

# TEST DATA OF SUTS61212

Regulated DC Power Supply  
March 12, 2009

Approved by : Kazunari Asano  
Kazunari Asano Design Manager

Prepared by : Sho Saito  
Sho Saito Design Engineer

**COSEL CO.,LTD.**

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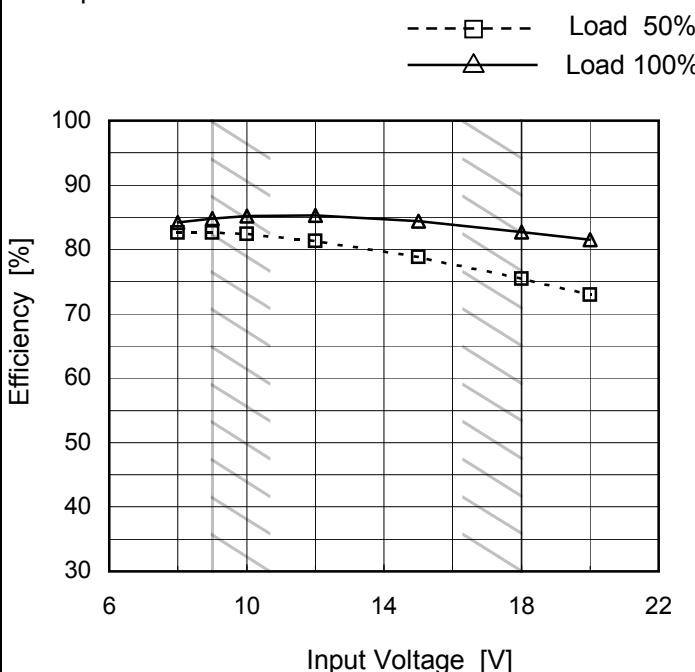
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Item	Efficiency (by Input Voltage)	Testing Circuitry	Figure A
Object	—		

## 1. Graph



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

## 2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8	82.6	84.2
9	82.6	84.8
10	82.4	85.2
12	81.3	85.2
15	78.8	84.3
18	75.5	82.7
20	73.0	81.5
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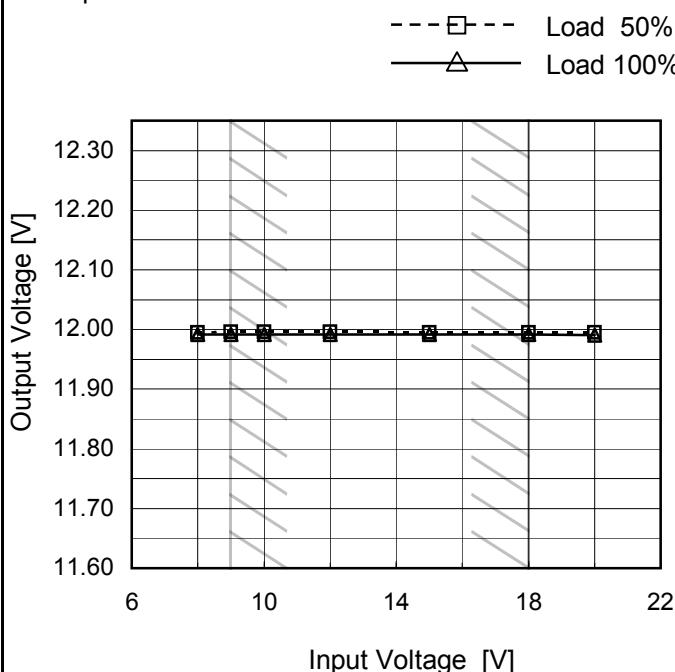
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1.Graph	<p>The graph plots Efficiency [%] on the y-axis (30 to 100) against Load Current [A] on the x-axis (0.0 to 0.6). Three data series are shown for different input voltages: 9V (solid line with triangles), 12V (dashed line with squares), and 18V (dash-dot line with circles). All curves show efficiency increasing with load current. A slanted line is drawn across the graph, starting from approximately (0.1, 60) and ending at (0.5, 85), representing the rated load current range.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>9V [%]</th> <th>12V [%]</th> <th>18V [%]</th> </tr> </thead> <tbody> <tr><td>0.10</td><td>72.5</td><td>68.8</td><td>58.9</td></tr> <tr><td>0.20</td><td>80.9</td><td>78.9</td><td>72.1</td></tr> <tr><td>0.30</td><td>83.5</td><td>82.7</td><td>77.8</td></tr> <tr><td>0.40</td><td>84.5</td><td>84.4</td><td>80.8</td></tr> <tr><td>0.50</td><td>84.9</td><td>85.2</td><td>82.7</td></tr> <tr><td>0.55</td><td>84.8</td><td>85.5</td><td>83.3</td></tr> </tbody> </table>	Load Current [A]	9V [%]	12V [%]	18V [%]	0.10	72.5	68.8	58.9	0.20	80.9	78.9	72.1	0.30	83.5	82.7	77.8	0.40	84.5	84.4	80.8	0.50	84.9	85.2	82.7	0.55	84.8	85.5	83.3																								
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Note: Slanted line shows the range of the rated load current.

Model	SUTS61212
Item	Line Regulation
Object	+12V0.5A

Temperature 25°C  
Testing Circuitry Figure A

## 1.Graph



## 2.Values

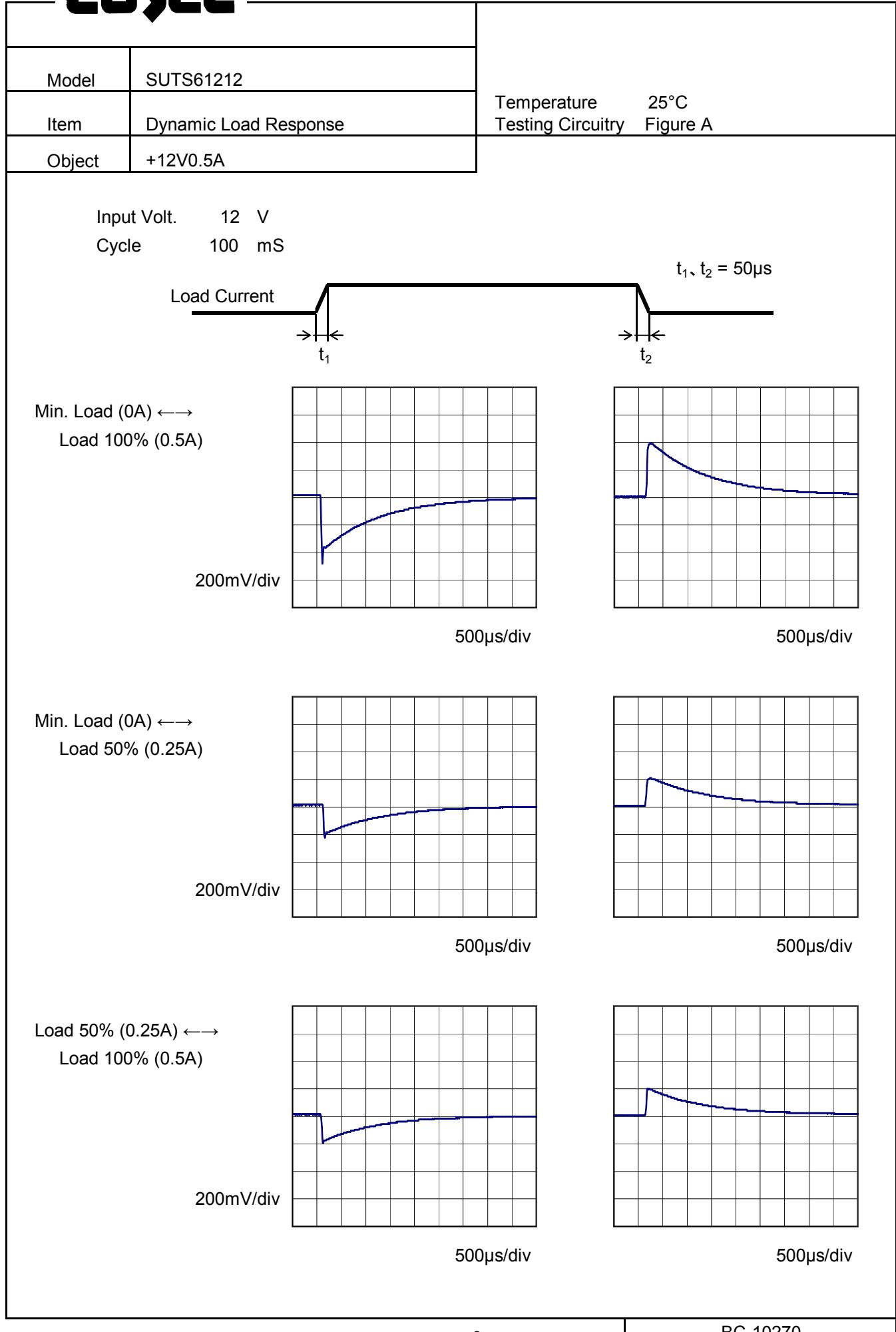
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8	11.995	11.992
9	11.996	11.992
10	11.996	11.992
12	11.996	11.992
15	11.995	11.992
18	11.995	11.991
20	11.995	11.991
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Note: Slanted line shows the range of the rated load current.

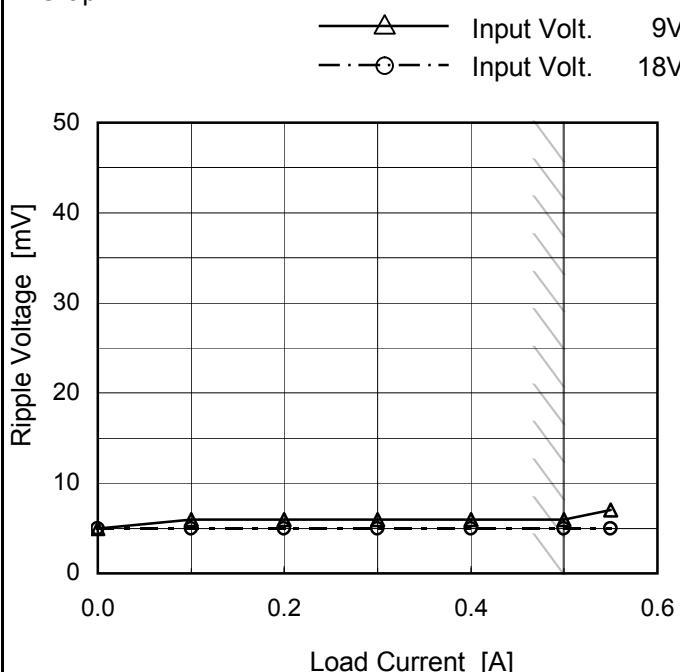
**COSEL**



Model	SUTS61212
Item	Ripple Voltage (by Load Current)
Object	+12V0.5A

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	5	5
0.10	6	5
0.20	6	5
0.30	6	5
0.40	6	5
0.50	6	5
0.55	7	5
--	-	-
--	-	-
--	-	-
--	-	-

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]

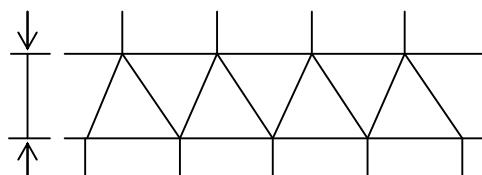
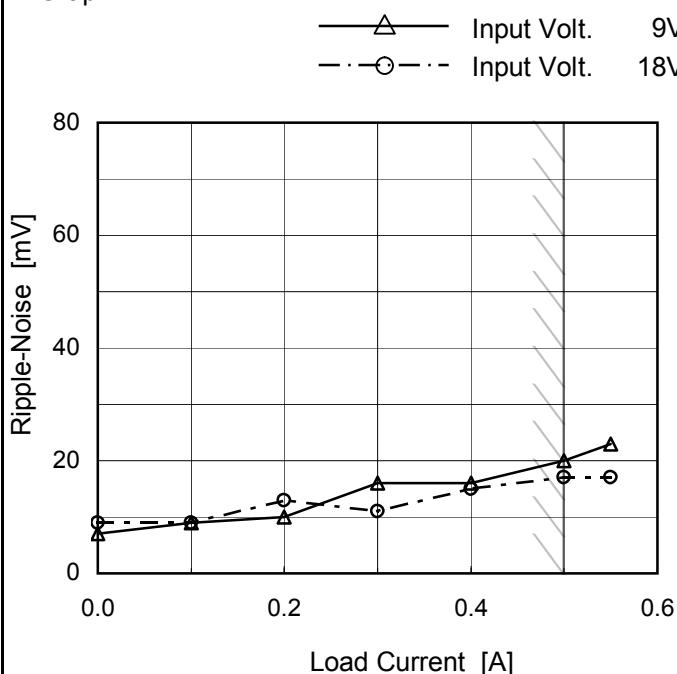


Fig.Complex Ripple Wave Form

Model	SUTS61212
Item	Ripple-Noise
Object	+12V0.5A

Temperature 25°C  
Testing Circuitry Figure B

## 1. Graph



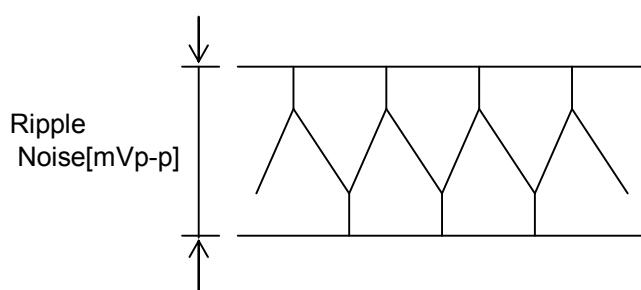
Measured by 100 MHz Oscilloscope.

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

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

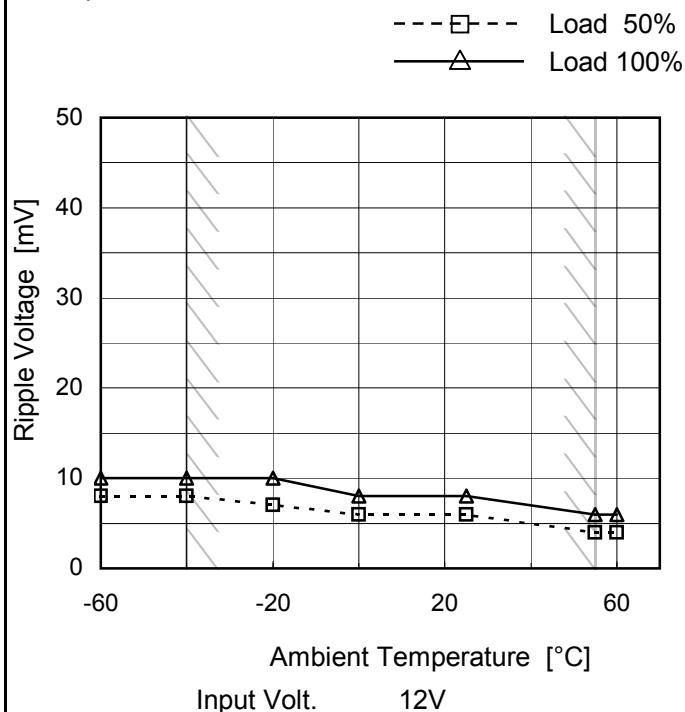
## 2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	7	9
0.10	9	9
0.20	10	13
0.30	16	11
0.40	16	15
0.50	20	17
0.55	23	17
--	-	-
--	-	-
--	-	-
--	-	-



Model	SUTS61212
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.5A

## 1. Graph



Measured by 100 MHz Oscilloscope.

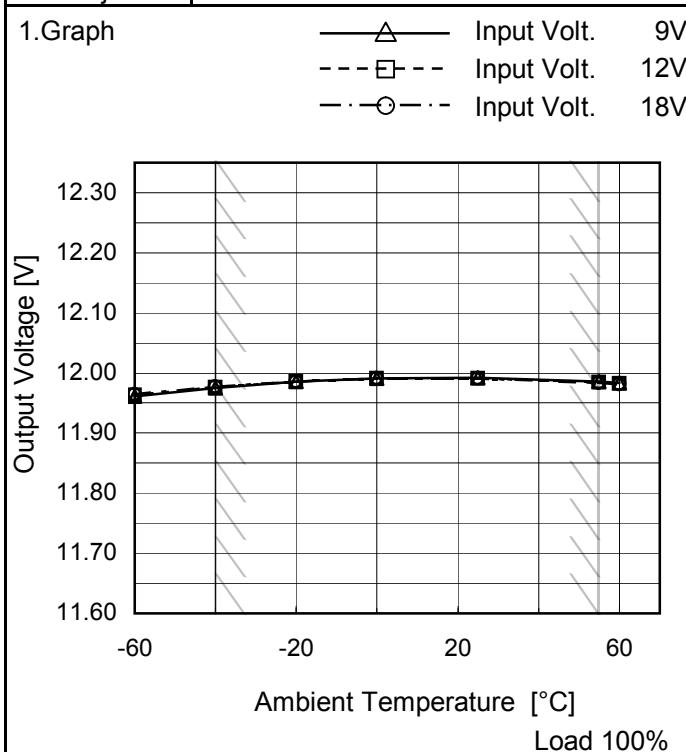
Note: Slanted line shows the range of the rated ambient temperature.

## Testing Circuitry Figure B

## 2. Values

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

Model	SUTS61212
Item	Ambient Temperature Drift
Object	+12V0.5A



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	11.961	11.963	11.964
-40	11.975	11.977	11.977
-20	11.985	11.986	11.986
0	11.991	11.991	11.991
25	11.992	11.991	11.991
55	11.985	11.985	11.983
60	11.984	11.983	11.982
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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



Model	SUTS61212	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

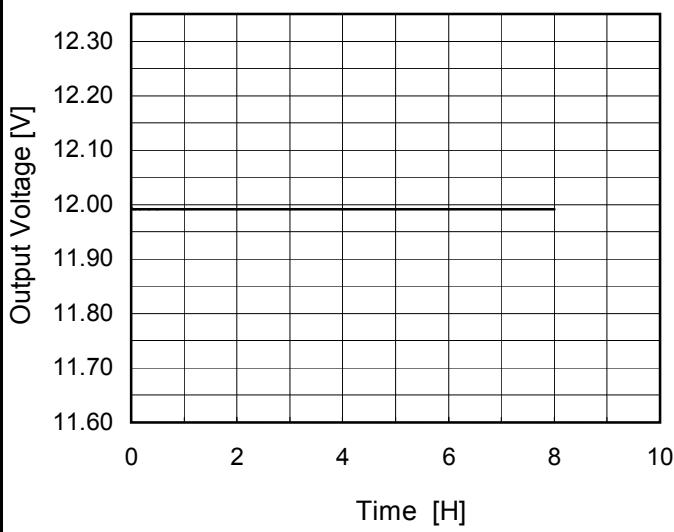
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	18	0	11.998	±12	±0.1
Minimum Voltage	-40	9	0.5	11.975		

**COSEL**

Model	SUTS61212
Item	Time Lapse Drift
Object	+12V0.5A

Temperature 25°C  
Testing Circuitry Figure A

1. Graph



2. Values

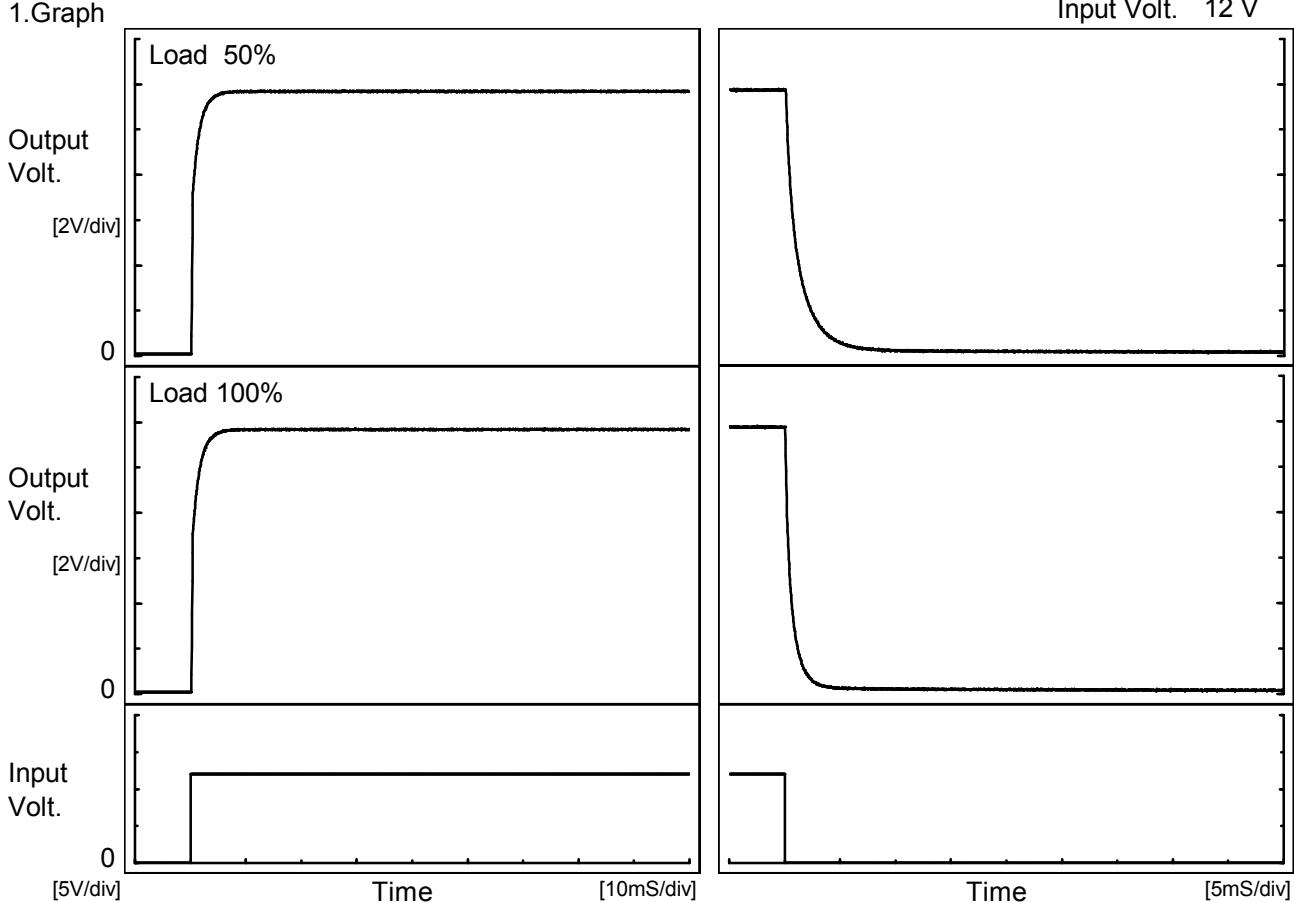
Time since start [H]	Output Voltage [V]
0.0	11.994
0.5	11.991
1.0	11.991
2.0	11.991
3.0	11.991
4.0	11.991
5.0	11.991
6.0	11.991
7.0	11.991
8.0	11.991

**COSEL**

Model	SUTS61212
Item	Rise and Fall Time
Object	+12V0.5A

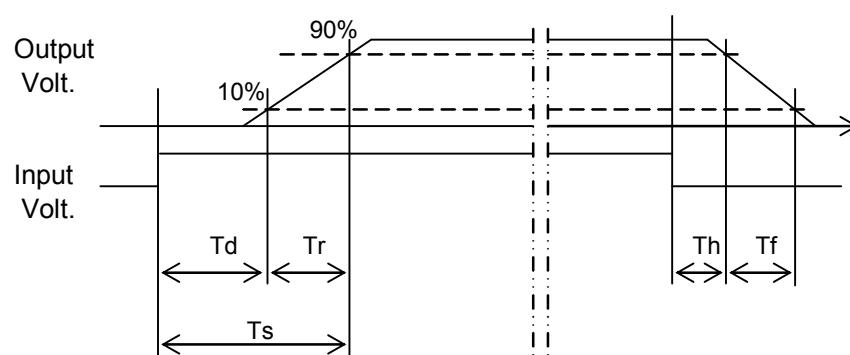
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

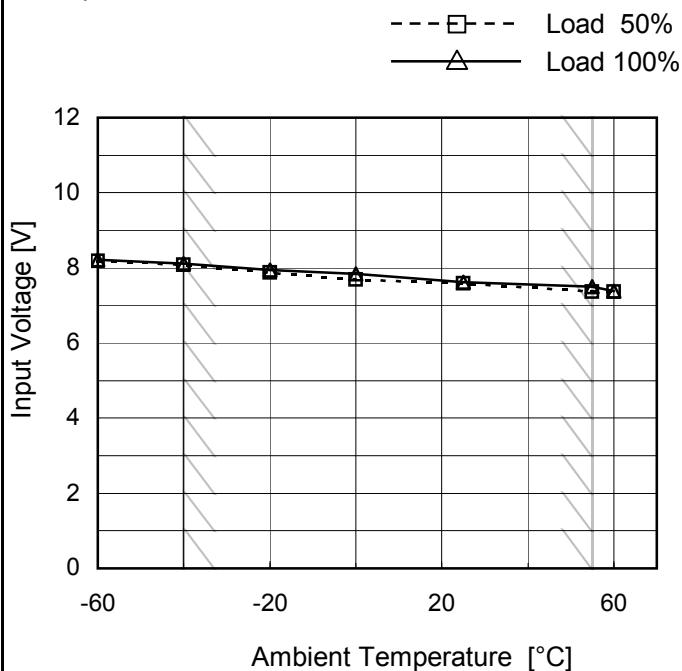
Load	Time	Td	Tr	Ts	Th	Tf	[mS]
50 %		0.3	2.4	2.7	0.1	3.0	
100 %		0.3	2.5	2.8	0.1	1.5	



Model	SUTS61212
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V0.5A

Testing Circuitry Figure A

## 1. Graph



## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	8.2	8.3
-40	8.1	8.2
-20	7.9	8.0
0	7.7	7.9
25	7.6	7.7
55	7.4	7.5
60	7.4	7.4
--	-	-
--	-	-
--	-	-
--	-	-

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

Model	SUTS61212	Temperature Testing Circuitry 25°C Figure A																																																							
Item	Overcurrent Protection																																																								
Object	+12V0.5A																																																								
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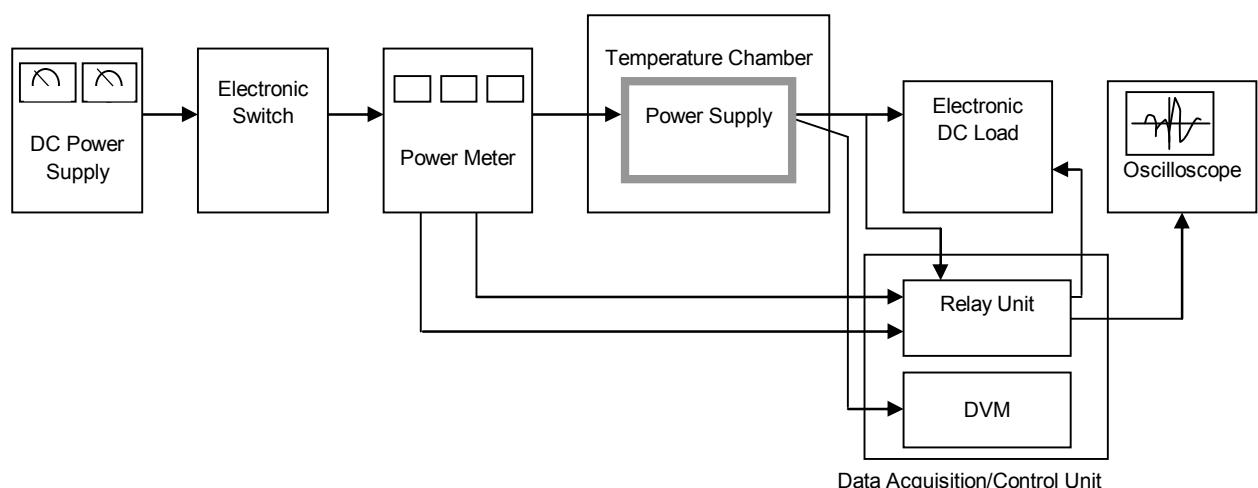


Figure A

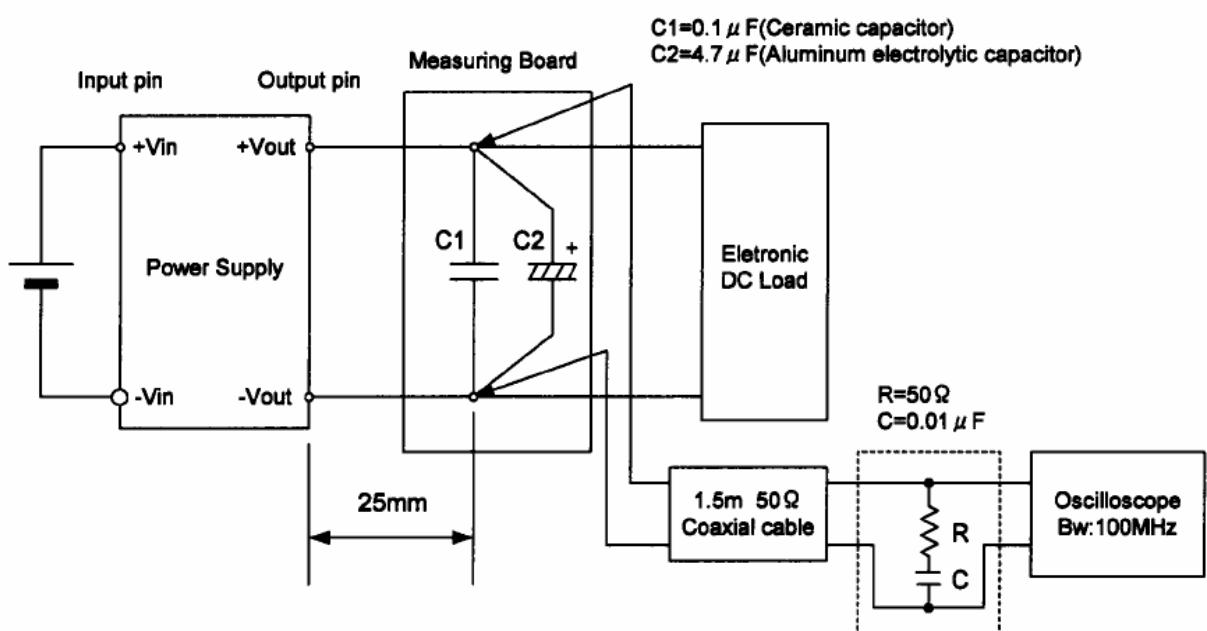


Figure B (Ripple and Ripple noise Characteristic)