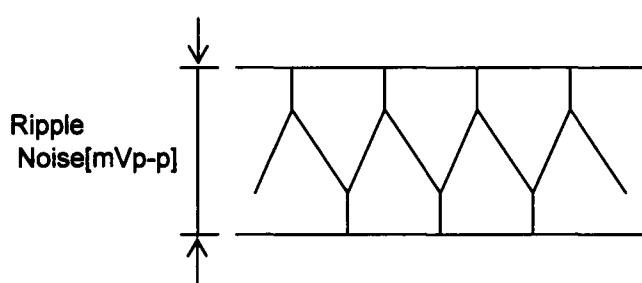


Fig.Complex Ripple Noise Wave Form

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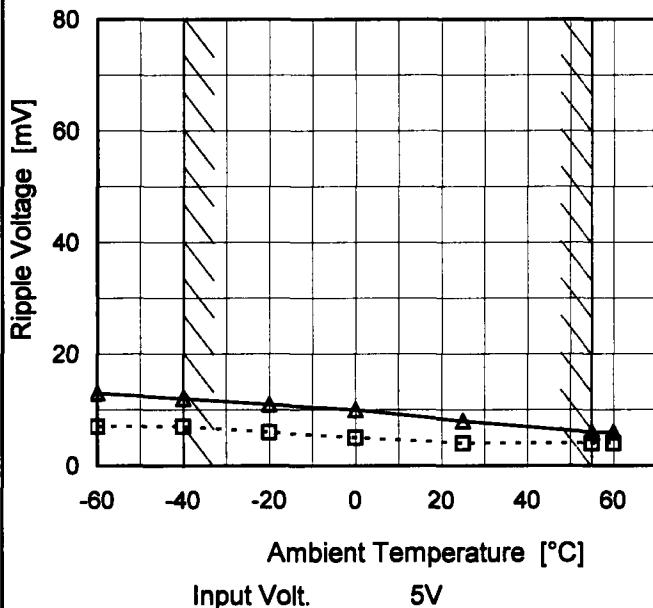
Model SUS100515/SUCCS100515

Item Ripple Voltage (by Ambient Temp.)

Object +15V0.7A

## 1. Graph

- - - □ - - Load 50%  
 — ▲ — Load 100%



Input Volt. 5V

Measured by 100 MHz Oscilloscope.

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

Testing Circuitry Figure B

## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	7	13
-40	7	12
-20	6	11
0	5	10
25	4	8
55	4	6
60	4	6
--	-	-
--	-	-
--	-	-
--	-	-

# COSEL

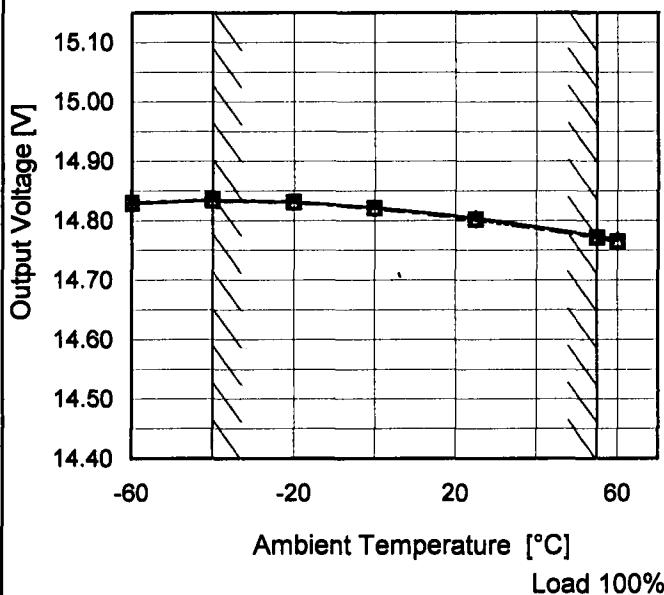
Model SUS100515/SUCCS100515

Item Ambient Temperature Drift

Object +15V0.7A

1. Graph

—△— Input Volt. 4.5V  
 - - -□- - Input Volt. 5V  
 - - ○- - Input Volt. 9V



Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
-60	14.829	14.830	14.830
-40	14.834	14.834	14.833
-20	14.831	14.831	14.830
0	14.822	14.821	14.820
25	14.804	14.802	14.801
55	14.774	14.771	14.771
60	14.767	14.765	14.763
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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



Model	SUS100515/SUCS100515	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+15V0.7A	

### 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 - 0.7A

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

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

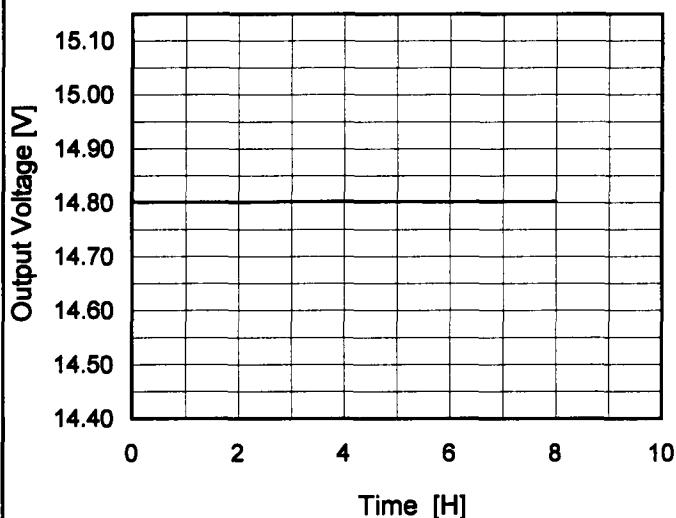
### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	9	0	14.839	±34	±0.2
Minimum Voltage	55	9	0.7	14.771		

**COSEL**

Model	SUS100515/SUCCS100515
Item	Time Lapse Drift
Object	+15V0.7A

1. Graph



Input Volt.      5V  
Load            100%

Temperature      25°C  
Testing Circuitry      Figure A

2. Values

Time since start [H]	Output Voltage [V]
0.0	14.812
0.5	14.801
1.0	14.801
2.0	14.801
3.0	14.802
4.0	14.802
5.0	14.802
6.0	14.802
7.0	14.802
8.0	14.802

# COSEL

Model SUS100515/SUCS100515

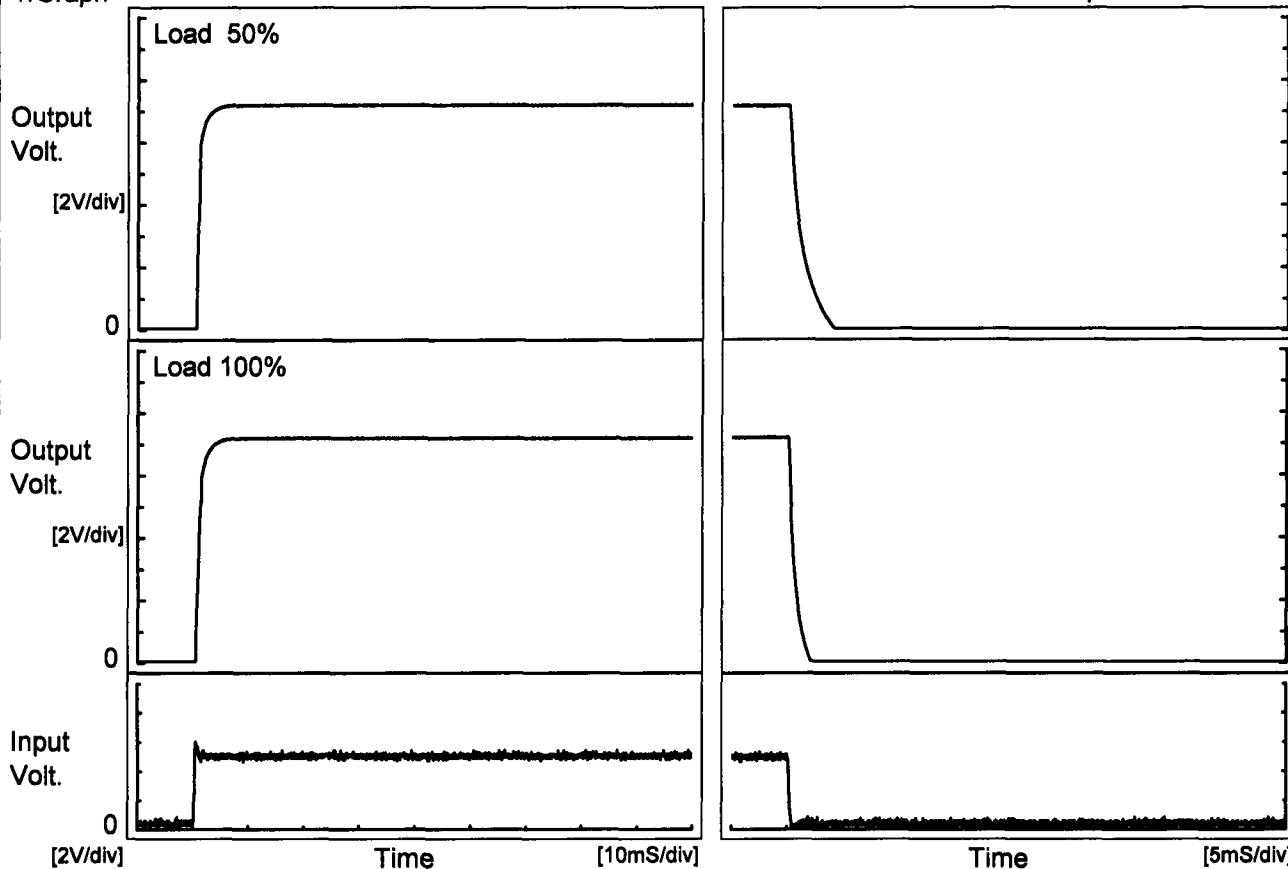
Temperature 25°C  
Testing Circuitry Figure A

Item Rise and Fall Time

Object +15V0.7A

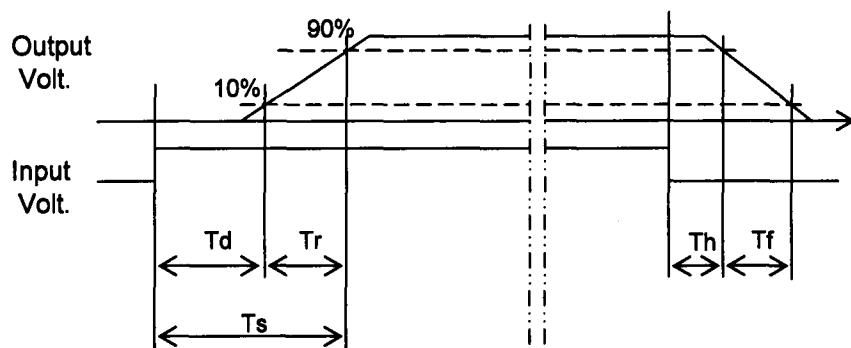
1. Graph

Input Volt. 5 V



2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[mS]
50 %		0.5	2.1	2.6	0.2	2.6	
100 %		0.5	2.5	3.0	0.2	1.3	



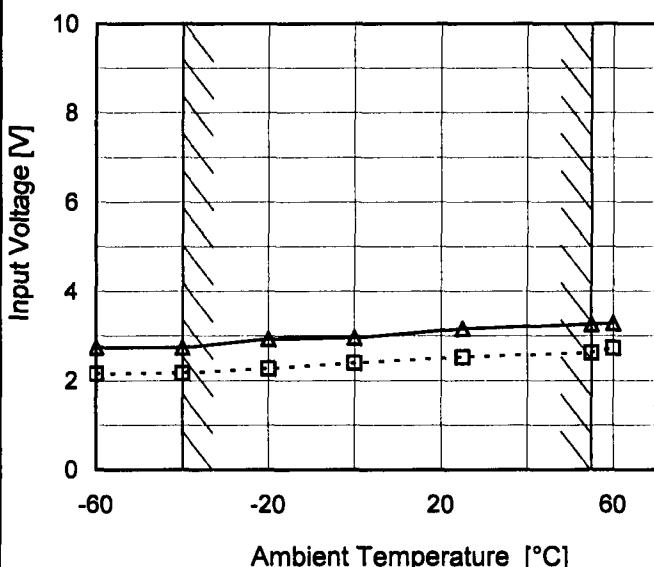
**COSEL**

Model SUS100515/SUCCS100515

 Item Minimum Input Voltage  
for Regulated Output Voltage

Object +15V0.7A

## 1. Graph

 --- □ --- Load 50%  
 —△— Load 100%


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

## Testing Circuitry Figure A

## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	2.2	2.8
-40	2.2	2.8
-20	2.3	3.0
0	2.4	3.0
25	2.6	3.2
55	2.7	3.3
60	2.8	3.3
--	-	-
--	-	-
--	-	-
--	-	-

**COSEL**

Model	SUS100515/SUCS100515
Item	Overcurrent Protection
Object	+15V0.7A
1.Graph	
<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 2.0). Three curves are shown for Input Voltages of 4.5V, 5V, and 9V. A slanted line indicates the range of the rated load current.</p>	
<p>Note: Slanted line shows the range of the rated load current.</p>	

 Temperature 25°C  
 Testing Circuitry Figure A

## 2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
15.0	0.94	0.98	1.01
14.3	0.97	1.02	1.09
13.5	1.00	1.05	1.12
12.0	1.01	1.05	1.08
10.5	1.01	1.04	1.02
9.0	1.00	1.03	0.96
7.5	1.00	1.02	0.90
6.0	0.97	1.02	0.85
4.5	0.97	1.03	0.81
3.0	1.00	1.06	0.73
1.5	1.06	1.14	0.71
0.0	1.31	1.40	1.63

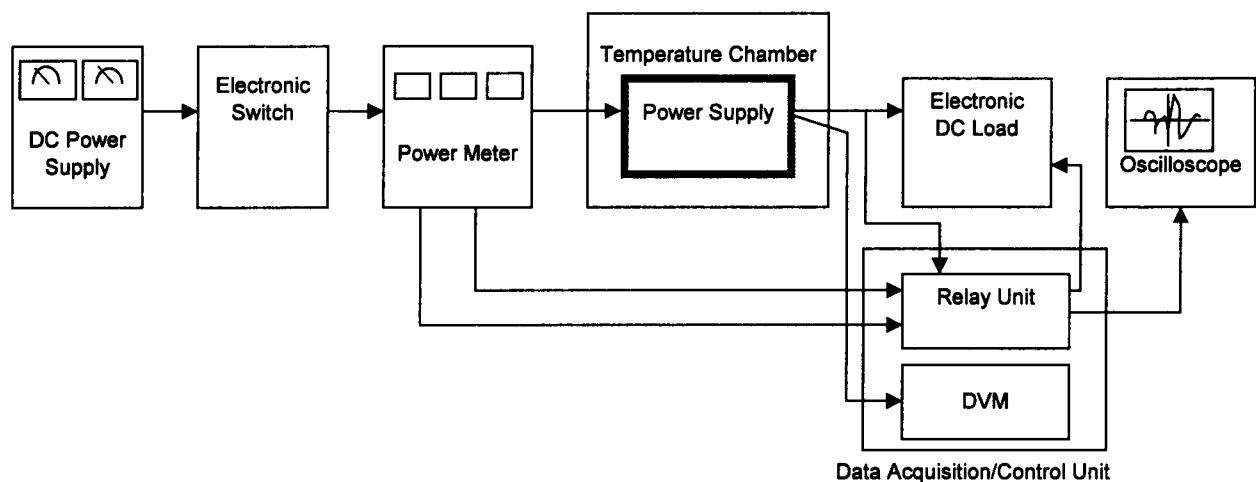


Figure A

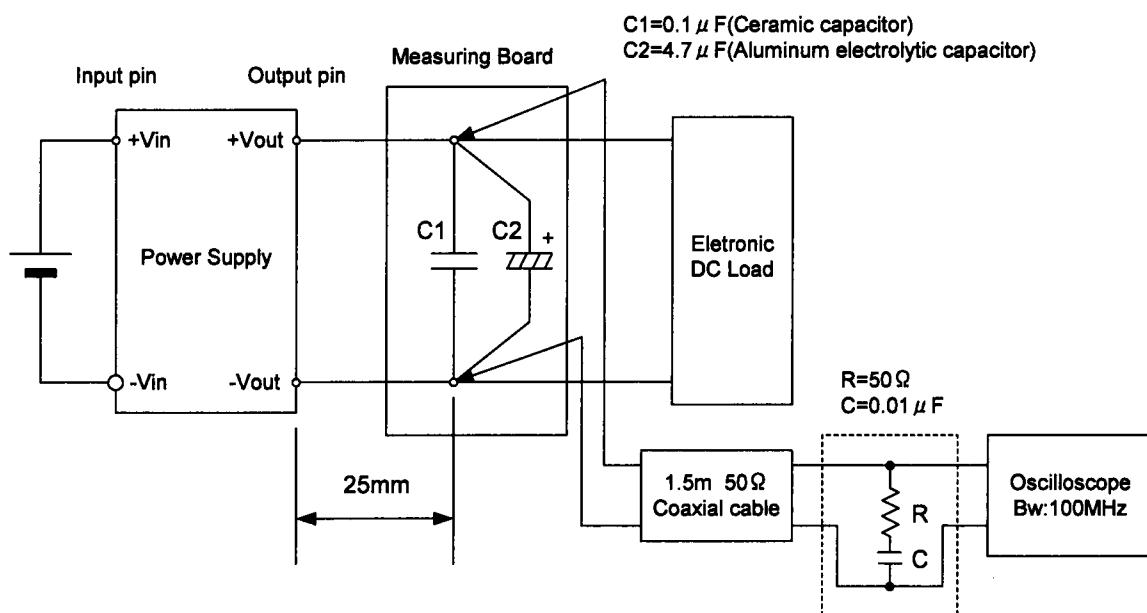


Figure B(Ripple and Ripple noise Characteristic)