



TEST DATA OF SUCS31205

Regulated DC Power Supply
Mar 10, 2005

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Tetsuo Sugimori Design Manager

Prepared by : Hayato Nakatsubo
Hayato Nakatsubo Design Engineer

COSEL CO.,LTD.



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(Final Page 18)

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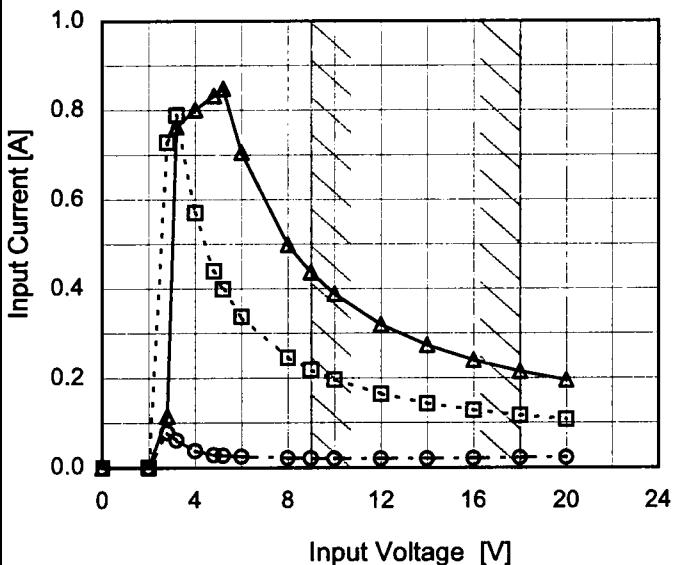
Model SUCS31205

Item Input Current (by Input Voltage)

Object _____

1. Graph

—△— Load 100%
 - - -□--- Load 50%
 - -○--- Load 0%



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

Temperature 25°C
 Testing Circuitry Figure A

2. Values

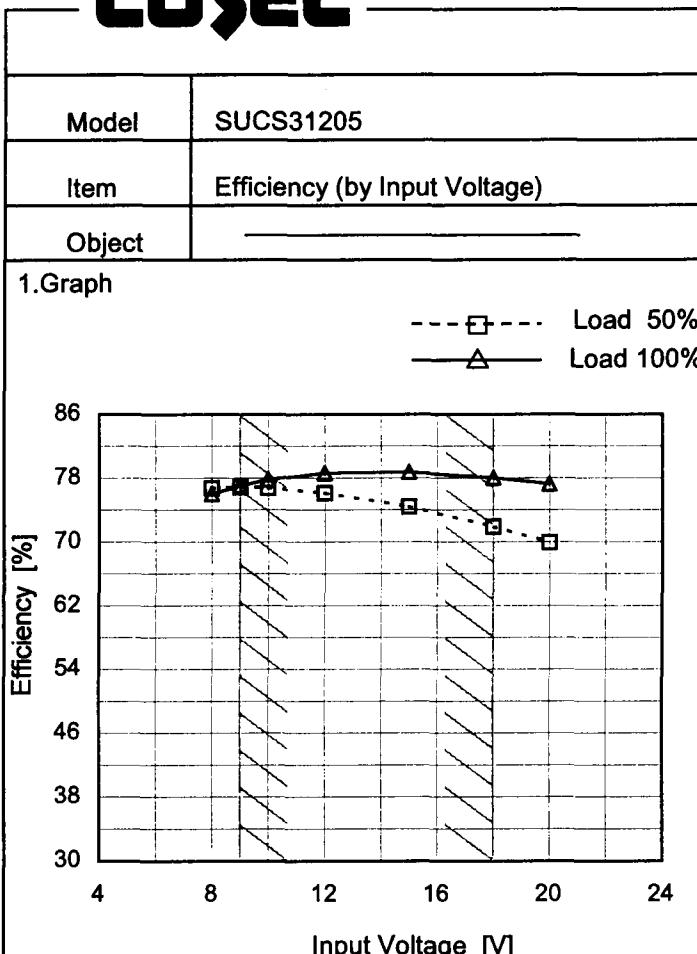
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.000	0.000	0.000
2.8	0.078	0.729	0.115
3.2	0.061	0.790	0.763
4.0	0.037	0.571	0.801
4.8	0.028	0.441	0.833
5.2	0.027	0.399	0.848
6.0	0.024	0.337	0.705
8.0	0.021	0.246	0.499
9.0	0.020	0.219	0.437
10.0	0.020	0.197	0.389
12.0	0.019	0.165	0.320
14.0	0.020	0.143	0.274
16.0	0.020	0.128	0.240
18.0	0.021	0.116	0.215
20.0	0.022	0.108	0.195
--	-	-	-
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Model	SUCS31205	Temperature 25°C																																																			
Item	Input Current (by Load Current)	Testing Circuitry Figure A																																																			
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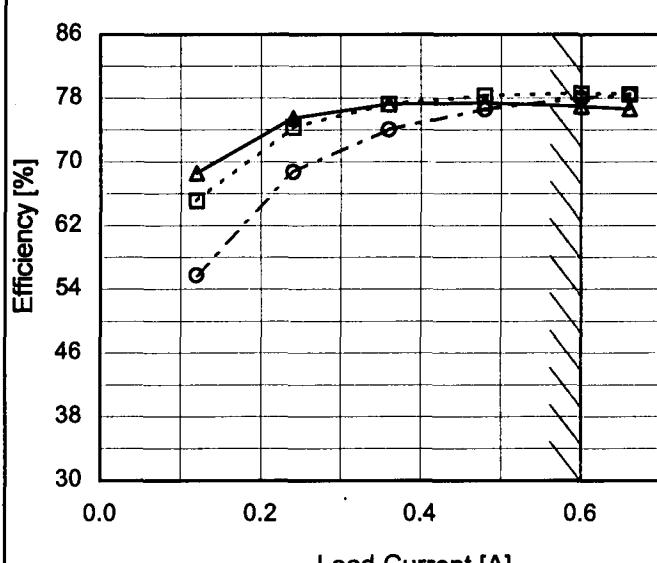
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 Temperature 25°C
 Testing Circuitry Figure A

2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8	76.8	76.0
9	76.9	77.0
10	76.8	77.8
12	76.2	78.6
15	74.4	78.8
18	71.9	78.0
20	69.9	77.3
--	-	-
--	-	-

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

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Model	SUCS31205	Temperature Testing Circuitry	25°C Figure A																																																		
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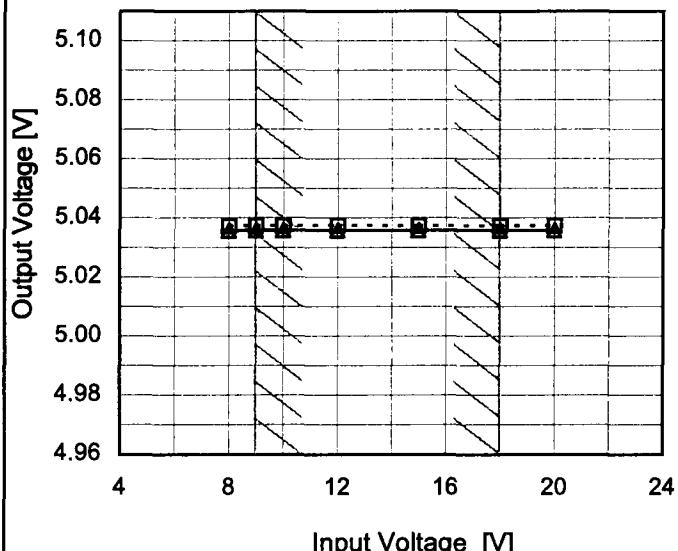
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Model	SUCS31205
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| Item | Line Regulation |
| Object | +5V0.6A |

1. Graph

---□--- Load 50%
 —△— Load 100%



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%
8	5.037	5.036
9	5.037	5.036
10	5.037	5.036
12	5.037	5.036
15	5.037	5.036
18	5.037	5.036
20	5.037	5.036
--	-	-
--	-	-

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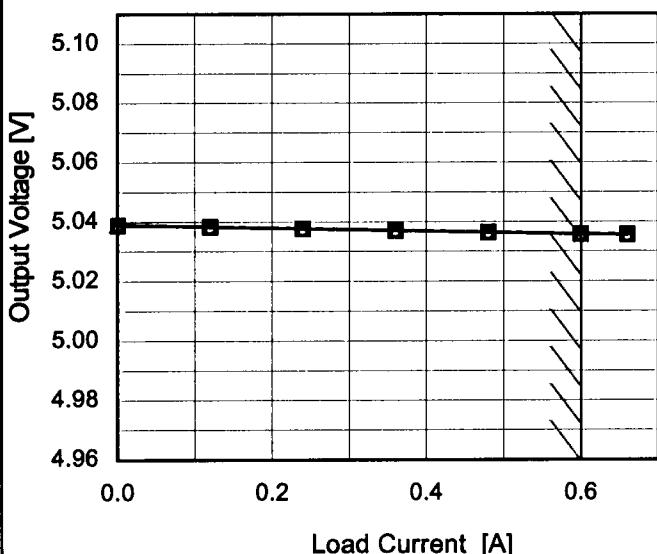
Model SUCS31205

Item Load Regulation

Object +5V0.6A

1.Graph

—▲— Input Volt. 9V
 - - □ - - Input Volt. 12V
 - - ○ - - Input Volt. 18V



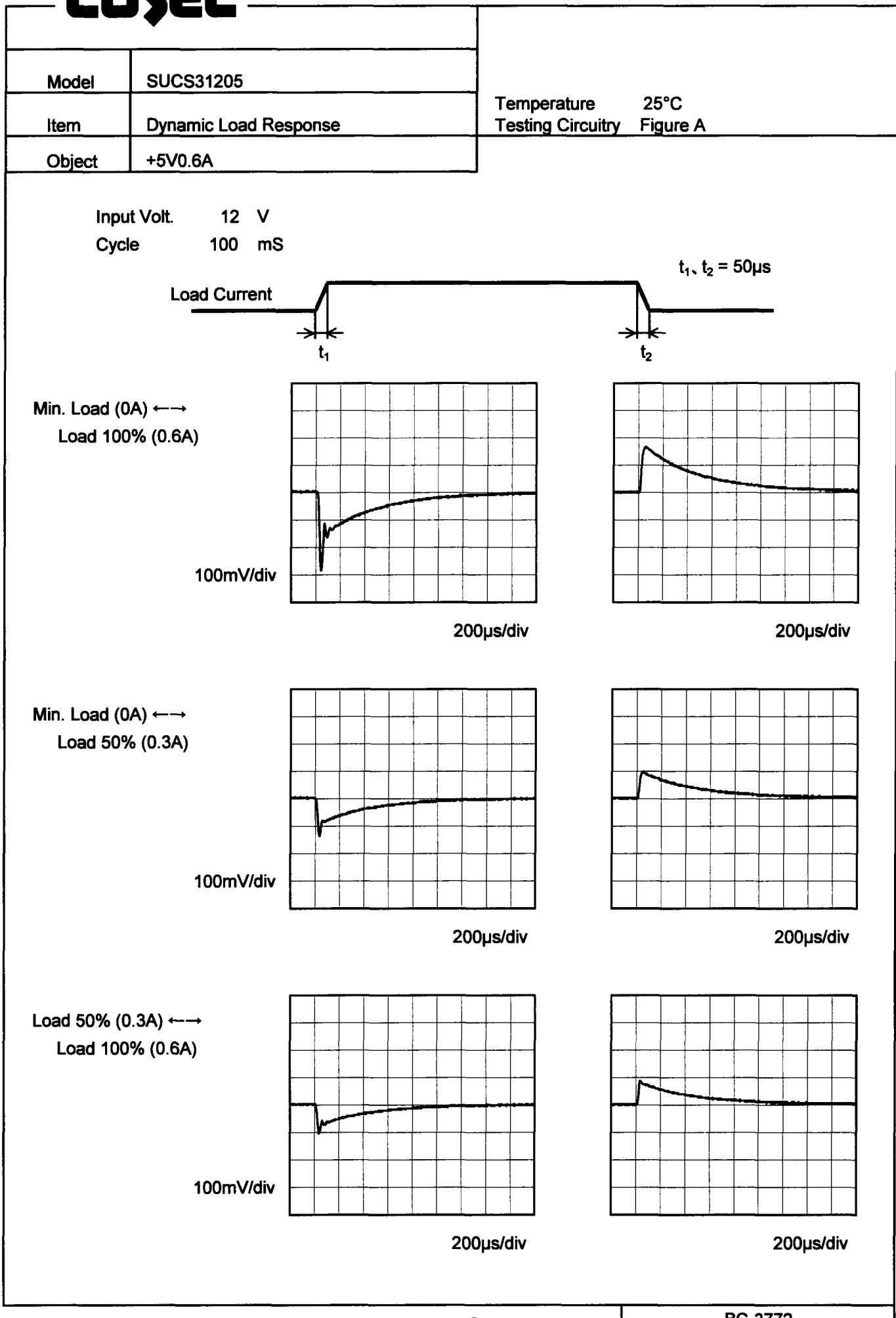
Note: Slanted line shows the range of the rated load current.

 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	5.039	5.039	5.039
0.12	5.038	5.038	5.038
0.24	5.038	5.038	5.038
0.36	5.037	5.037	5.037
0.48	5.036	5.036	5.036
0.60	5.036	5.036	5.036
0.66	5.036	5.036	5.036
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

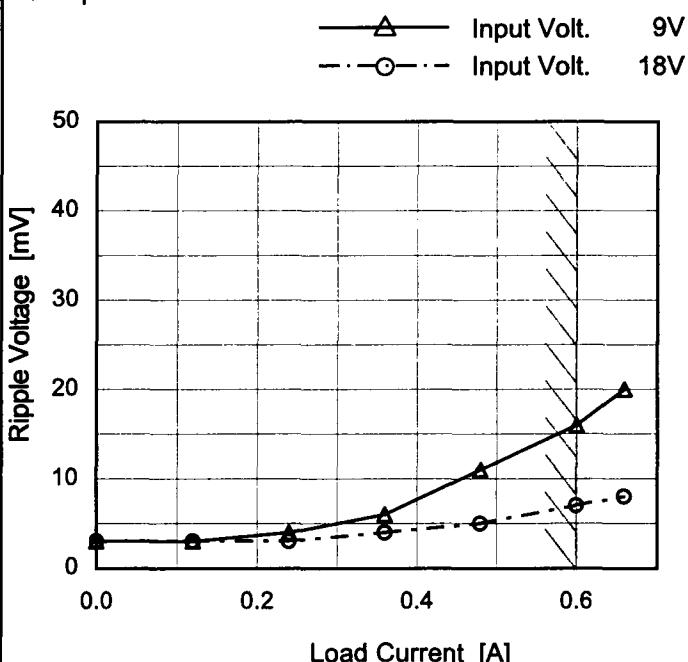


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Model	SUCS31205
Item	Ripple Voltage (by Load Current)
Object	+5V0.6A

 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	3	3
0.12	3	3
0.24	4	3
0.36	6	4
0.48	11	5
0.60	16	7
0.66	20	8
--	-	-
--	-	-
--	-	-
--	-	-

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.

Ripple [mVp-p]

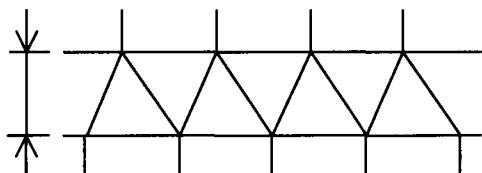
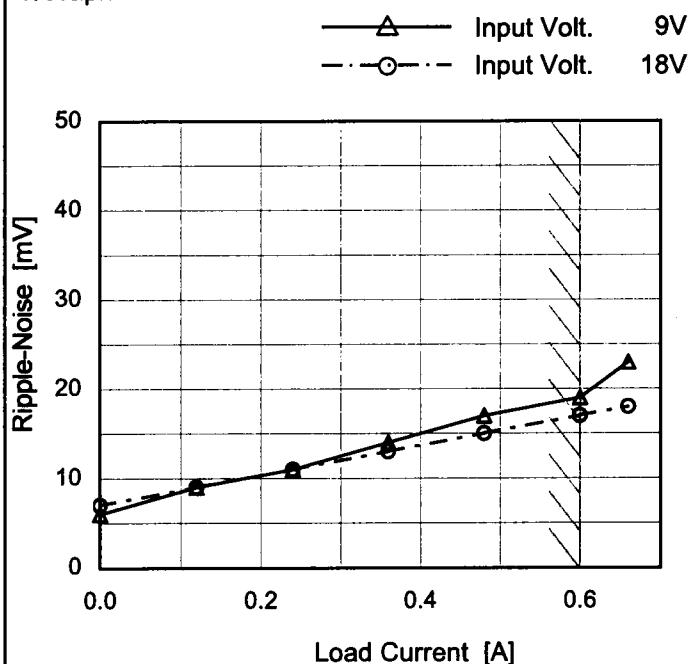


Fig.Complex Ripple Wave Form

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Model	SUCCS31205
Item	Ripple-Noise
Object	+5V0.6A

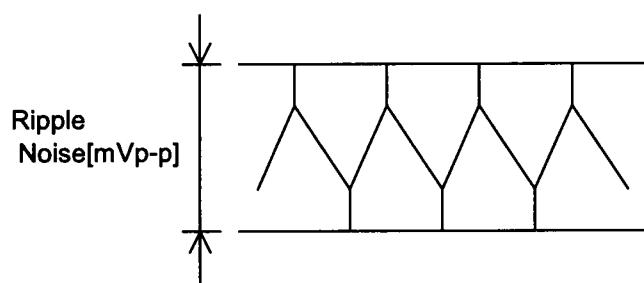
1. Graph



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.

Temperature 25°C
Testing Circuitry Figure B

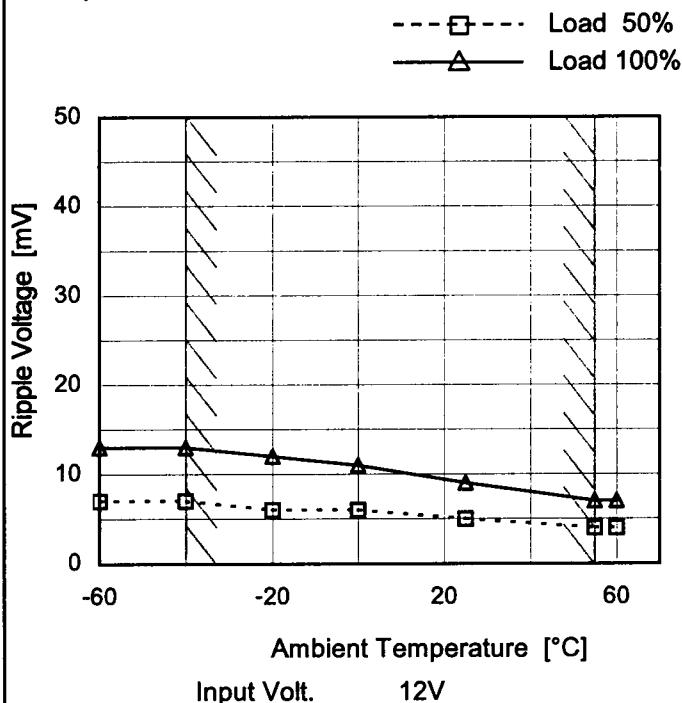
2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	6	7
0.12	9	9
0.24	11	11
0.36	14	13
0.48	17	15
0.60	19	17
0.66	23	18
--	-	-
--	-	-
--	-	-
--	-	-

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Model	SUCS31205
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V0.6A

1. Graph



Measured by 100 MHz Oscilloscope.

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

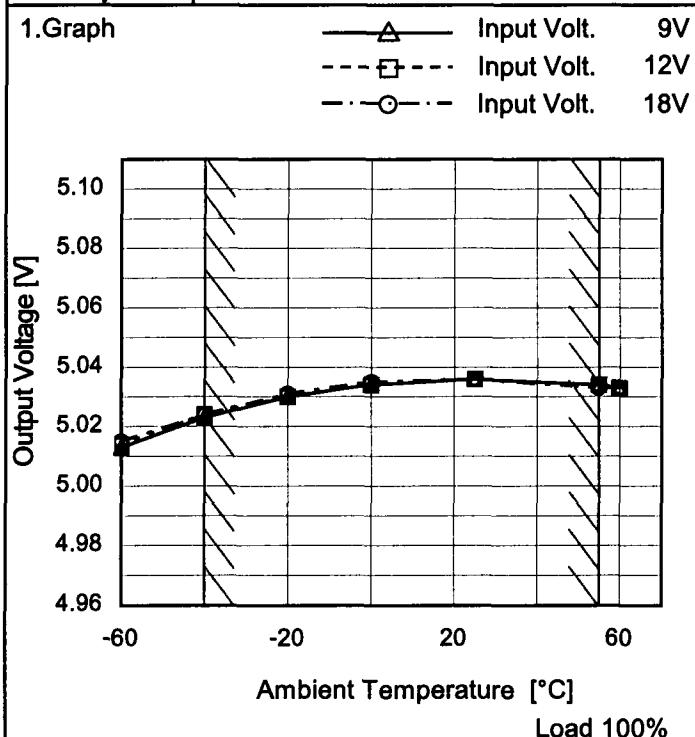
Testing Circuitry Figure B

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	7	13
-40	7	13
-20	6	12
0	6	11
25	5	9
55	4	7
60	4	7
--	-	-
--	-	-
--	-	-
--	-	-



Model	SUCS31205
Item	Ambient Temperature Drift
Object	+5V0.6A



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	5.013	5.014	5.015
-40	5.023	5.024	5.024
-20	5.030	5.030	5.031
0	5.034	5.034	5.035
25	5.036	5.036	5.036
55	5.034	5.034	5.033
60	5.033	5.033	5.033
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model	SUCS31205	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+5V0.6A	

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 - 0.6A

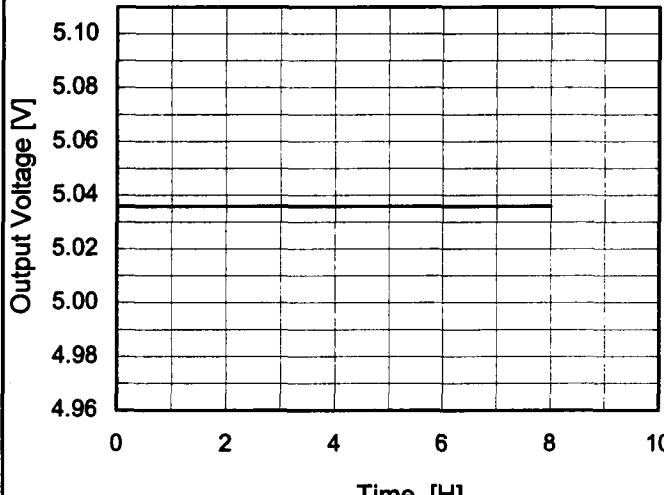
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	18	0	5.039	± 8	± 0.2
Minimum Voltage	-40	9	0.6	5.023		

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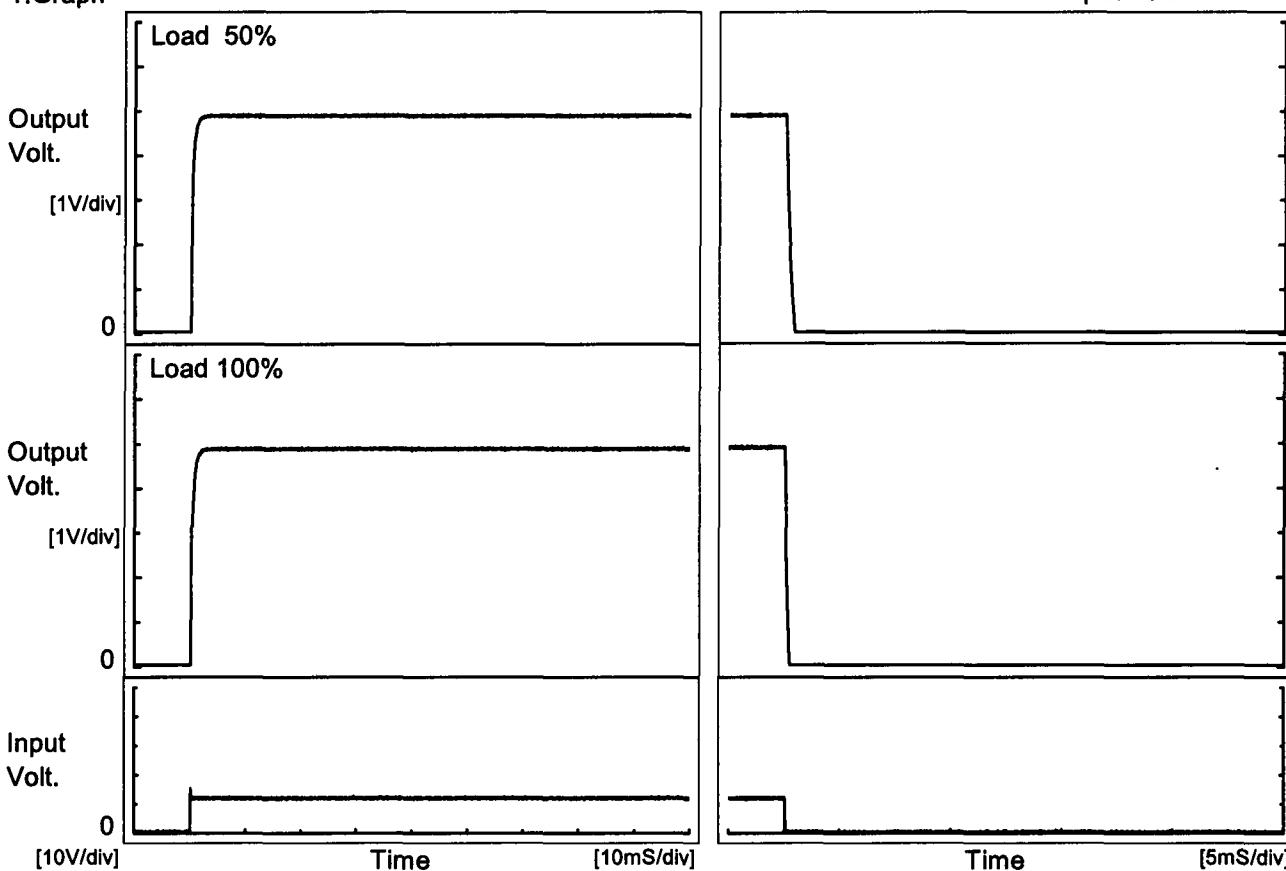
Model	SUCS31205	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+5V0.6A																								
1.Graph			2.Values																						
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 12V Load 100%</p>			<table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>5.037</td></tr> <tr><td>0.5</td><td>5.036</td></tr> <tr><td>1.0</td><td>5.036</td></tr> <tr><td>2.0</td><td>5.036</td></tr> <tr><td>3.0</td><td>5.036</td></tr> <tr><td>4.0</td><td>5.036</td></tr> <tr><td>5.0</td><td>5.036</td></tr> <tr><td>6.0</td><td>5.036</td></tr> <tr><td>7.0</td><td>5.036</td></tr> <tr><td>8.0</td><td>5.036</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	5.037	0.5	5.036	1.0	5.036	2.0	5.036	3.0	5.036	4.0	5.036	5.0	5.036	6.0	5.036	7.0	5.036	8.0	5.036
Time since start [H]	Output Voltage [V]																								
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5.0	5.036																								
6.0	5.036																								
7.0	5.036																								
8.0	5.036																								

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Model	SUCS31205
Item	Rise and Fall Time
Object	+5V0.6A

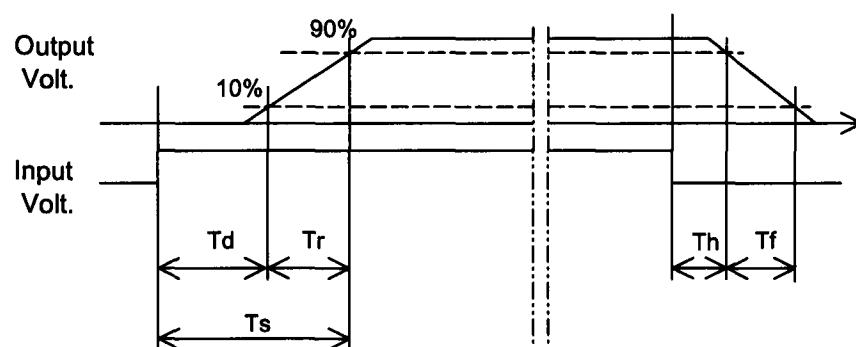
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

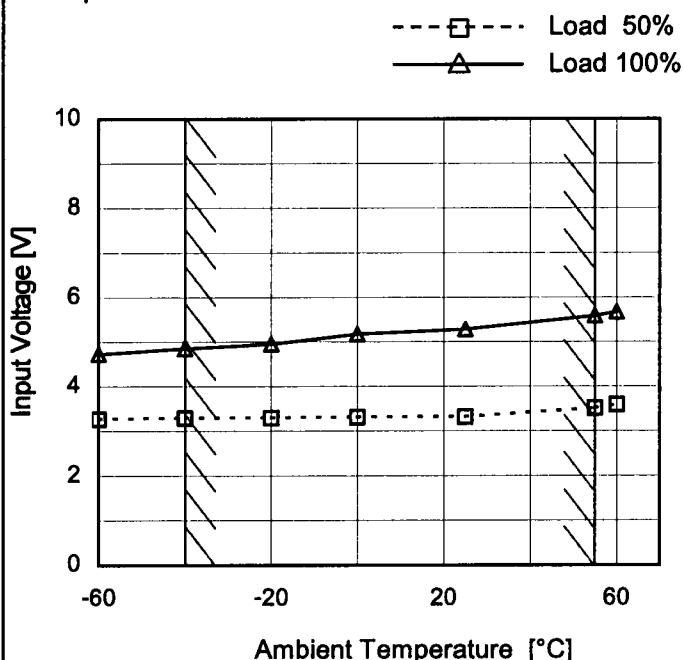
Load	Time	Td	Tr	Ts	Th	Tf	[mS]
50 %		0.1	1.0	1.1	0.1	0.6	
100 %		0.1	1.0	1.1	0.1	0.3	



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Model	SUCS31205
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V0.6A

1. Graph



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	3.3	4.8
-40	3.3	4.9
-20	3.3	5.0
0	3.4	5.2
25	3.4	5.3
55	3.6	5.6
60	3.6	5.7
--	-	-
--	-	-
--	-	-
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COSEL

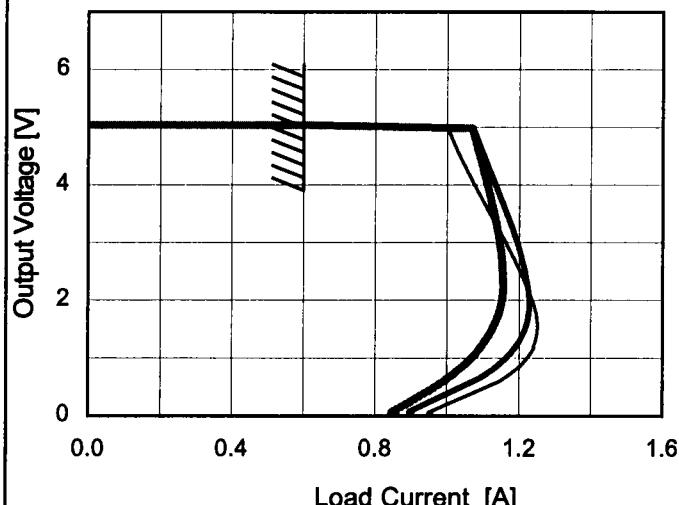
Model SUCS31205

Item Overcurrent Protection

Object +5V0.6A

1. Graph

— Input Volt. 9V
 — Input Volt. 12V
 — Input Volt. 18V



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

 Temperature 25°C
 Testing Circuitry Figure A

2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
5.00	0.60	0.60	0.60
4.75	1.02	1.09	1.08
4.50	1.04	1.10	1.09
4.00	1.08	1.13	1.11
3.50	1.12	1.17	1.13
3.00	1.16	1.19	1.15
2.50	1.20	1.22	1.15
2.00	1.24	1.23	1.15
1.50	1.25	1.22	1.13
1.00	1.22	1.16	1.07
0.50	1.15	1.09	0.96
0.00	0.96	0.90	0.86

COSEL

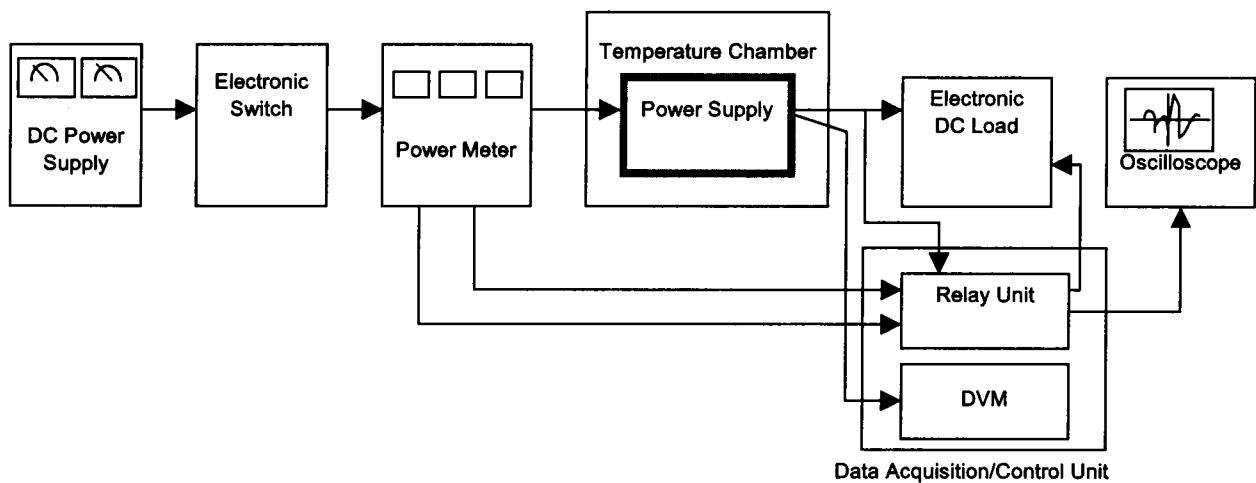


Figure A

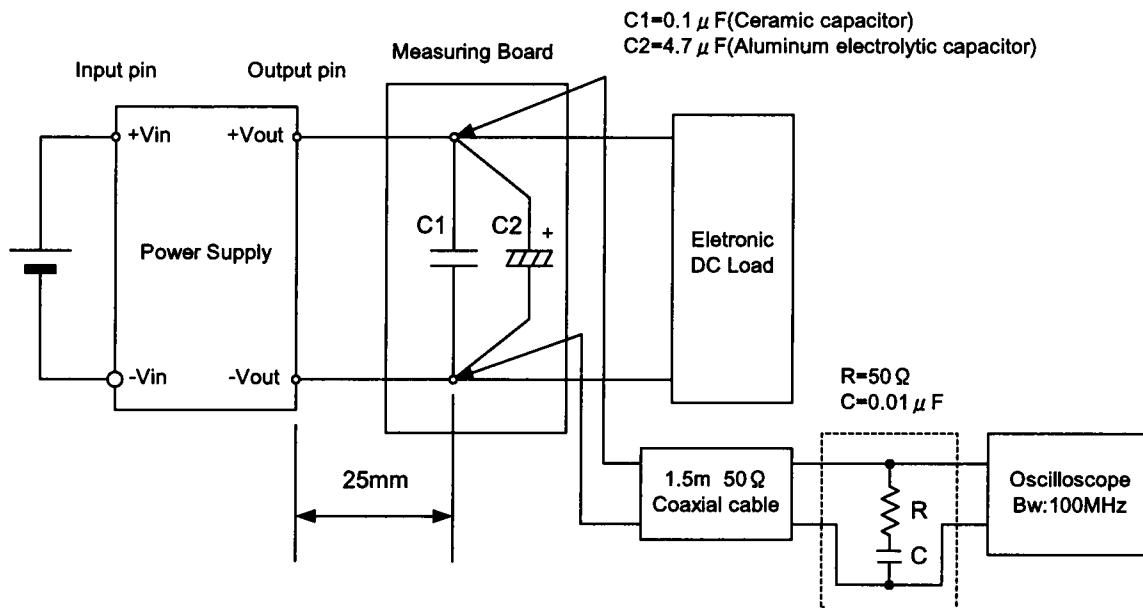


Figure B (Ripple and Ripple noise Characteristic)