

TEST DATA OF SUS62405 SUCS62405

Regulated DC Power Supply
Feb 17, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori

Design Manager

Prepared by : Yoshikazu Mizuno
Yoshikazu Mizuno

Design Engineer

COSEL CO.,LTD.



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Model	SUS62405/SUCS62405	Temperature	25°C																																																																							
Item	Input Current (by Input Voltage)	Testing Circuitry	Figure A																																																																							
Object	—	2. Values																																																																								
1. Graph	<p>Legend:</p> <ul style="list-style-type: none"> Load 100%: ▲ Load 50%: □ Load 0%: ○ 																																																																									
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Note: Slanted line shows the range of the rated input voltage.

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Model	SUS62405/SUCS62405	Temperature Testing Circuitry	25°C Figure A														
Item	Input Current (by Load Current)																
Object	—	2. Values															
1. Graph	<p>—▲— Input Volt. 18V -□--- Input Volt. 24V -○--- Input Volt. 36V</p> <table border="1"> <caption>Data points estimated from the graph</caption> <thead> <tr> <th>Load Current [A]</th> <th>Input Volt. 18V [A]</th> <th>Input Volt. 24V [A]</th> <th>Input Volt. 36V [A]</th> </tr> </thead> <tbody> <tr> <td>0.4</td> <td>0.15</td> <td>0.12</td> <td>0.09</td> </tr> <tr> <td>0.8</td> <td>0.28</td> <td>0.22</td> <td>0.16</td> </tr> <tr> <td>1.2</td> <td>0.42</td> <td>0.34</td> <td>0.22</td> </tr> </tbody> </table>	Load Current [A]	Input Volt. 18V [A]	Input Volt. 24V [A]	Input Volt. 36V [A]	0.4	0.15	0.12	0.09	0.8	0.28	0.22	0.16	1.2	0.42	0.34	0.22
Load Current [A]	Input Volt. 18V [A]	Input Volt. 24V [A]	Input Volt. 36V [A]														
0.4	0.15	0.12	0.09														
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			Input Volt. 18[V] Input Volt. 24[V] Input Volt. 36[V]														
		0.00	0.025 0.022 0.023														
		0.20	0.088 0.070 0.055														
		0.40	0.151 0.116 0.086														
		0.60	0.216 0.164 0.117														
		0.80	0.282 0.213 0.148														
		1.00	0.350 0.262 0.180														
		1.20	0.419 0.312 0.213														
		1.32	0.456 0.342 0.232														
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Item	Efficiency (by Input Voltage)	Temperature 25°C Testing Circuitry Figure A																																
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<p>The graph displays efficiency data for the COSEL SUS62405/SUCCS62405 power supply. The Y-axis represents Efficiency [%] from 30 to 90. The X-axis represents Input Voltage [V] from 10 to 40. Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show efficiency decreasing as input voltage increases beyond the rated range (indicated by the slanted line). The efficiency is highest at the rated input voltage of approximately 20V.</p>																																		
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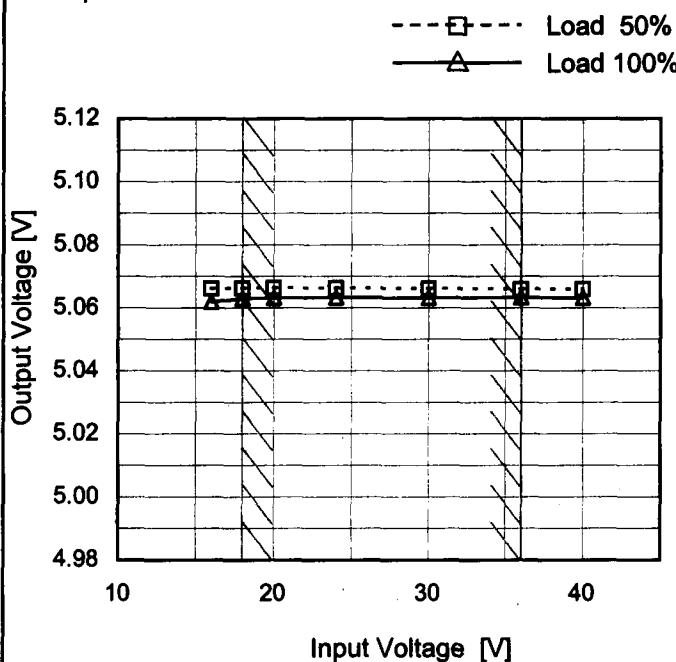
Note: Slanted line shows the range of the rated load current.

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Model	SUS62405/SUCS62405
Item	Line Regulation
Object	+5V1.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

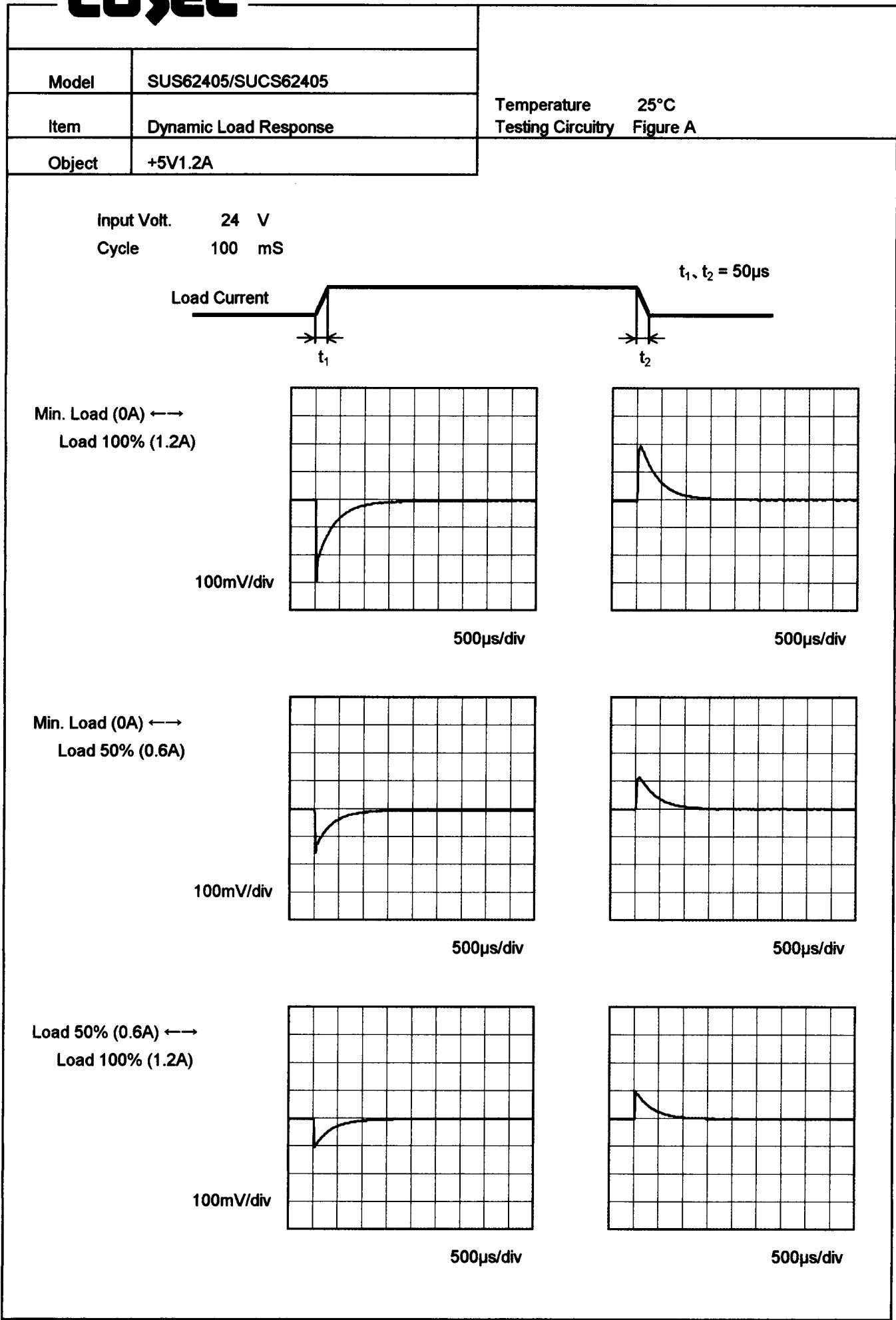
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	5.066	5.062
18	5.066	5.063
20	5.066	5.063
24	5.066	5.063
30	5.066	5.063
36	5.066	5.063
40	5.066	5.063
-	-	-
-	-	-

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

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Model	SUS62405/SUCS62405	Temperature	25°C
Item	Load Regulation	Testing Circuitry	Figure A
Object	+5V1.2A		
1.Graph	<p>Input Volt. 18V Input Volt. 24V Input Volt. 36V</p>		
2.Values			
Load Current [A]	Output Voltage [V]		
Load Current [A]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	5.069	5.068	5.069
0.20	5.068	5.068	5.068
0.40	5.067	5.067	5.067
0.60	5.067	5.066	5.066
0.80	5.066	5.066	5.066
1.00	5.065	5.065	5.065
1.20	5.063	5.064	5.064
1.32	5.062	5.063	5.063
-	-	-	-
-	-	-	-
--	-	-	-

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

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Model	SUS62405/SUCS62405	Temperature Testing Circuitry Figure B																																						
Item	Ripple Voltage (by Load Current)																																							
Object	+5V1.2A																																							
1.Graph		2.Values																																						
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The graph shows two curves: one for Input Volt. 18V (solid line with triangle markers) and one for Input Volt. 36V (dashed line with circle markers). The x-axis represents Load Current [A] from 0.0 to 1.2. The y-axis represents Ripple Voltage [mV] from 0 to 50. Both curves show a slight increase in ripple voltage as load current increases, with the 18V curve being higher than the 36V curve. A slanted line on the graph indicates the range of rated load current.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 18 [V]</th> <th>Input Volt. 36 [V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>3</td><td>2</td></tr> <tr><td>0.24</td><td>3</td><td>4</td></tr> <tr><td>0.48</td><td>4</td><td>4</td></tr> <tr><td>0.72</td><td>4</td><td>4</td></tr> <tr><td>0.96</td><td>6</td><td>4</td></tr> <tr><td>1.20</td><td>14</td><td>4</td></tr> <tr><td>1.32</td><td>14</td><td>5</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. 18 [V]	Input Volt. 36 [V]	0.00	3	2	0.24	3	4	0.48	4	4	0.72	4	4	0.96	6	4	1.20	14	4	1.32	14	5	--	-	-	--	-	-	--	-	-	--	-	-
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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>Ripple [mVp-p]</p> <p>Oscilloscope trace showing a complex ripple wave form. The vertical axis is labeled "Ripple [mVp-p]" and the horizontal axis represents time. The trace shows a periodic waveform with a triangular envelope, indicating a complex ripple pattern.</p>																																								
<p>Fig.Complex Ripple Wave Form</p>																																								

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Model	SUS62405/SUCS62405	Temperature 25°C Testing Circuitry Figure B																																						
Item	Ripple-Noise																																							
Object	+5V1.2A																																							
1.Graph		2.Values																																						
<p>Graph showing Ripple-Noise [mV] vs Load Current [A]. The Y-axis is labeled "Ripple-Noise [mV]" and ranges from 0 to 100 in increments of 20. The X-axis is labeled "Load Current [A]" and ranges from 0.0 to 1.2 in increments of 0.4. Two data series are plotted: Input Volt. 18V (solid line with open triangle markers) and Input Volt. 36V (dashed line with open circle markers). Both series show an upward trend. A slanted line is drawn through the data points, representing the range of the rated load current.</p>																																								
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<p>Fig.Complex Ripple Noise Wave Form</p>																																								

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Model SUS62405/SUCS62405 Item Ripple Voltage (by Ambient Temp.) Object +5V1.2A	Testing Circuitry Figure B																																						
	2.Values																																						
	<table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>-60</td><td>5</td><td>8</td></tr> <tr><td>-40</td><td>5</td><td>8</td></tr> <tr><td>-20</td><td>5</td><td>7</td></tr> <tr><td>0</td><td>4</td><td>7</td></tr> <tr><td>25</td><td>2</td><td>7</td></tr> <tr><td>55</td><td>2</td><td>3</td></tr> <tr><td>60</td><td>2</td><td>3</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>		Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	5	8	-40	5	8	-20	5	7	0	4	7	25	2	7	55	2	3	60	2	3	--	-	-	--	-	-	--	-	-	--	-
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<p>Measured by 100 MHz Oscilloscope.</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>																																							

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Model	SUS62405/SUCS62405																																																					
Item	Ambient Temperature Drift																																																					
Object	+5V1.2A																																																					
1.Graph	Input Volt. 18V Input Volt. 24V Input Volt. 36V	2.Values																																																				
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Note: Slanted line shows the range of the rated ambient temperature.



Model	SUS62405/SUCS62405	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
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 : 18 - 36V

Load Current : 0 - 1.2A

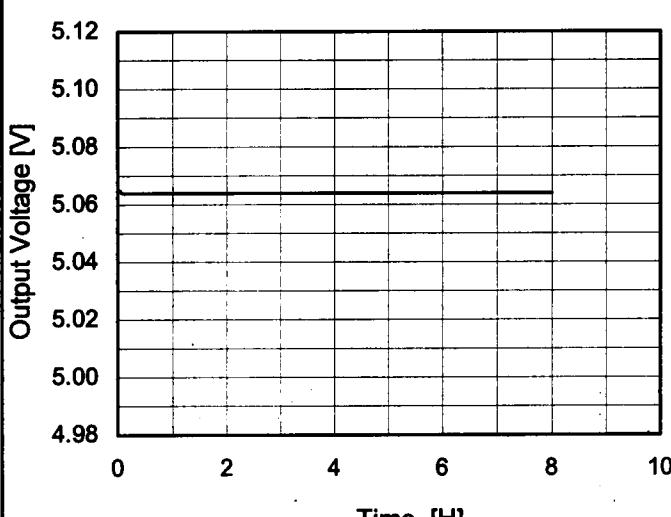
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

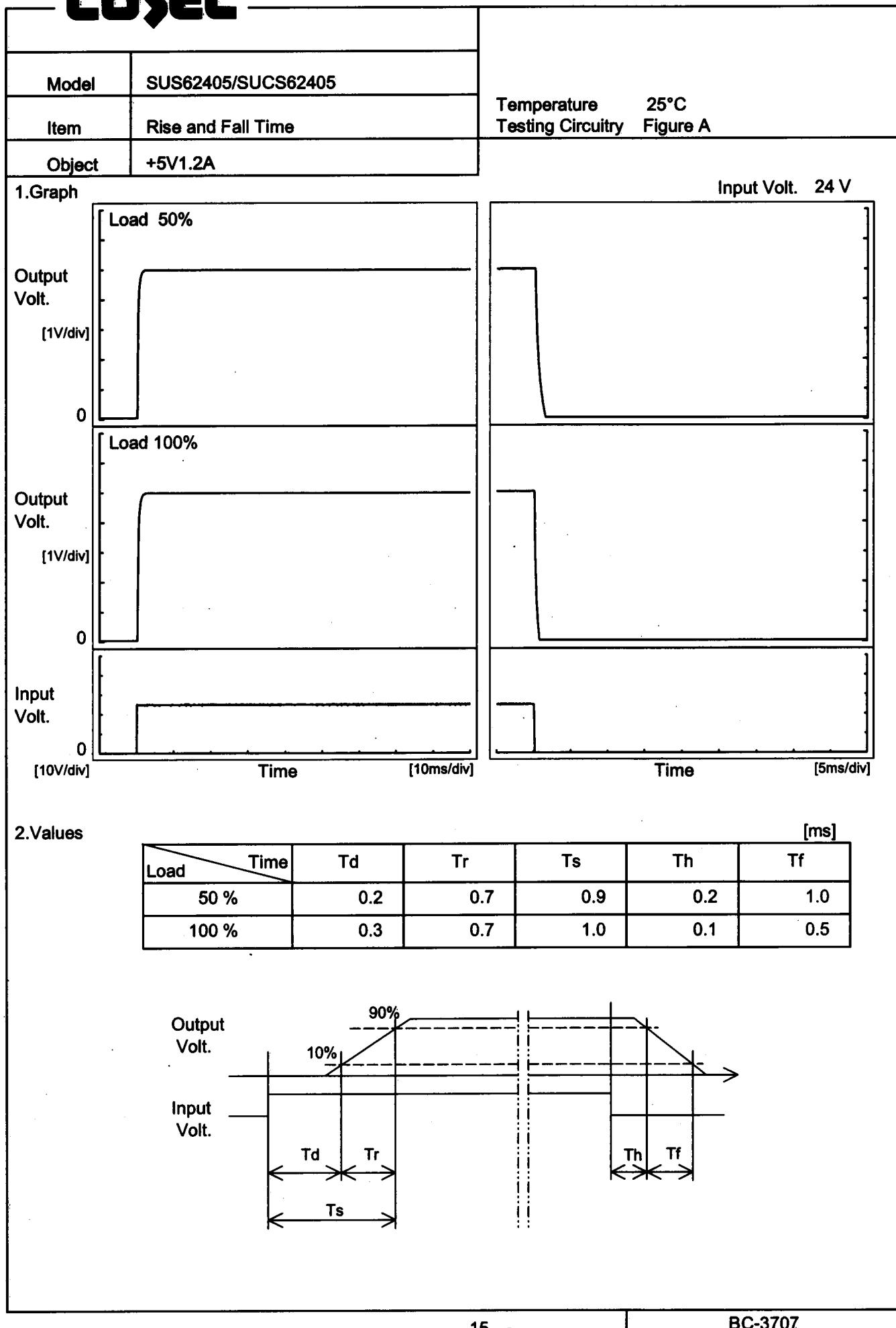
$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	18	0	5.069	± 9	± 0.2
Minimum Voltage	-40	18	1.2	5.052		

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Model	SUS62405/SUCS62405	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+5V1.2A																								
1.Graph			2.Values																						
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 24V 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>5.065</td></tr> <tr><td>0.5</td><td>5.064</td></tr> <tr><td>1.0</td><td>5.064</td></tr> <tr><td>2.0</td><td>5.064</td></tr> <tr><td>3.0</td><td>5.064</td></tr> <tr><td>4.0</td><td>5.064</td></tr> <tr><td>5.0</td><td>5.064</td></tr> <tr><td>6.0</td><td>5.064</td></tr> <tr><td>7.0</td><td>5.064</td></tr> <tr><td>8.0</td><td>5.064</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	5.065	0.5	5.064	1.0	5.064	2.0	5.064	3.0	5.064	4.0	5.064	5.0	5.064	6.0	5.064	7.0	5.064	8.0	5.064
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<p>Model SUS62405/SUCCS62405</p> <p>Item Minimum Input Voltage for Regulated Output Voltage</p> <p>Object +5V1.2A</p>	Testing Circuitry Figure A																																						
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<p>1.Graph</p> <p>Input Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>---□--- Load 50%</p> <p>—△— Load 100%</p>																																							
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Model	SUS62405/SUCS62405
Item	Overcurrent Protection
Object	+5V1.2A
1. Graph	
<p style="text-align: center;"> Input Volt. 18V Input Volt. 24V Input Volt. 36V </p> <p>Output Voltage [V]</p> <p>Load Current [A]</p>	
<p>Note: Slanted line shows the range of the rated load current.</p>	

Temperature 25°C
 Testing Circuitry Figure A

2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
5.00	1.20	1.21	1.21
4.75	1.70	1.77	1.73
4.50	1.73	1.79	1.74
4.00	1.77	1.83	1.75
3.50	1.82	1.87	1.76
3.00	1.99	1.97	1.82
2.50	2.05	2.01	1.84
2.00	2.10	2.03	1.84
1.50	2.11	2.00	1.82
1.00	2.05	1.92	1.75
0.50	1.89	1.74	1.62
0.00	1.57	1.45	1.38

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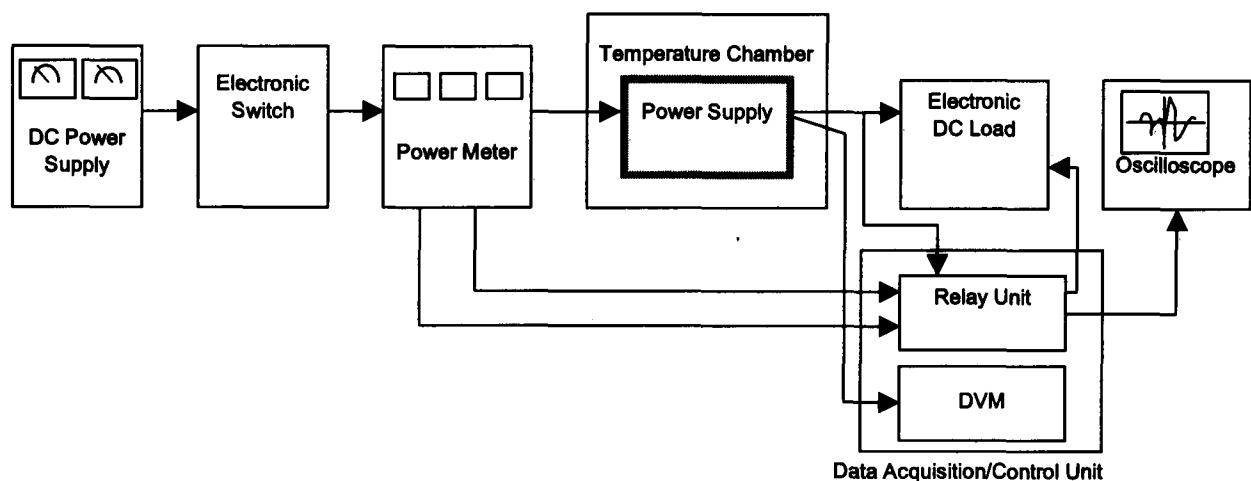


Figure A

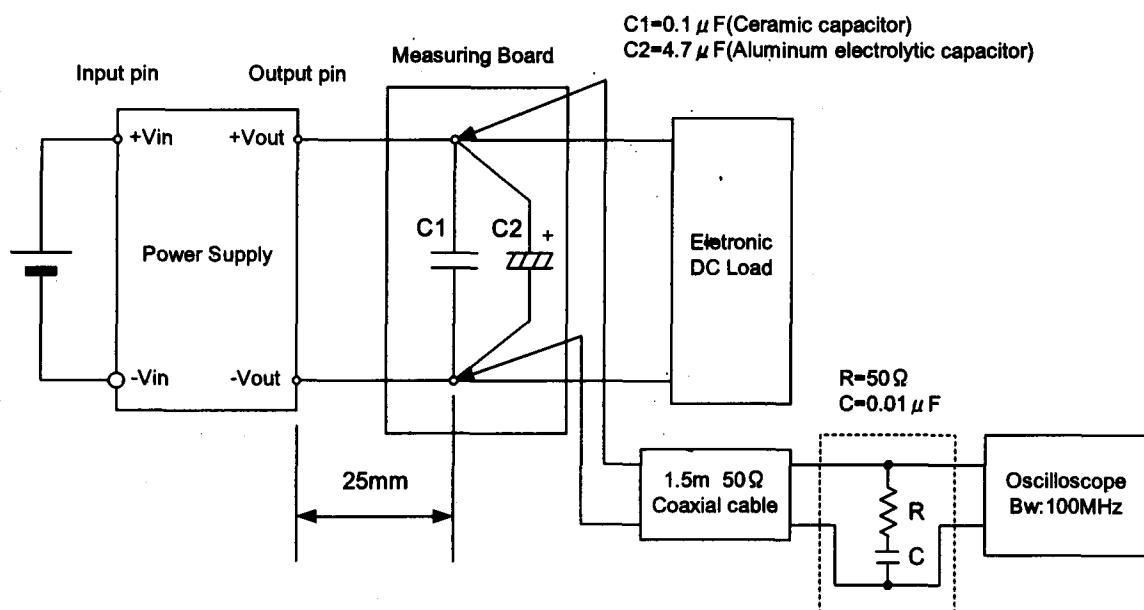


Figure B (Ripple and Ripple noise Characteristic)