



# TEST DATA OF SUS101215 SUCS101215

Regulated DC Power Supply  
Mar 24, 2005

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**COSEL CO.,LTD.**



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Model		SUS101215/SUCS101215																																																																																
Item		Input Current (by Input Voltage)																																																																																
Object																																																																																		
1.Graph <div><div><div><div>—△—</div><div>Load 100%</div></div><div><div>---□---</div><div>Load 50%</div></div><div><div>---○---</div><div>Load 0%</div></div></div><p>Note: Slanted line shows the range of the rated input voltage.</p></div>																																																																																		
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Input Voltage [V]	Input Current [A]																																																																																	
	Load 0%	Load 50%	Load 100%																																																																															
0.0	0.000	0.000	0.000																																																																															
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Model

SUS101215/SUCS101215

Item

Input Current (by Load Current)

Object

Temperature

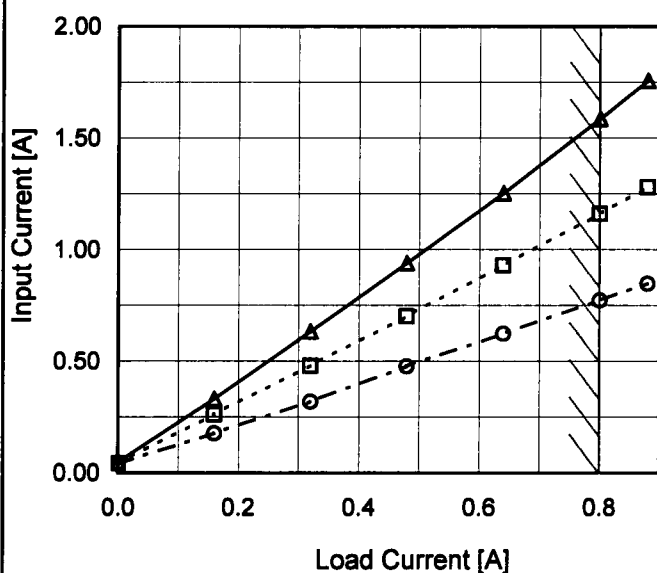
25°C

Testing Circuitry

Figure A

## 1. Graph

—△— Input Volt. 9V  
 ---□--- Input Volt. 12V  
 - - -○- - - Input Volt. 18V



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

## 2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	0.049	0.044	0.040
0.16	0.333	0.262	0.177
0.32	0.634	0.480	0.319
0.48	0.940	0.701	0.476
0.64	1.253	0.929	0.623
0.80	1.586	1.161	0.773
0.88	1.757	1.280	0.848
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



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Model		SUS101215/SUCS101215		Temperature 25°C																																	
Item		Efficiency (by Input Voltage)		Testing Circuitry Figure A																																	
Object																																					
1.Graph				2.Values																																	
<div><div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div><p>Efficiency [%]</p><p>Input Voltage [V]</p><p>Note: Slanted line shows the range of the rated input voltage.</p></div>				<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>8</td><td>87.6</td><td>86.8</td></tr><tr><td>9</td><td>87.6</td><td>87.5</td></tr><tr><td>10</td><td>86.9</td><td>87.8</td></tr><tr><td>12</td><td>86.3</td><td>88.3</td></tr><tr><td>15</td><td>85.1</td><td>87.9</td></tr><tr><td>18</td><td>83.8</td><td>87.4</td></tr><tr><td>20</td><td>82.9</td><td>86.9</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	8	87.6	86.8	9	87.6	87.5	10	86.9	87.8	12	86.3	88.3	15	85.1	87.9	18	83.8	87.4	20	82.9	86.9	--	-	-	--	-	-
Input Voltage [V]	Efficiency [%]																																				
	Load 50%	Load 100%																																			
8	87.6	86.8																																			
9	87.6	87.5																																			
10	86.9	87.8																																			
12	86.3	88.3																																			
15	85.1	87.9																																			
18	83.8	87.4																																			
20	82.9	86.9																																			
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Model	SUS101215/SUCS101215	Temperature 25°C Testing Circuitry Figure A																															
Item	Line Regulation																																
Object	+15V0.8A																																
1.Graph		2.Values																															
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <table><thead><tr><th>Input Voltage [V]</th><th>Output Voltage [V] Load 50%</th><th>Output Voltage [V] Load 100%</th></tr></thead><tbody><tr><td>8</td><td>14.895</td><td>14.891</td></tr><tr><td>9</td><td>14.896</td><td>14.890</td></tr><tr><td>10</td><td>14.896</td><td>14.890</td></tr><tr><td>12</td><td>14.896</td><td>14.890</td></tr><tr><td>15</td><td>14.896</td><td>14.891</td></tr><tr><td>18</td><td>14.896</td><td>14.890</td></tr><tr><td>20</td><td>14.896</td><td>14.890</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> <p>Note: Slanted line shows the range of the rated input voltage.</p>		Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%	8	14.895	14.891	9	14.896	14.890	10	14.896	14.890	12	14.896	14.890	15	14.896	14.891	18	14.896	14.890	20	14.896	14.890	--	-	-	--	-	-		
Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%																															
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--	-	-																															
--	-	-																															



<b>Model</b>		SUS101215/SUCS101215		<b>Temperature</b>	25°C
<b>Item</b>		Load Regulation		<b>Testing Circuitry</b>	Figure A
<b>Object</b>		+15V0.8A			

1.Graph

—△— Input Volt. 9V  
- - □ - - Input Volt. 12V  
- · ○ · - Input Volt. 18V

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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	14.903	14.898	14.900
0.16	14.901	14.897	14.898
0.32	14.898	14.896	14.897
0.48	14.896	14.896	14.896
0.64	14.894	14.895	14.895
0.80	14.890	14.894	14.895
0.88	14.888	14.893	14.894
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

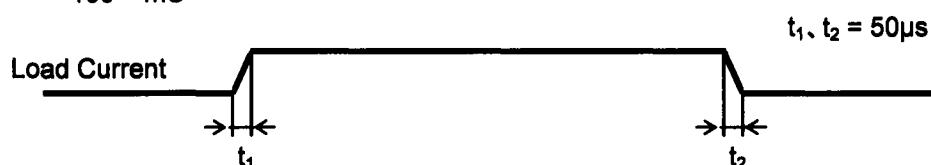
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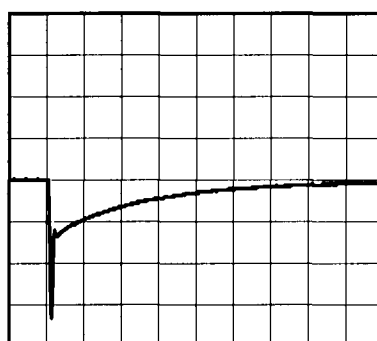
Model	SUS101215/SUCS101215	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+15V0.8A		

Input Volt. 12 V  
Cycle 100 mS



Min. Load (0A)  $\longleftrightarrow$   
Load 100% (0.8A)

200mV/div



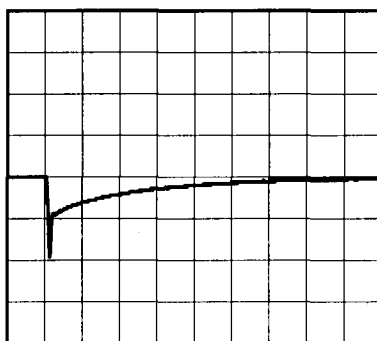
500µs/div



500µs/div

Min. Load (0A)  $\longleftrightarrow$   
Load 50% (0.4A)

200mV/div



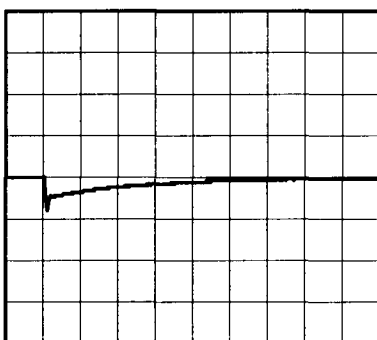
500µs/div



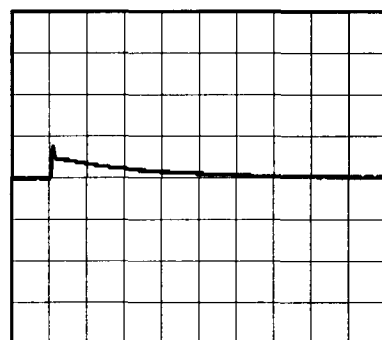
500µs/div

Load 50% (0.4A)  $\longleftrightarrow$   
Load 100% (0.8A)

200mV/div



500µs/div



500µs/div

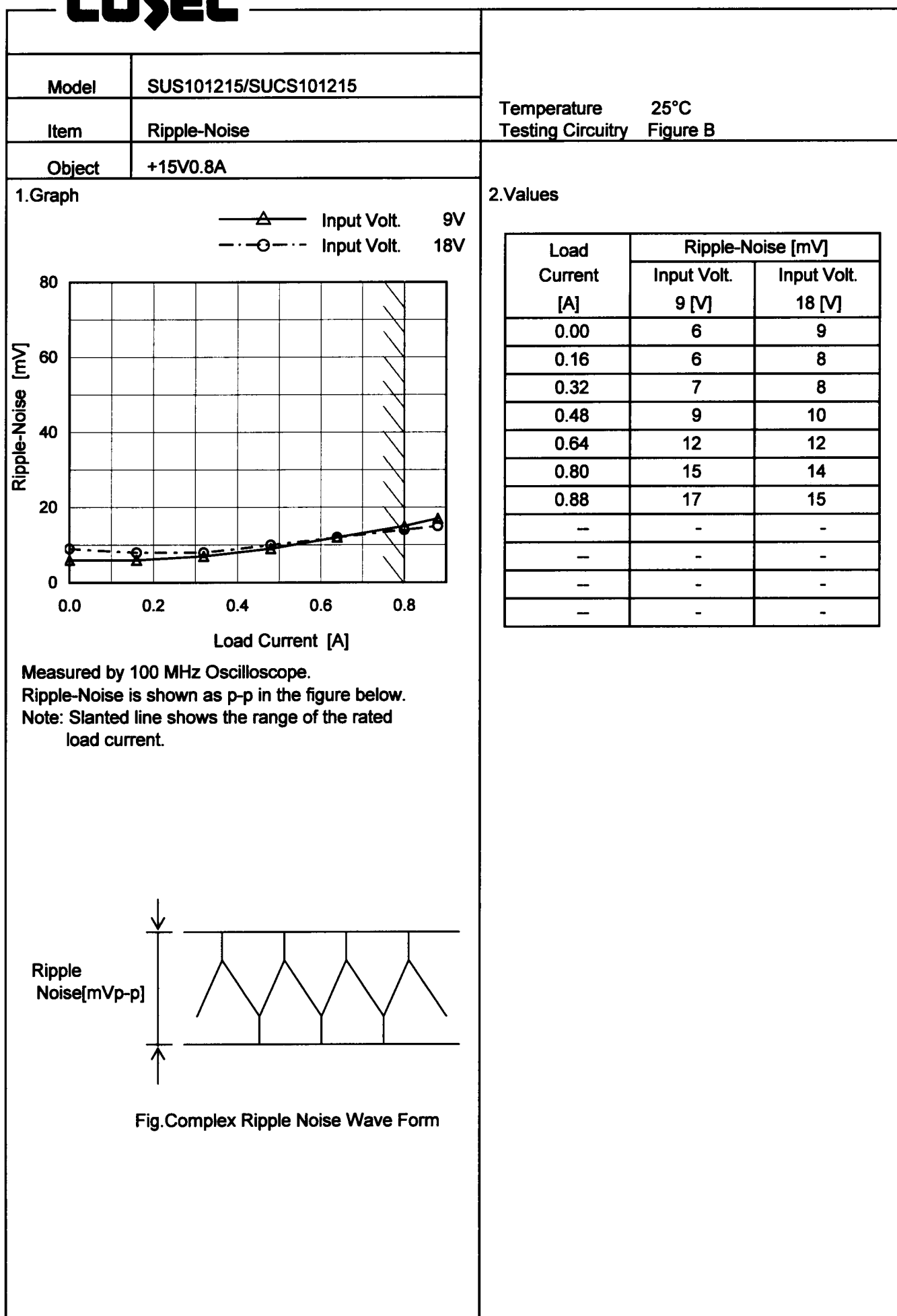


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Model		SUS101215/SUCS101215		Temperature Testing Circuitry	25°C Figure B																																						
Item		Ripple Voltage (by Load Current)																																									
Object		+15V0.8A																																									
1.Graph																																											
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Input Volt.</div><div>9V</div></div><div><div>Input Volt.</div><div>18V</div></div></div><div></div></div> <div><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></div> <div><div><div>Ripple [mVp-p]</div><div></div></div><div>Fig.Complex Ripple Wave Form</div></div>						2.Values																																					
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 9 [V]</th><th>Input Volt. 18 [V]</th></tr><tr><td>0.00</td><td>3</td><td>4</td></tr><tr><td>0.16</td><td>4</td><td>7</td></tr><tr><td>0.32</td><td>3</td><td>4</td></tr><tr><td>0.48</td><td>5</td><td>5</td></tr><tr><td>0.64</td><td>7</td><td>6</td></tr><tr><td>0.80</td><td>9</td><td>6</td></tr><tr><td>0.88</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></table>				Load Current [A]	Ripple Voltage [mV]		Input Volt. 9 [V]	Input Volt. 18 [V]	0.00	3	4	0.16	4	7	0.32	3	4	0.48	5	5	0.64	7	6	0.80	9	6	0.88	9	7	—	-	-	—	-	-	—	-	-	—	-	-
Load Current [A]	Ripple Voltage [mV]																																										
	Input Volt. 9 [V]	Input Volt. 18 [V]																																									
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Model

SUS101215/SUCS101215

Item

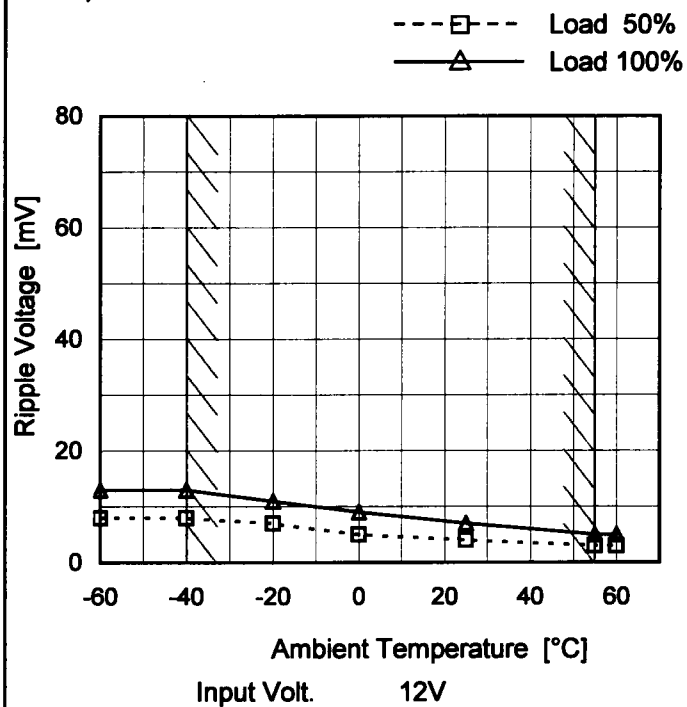
Ripple Voltage (by Ambient Temp.)

Object

+15V0.8A

Testing Circuitry Figure B

## 1. Graph



Measured by 100 MHz Oscilloscope.

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

## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	8	13
-40	8	13
-20	7	11
0	5	9
25	4	7
55	3	5
60	3	5
—	—	—
—	—	—
—	—	—
—	—	—



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		Testing Circuitry Figure A
Model	SUS101215/SUCS101215	
Item	Output Voltage Accuracy	
Object	+15V0.8A	

### 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 - 0.8A

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

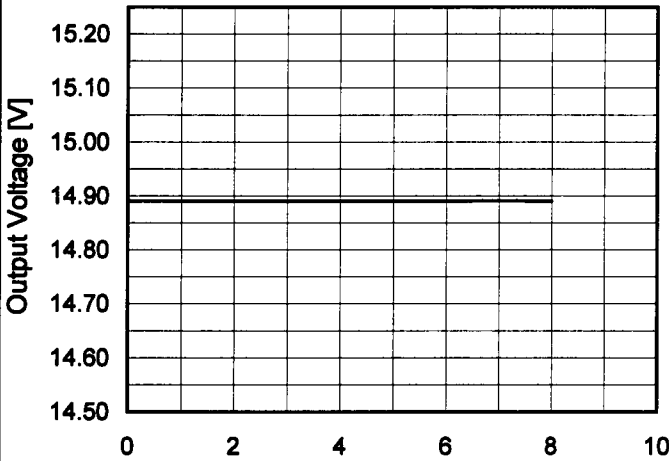
\* Output Voltage Accuracy (Ration) =  $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	18	0	14.926	±33	±0.2
Minimum Voltage	55	18	0.8	14.861		



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Model	SUS101215/SUCS101215																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+15V0.8A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 12V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>14.895</td></tr><tr><td>0.5</td><td>14.891</td></tr><tr><td>1.0</td><td>14.890</td></tr><tr><td>2.0</td><td>14.890</td></tr><tr><td>3.0</td><td>14.891</td></tr><tr><td>4.0</td><td>14.891</td></tr><tr><td>5.0</td><td>14.891</td></tr><tr><td>6.0</td><td>14.891</td></tr><tr><td>7.0</td><td>14.891</td></tr><tr><td>8.0</td><td>14.891</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	14.895	0.5	14.891	1.0	14.890	2.0	14.890	3.0	14.891	4.0	14.891	5.0	14.891	6.0	14.891	7.0	14.891	8.0	14.891
Time since start [H]	Output Voltage [V]																								
0.0	14.895																								
0.5	14.891																								
1.0	14.890																								
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3.0	14.891																								
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5.0	14.891																								
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7.0	14.891																								
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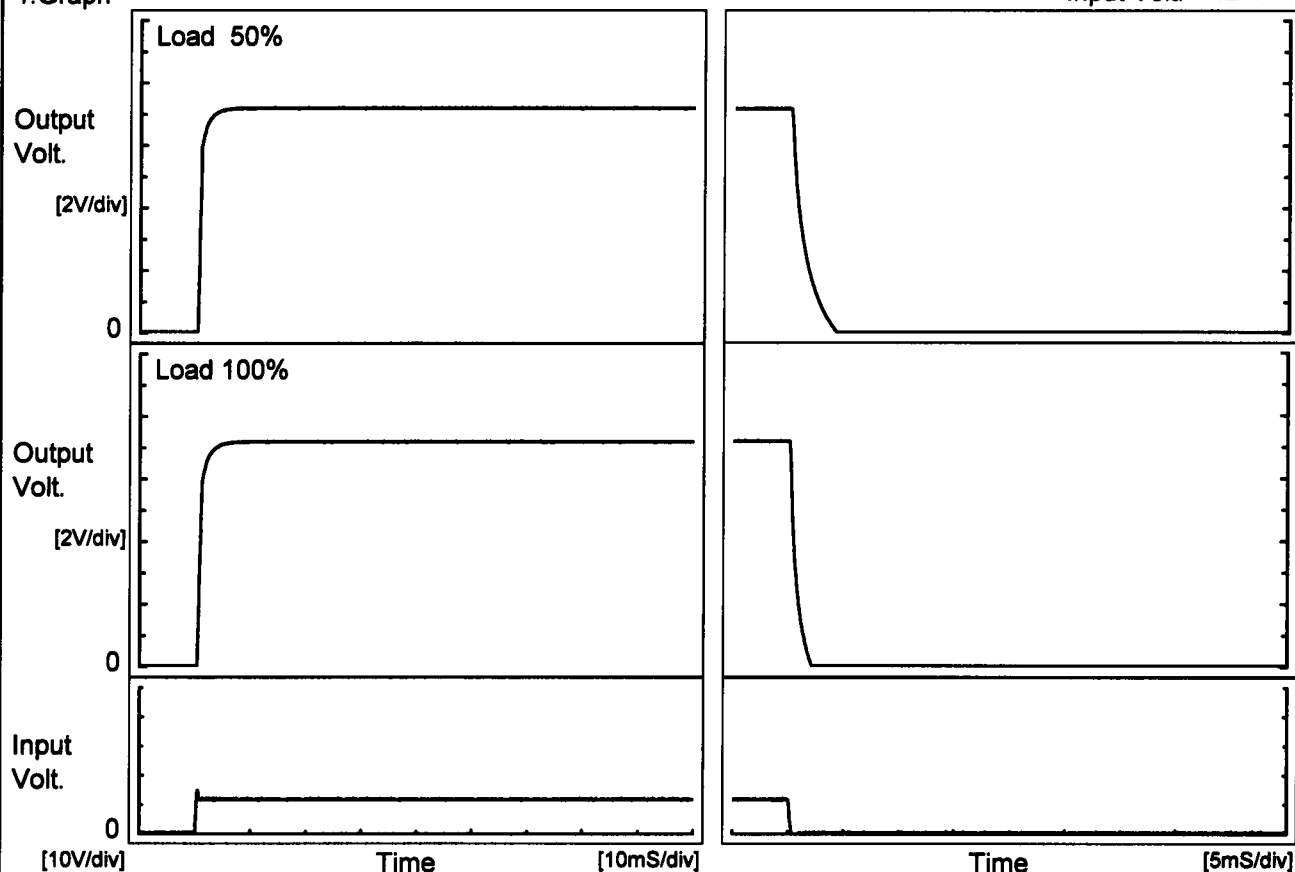


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Model	SUS101215/SUCS101215	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+15V0.8A		

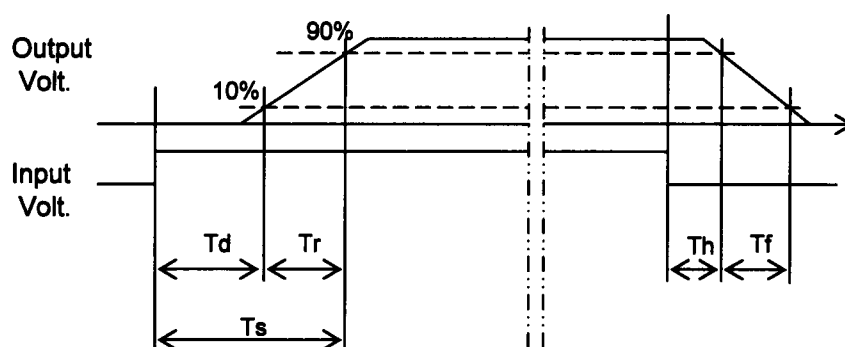
## 1. Graph

Input Volt. 12 V



## 2. Values

		[mS]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.4	2.0	2.4	0.2	2.7
100 %		0.5	2.2	2.7	0.2	1.3





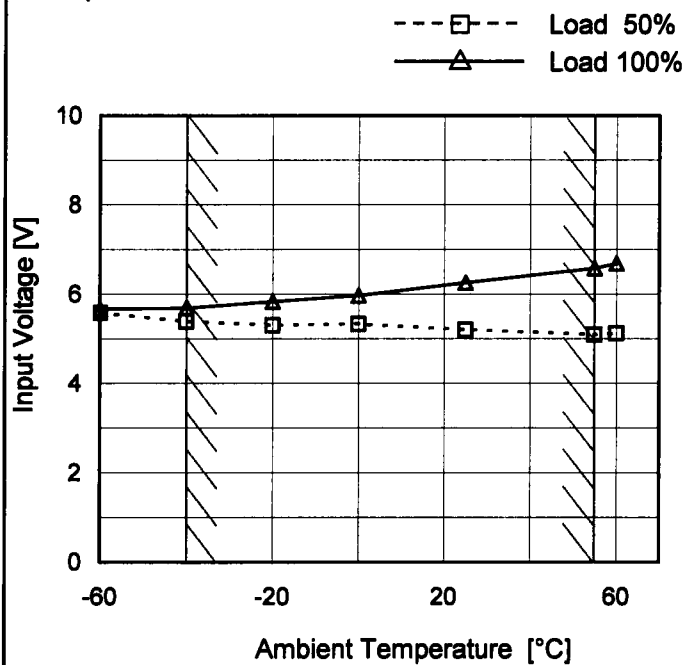
Model SUS101215/SUCS101215

Item Minimum Input Voltage  
for Regulated Output Voltage

Object +15V0.8A

Testing Circuitry Figure A

## 1. Graph



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

## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	5.6	5.7
-40	5.4	5.7
-20	5.3	5.9
0	5.4	6.0
25	5.2	6.3
55	5.1	6.6
60	5.2	6.7
0	-	-
--	-	-
--	-	-
--	-	-



<div> <div>Model</div> <div>SUS101215/SUCS101215</div> </div>		<div> <div>Temperature</div> <div>25°C</div> </div> <div> <div>Testing Circuitry</div> <div>Figure A</div> </div>
<div> <div>Item</div> <div>Overcurrent Protection</div> </div>		
<div> <div>Object</div> <div>+15V0.8A</div> </div>		

1.Graph

Input Volt.

9V

Input Volt.

12V

Input Volt.

18V

Output Voltage [V]

20

16

12

8

4

0

0.0

1.0

2.0

Load Current [A]

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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
15.0	1.15	1.25	1.32
14.3	1.17	1.27	1.35
13.5	1.19	1.29	1.36
12.0	1.20	1.29	1.35
10.5	1.21	1.29	1.33
9.0	1.22	1.29	1.31
7.5	1.24	1.29	1.30
6.0	1.27	1.31	1.28
4.5	1.31	1.33	1.26
3.0	1.37	1.34	1.24
1.5	1.44	1.39	1.27
0.0	1.68	1.62	1.50

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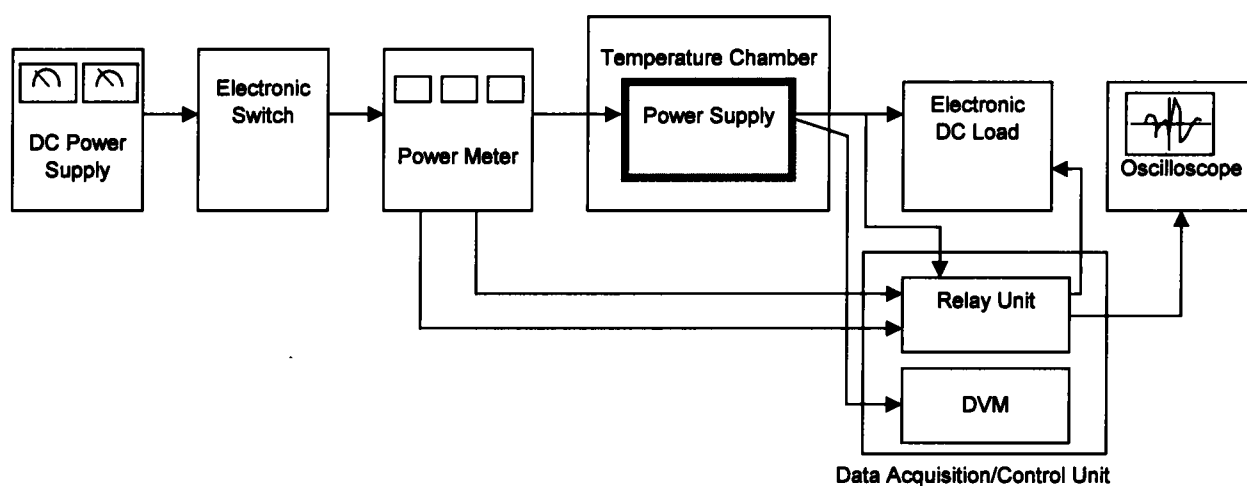


Figure A

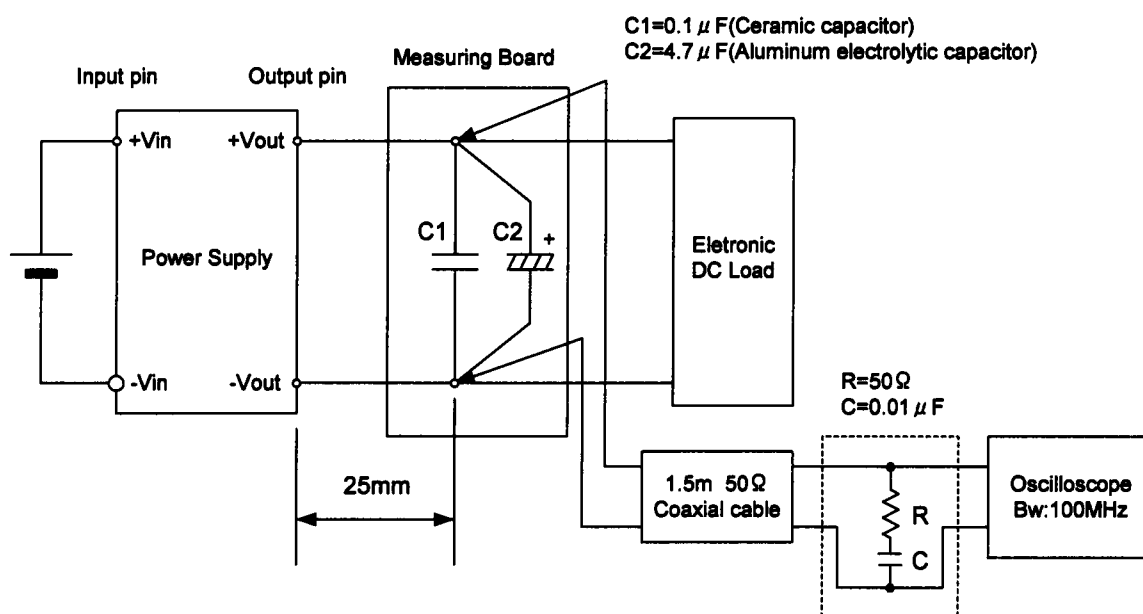


Figure B (Ripple and Ripple noise Characteristic)