

TEST DATA OF SUCS1R54805

Regulated DC Power Supply
Sep 28, 2004

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Masahiro Shima
Masahiro Shima Design Engineer

COSEL CO.,LTD.



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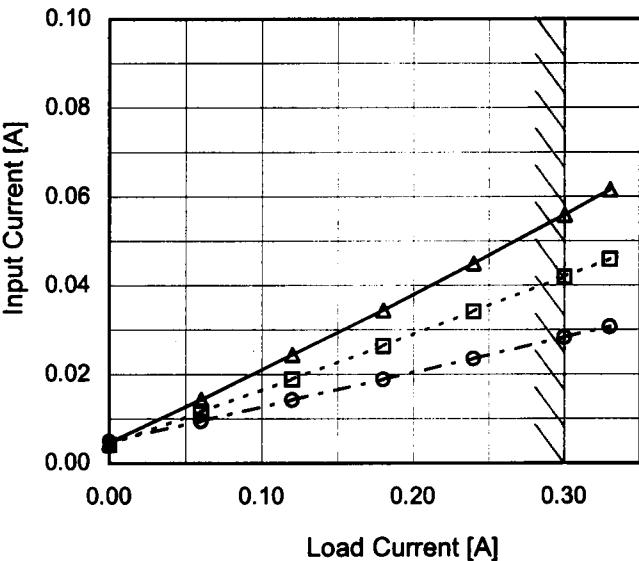
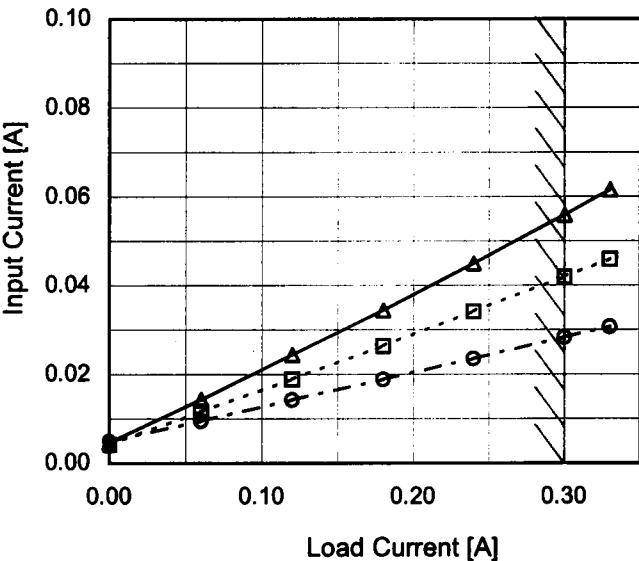
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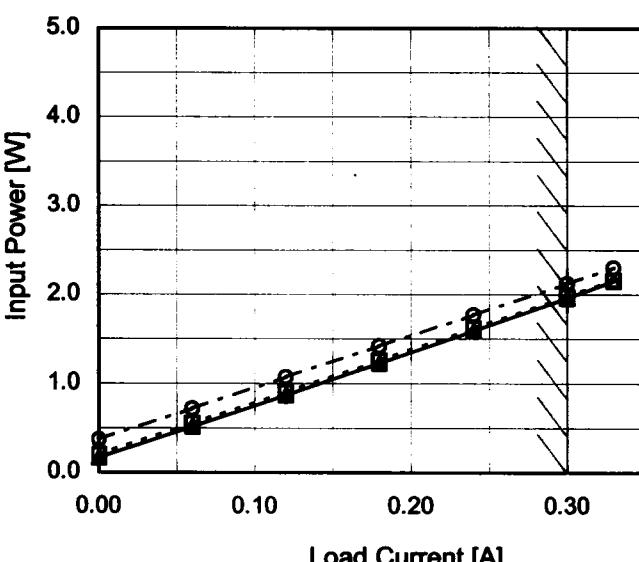
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Model	SUCS1R54805		
Item	Input Current (by Input Voltage)	Temperature 25°C	Testing Circuitry Figure A
Object	_____	_____	_____
1. Graph			
<p style="text-align: center;"> —△— Load 100% ---□--- Load 50% ---○--- Load 0% </p>			
Note: Slanted line shows the range of the rated input voltage.			
2. Values			
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
8.0	0.001	0.001	0.001
16.0	0.001	0.001	0.001
21.6	0.006	0.054	0.117
24.0	0.006	0.044	0.089
33.0	0.005	0.032	0.061
36.0	0.005	0.029	0.055
40.0	0.005	0.027	0.050
48.0	0.004	0.023	0.042
60.0	0.004	0.019	0.034
70.0	0.005	0.017	0.030
76.0	0.005	0.016	0.028
80.0	0.005	0.016	0.027
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--	-	-	-
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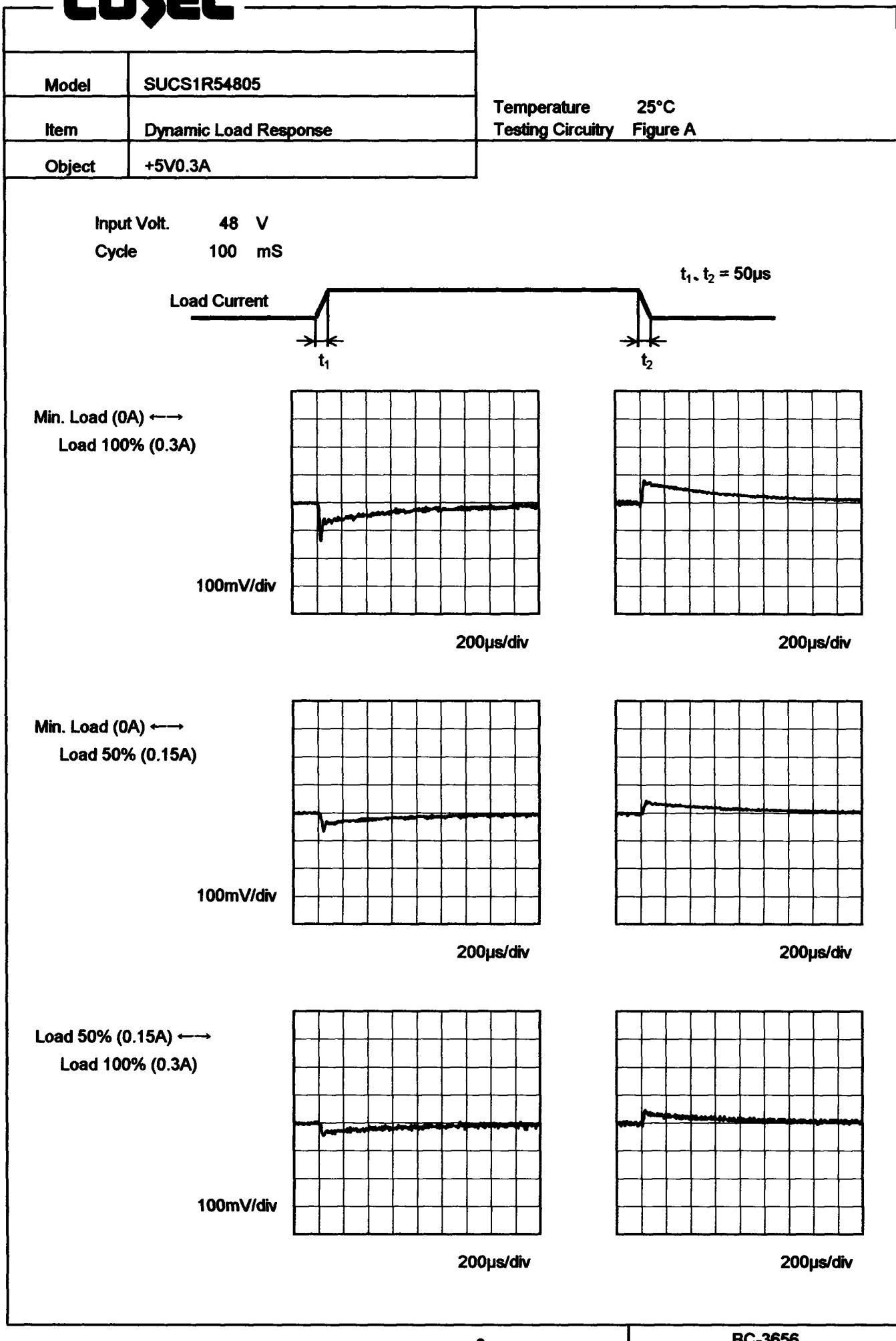
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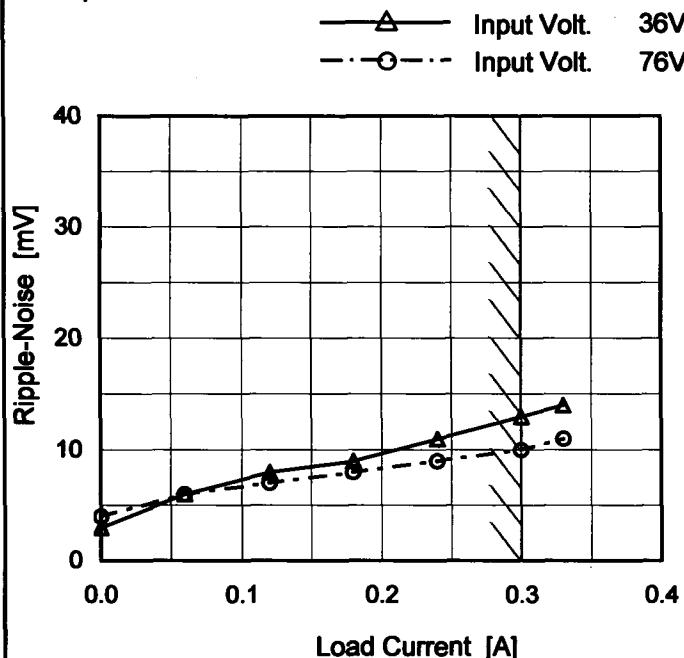
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1. Graph																																								
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The Y-axis ranges from 0 to 40 mV, and the X-axis ranges from 0.0 to 0.4 A. Two curves are plotted: one for Input Volt. 36V (solid line with triangle markers) and one for Input Volt. 76V (dashed line with circle markers). Both curves show an increase in ripple voltage as load current increases. A slanted line is drawn across the graph, starting from approximately (0.05, 1) and ending at (0.35, 7), indicating the range of the rated load current.</p>																																								
2. Values																																								
<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 36 [V]</th> <th>Input Volt. 76 [V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>2</td><td>2</td></tr> <tr><td>0.06</td><td>2</td><td>2</td></tr> <tr><td>0.12</td><td>3</td><td>3</td></tr> <tr><td>0.18</td><td>4</td><td>3</td></tr> <tr><td>0.24</td><td>5</td><td>3</td></tr> <tr><td>0.30</td><td>7</td><td>4</td></tr> <tr><td>0.33</td><td>8</td><td>4</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. 36 [V]	Input Volt. 76 [V]	0.00	2	2	0.06	2	2	0.12	3	3	0.18	4	3	0.24	5	3	0.30	7	4	0.33	8	4	-	-	-	-	-	-	-	-	-	-	-	-
Load Current [A]	Ripple Voltage [mV]																																							
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<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>Diagram illustrating a Complex Ripple Wave Form. The vertical axis is labeled "Ripple [mVp-p]" with arrows indicating the positive and negative directions. The waveform consists of multiple triangular cycles, each representing a full cycle of the ripple voltage. The amplitude of the ripple is indicated by the distance between the zero-line and the peak of the waveform.</p>																																								
<p>Fig.Complex Ripple Wave Form</p>																																								

COSEL

Model	SUCS1R54805
Item	Ripple-Noise
Object	+5V0.3A

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.

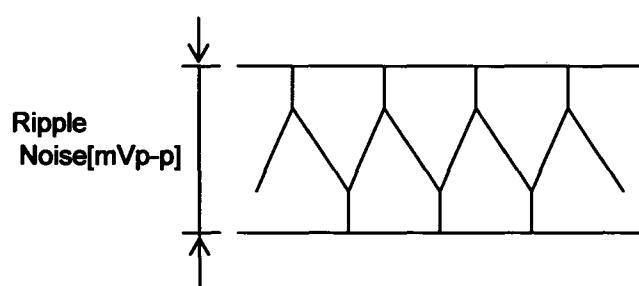


Fig.Complex Ripple Noise Wave Form

Temperature 25°C
Testing Circuitry Figure B

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	3	4
0.06	6	6
0.12	8	7
0.18	9	8
0.24	11	9
0.30	13	10
0.33	14	11
-	-	-
-	-	-
-	-	-
-	-	-

COSEL

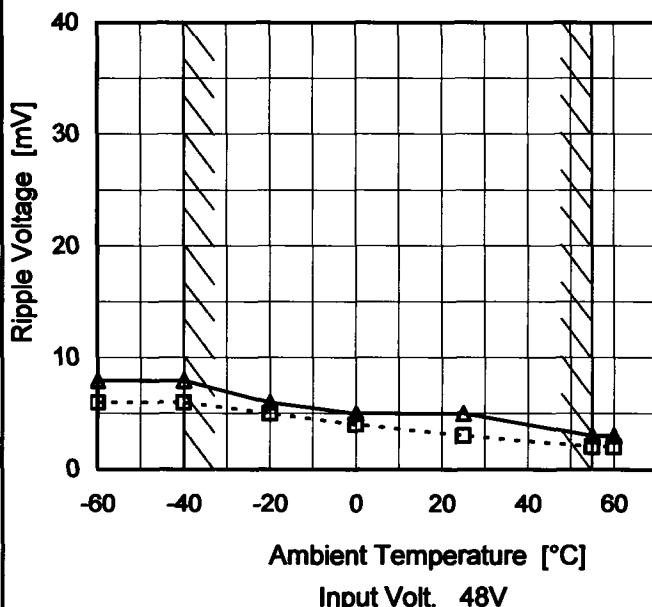
Model SUCS1R54805

Item Ripple Voltage (by Ambient Temp.)

Object +5V0.3A

1. Graph

--□-- Load 50%
—△— Load 100%



Testing Circuitry Figure B

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	6	8
-40	6	8
-20	5	6
0	4	5
25	3	5
55	2	3
60	2	3
—	—	—
—	—	—
—	—	—
—	—	—

Measured by 100 MHz Oscilloscope.

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

COSEL

Model	SUCS1R54805					
Item	Ambient Temperature Drift					
Object	+5V0.3A					
1.Graph						
<p>The graph plots Output Voltage [V] on the y-axis (4.90 to 5.06) against Ambient Temperature [°C] on the x-axis (-60 to 60). Three data series are shown for Input Voltages of 36V, 48V, and 76V. All series show a slight decrease in output voltage as temperature increases, with the 76V series showing the most significant drift. A horizontal line at approximately 4.98V indicates the rated ambient temperature range.</p>						
2.Values						
Ambient Temperature [°C]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]			
-60	4.980	4.981	4.982			
-40	4.984	4.984	4.984			
-20	4.984	4.985	4.985			
0	4.983	4.983	4.983			
25	4.977	4.977	4.977			
55	4.967	4.967	4.966			
60	4.965	4.964	4.964			
--	-	-	-			
--	-	-	-			
--	-	-	-			
--	-	-	-			

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



Model	SUCS1R54805	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V0.3A	

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 - 0.3A

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

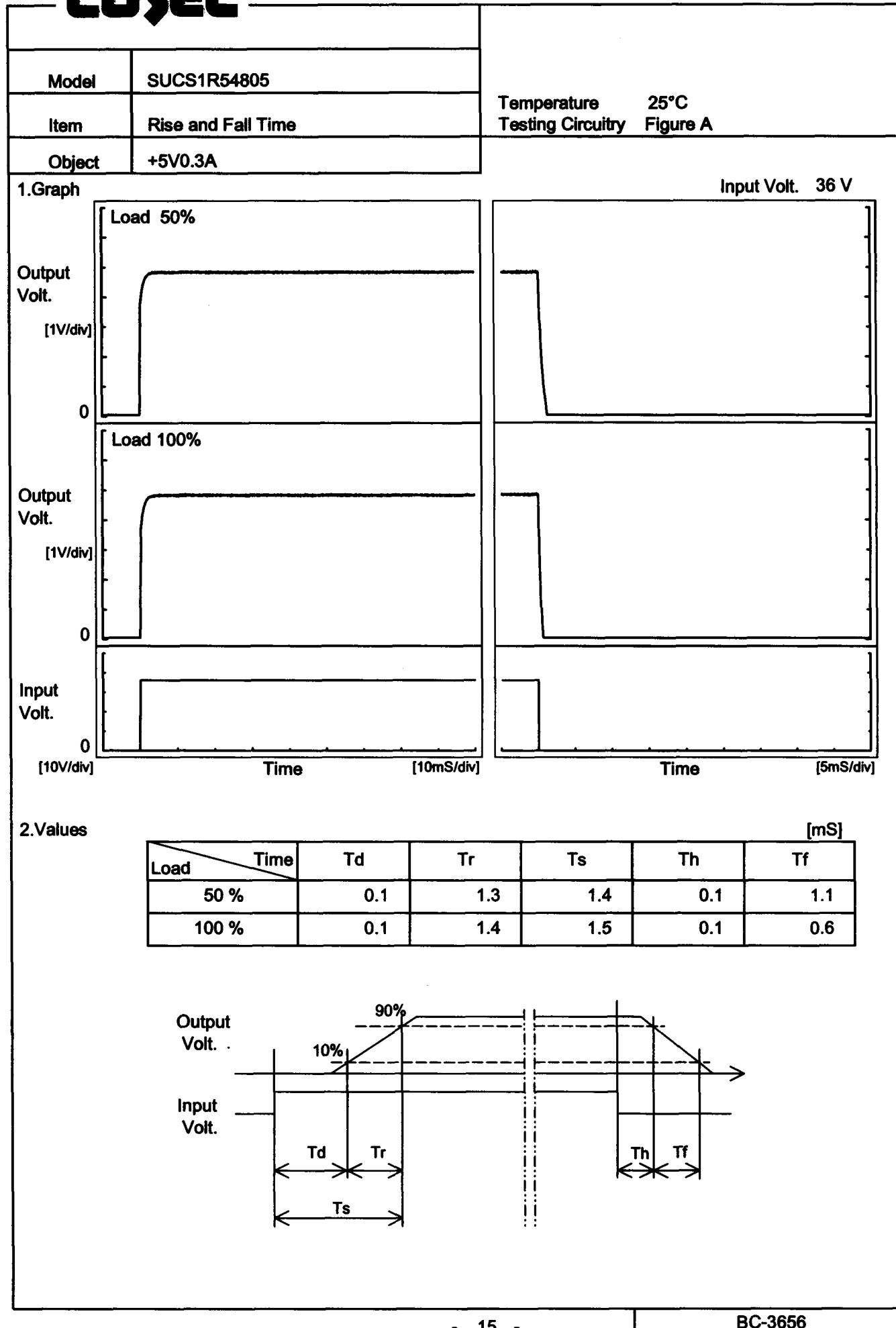
$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	76	0	4.987	±11	±0.2
Minimum Voltage	55	76	0.3	4.966		

COSEL

Model	SUCCS1R54805	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+5V0.3A																								
1.Graph	<p>2.Values</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>4.980</td></tr> <tr><td>0.5</td><td>4.976</td></tr> <tr><td>1.0</td><td>4.976</td></tr> <tr><td>2.0</td><td>4.976</td></tr> <tr><td>3.0</td><td>4.976</td></tr> <tr><td>4.0</td><td>4.976</td></tr> <tr><td>5.0</td><td>4.976</td></tr> <tr><td>6.0</td><td>4.976</td></tr> <tr><td>7.0</td><td>4.976</td></tr> <tr><td>8.0</td><td>4.976</td></tr> </tbody> </table>			Time since start [H]	Output Voltage [V]	0.0	4.980	0.5	4.976	1.0	4.976	2.0	4.976	3.0	4.976	4.0	4.976	5.0	4.976	6.0	4.976	7.0	4.976	8.0	4.976
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<p>The graph plots Output Voltage [V] on the Y-axis (ranging from 4.90 to 5.06) against Time [H] on the X-axis (ranging from 0 to 10). A single horizontal line is drawn at approximately 4.976V, representing the output voltage over the 8-hour period.</p> <p>Input Volt. 48V Load 100%</p>																									

COSEL

COSEL

Model	SUCS1R54805																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																							
Object	+5V0.3A																																							
1. Graph																																								
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COSEL

Model	SUCS1R54805	Temperature	25°C																																																							
Item	Overcurrent Protection	Testing Circuitry	Figure A																																																							
Object	+5V0.3A																																																									
1.Graph	<p>Input Volt. 36V Input Volt. 48V Input Volt. 76V</p> <p>Output Voltage [V]</p> <p>Load Current [A]</p>																																																									
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COSEL

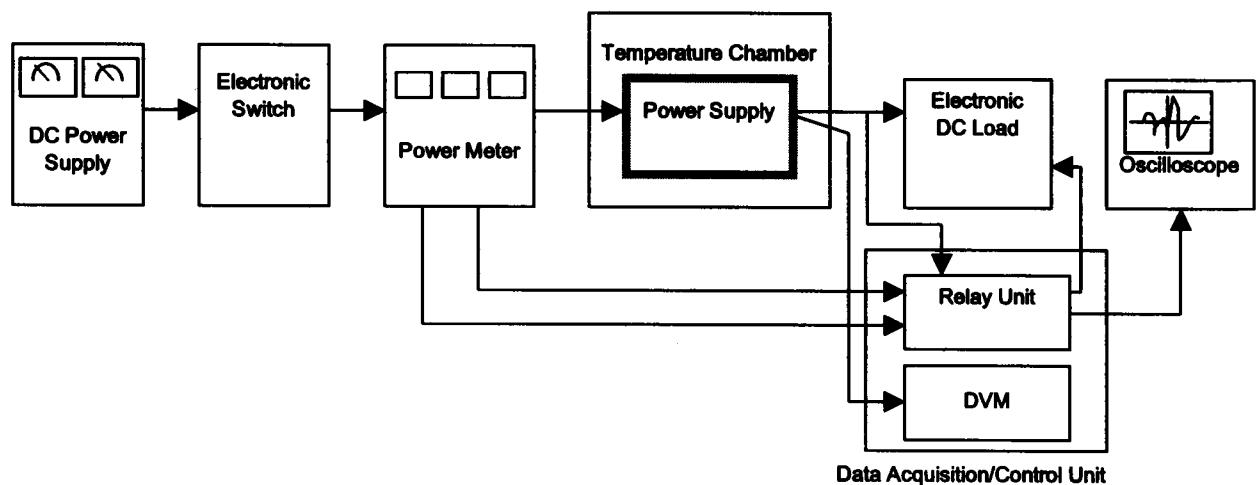


Figure A

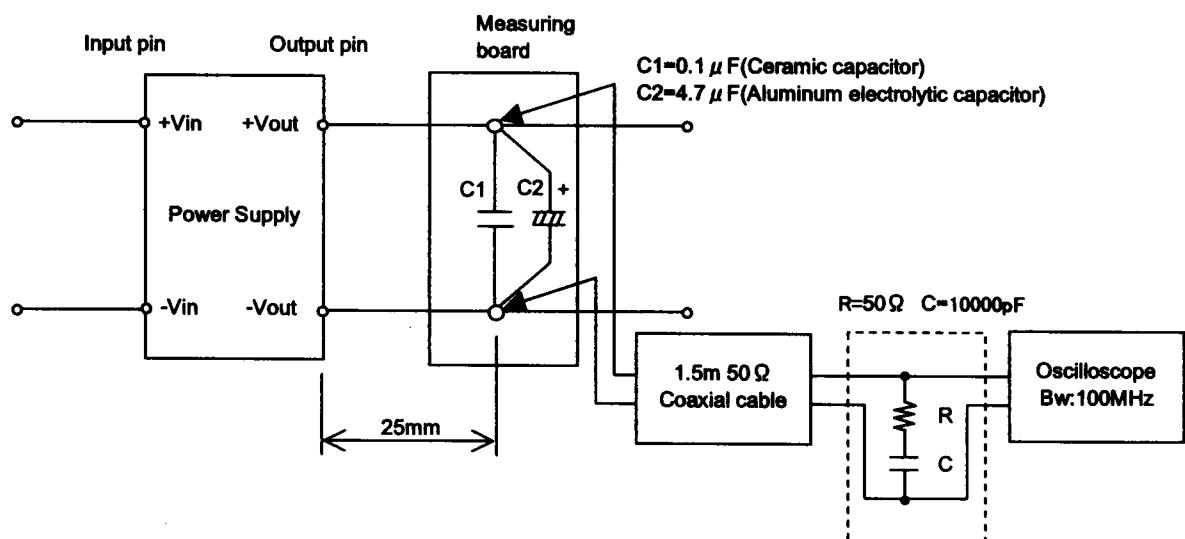


Figure B (Ripple and Ripple noise Characteristic)