

# TEST DATA OF SUTS64805

Regulated DC Power Supply  
March 17, 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	SUTS64805	Temperature Testing Circuitry      25°C Figure A																																																																																	
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<p>The graph plots Efficiency [%] on the y-axis (40 to 100) against Input Voltage [V] on the x-axis (20 to 80). 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>33</td><td>78.6</td><td>80.3</td></tr> <tr><td>36</td><td>78.5</td><td>80.9</td></tr> <tr><td>40</td><td>78.5</td><td>81.2</td></tr> <tr><td>48</td><td>77.6</td><td>81.4</td></tr> <tr><td>55</td><td>76.6</td><td>81.1</td></tr> <tr><td>60</td><td>75.6</td><td>80.7</td></tr> <tr><td>70</td><td>73.2</td><td>79.5</td></tr> <tr><td>76</td><td>71.4</td><td>78.6</td></tr> <tr><td>80</td><td>70.4</td><td>78.1</td></tr> </tbody> </table>		Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	33	78.6	80.3	36	78.5	80.9	40	78.5	81.2	48	77.6	81.4	55	76.6	81.1	60	75.6	80.7	70	73.2	79.5	76	71.4	78.6	80	70.4	78.1
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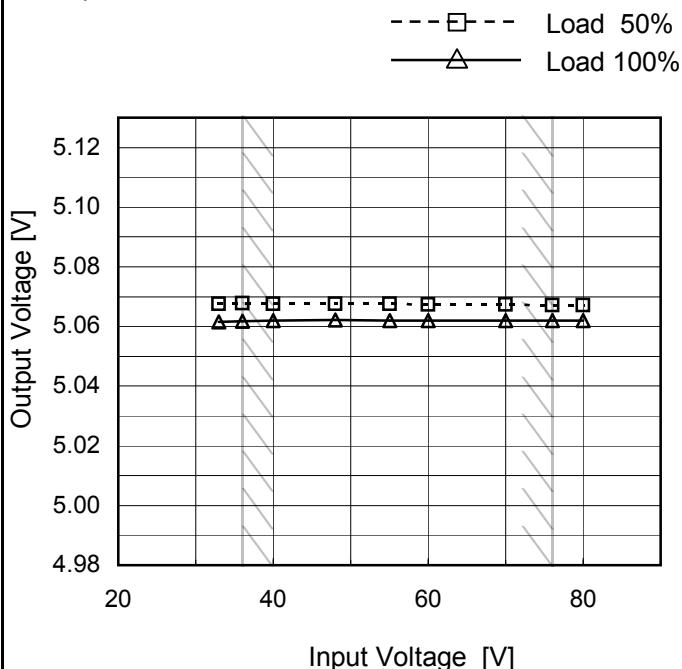
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Model	SUTS64805
Item	Line Regulation
Object	+5V1.2A

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	5.068	5.062
36	5.068	5.062
40	5.068	5.062
48	5.068	5.062
55	5.068	5.062
60	5.067	5.062
70	5.067	5.062
76	5.067	5.062
80	5.067	5.062

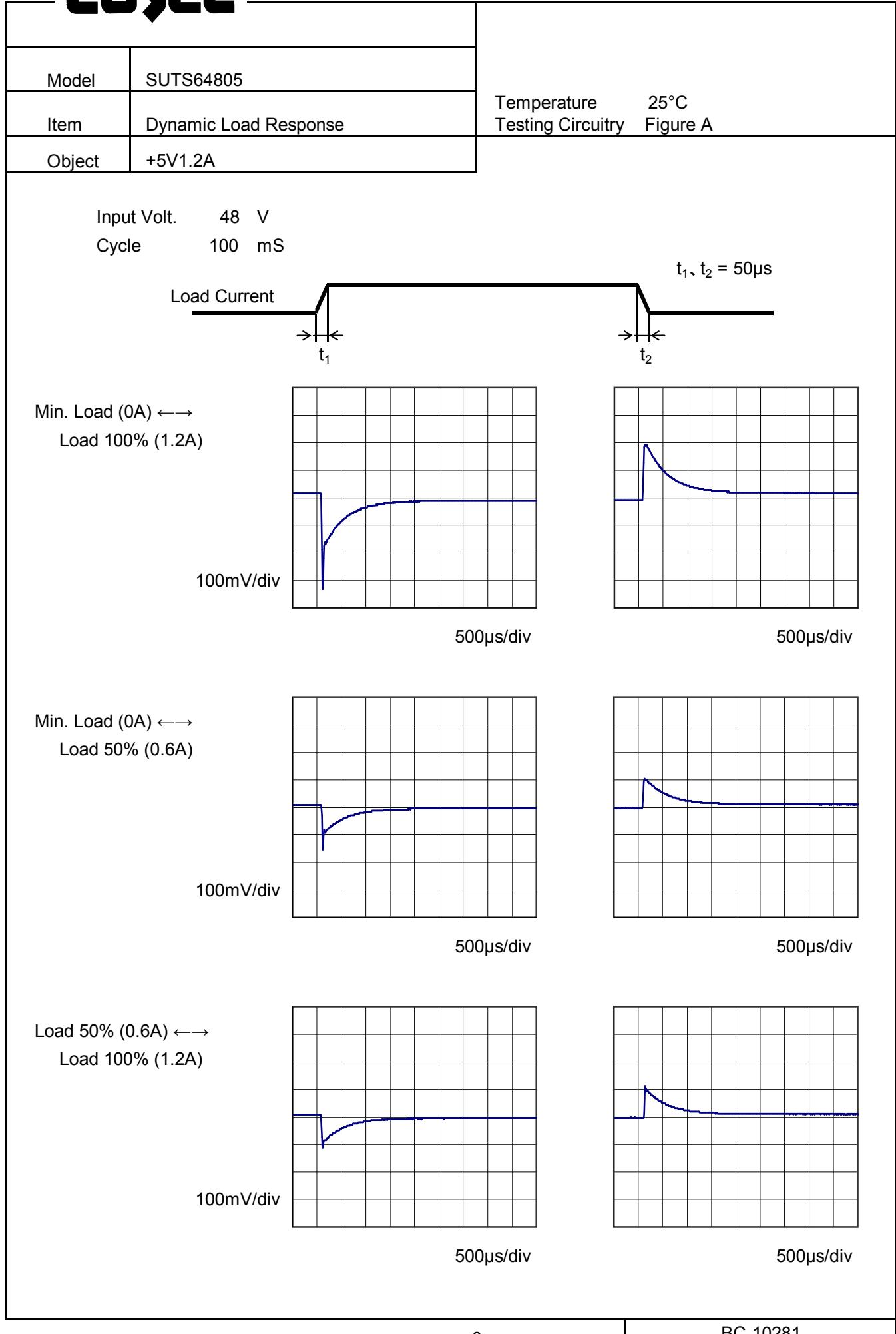
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1.32	5.061	5.061	5.061																														
2.Values																																	

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

Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	5.073	5.073	5.073
0.24	5.071	5.071	5.071
0.48	5.069	5.069	5.068
0.72	5.067	5.067	5.066
0.96	5.064	5.064	5.064
1.20	5.062	5.062	5.062
1.32	5.061	5.061	5.061
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--	-	-	-

**COSEL**



**COSEL**

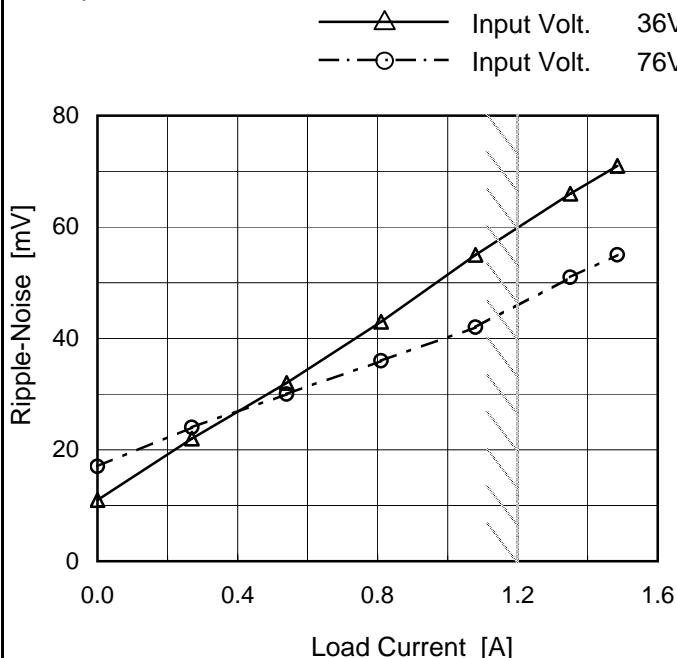
Model	SUTS64805																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	+5V1.2A																																							
1.Graph																																								
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The Y-axis ranges from 0 to 50 mV, and the X-axis ranges from 0.0 to 1.6 A. Two curves are plotted: one for Input Volt. 36V (solid line with open triangle markers) and one for Input Volt. 76V (dashed line with open circle markers). A slanted line indicates the rated load current range.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (Input Volt. 36V)</th> <th>Ripple Voltage [mV] (Input Volt. 76V)</th> </tr> </thead> <tbody> <tr><td>0.000</td><td>7</td><td>8</td></tr> <tr><td>0.270</td><td>5</td><td>4</td></tr> <tr><td>0.540</td><td>6</td><td>6</td></tr> <tr><td>0.810</td><td>7</td><td>7</td></tr> <tr><td>1.080</td><td>14</td><td>7</td></tr> <tr><td>1.350</td><td>21</td><td>8</td></tr> <tr><td>1.485</td><td>23</td><td>8</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. 36V)	Ripple Voltage [mV] (Input Volt. 76V)	0.000	7	8	0.270	5	4	0.540	6	6	0.810	7	7	1.080	14	7	1.350	21	8	1.485	23	8	--	-	-	--	-	-	--	-	-	--	-	-			
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<p>Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p> <p>Ripple [mVp-p]</p> <p>Fig.Complex Ripple Wave Form</p>																																								

**COSEL**

Model	SUTS64805
Item	Ripple-Noise
Object	+5V1.2A

 Temperature 25°C  
 Testing Circuitry Figure B

## 1.Graph



## 2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.000	11	17
0.270	22	24
0.540	32	30
0.810	43	36
1.080	55	42
1.350	66	51
1.485	71	55
--	-	-
--	-	-
--	-	-
--	-	-

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.  
 1.2 A

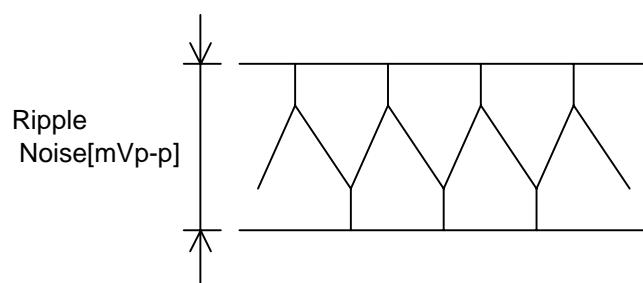
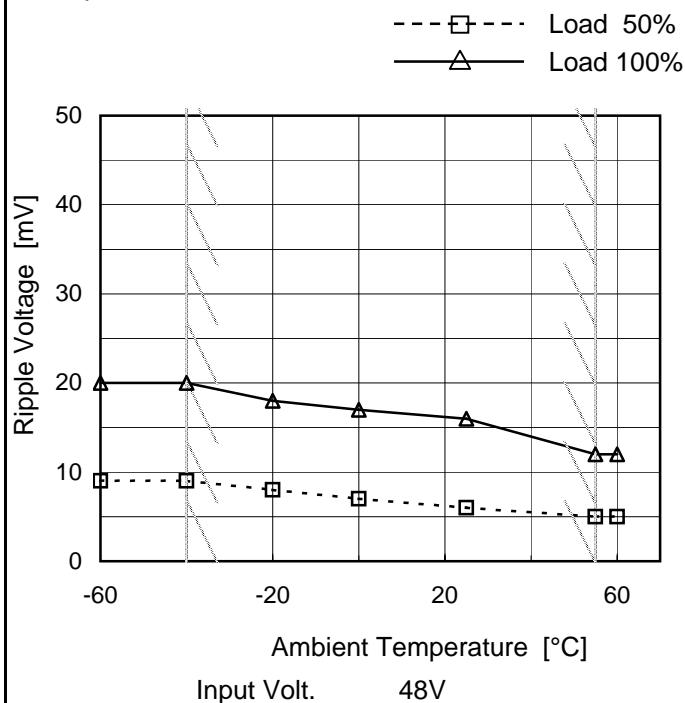


Fig.Complex Ripple Noise Wave Form

**COSEL**

Model	SUTS64805
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V1.2A

## 1. Graph



Measured by 100 MHz Oscilloscope.

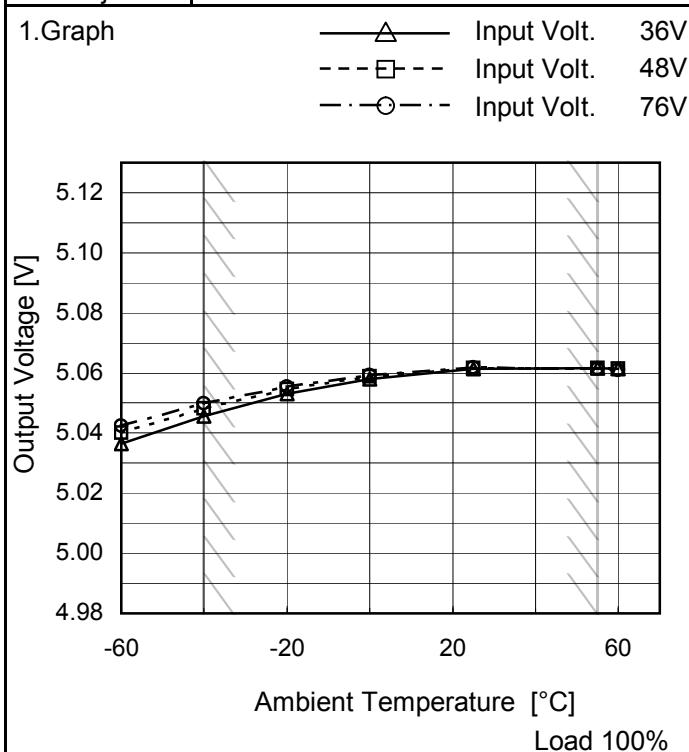
Note: Slanted line shows the range of the rated ambient temperature.

Testing Circuitry Figure B

## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	9	20
-40	9	20
-20	8	18
0	7	17
25	6	16
55	5	12
60	5	12
--	-	-
--	-	-
--	-	-
--	-	-

Model	SUTS64805
Item	Ambient Temperature Drift
Object	+5V1.2A



Testing Circuitry Figure A

## 2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	5.036	5.040	5.043
-40	5.046	5.048	5.050
-20	5.053	5.055	5.056
0	5.058	5.059	5.059
25	5.061	5.062	5.062
55	5.062	5.062	5.061
60	5.061	5.061	5.061
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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



Model	SUTS64805	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+5V1.2A	

### 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 : 36 - 76V

Load Current : 0 - 1.2A

\* 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

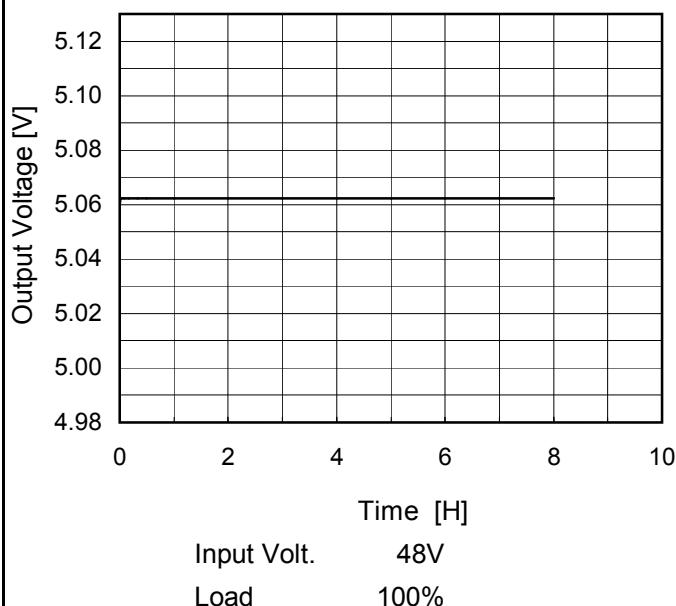
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	76	0	5.074	±14	±0.3
Minimum Voltage	-40	36	1.2	5.046		

**COSEL**

Model	SUTS64805
Item	Time Lapse Drift
Object	+5V1.2A

Temperature 25°C  
Testing Circuitry Figure A

1. Graph



2. Values

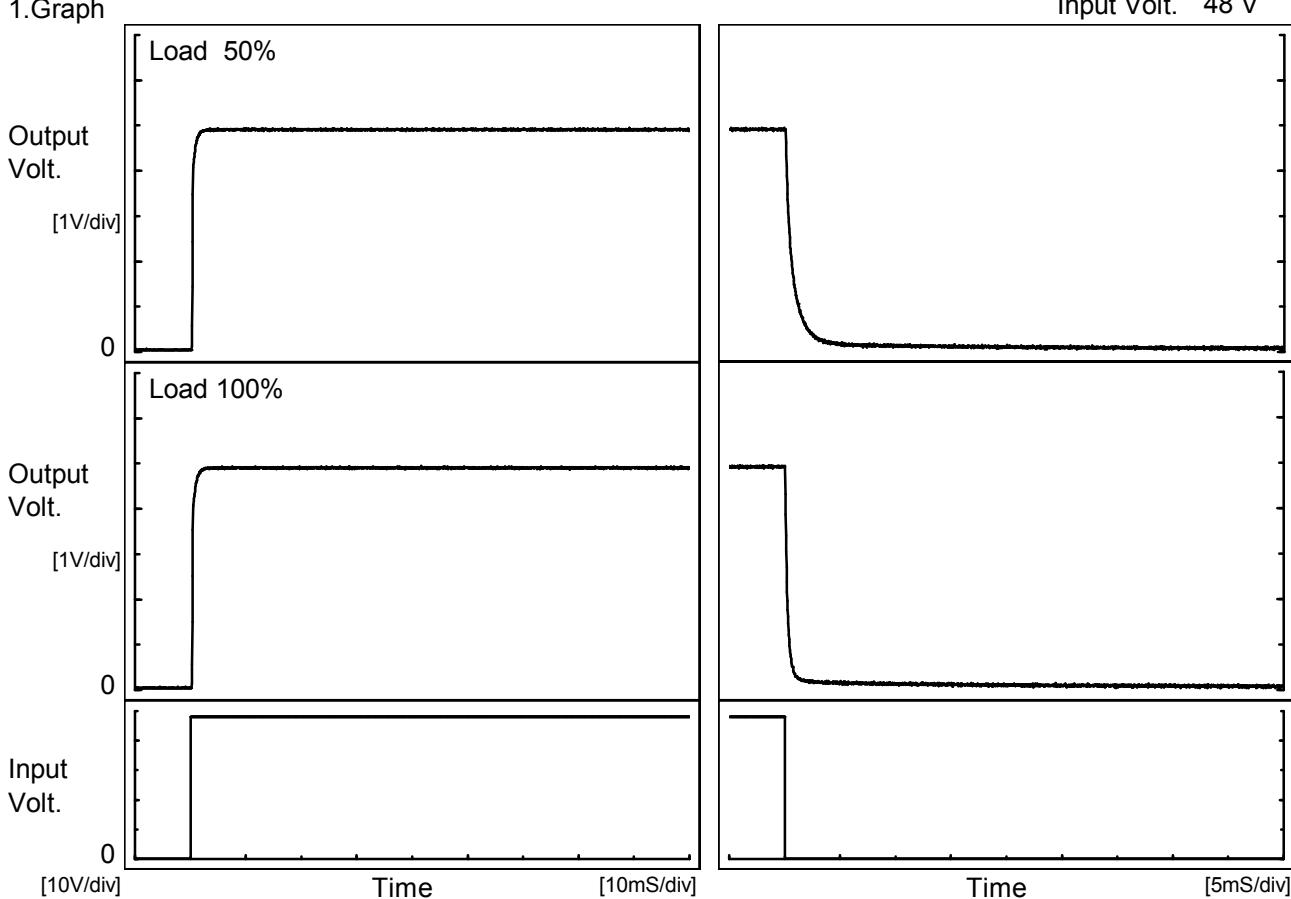
Time since start [H]	Output Voltage [V]
0.0	5.060
0.5	5.062
1.0	5.062
2.0	5.062
3.0	5.062
4.0	5.062
5.0	5.062
6.0	5.062
7.0	5.062
8.0	5.062

**COSEL**

Model	SUTS64805
Item	Rise and Fall Time
Object	+5V1.2A

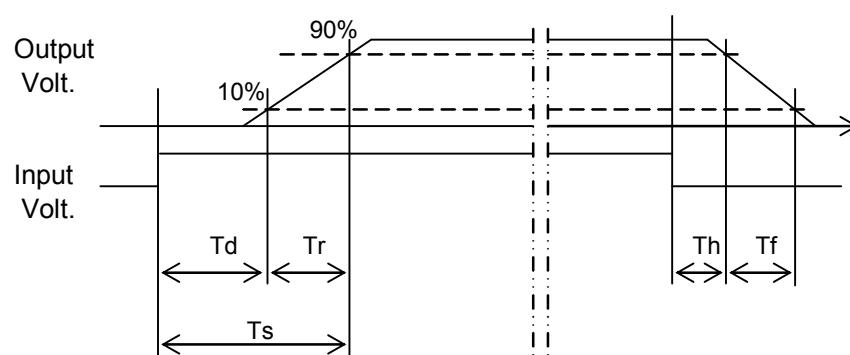
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

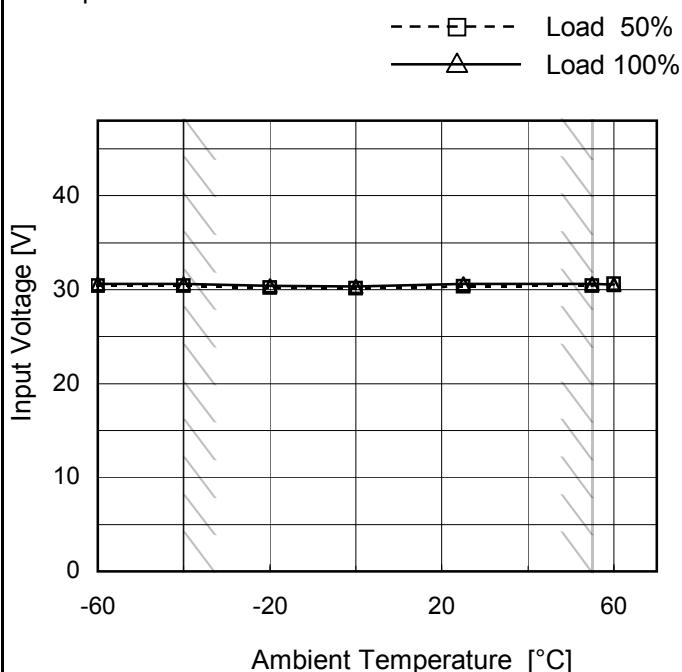
Load	Time	Td	Tr	Ts	Th	Tf	[mS]
50 %		0.3	0.6	0.9	0.1	1.9	
100 %		0.3	0.7	1.0	0.1	0.6	



Model	SUTS64805
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V1.2A

## Testing Circuitry Figure A

## 1.Graph



## 2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	30.4	30.7
-40	30.5	30.6
-20	30.2	30.4
0	30.2	30.4
25	30.4	30.6
55	30.5	30.6
60	30.7	30.6
--	-	-
--	-	-
--	-	-
--	-	-

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

Model	SUTS64805	Temperature Testing Circuitry 25°C Figure A																																																							
Item	Overcurrent Protection																																																								
Object	+5V1.2A																																																								
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coSEL

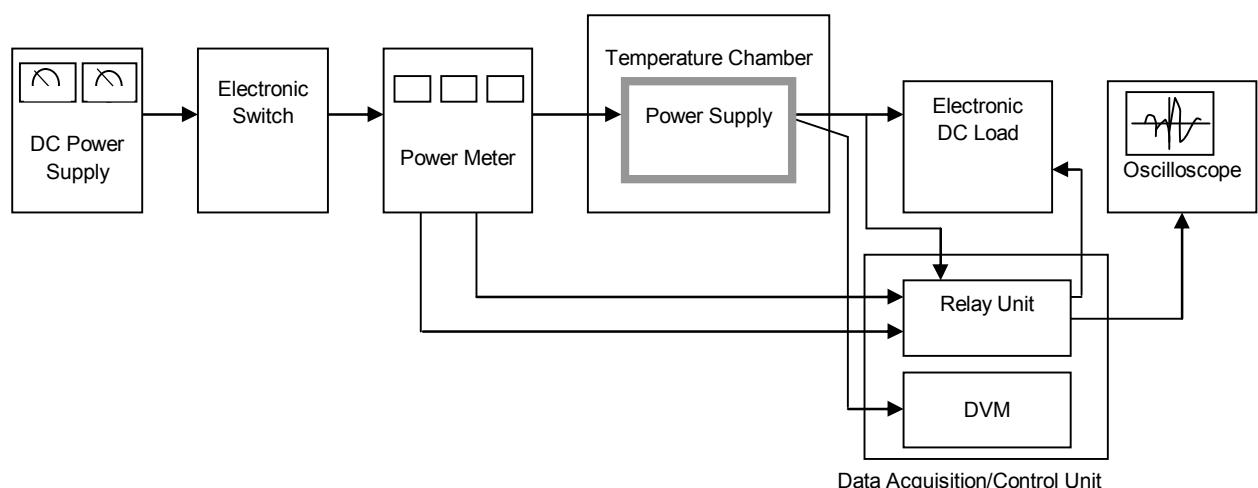


Figure A

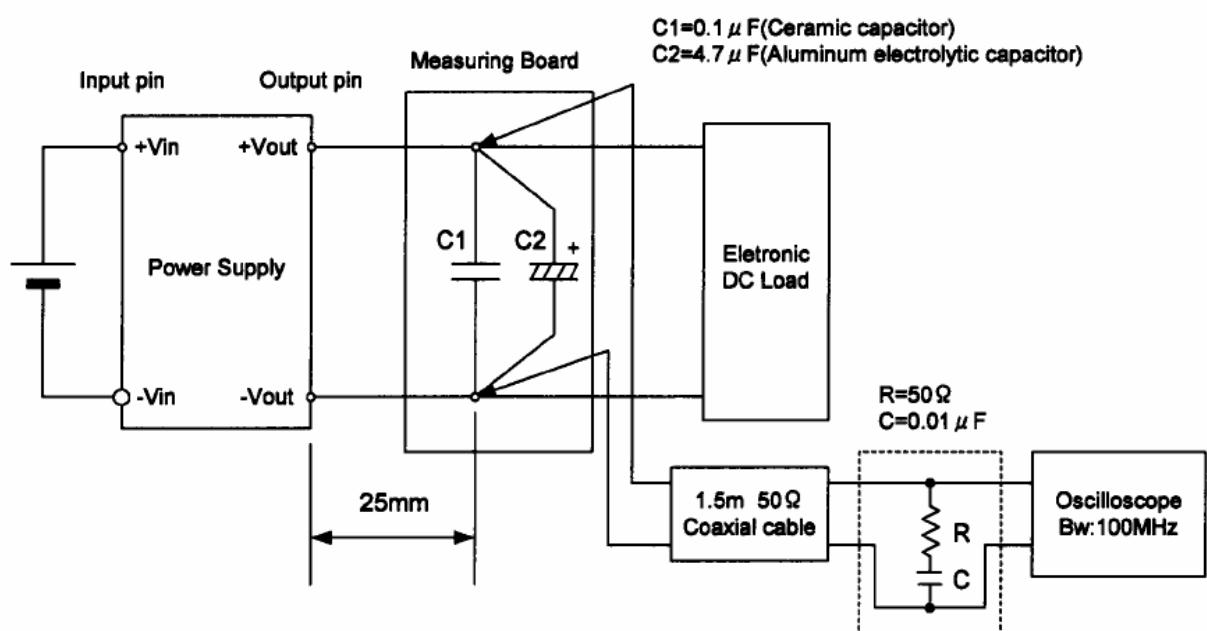


Figure B (Ripple and Ripple noise Characteristic)