

# TEST DATA OF SUTS10123R3

## Regulated DC Power Supply

Approved by : Kazunari Asano  
Kazunari Asano Design Manager

Prepared by : Sho Saito Sho Saito Design Engineer

COSEL CO.,LTD.

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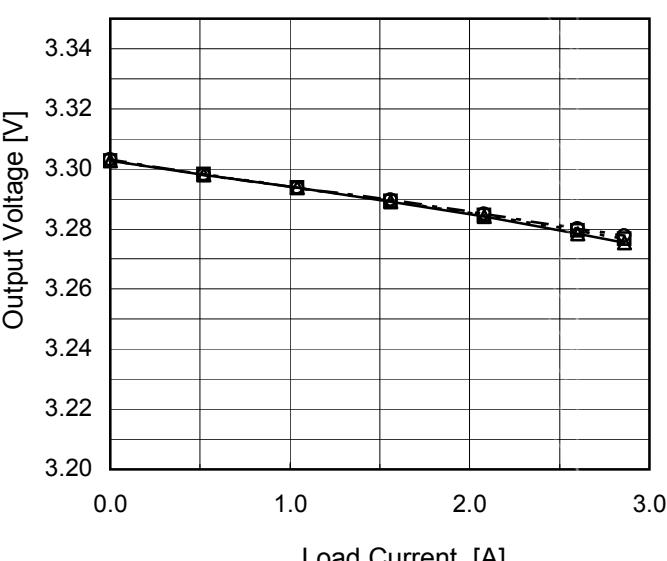
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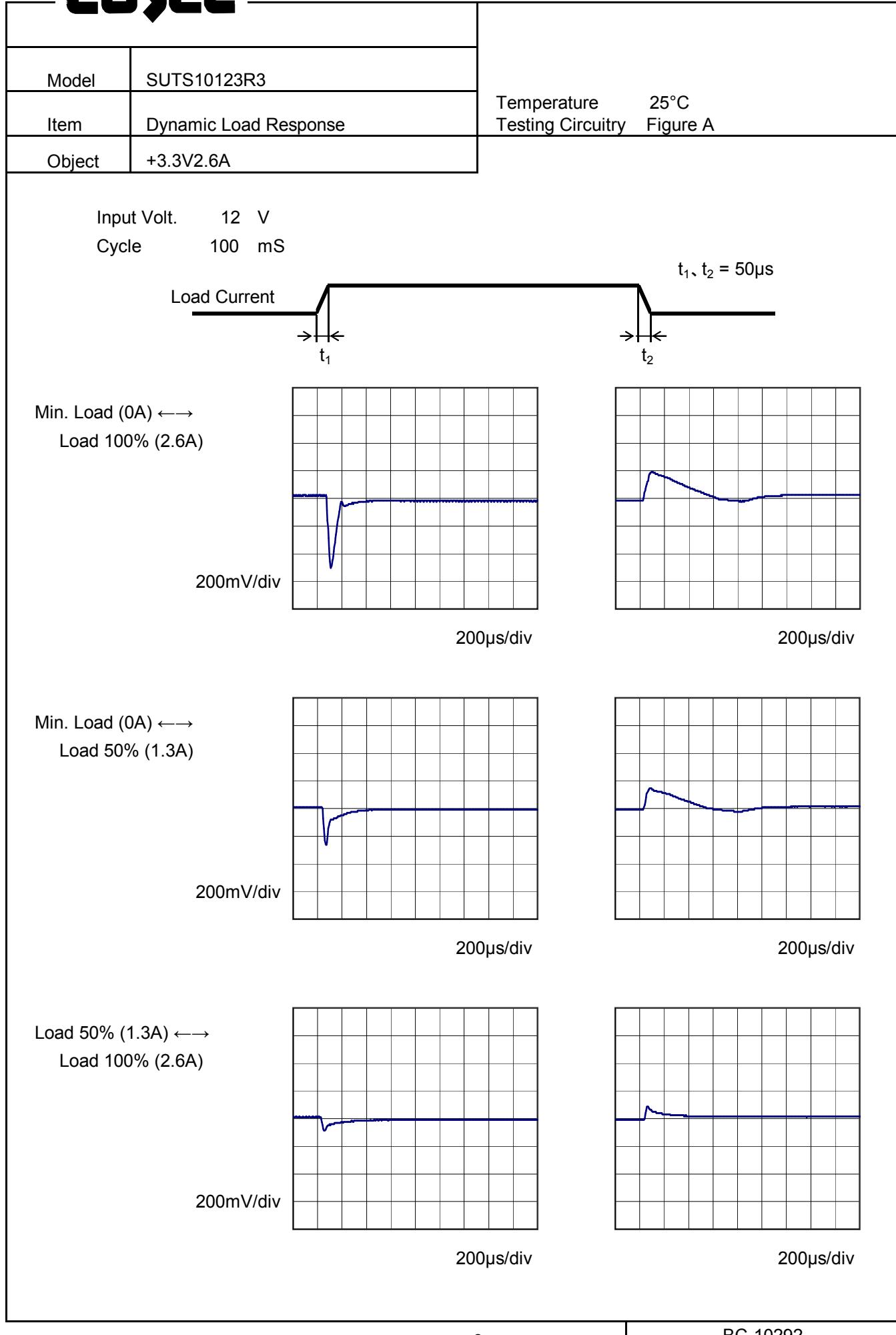
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<p>The graph plots Efficiency [%] on the y-axis (30 to 100) against Input Voltage [V] on the x-axis (6 to 22). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a slight decrease in efficiency as input voltage increases. A slanted line on the graph indicates the rated input voltage range.</p> <table border="1"> <thead> <tr> <th>Input Voltage [V]</th> <th>Efficiency Load 50% [%]</th> <th>Efficiency Load 100% [%]</th> </tr> </thead> <tbody> <tr><td>8</td><td>83.2</td><td>82.4</td></tr> <tr><td>9</td><td>83.3</td><td>83.5</td></tr> <tr><td>10</td><td>82.9</td><td>83.8</td></tr> <tr><td>12</td><td>83.6</td><td>83.9</td></tr> <tr><td>15</td><td>83.2</td><td>83.4</td></tr> <tr><td>18</td><td>80.1</td><td>82.4</td></tr> <tr><td>20</td><td>78.4</td><td>81.7</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>				Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	8	83.2	82.4	9	83.3	83.5	10	82.9	83.8	12	83.6	83.9	15	83.2	83.4	18	80.1	82.4	20	78.4	81.7	--	-	-	--	-	-
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1.04	83.0	82.9	77.8																																																			
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Model	SUTS10123R3	Temperature Testing Circuitry 25°C Figure A																																	
Item	Line Regulation																																		
Object	+3.3V2.6A																																		
1.Graph		2.Values																																	
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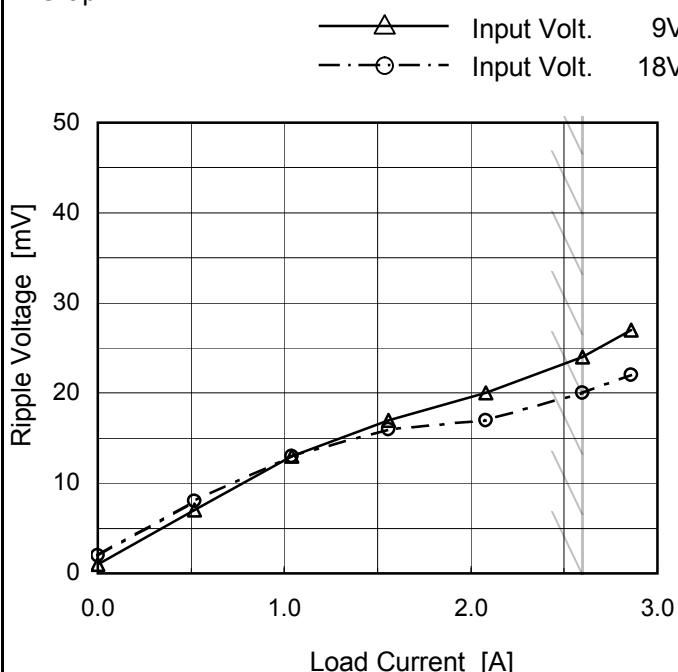
**COSEL**



Model	SUTS10123R3
Item	Ripple Voltage (by Load Current)
Object	+3.3V2.6A

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	1	2
0.52	7	8
1.04	13	13
1.56	17	16
2.08	20	17
2.60	24	20
2.86	27	22
--	-	-
--	-	-
--	-	-
--	-	-

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]

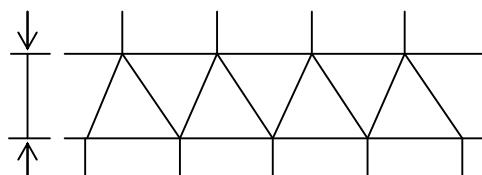
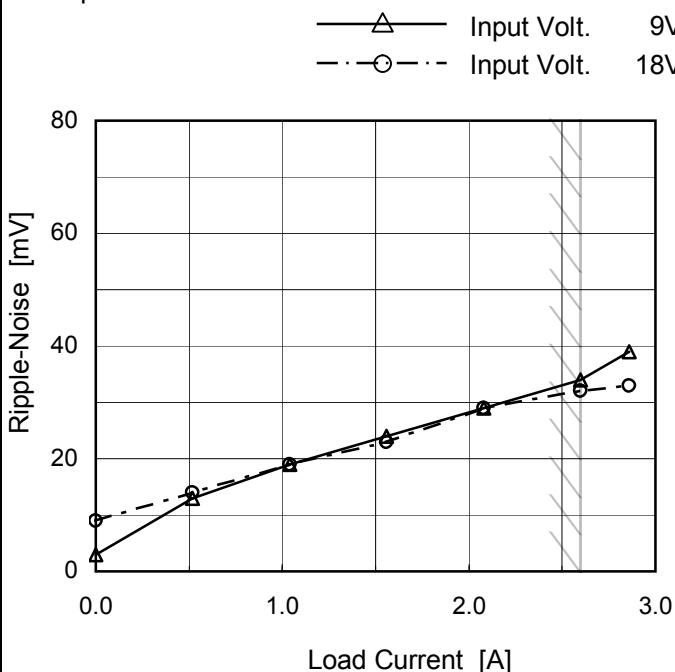


Fig.Complex Ripple Wave Form

Model	SUTS10123R3
Item	Ripple-Noise
Object	+3.3V2.6A

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	3	9
0.52	13	14
1.04	19	19
1.56	24	23
2.08	29	29
2.60	34	32
2.86	39	33
--	-	-
--	-	-
--	-	-
--	-	-

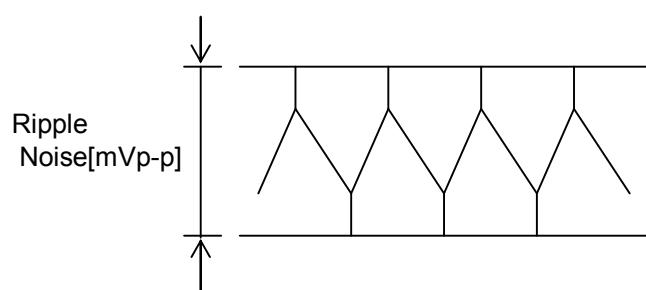
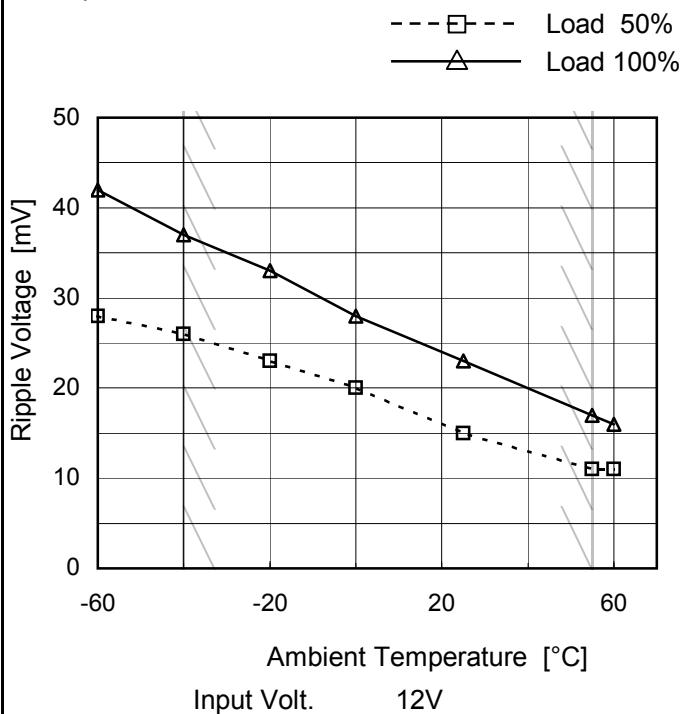


Fig.Complex Ripple Noise Wave Form

Model	SUTS10123R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V2.6A

## 1. Graph



Measured by 150 MHz Oscilloscope.

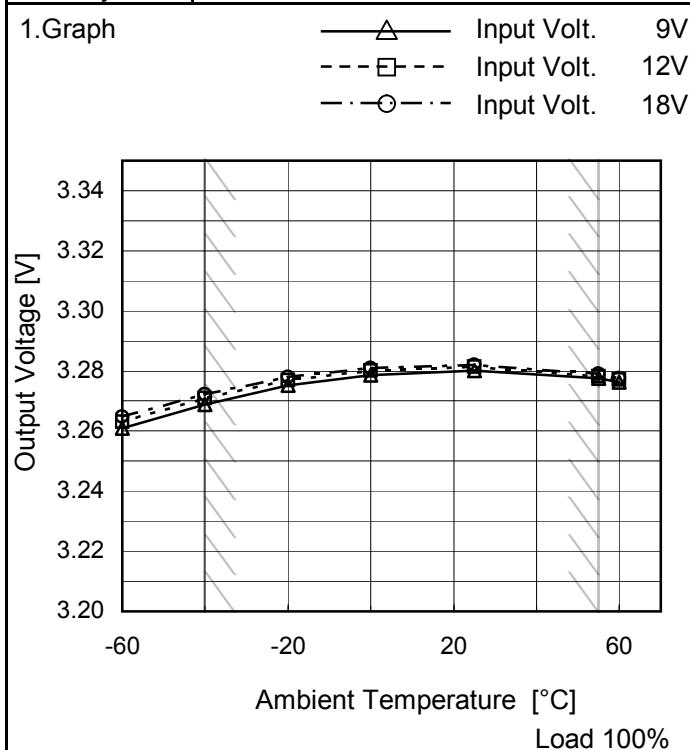
Note: Slanted line shows the range of the rated ambient temperature.

Testing Circuitry Figure B

## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	28	42
-40	26	37
-20	23	33
0	20	28
25	15	23
55	11	17
60	11	16
--	-	-
--	-	-
--	-	-
--	-	-

Model	SUTS10123R3
Item	Ambient Temperature Drift
Object	+3.3V2.6A



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

### 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	3.261	3.263	3.265
-40	3.269	3.271	3.272
-20	3.275	3.277	3.278
0	3.279	3.280	3.281
25	3.280	3.281	3.282
55	3.278	3.278	3.279
60	3.276	3.277	3.278
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model	SUTS10123R3	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+3.3V2.6A	

### 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 - 2.6A

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

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

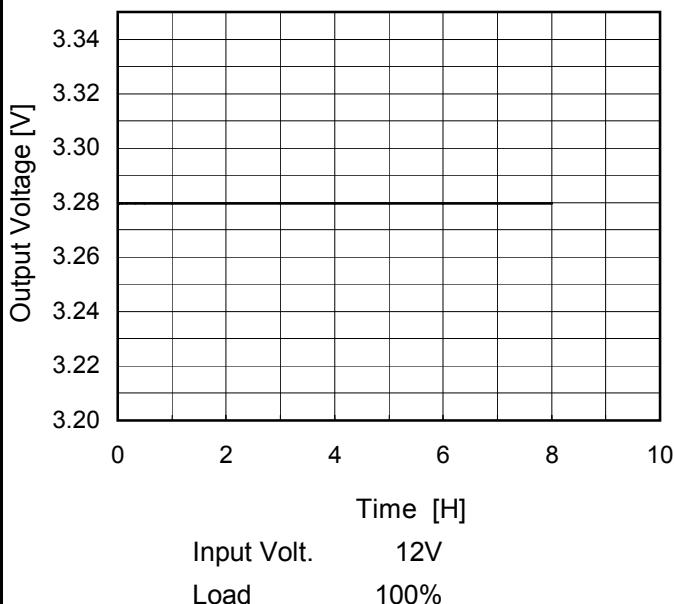
### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	18	0	3.305	±18	±0.5
Minimum Voltage	-40	9	2.6	3.269		

**COSEL**

Model	SUTS10123R3
Item	Time Lapse Drift
Object	+3.3V2.6A

1.Graph



Temperature 25°C  
Testing Circuitry Figure A

2.Values

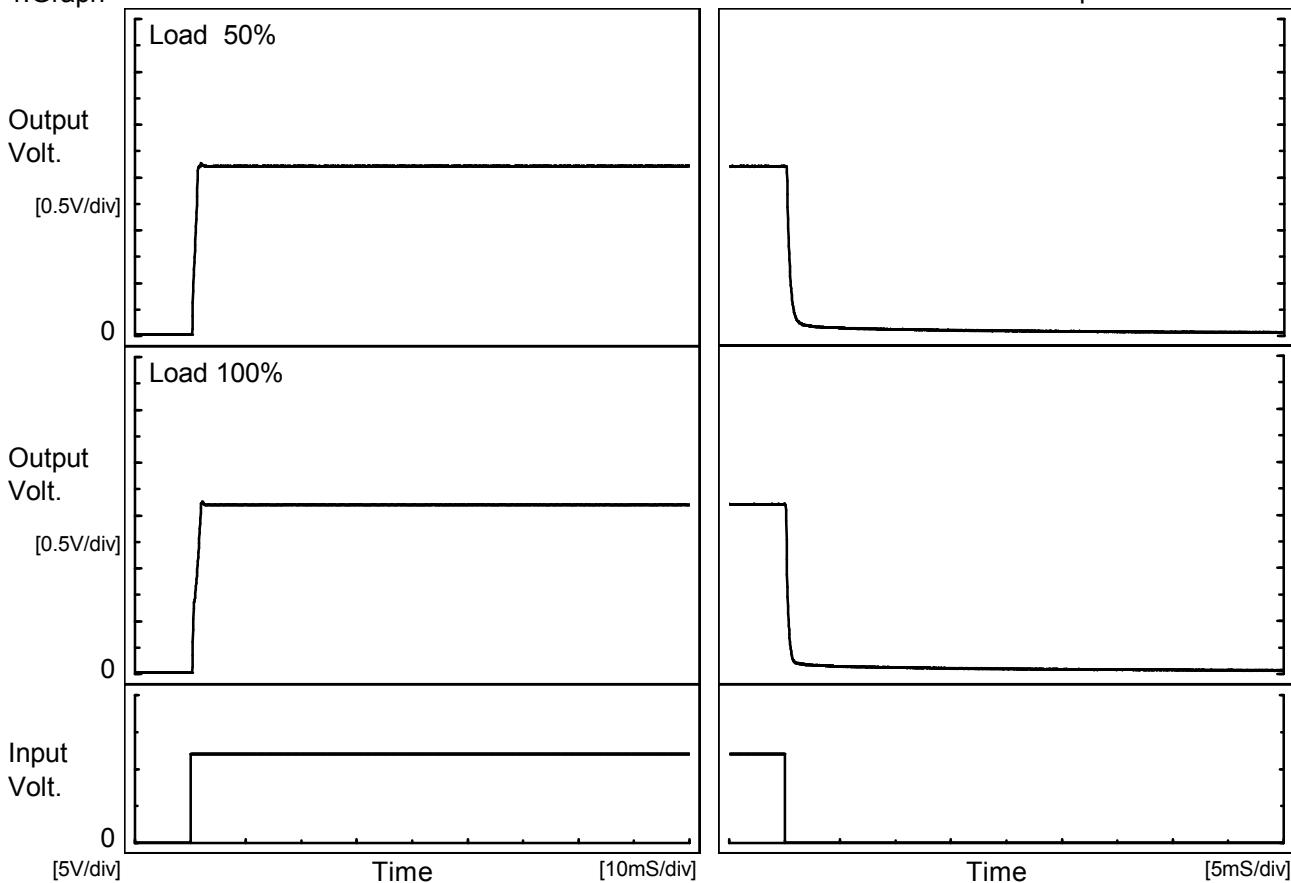
Time since start [H]	Output Voltage [V]
0.0	3.279
0.5	3.280
1.0	3.280
2.0	3.280
3.0	3.280
4.0	3.280
5.0	3.280
6.0	3.280
7.0	3.280
8.0	3.280

**COSEL**

Model	SUTS10123R3
Item	Rise and Fall Time
Object	+3.3V2.6A

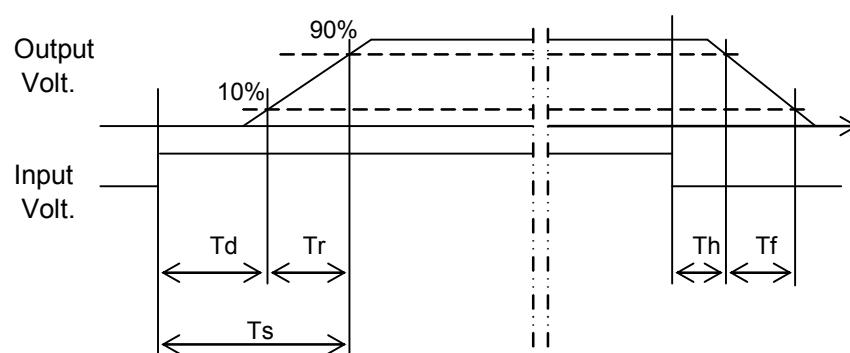
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

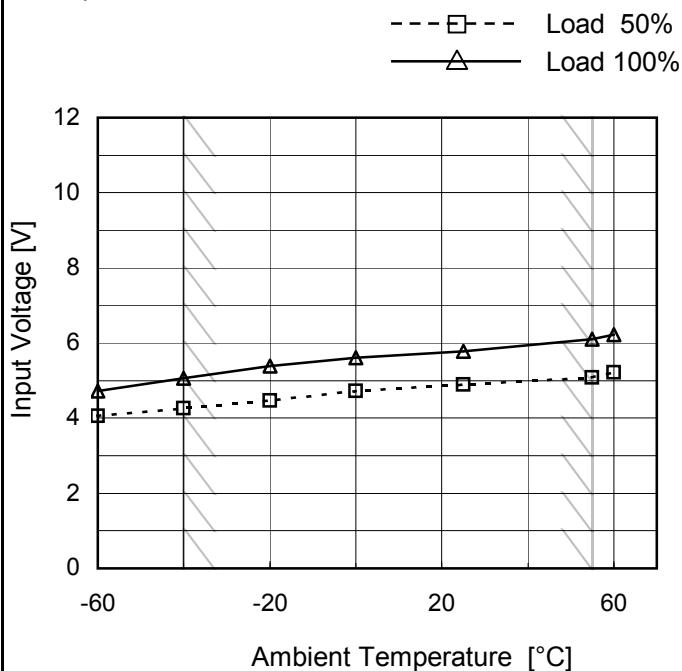
Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.4	1.0	1.4	0.2	0.8
100 %		0.4	1.5	1.9	0.1	0.5



Model	SUTS10123R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V2.6A

## Testing Circuitry Figure A

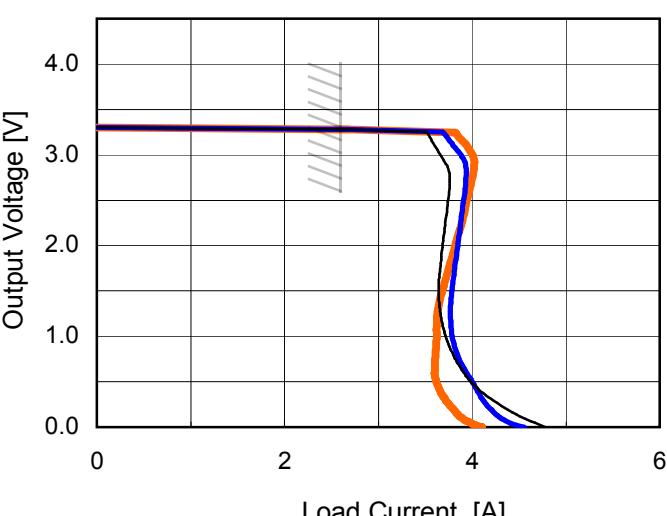
## 1.Graph



## 2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	4.1	4.8
-40	4.3	5.1
-20	4.5	5.4
0	4.8	5.6
25	4.9	5.8
55	5.1	6.1
60	5.3	6.3
--	-	-
--	-	-
--	-	-
--	-	-

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

Model	SUTS10123R3	Temperature Testing Circuitry      25°C Figure A																																																									
Item	Overcurrent Protection																																																										
Object	+3.3V2.6A																																																										
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coSEL

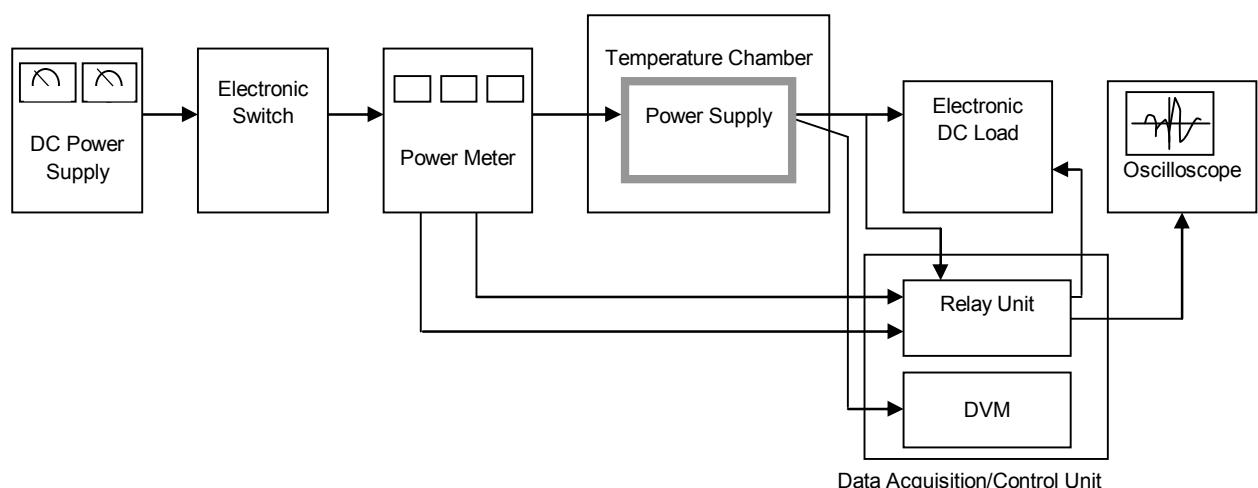


Figure A

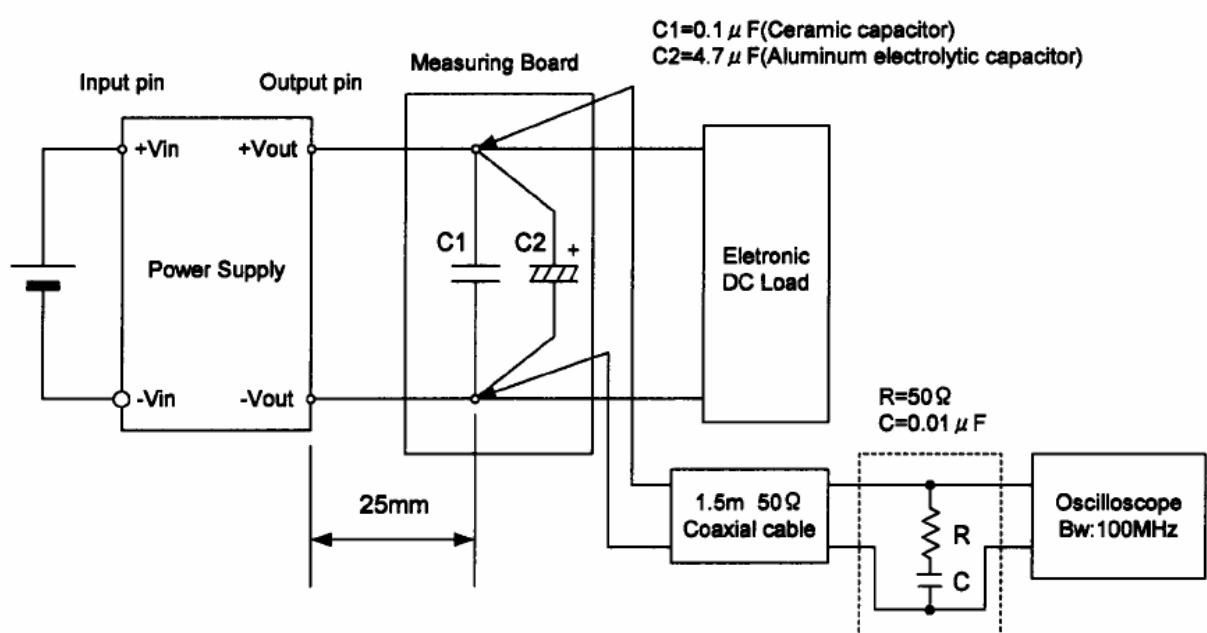


Figure B (Ripple and Ripple noise Characteristic)