



# TEST DATA OF SUCS3483R3

Regulated DC Power Supply  
Mar 9, 2005

Approved by : Tetsuo Sugimori  
Tetsuo Sugimori                                  Design Manager

Prepared by : Hayato Nakatsubo  
Hayato Nakatsubo                                  Design Engineer

**COSEL CO.,LTD.**



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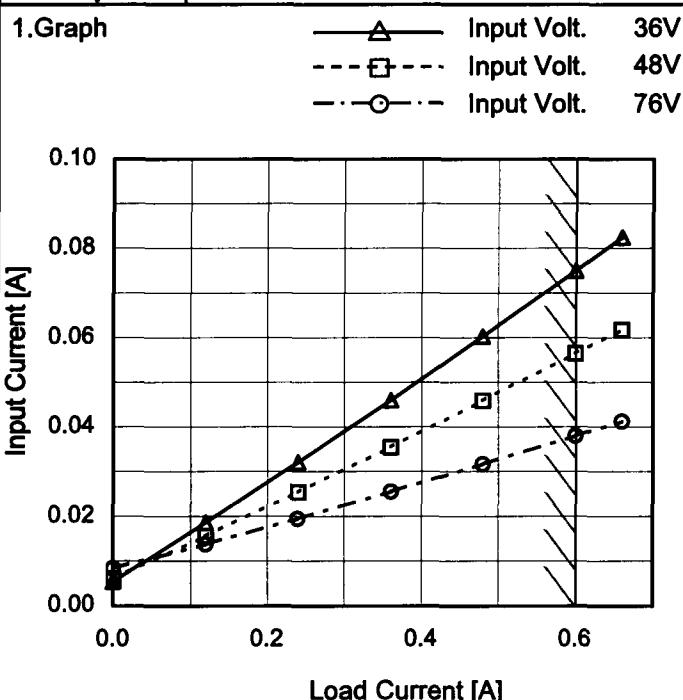
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Model	SUCS3483R3	Temperature Testing Circuitry Figure A																																																																															
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Object	_____																																																																																
1.Graph		2.Values																																																																															
<p>The graph plots Input Current [A] on the y-axis (0.000 to 0.200) against Input Voltage [V] on the x-axis (0 to 80). Three data series are shown: Load 100% (triangles), Load 50% (squares), and Load 0% (circles). All series show a sharp increase in current from 0V to approximately 20V, followed by a gradual decrease. A slanted line is drawn through the data points, representing the rated input voltage range.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Load 0%</th> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>8.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>16.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>19.2</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>21.6</td><td>0.006</td><td>0.065</td><td>0.131</td></tr> <tr><td>24.0</td><td>0.006</td><td>0.058</td><td>0.115</td></tr> <tr><td>33.0</td><td>0.005</td><td>0.042</td><td>0.082</td></tr> <tr><td>36.0</td><td>0.005</td><td>0.039</td><td>0.075</td></tr> <tr><td>40.0</td><td>0.006</td><td>0.036</td><td>0.067</td></tr> <tr><td>48.0</td><td>0.006</td><td>0.030</td><td>0.056</td></tr> <tr><td>60.0</td><td>0.007</td><td>0.026</td><td>0.046</td></tr> <tr><td>70.0</td><td>0.008</td><td>0.024</td><td>0.040</td></tr> <tr><td>76.0</td><td>0.008</td><td>0.023</td><td>0.038</td></tr> <tr><td>80.0</td><td>0.008</td><td>0.022</td><td>0.037</td></tr> <tr><td>84.8</td><td>0.009</td><td>0.022</td><td>0.035</td></tr> <tr><td>88.0</td><td>0.009</td><td>0.021</td><td>0.034</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Input Voltage [V]	Input Current [A]			Load 0%	Load 50%	Load 100%	0.0	0.000	0.000	0.000	8.0	0.000	0.000	0.000	16.0	0.000	0.000	0.000	19.2	0.000	0.000	0.000	21.6	0.006	0.065	0.131	24.0	0.006	0.058	0.115	33.0	0.005	0.042	0.082	36.0	0.005	0.039	0.075	40.0	0.006	0.036	0.067	48.0	0.006	0.030	0.056	60.0	0.007	0.026	0.046	70.0	0.008	0.024	0.040	76.0	0.008	0.023	0.038	80.0	0.008	0.022	0.037	84.8	0.009	0.022	0.035	88.0	0.009	0.021	0.034	--	-	-	-	--	-	-	-
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Note: Slanted line shows the range of the rated input voltage.

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Model	SUCS3483R3
Item	Input Current (by Load Current)
Object	_____



Temperature 25°C  
Testing Circuitry Figure A

## 2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.005	0.006	0.008
0.12	0.019	0.016	0.014
0.24	0.032	0.025	0.020
0.36	0.046	0.036	0.026
0.48	0.060	0.046	0.032
0.60	0.075	0.057	0.038
0.66	0.083	0.062	0.041
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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

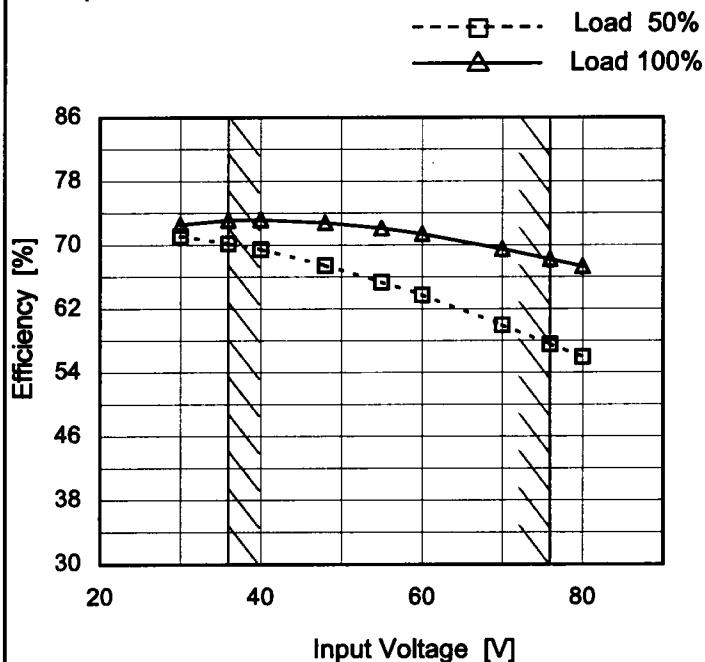
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Model	SUCS3483R3	Temperature 25°C																																																			
Item	Input Power (by Load Current)	Testing Circuitry Figure A																																																			
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1.Graph																																																					
—△— Input Volt. 36V - -□--- Input Volt. 48V - -○--- Input Volt. 76V																																																					
<p>The graph plots Input Power [W] on the y-axis against Load Current [A] on the x-axis. Three data series are shown for input voltages of 36V, 48V, and 76V. The power increases linearly with load current for each voltage. A slanted line on the graph indicates the range of the rated load current.</p>																																																					
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<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Power [W]</th> </tr> <tr> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr> <td>0.00</td><td>0.20</td><td>0.29</td><td>0.64</td></tr> <tr> <td>0.12</td><td>0.67</td><td>0.75</td><td>1.05</td></tr> <tr> <td>0.24</td><td>1.16</td><td>1.22</td><td>1.49</td></tr> <tr> <td>0.36</td><td>1.66</td><td>1.71</td><td>1.94</td></tr> <tr> <td>0.48</td><td>2.17</td><td>2.21</td><td>2.41</td></tr> <tr> <td>0.60</td><td>2.70</td><td>2.71</td><td>2.89</td></tr> <tr> <td>0.66</td><td>2.97</td><td>2.97</td><td>3.14</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]	Input Power [W]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.00	0.20	0.29	0.64	0.12	0.67	0.75	1.05	0.24	1.16	1.22	1.49	0.36	1.66	1.71	1.94	0.48	2.17	2.21	2.41	0.60	2.70	2.71	2.89	0.66	2.97	2.97	3.14	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Power [W]																																																				
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Note: Slanted line shows the range of the rated load current.																																																					

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Model	SUCS3483R3
Item	Efficiency (by Input Voltage)
Object	—

## 1.Graph



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

Temperature 25°C  
Testing Circuitry Figure A

## 2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
30	71.1	72.6
36	70.2	73.1
40	69.5	73.2
48	67.4	72.8
55	65.4	72.1
60	63.7	71.4
70	60.0	69.5
76	57.5	68.2
80	56.0	67.3

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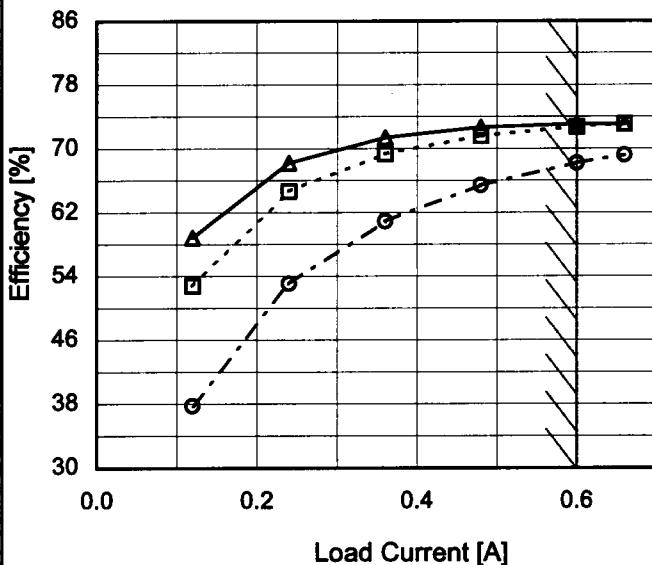
Model SUCS3483R3

Item Efficiency (by Load Current)

Object \_\_\_\_\_

1. Graph

—△— Input Volt. 36V  
 - -□--- Input Volt. 48V  
 - -○--- Input Volt. 76V



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

Temperature 25°C  
 Testing Circuitry Figure A

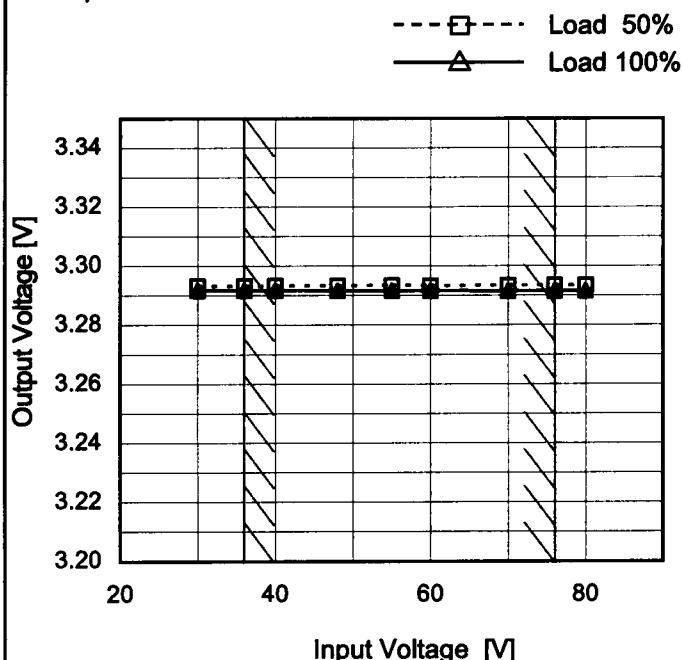
2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	-	-	-
0.12	58.9	52.8	37.8
0.24	68.2	64.7	53.1
0.36	71.4	69.4	60.9
0.48	72.7	71.6	65.4
0.60	73.1	72.7	68.2
0.66	73.1	73.1	69.2
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SUCS3483R3
Item	Line Regulation
Object	+3.3V0.6A

## 1. Graph



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

Temperature 25°C  
Testing Circuitry Figure A

## 2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
30	3.293	3.292
36	3.293	3.292
40	3.293	3.292
48	3.293	3.292
55	3.293	3.292
60	3.293	3.292
70	3.293	3.292
76	3.293	3.292
80	3.293	3.292

# COSEL

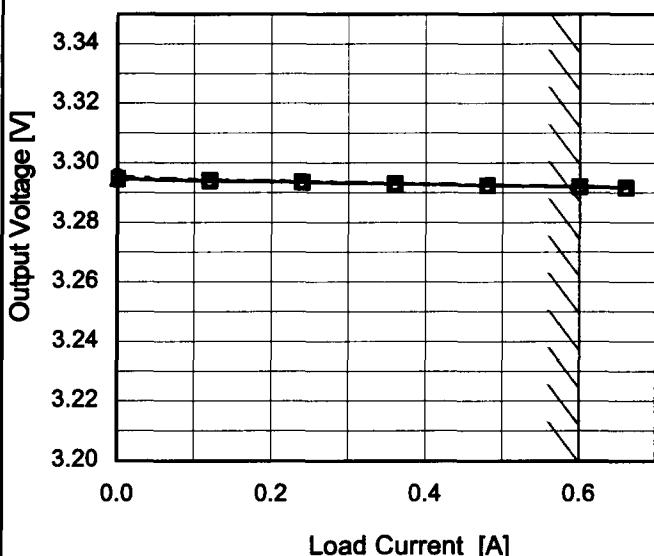
Model SUCS3483R3

Item Load Regulation

Object +3.3V0.6A

1. Graph

—△— Input Volt. 36V  
 - - -□- - Input Volt. 48V  
 - - ○- - Input Volt. 76V

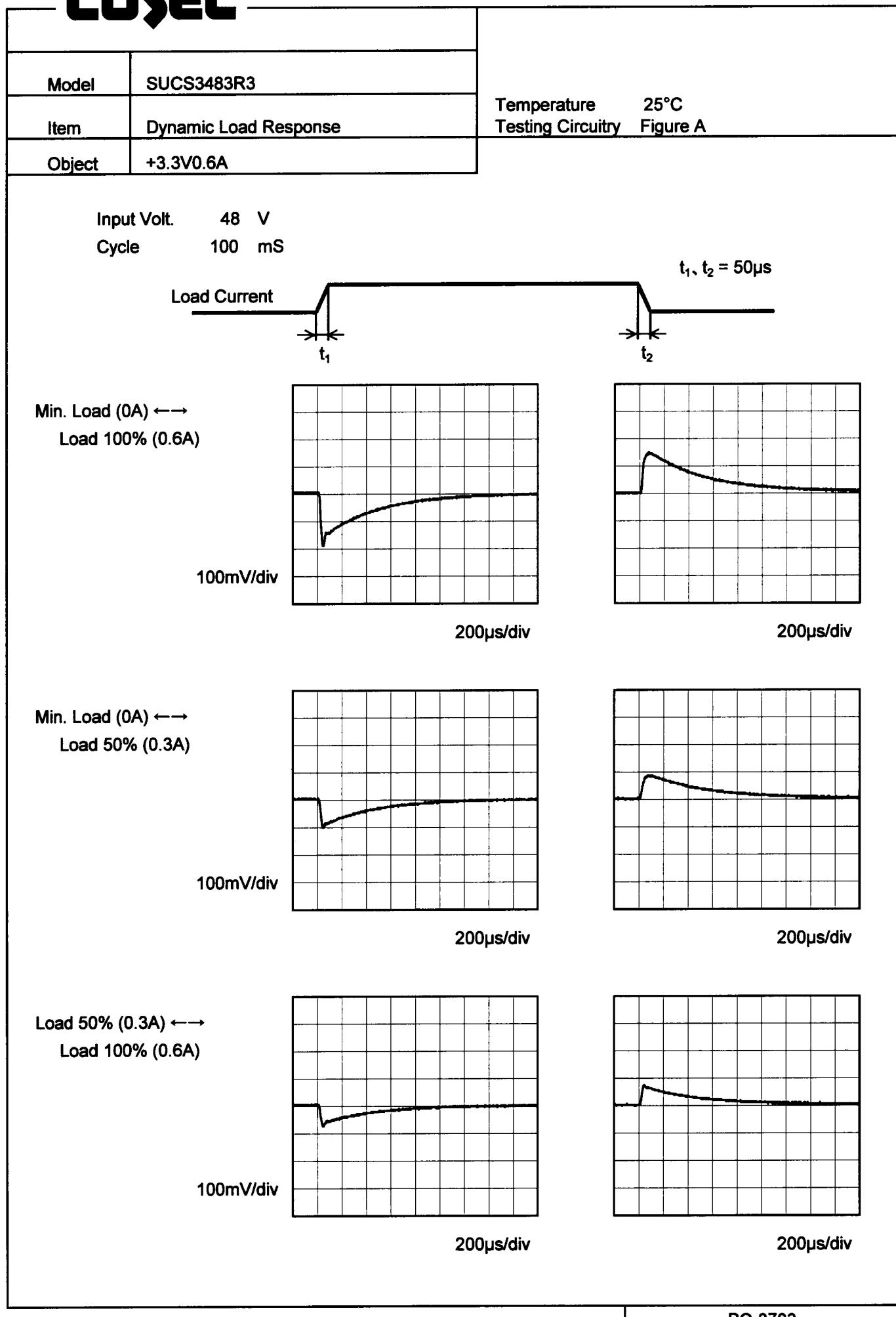


Note: Slanted line shows the range of the rated load current.

Temperature 25°C  
 Testing Circuitry Figure A

2. Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	3.295	3.295	3.295
0.12	3.294	3.294	3.294
0.24	3.294	3.294	3.294
0.36	3.293	3.293	3.293
0.48	3.293	3.293	3.293
0.60	3.292	3.292	3.292
0.66	3.292	3.292	3.292
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--	-	-	-
--	-	-	-
--	-	-	-

**COSEL**

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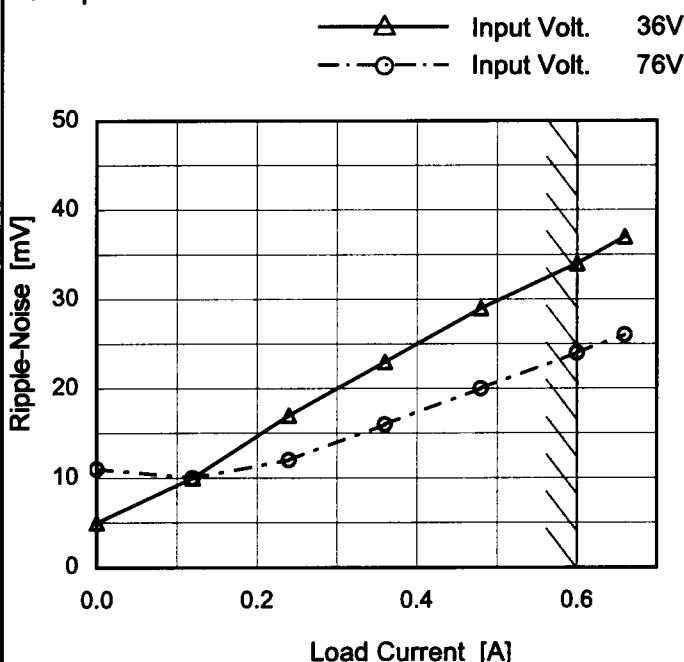
Model	SUCS3483R3																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	+3.3V0.6A																																							
1.Graph																																								
<p>Y-axis: Ripple Voltage [mV] (0 to 50)  X-axis: Load Current [A] (0.0 to 0.6)  Legend:  — ▲ — Input Volt. 36V  - - ○ - - Input Volt. 76V</p>																																								
<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>																																								
<p>Ripple [mVp-p]</p>																																								
<p>Fig.Complex Ripple Wave Form</p>																																								
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Load Current [A]	Ripple Voltage [mV]																																							
	Input Volt. 36 [V]	Input Volt. 76 [V]																																						
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Model	SUCS3483R3
Item	Ripple-Noise
Object	+3.3V0.6A

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. 36 [V]	Input Volt. 76 [V]
0.00	5	11
0.12	10	10
0.24	17	12
0.36	23	16
0.48	29	20
0.60	34	24
0.66	37	26
--	-	-
--	-	-
--	-	-
--	-	-

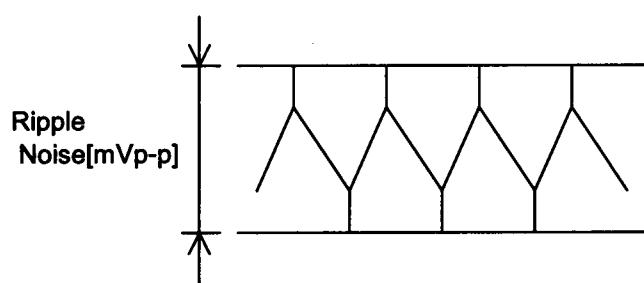
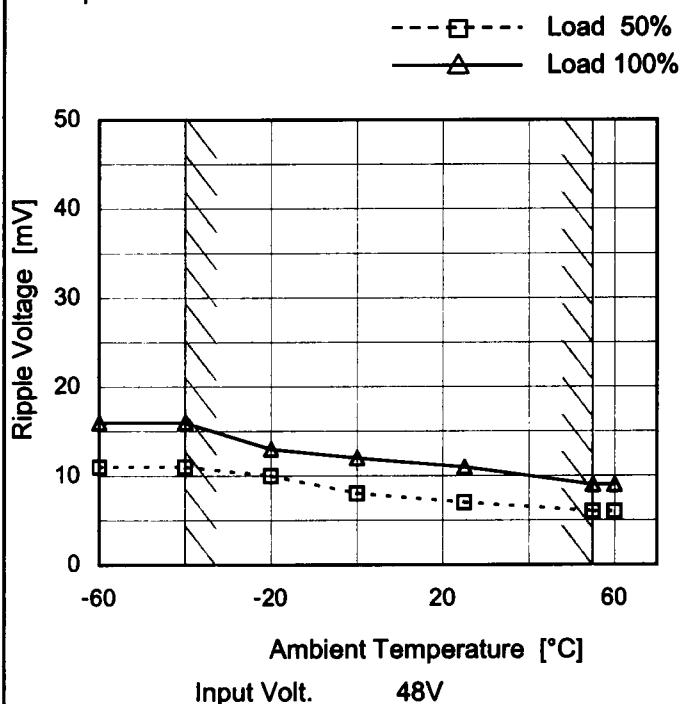


Fig.Complex Ripple Noise Wave Form

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Model	SUCS3483R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V0.6A

## 1. Graph



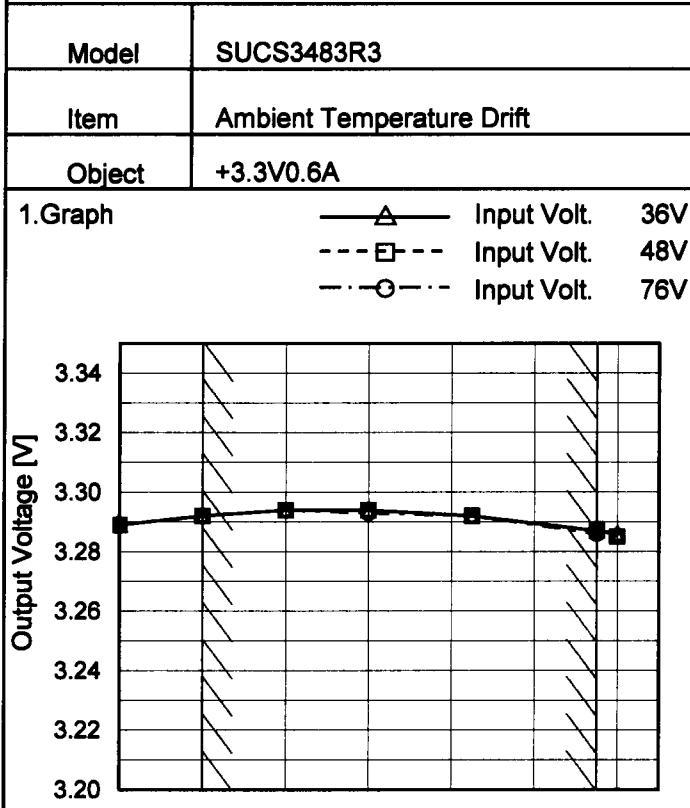
Measured by 100 MHz Oscilloscope.

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	11	16
-40	11	16
-20	10	13
0	8	12
25	7	11
55	6	9
60	6	9
--	-	-
--	-	-
--	-	-
-	-	-

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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	3.289	3.289	3.289
-40	3.292	3.292	3.292
-20	3.294	3.294	3.294
0	3.294	3.294	3.293
25	3.292	3.292	3.292
55	3.287	3.287	3.286
60	3.286	3.285	3.285
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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



Model	SUCS3483R3	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+3.3V0.6A	

### 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 : 36 - 76V

Load Current : 0 - 0.6A

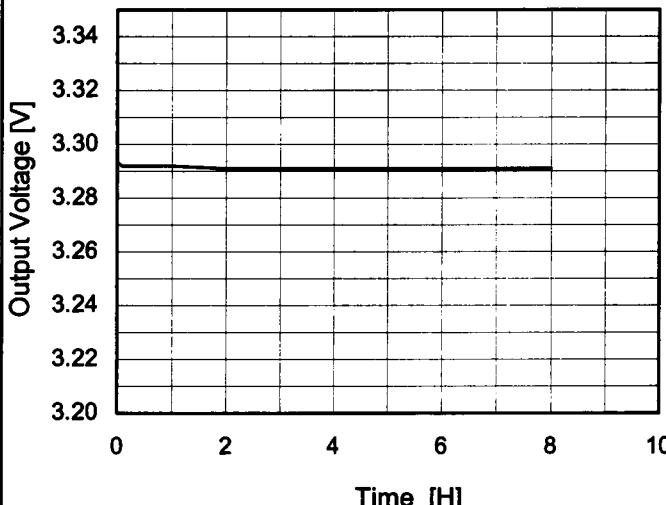
\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	0	76	0	3.297	$\pm 6$	$\pm 0.2$
Minimum Voltage	55	76	0.6	3.286		

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Model	SUCS3483R3	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+3.3V0.6A																								
1.Graph			2.Values																						
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 48V Load 100%</p>			<table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>3.294</td></tr> <tr><td>0.5</td><td>3.292</td></tr> <tr><td>1.0</td><td>3.292</td></tr> <tr><td>2.0</td><td>3.291</td></tr> <tr><td>3.0</td><td>3.291</td></tr> <tr><td>4.0</td><td>3.291</td></tr> <tr><td>5.0</td><td>3.291</td></tr> <tr><td>6.0</td><td>3.291</td></tr> <tr><td>7.0</td><td>3.291</td></tr> <tr><td>8.0</td><td>3.291</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	3.294	0.5	3.292	1.0	3.292	2.0	3.291	3.0	3.291	4.0	3.291	5.0	3.291	6.0	3.291	7.0	3.291	8.0	3.291
Time since start [H]	Output Voltage [V]																								
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**COSEL**

Model SUCS3483R3

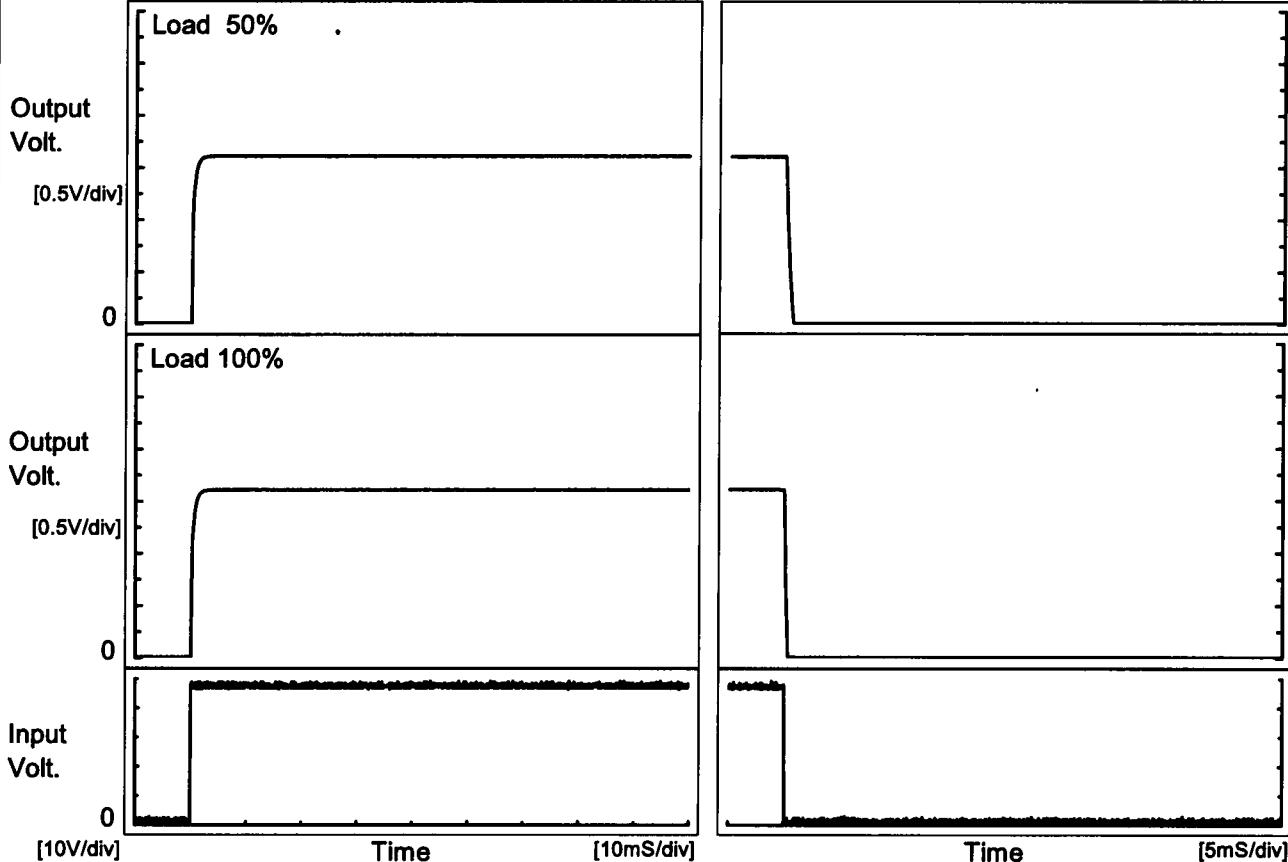
Temperature 25°C  
Testing Circuitry Figure A

Item Rise and Fall Time

Object +3.3V0.6A

## 1. Graph

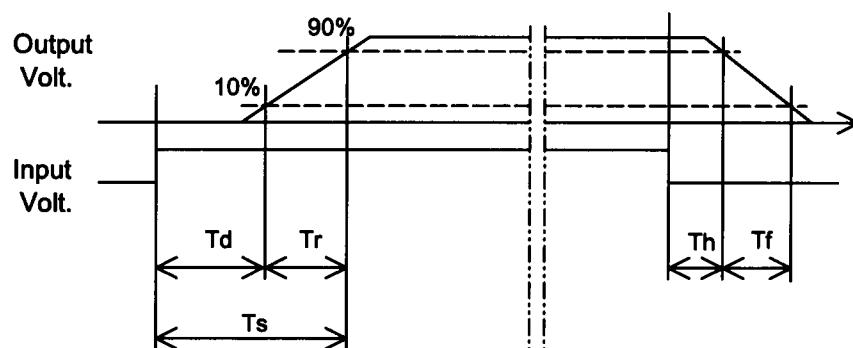
Input Volt. 48 V



## 2. Values

[mS]

Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.1	1.0	1.1	0.1	0.6
100 %		0.1	1.0	1.1	0.1	0.3

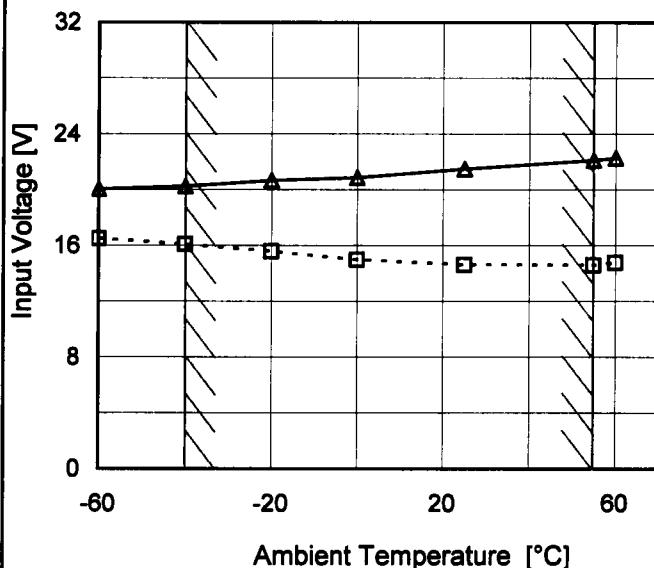


**COSEL**

Model	SUCS3483R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V0.6A

## 1. Graph

--- □--- Load 50%  
 —△— Load 100%



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

## Testing Circuitry Figure A

## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	16.5	20.1
-40	16.1	20.3
-20	15.6	20.7
0	15.0	20.9
25	14.7	21.5
55	14.6	22.2
60	14.8	22.3
--	-	-
--	-	-
--	-	-
--	-	-

**COSEL**

Model	SUCS3483R3	Temperature Testing Circuitry 25°C Figure A																																																							
Item	Overcurrent Protection																																																								
Object	+3.3V0.6A																																																								
1.Graph	<p style="text-align: right;">Input Volt. 36V Input Volt. 48V Input Volt. 76V</p> <p>The graph plots Output Voltage [V] on the Y-axis (0.0 to 4.0) against Load Current [A] on the X-axis (0.0 to 1.6). Three curves are shown for different input voltages: 36V (top), 48V (middle), and 76V (bottom). All curves show a constant output voltage until a certain load current is reached, after which the output voltage drops sharply. A slanted line is drawn across the graph, representing the range of the rated load current.</p>	2.Values																																																							
		<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="3">Load Current [A]</th> </tr> <tr> <th>36[V]</th> <th>48[V]</th> <th>76[V]</th> </tr> </thead> <tbody> <tr><td>3.30</td><td>0.60</td><td>0.60</td><td>0.60</td></tr> <tr><td>3.14</td><td>0.98</td><td>1.06</td><td>1.02</td></tr> <tr><td>2.97</td><td>1.00</td><td>1.08</td><td>1.03</td></tr> <tr><td>2.64</td><td>1.05</td><td>1.12</td><td>1.06</td></tr> <tr><td>2.31</td><td>1.09</td><td>1.15</td><td>1.08</td></tr> <tr><td>1.98</td><td>1.14</td><td>1.18</td><td>1.09</td></tr> <tr><td>1.65</td><td>1.18</td><td>1.21</td><td>1.10</td></tr> <tr><td>1.32</td><td>1.22</td><td>1.23</td><td>1.09</td></tr> <tr><td>0.99</td><td>1.23</td><td>1.21</td><td>1.05</td></tr> <tr><td>0.66</td><td>1.20</td><td>1.16</td><td>1.00</td></tr> <tr><td>0.33</td><td>1.16</td><td>1.09</td><td>0.92</td></tr> <tr><td>0.00</td><td>1.04</td><td>0.99</td><td>0.88</td></tr> </tbody> </table>	Output Voltage [V]	Load Current [A]			36[V]	48[V]	76[V]	3.30	0.60	0.60	0.60	3.14	0.98	1.06	1.02	2.97	1.00	1.08	1.03	2.64	1.05	1.12	1.06	2.31	1.09	1.15	1.08	1.98	1.14	1.18	1.09	1.65	1.18	1.21	1.10	1.32	1.22	1.23	1.09	0.99	1.23	1.21	1.05	0.66	1.20	1.16	1.00	0.33	1.16	1.09	0.92	0.00	1.04	0.99	0.88
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Note: Slanted line shows the range of the rated load current.

COSEL

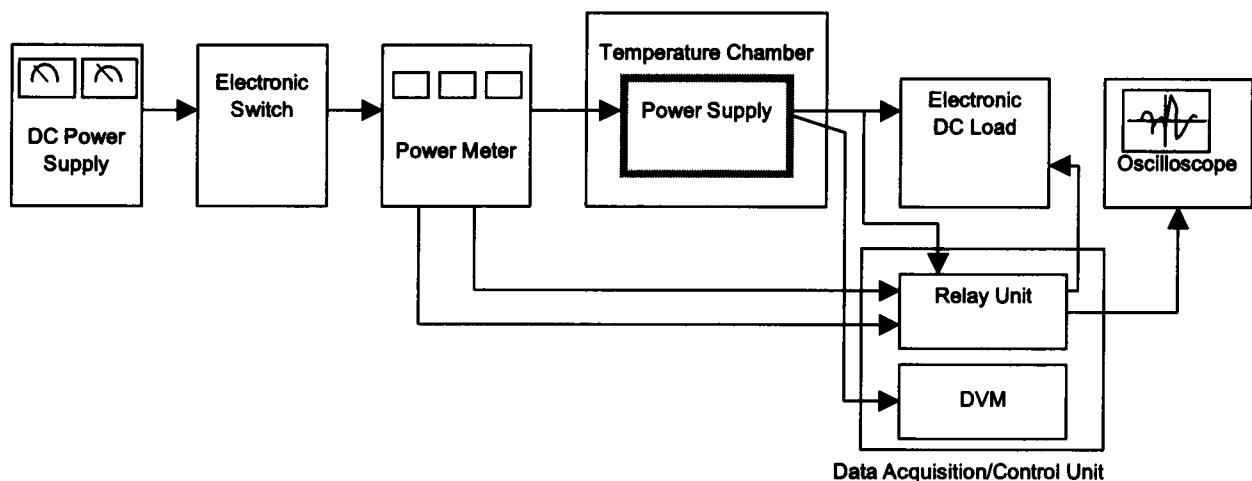


Figure A

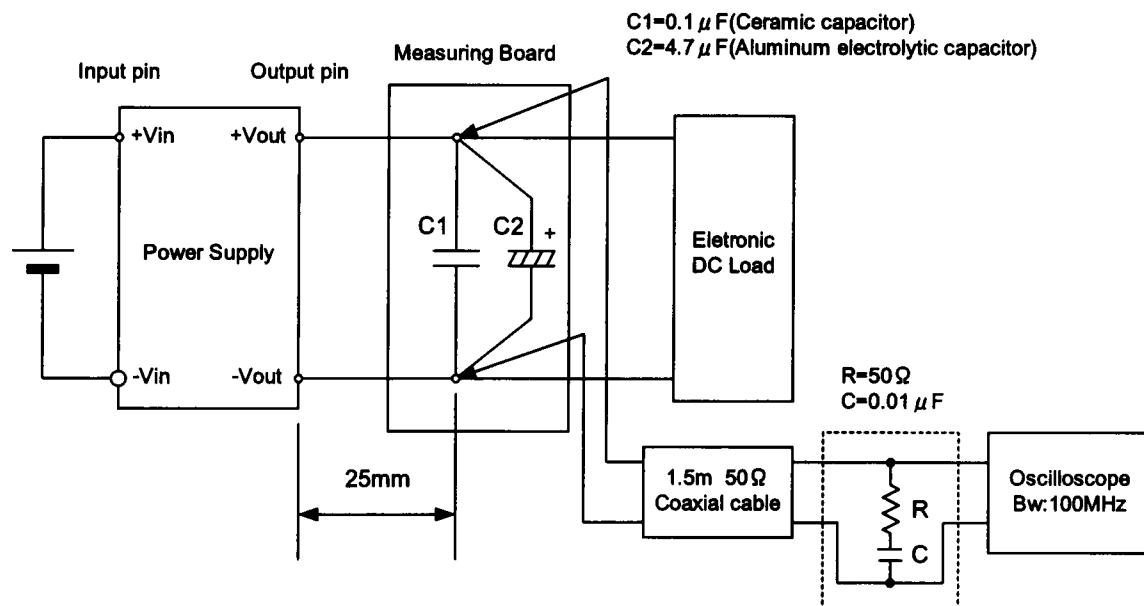


Figure B (Ripple and Ripple noise Characteristic)