

# TEST DATA OF SUTS101215

Regulated DC Power Supply  
February 10, 2009

Approved by : Kazunari Asano  
Kazunari Asano Design Manager

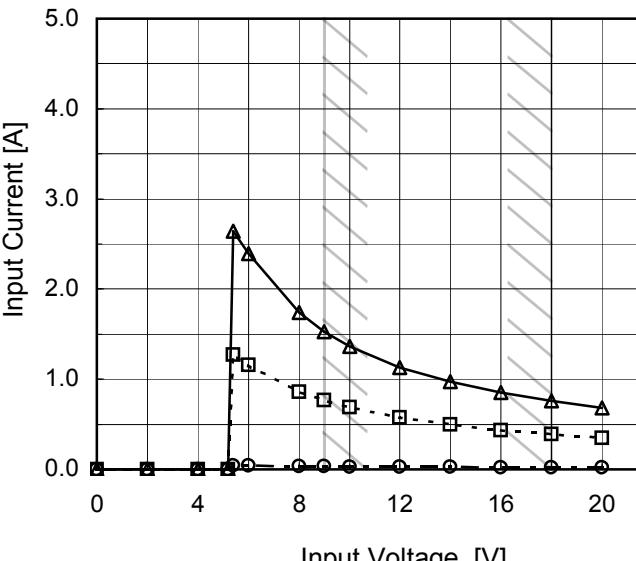
Prepared by : Sho Saito  
Sho Saito Design Engineer

**COSEL CO.,LTD.**

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Model	SUTS101215	Temperature Testing Circuitry      25°C Figure A																																																																																	
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Model	SUTS101215	Temperature Testing Circuitry 25°C Figure A
Item	Input Current (by Load Current)	
Object		

1. Graph

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	0.033	0.027	0.021
0.16	0.325	0.250	0.164
0.32	0.620	0.470	0.311
0.48	0.910	0.689	0.467
0.64	1.216	0.907	0.617
0.80	1.521	1.152	0.758
0.88	1.688	1.253	0.842
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Note: Slanted line shows the range of the rated load current.

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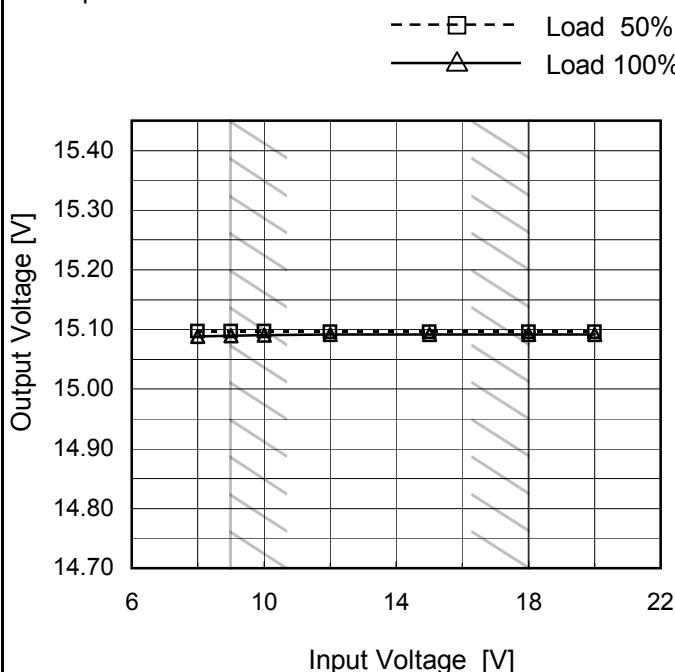
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Model	SUTS101215
Item	Line Regulation
Object	+15V0.8A

Temperature 25°C  
Testing Circuitry Figure A

## 1.Graph



## 2.Values

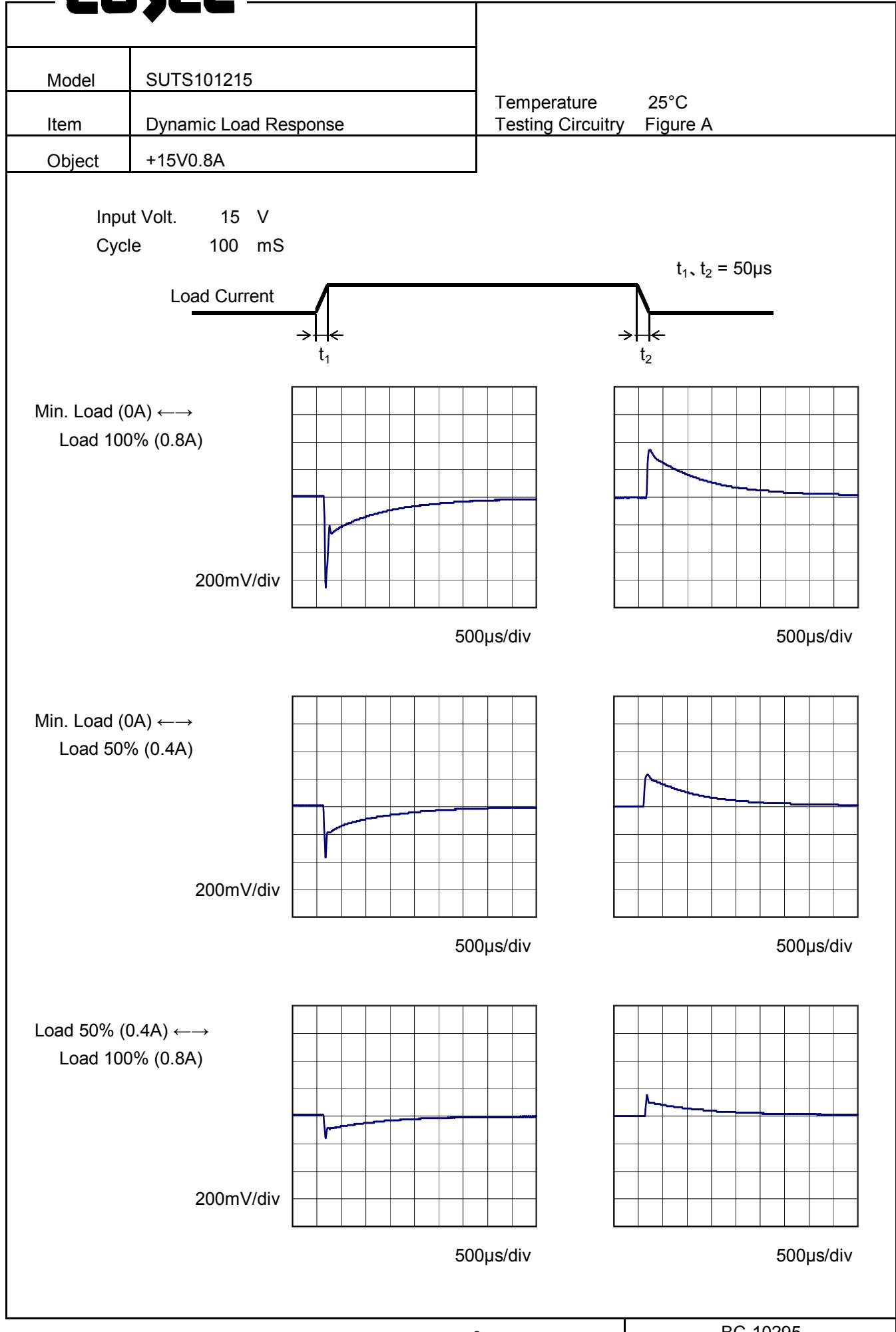
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8	15.097	15.089
9	15.097	15.090
10	15.097	15.091
12	15.096	15.091
15	15.096	15.091
18	15.096	15.092
20	15.096	15.092
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1.Graph	<p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Legend:</p> <ul style="list-style-type: none"> <li>Input Volt. 9V</li> <li>Input Volt. 12V</li> <li>Input Volt. 18V</li> </ul> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>9[V]</th> <th>12[V]</th> <th>18[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>15.103</td><td>15.102</td><td>15.104</td></tr> <tr><td>0.16</td><td>15.100</td><td>15.099</td><td>15.100</td></tr> <tr><td>0.32</td><td>15.098</td><td>15.097</td><td>15.097</td></tr> <tr><td>0.48</td><td>15.096</td><td>15.096</td><td>15.095</td></tr> <tr><td>0.64</td><td>15.093</td><td>15.093</td><td>15.093</td></tr> <tr><td>0.80</td><td>15.090</td><td>15.091</td><td>15.092</td></tr> <tr><td>0.88</td><td>15.087</td><td>15.090</td><td>15.091</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]	9[V]	12[V]	18[V]	0.00	15.103	15.102	15.104	0.16	15.100	15.099	15.100	0.32	15.098	15.097	15.097	0.48	15.096	15.096	15.095	0.64	15.093	15.093	15.093	0.80	15.090	15.091	15.092	0.88	15.087	15.090	15.091	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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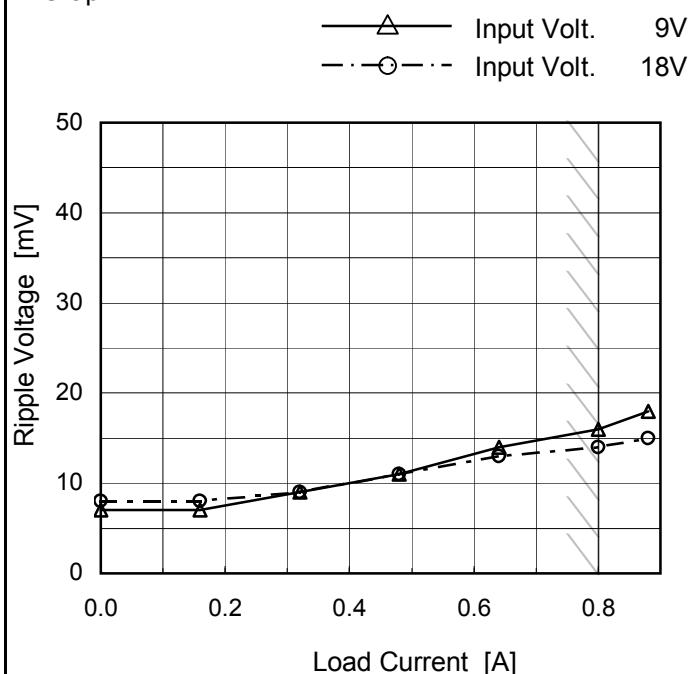
**COSEL**



Model	SUTS101215
Item	Ripple Voltage (by Load Current)
Object	+15V0.8A

Temperature 25°C  
Testing Circuitry Figure B

## 1. Graph



## 2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	7	8
0.16	7	8
0.32	9	9
0.48	11	11
0.64	14	13
0.80	16	14
0.88	18	15
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Ripple Voltage is shown as p-p in the figure below.

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

Ripple [mVp-p]

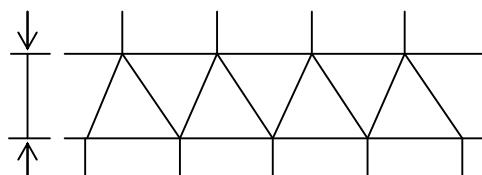
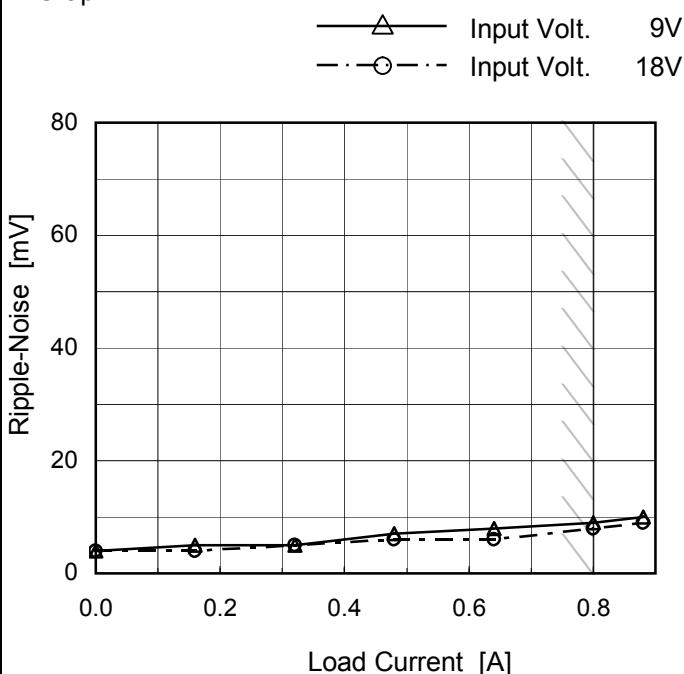


Fig.Complex Ripple Wave Form

Model	SUTS101215
Item	Ripple-Noise
Object	+15V0.8A

Temperature 25°C  
Testing Circuitry Figure B

## 1. Graph



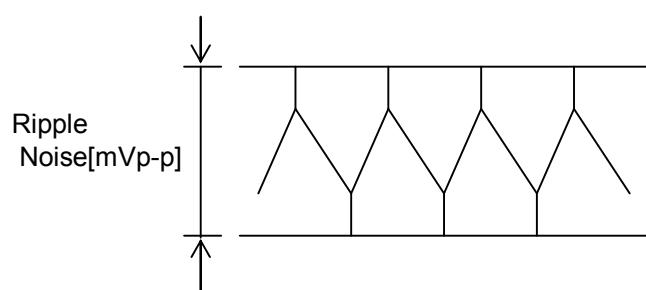
Measured by 150 MHz Oscilloscope.

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

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

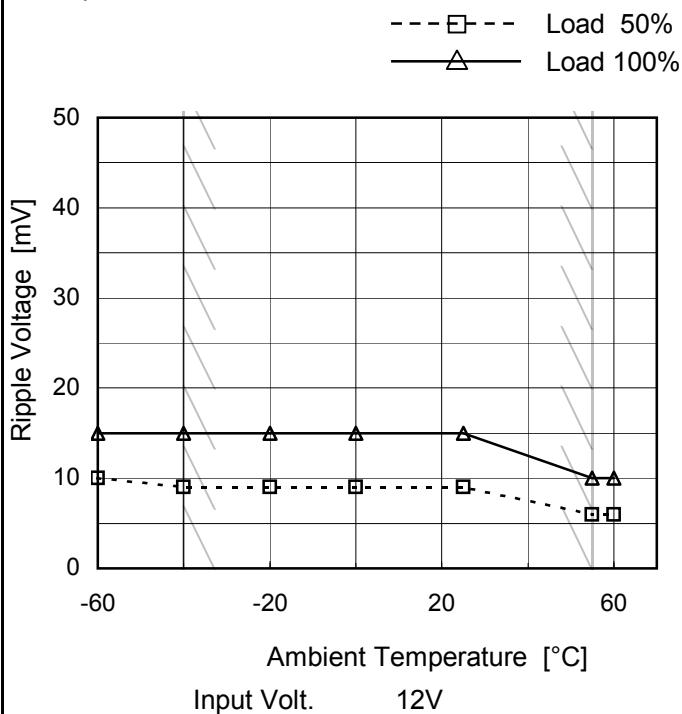
## 2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	4	4
0.16	5	4
0.32	5	5
0.48	7	6
0.64	8	6
0.80	9	8
0.88	10	9
--	-	-
--	-	-
--	-	-
--	-	-



Model	SUTS101215
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.8A

## 1. Graph



Measured by 150 MHz Oscilloscope.

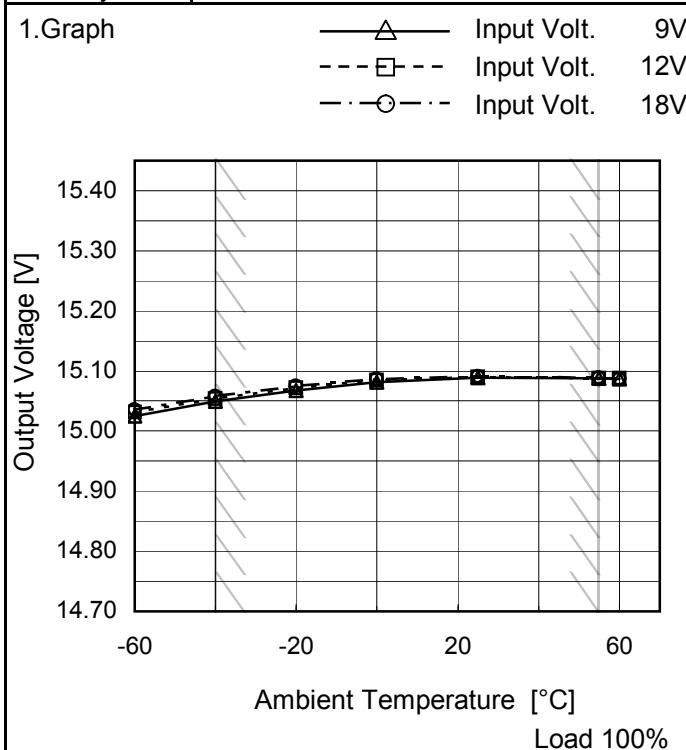
Note: Slanted line shows the range of the rated ambient temperature.

Testing Circuitry Figure B

## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	10	15
-40	9	15
-20	9	15
0	9	15
25	9	15
55	6	10
60	6	10
--	-	-
--	-	-
--	-	-
--	-	-

Model	SUTS101215
Item	Ambient Temperature Drift
Object	+15V0.8A



Testing Circuitry Figure A

## 2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
-60	15.024	15.031	15.036
-40	15.049	15.054	15.058
-20	15.068	15.072	15.075
0	15.082	15.085	15.086
25	15.089	15.090	15.091
55	15.088	15.088	15.089
60	15.087	15.087	15.087
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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



Model	SUTS101215	Testing Circuitry Figure A
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 =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

### 2. Values

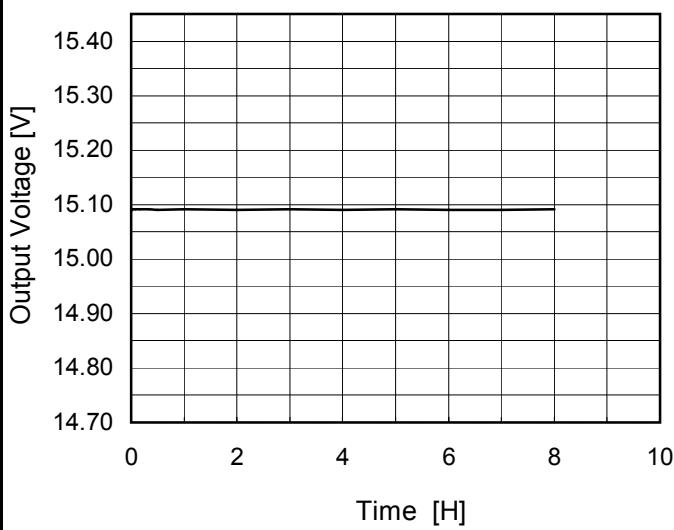
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	18	0	15.103	±27	±0.2
Minimum Voltage	-40	9	0.8	15.049		

**COSEL**

Model	SUTS101215
Item	Time Lapse Drift
Object	+15V0.8A

Temperature 25°C  
Testing Circuitry Figure A

1. Graph



Input Volt. 12V  
Load 100%

2. Values

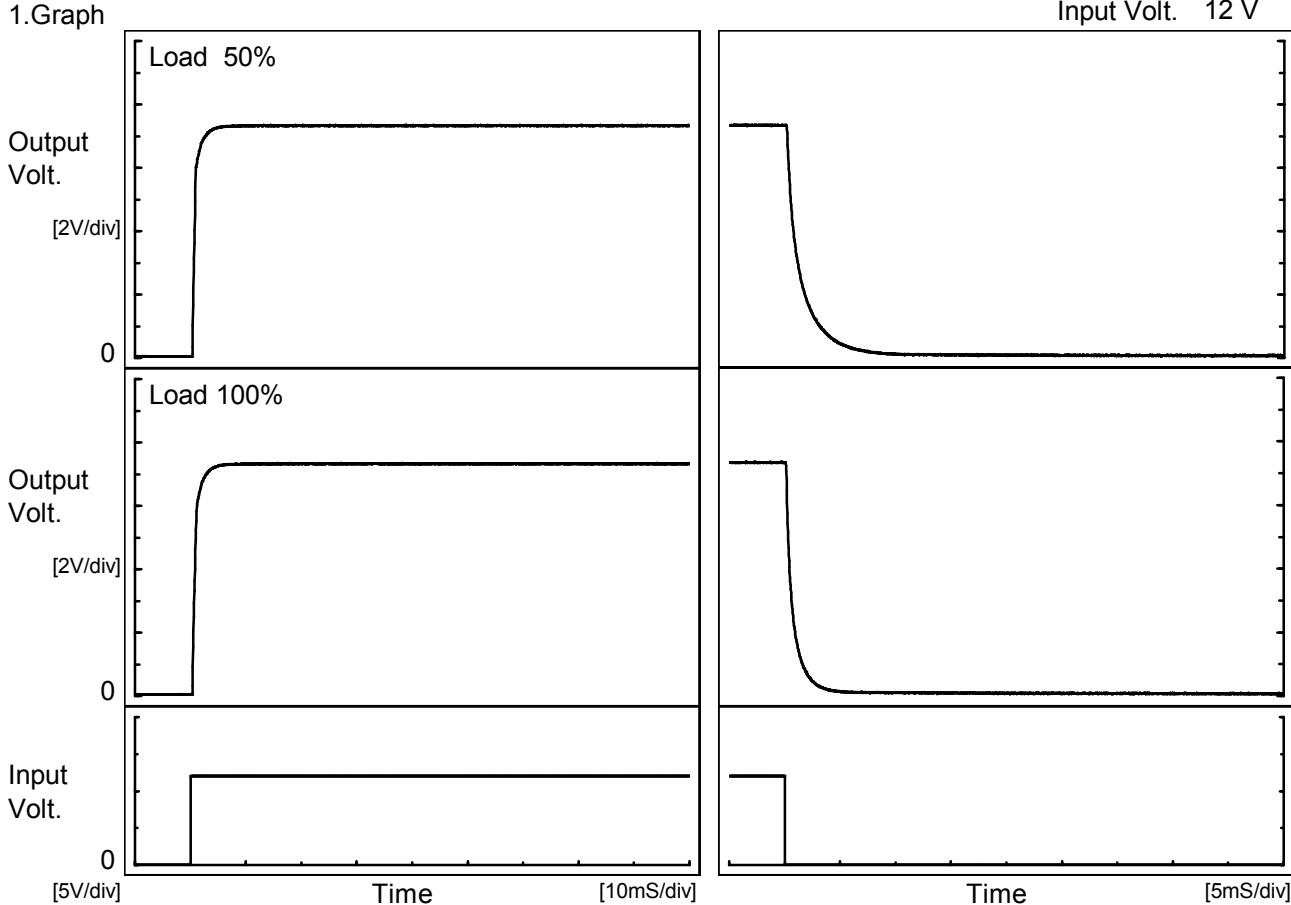
Time since start [H]	Output Voltage [V]
0.0	15.088
0.5	15.091
1.0	15.091
2.0	15.091
3.0	15.091
4.0	15.091
5.0	15.091
6.0	15.091
7.0	15.091
8.0	15.091

**COSEL**

Model	SUTS101215
Item	Rise and Fall Time
Object	+15V0.8A

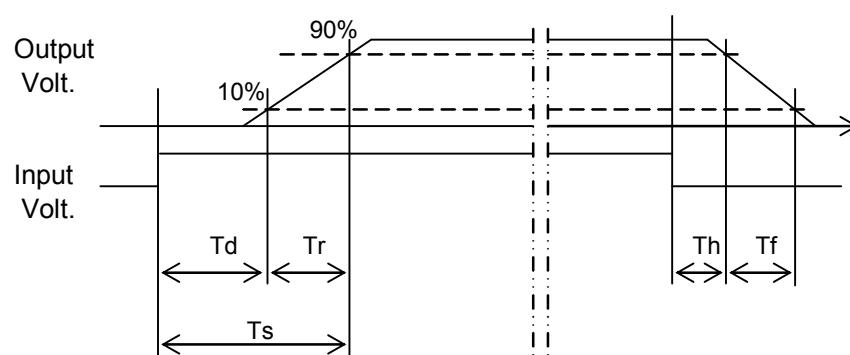
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

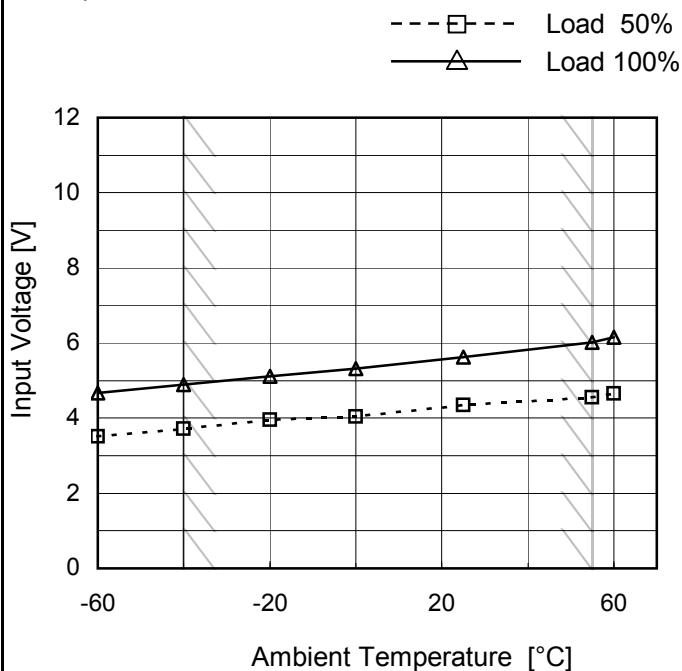
Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.5	1.6	2.1	0.2	3.4
100 %		0.5	1.8	2.3	0.2	1.7



Model	SUTS101215
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V0.8A

Testing Circuitry Figure A

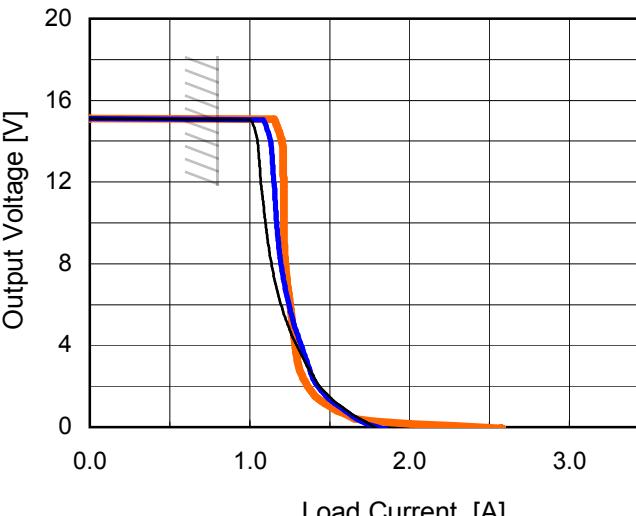
## 1. Graph



## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	3.6	4.7
-40	3.8	4.9
-20	4.0	5.2
0	4.1	5.4
25	4.4	5.7
55	4.6	6.1
60	4.7	6.2
--	-	-
--	-	-
--	-	-
--	-	-

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

Model	SUTS101215	Temperature Testing Circuitry 25°C Figure A																																																						
Item	Overcurrent Protection																																																							
Object	+15V0.8A																																																							
1.Graph	 <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>	2.Values																																																						
2.Values	<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>15.0</td><td>1.00</td><td>1.09</td><td>1.15</td></tr> <tr><td>14.3</td><td>1.04</td><td>1.12</td><td>1.19</td></tr> <tr><td>13.5</td><td>1.00</td><td>1.09</td><td>1.15</td></tr> <tr><td>12.0</td><td>1.07</td><td>1.15</td><td>1.21</td></tr> <tr><td>10.5</td><td>1.09</td><td>1.16</td><td>1.21</td></tr> <tr><td>9.0</td><td>1.11</td><td>1.18</td><td>1.21</td></tr> <tr><td>7.5</td><td>1.15</td><td>1.20</td><td>1.23</td></tr> <tr><td>6.0</td><td>1.19</td><td>1.24</td><td>1.25</td></tr> <tr><td>4.5</td><td>1.26</td><td>1.30</td><td>1.28</td></tr> <tr><td>3.0</td><td>1.36</td><td>1.37</td><td>1.31</td></tr> <tr><td>1.5</td><td>1.49</td><td>1.47</td><td>1.41</td></tr> <tr><td>0.0</td><td>1.81</td><td>1.84</td><td>2.57</td></tr> </tbody> </table>	Output Voltage [V]	Load Current [A]			Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	15.0	1.00	1.09	1.15	14.3	1.04	1.12	1.19	13.5	1.00	1.09	1.15	12.0	1.07	1.15	1.21	10.5	1.09	1.16	1.21	9.0	1.11	1.18	1.21	7.5	1.15	1.20	1.23	6.0	1.19	1.24	1.25	4.5	1.26	1.30	1.28	3.0	1.36	1.37	1.31	1.5	1.49	1.47	1.41	0.0	1.81	1.84	2.57
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coSEL

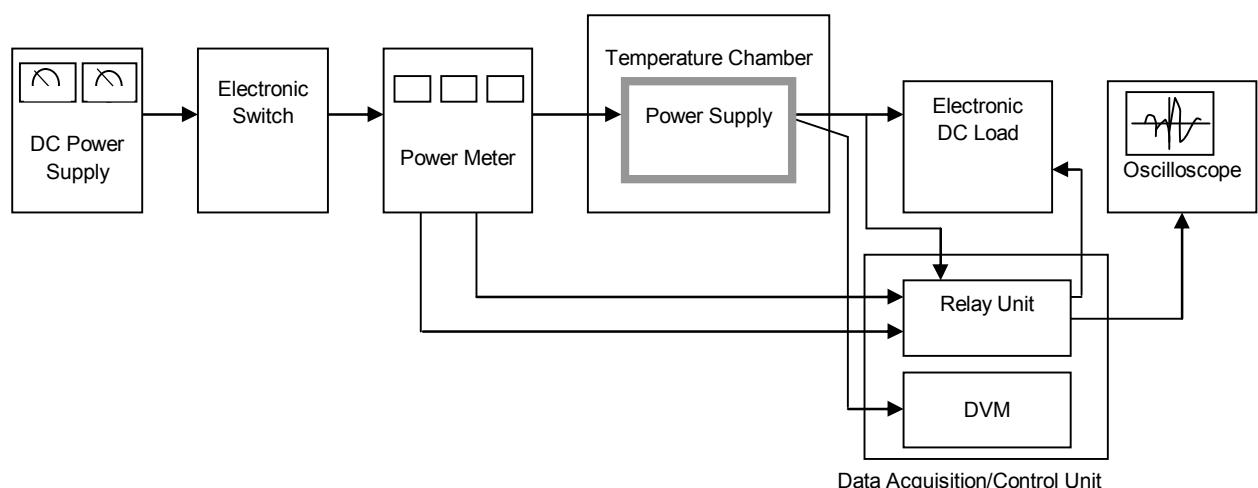


Figure A

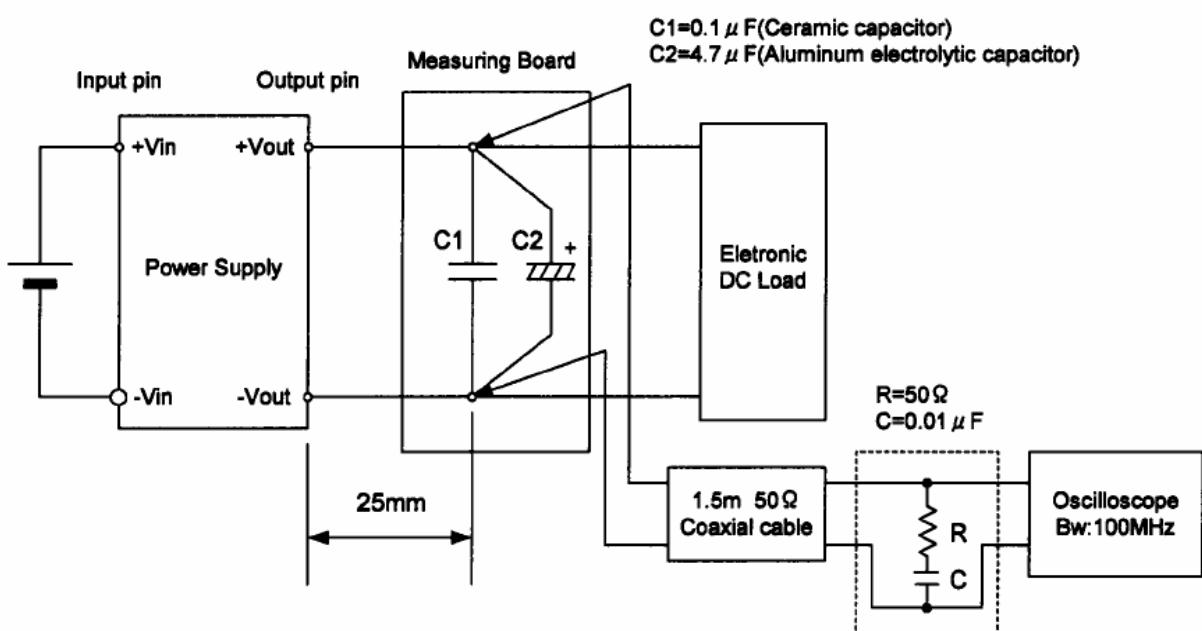


Figure B (Ripple and Ripple noise Characteristic)