

TEST DATA OF SUCS1R5053R3

Regulated DC Power Supply
Sep 15, 2004

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COSEL CO.,LTD.

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(Final Page 18)

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Model

SUCS1R5053R3

Item

Input Current (by Input Voltage)

Object

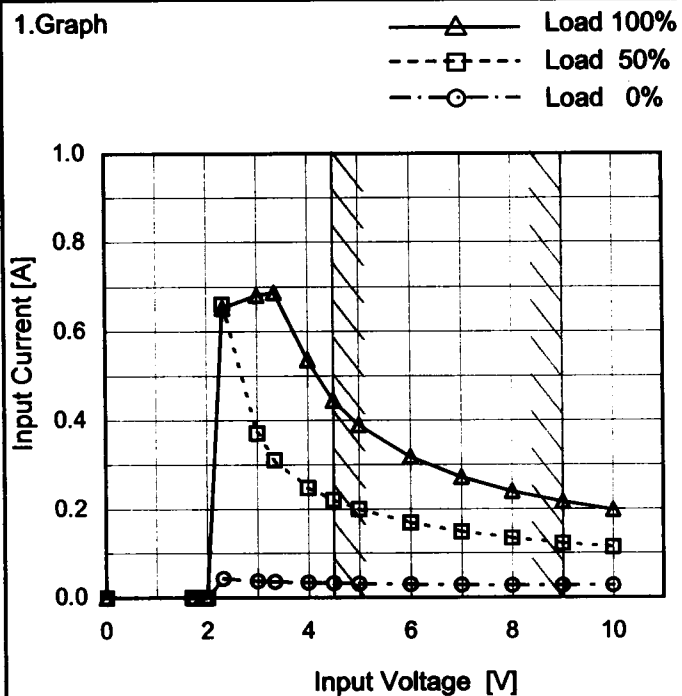
Temperature

25°C

Testing Circuitry

Figure A

1. Graph

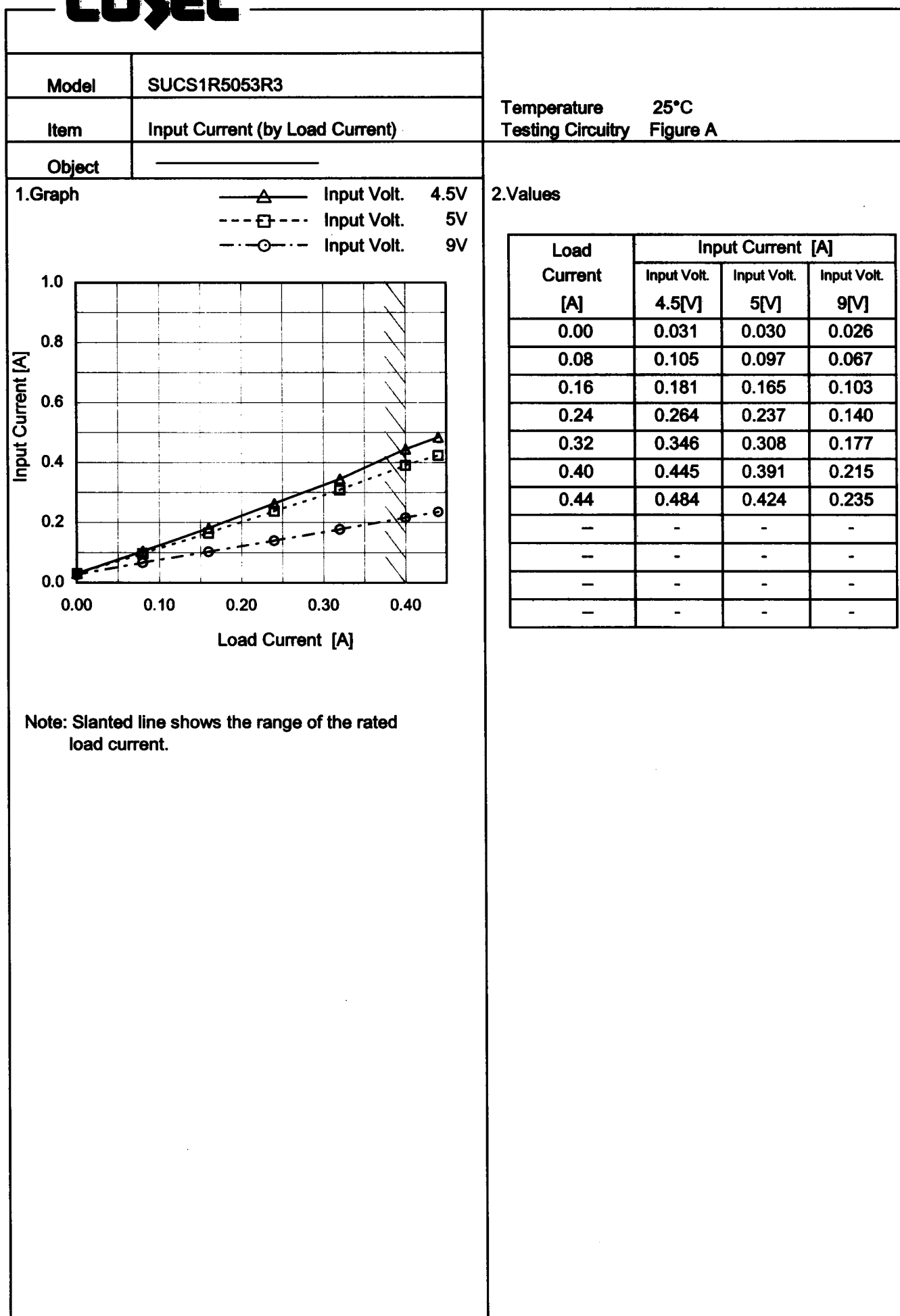


Note: Slanted line shows the range of the rated input voltage.

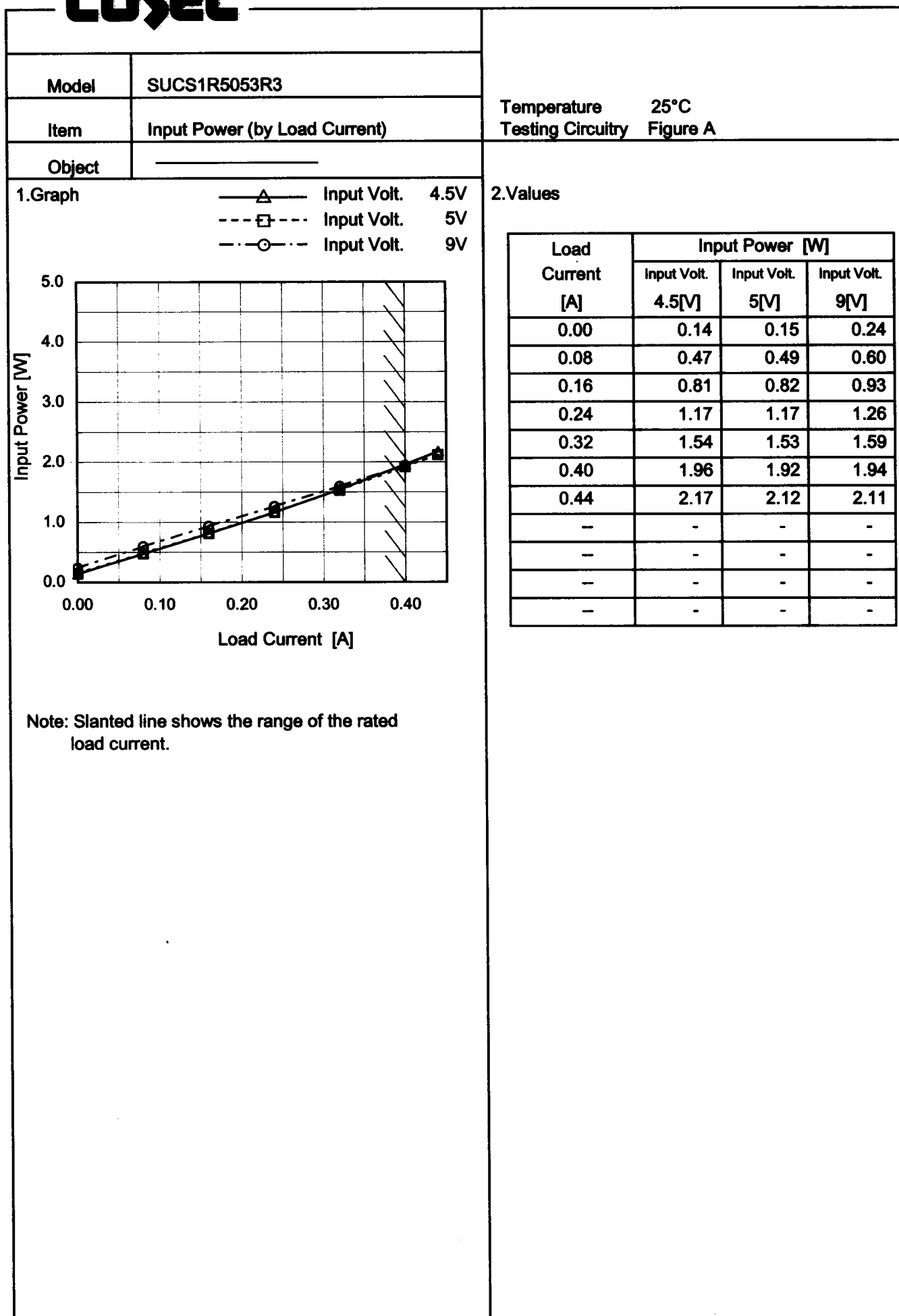
2. Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
1.7	0.000	0.000	0.000
2.0	0.000	0.000	0.000
2.3	0.043	0.661	0.653
3.0	0.037	0.371	0.681
3.3	0.035	0.311	0.687
4.0	0.033	0.248	0.536
4.5	0.032	0.221	0.445
5.0	0.030	0.200	0.390
6.0	0.028	0.169	0.318
7.0	0.027	0.148	0.273
8.0	0.027	0.134	0.240
9.0	0.027	0.122	0.217
10.0	0.027	0.113	0.198
—	—	—	—
—	—	—	—

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Model		SUCS1R5053R3	
Item		Efficiency (by Input Voltage)	
Object			

1.Graph

□

Load 50%

△

Load 100%

Efficiency [%]

80

70

60

50

40

30

3

5

7

9

11

Input Voltage [V]

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

2.Values

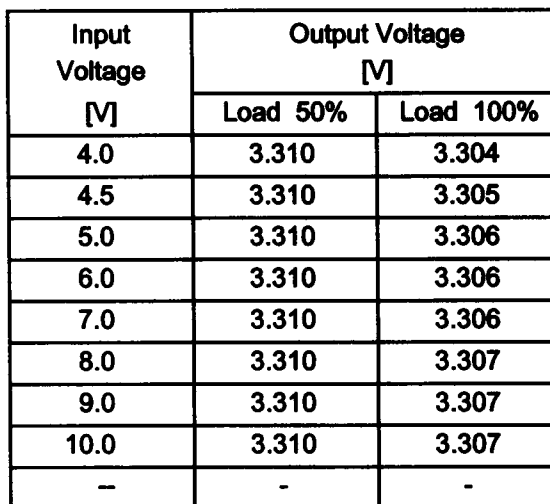
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
4.0	67.6	64.3
4.5	67.4	67.5
5.0	67.3	69.0
6.0	66.0	69.9
7.0	64.6	70.1
8.0	62.7	69.4
9.0	60.9	68.7
10.0	58.9	67.4
—	-	-

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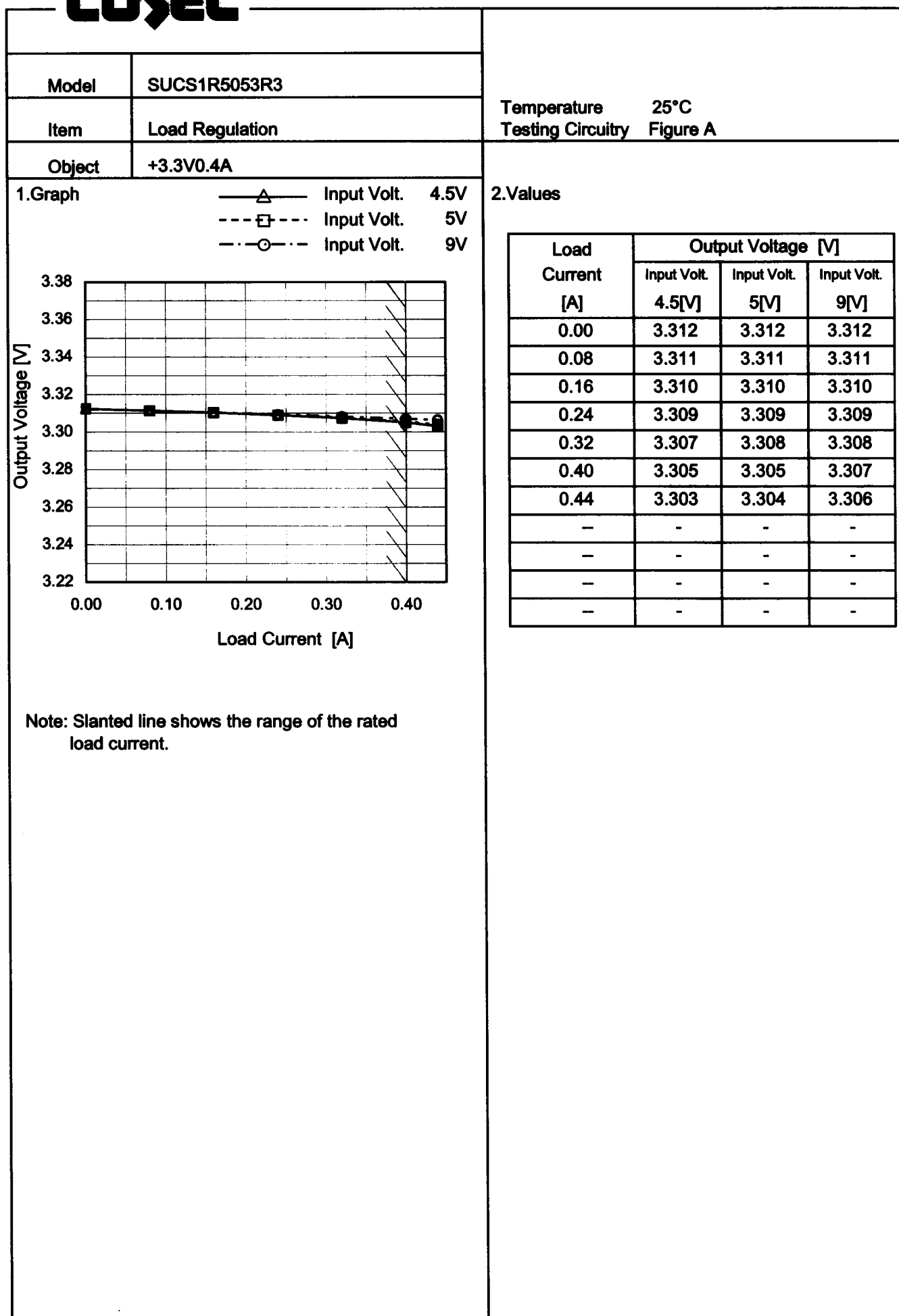
Model		SUCS1R5053R3		Temperature		25°C																																																		
Item		Efficiency (by Load Current)		Testing Circuitry		Figure A																																																		
Object																																																								
1.Graph		<div><div>—△—</div>Input Volt. 4.5V</div> <div><div>---□---</div>Input Volt. 5V</div> <div><div>---○---</div>Input Volt. 9V</div>		2.Values																																																				
<div><div><div>Efficiency [%]</div><div><div>Load Current [A]</div></div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</th></tr><tr><th>Input Volt. 4.5[V]</th><th>Input Volt. 5[V]</th><th>Input Volt. 9[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.08</td><td>56.5</td><td>55.1</td><td>44.9</td></tr><tr><td>0.16</td><td>65.8</td><td>65.4</td><td>57.1</td></tr><tr><td>0.24</td><td>68.5</td><td>68.5</td><td>63.3</td></tr><tr><td>0.32</td><td>68.8</td><td>69.4</td><td>66.7</td></tr><tr><td>0.40</td><td>67.7</td><td>69.2</td><td>68.5</td></tr><tr><td>0.44</td><td>67.2</td><td>68.9</td><td>69.2</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></table>				Load Current [A]	Efficiency [%]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	0.00	-	-	-	0.08	56.5	55.1	44.9	0.16	65.8	65.4	57.1	0.24	68.5	68.5	63.3	0.32	68.8	69.4	66.7	0.40	67.7	69.2	68.5	0.44	67.2	68.9	69.2	—	-	-	-	—	-	-	-	—	-	-	-	—	-	-	-
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Note: Slanted line shows the range of the rated load current.																																																								

Temperature 25°C
Testing Circuitry Figure A

2.Values



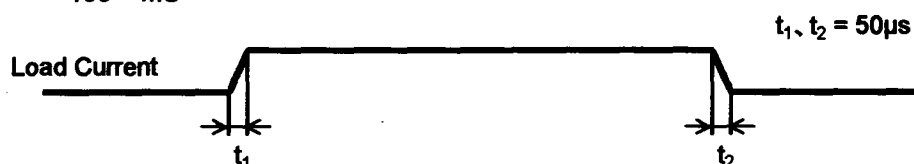
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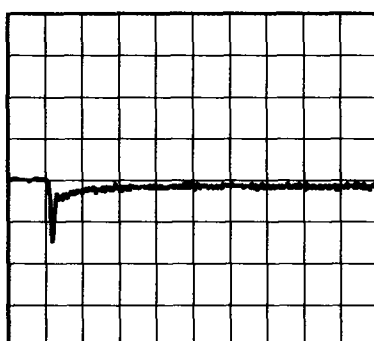
Model	SUCS1R5053R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V0.4A		

Input Volt. 5 V
Cycle 100 mS



Min. Load (0A) \longleftrightarrow
Load 100% (0.4A)

100mV/div



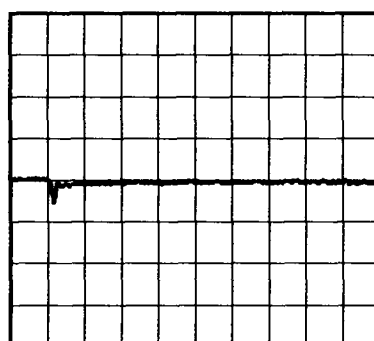
200µs/div



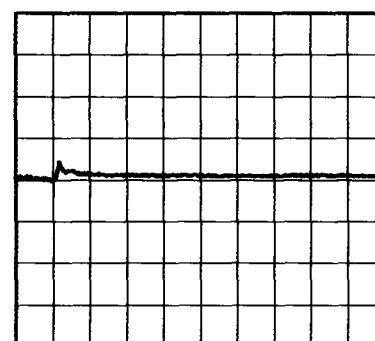
200µs/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.2A)

100mV/div



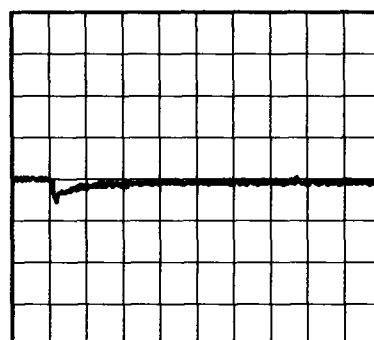
200µs/div



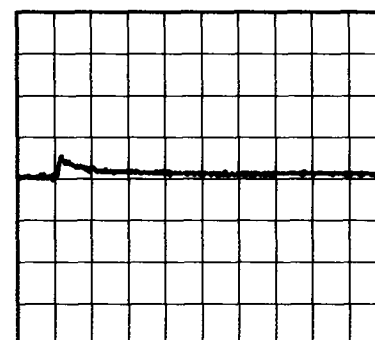
200µs/div

Load 50% (0.2A) \longleftrightarrow
Load 100% (0.4A)

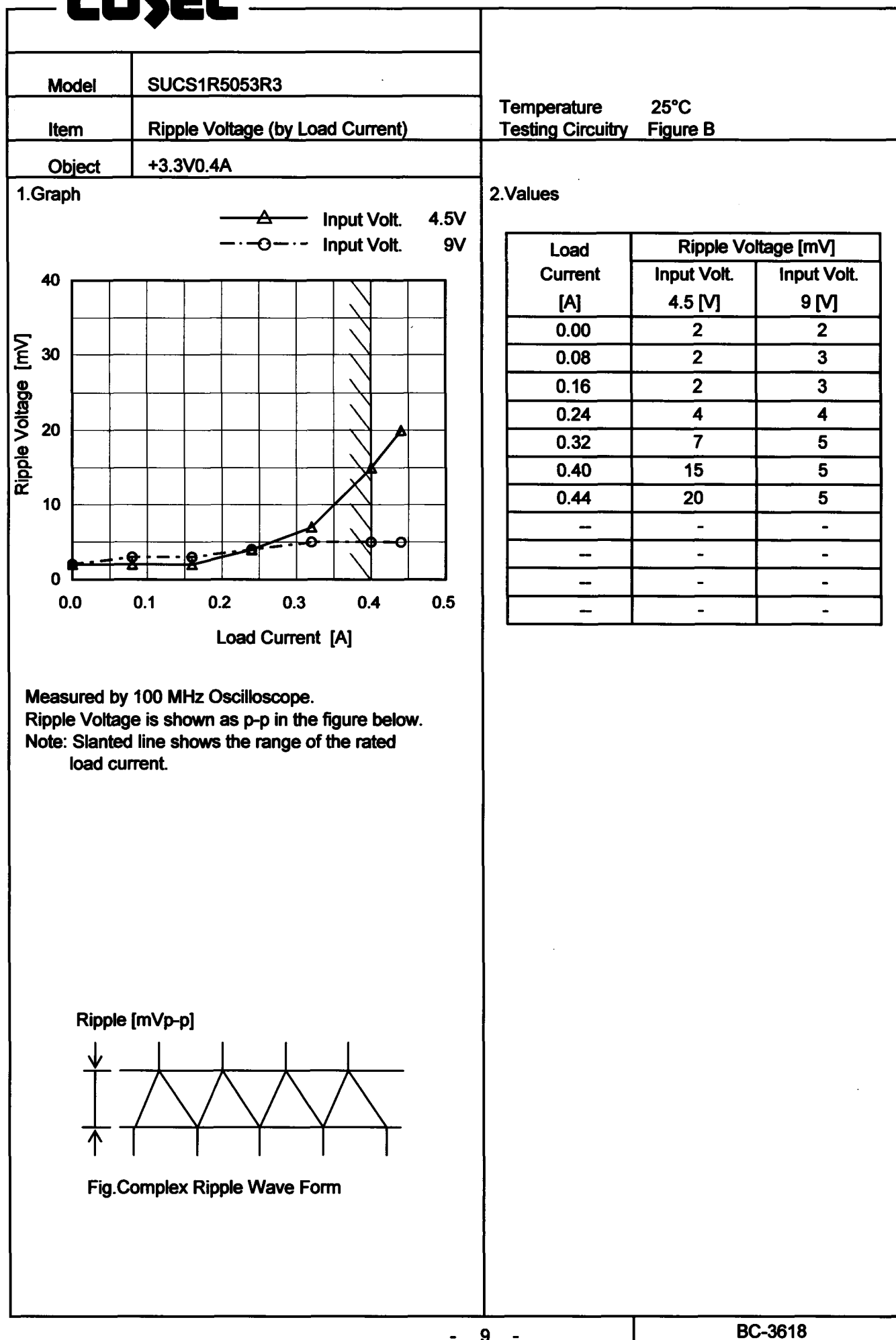
100mV/div



200µs/div



200µs/div

COSEL

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Model	SUCS1R5053R3																																								
Item	Ripple-Noise	Temperature	25°C																																						
Object	+3.3V0.4A	Testing Circuitry	Figure B																																						
1.Graph		2.Values																																							
<div><div><div>—△—</div><div>Input Volt.</div><div>4.5V</div></div><div><div>- - ○ - -</div><div>Input Volt.</div><div>9V</div></div></div> <p>Ripple-Noise [mV]</p> <p>Load Current [A]</p> <p>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.</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 4.5 [V]</th><th>Input Volt. 9 [V]</th></tr><tr><td>0.00</td><td>4</td><td>4</td></tr><tr><td>0.08</td><td>6</td><td>5</td></tr><tr><td>0.16</td><td>7</td><td>6</td></tr><tr><td>0.24</td><td>8</td><td>7</td></tr><tr><td>0.32</td><td>9</td><td>7</td></tr><tr><td>0.40</td><td>17</td><td>8</td></tr><tr><td>0.44</td><td>22</td><td>9</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></table>		Load Current [A]	Ripple-Noise [mV]		Input Volt. 4.5 [V]	Input Volt. 9 [V]	0.00	4	4	0.08	6	5	0.16	7	6	0.24	8	7	0.32	9	7	0.40	17	8	0.44	22	9	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
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<p>Ripple Noise[mVp-p]</p> <p>Fig.Complex Ripple Noise Wave Form</p>																																									

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Model

SUCS1R5053R3

Item

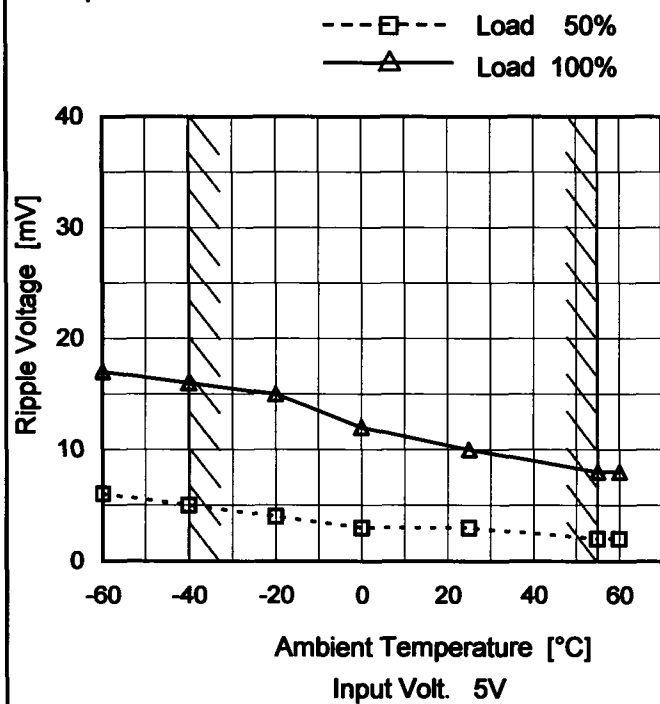
Ripple Voltage (by Ambient Temp.)

Object

+3.3V0.4A

Testing Circuitry Figure B

1. Graph

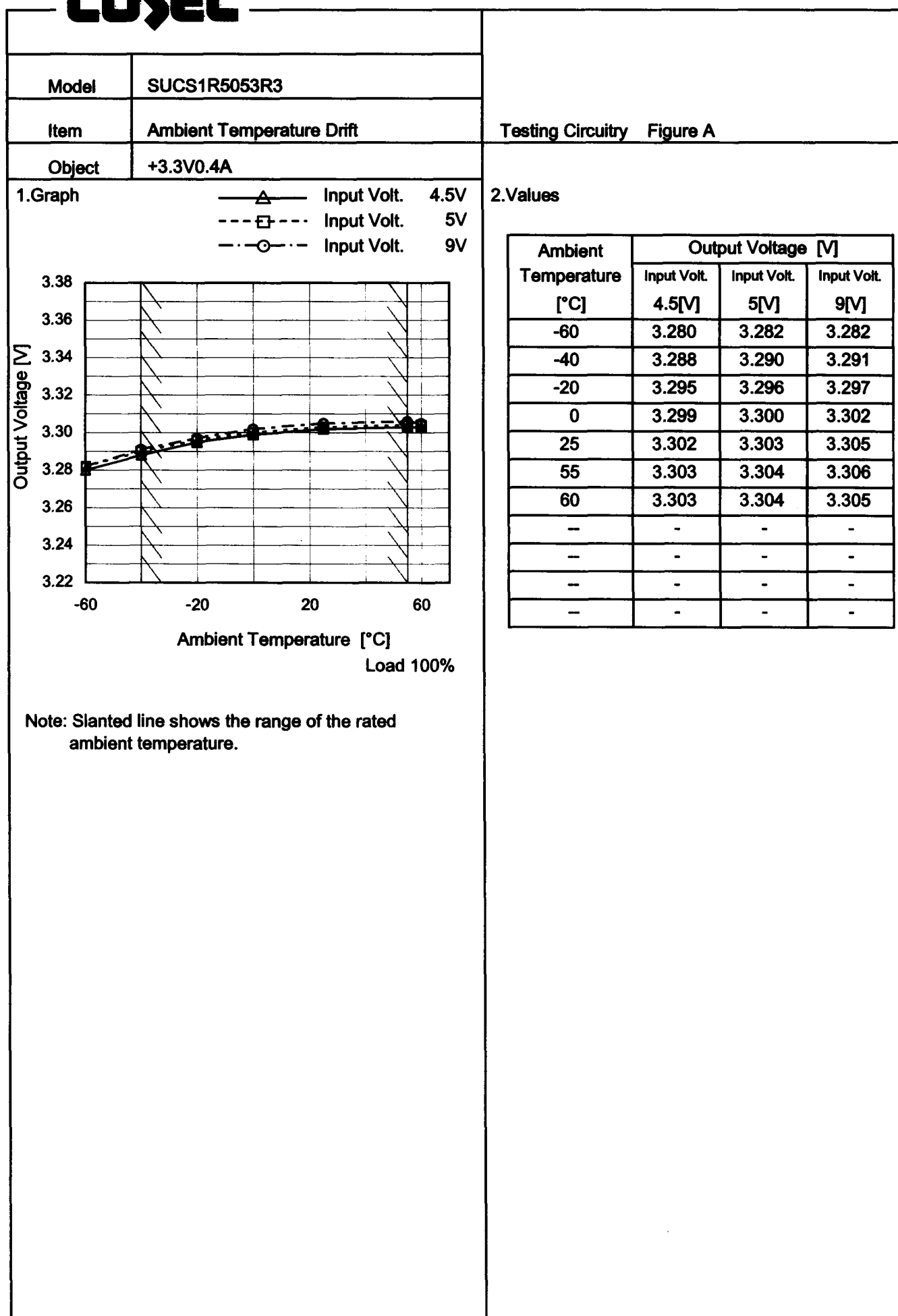


Measured by 100 MHz Oscilloscope.

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

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	6	17
-40	5	16
-20	4	15
0	3	12
25	3	10
55	2	8
60	2	8
—	—	—
—	—	—
—	—	—
—	—	—





		Testing Circuitry Figure A
Model	SUCS1R5053R3	
Item	Output Voltage Accuracy	
Object	+3.3V0.4A	

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 : 4.5 - 9V

Load Current : 0 - 0.4A

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

* 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	55	9	0	3.311	±12	±0.4
Minimum Voltage	-40	4.5	0.4	3.288		

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Model	SUCS1R5053R3																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+3.3V0.4A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><div><div>3.38</div><div>3.36</div><div>3.34</div><div>3.32</div><div>3.30</div><div>3.28</div><div>3.26</div><div>3.24</div><div>3.22</div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>10</div></div><div><div>Output Voltage [V]</div><div>Time [H]</div></div><div><div>Input Volt.</div><div>5V</div></div><div><div>Load</div><div>100%</div></div></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>3.304</td></tr><tr><td>0.5</td><td>3.305</td></tr><tr><td>1.0</td><td>3.305</td></tr><tr><td>2.0</td><td>3.305</td></tr><tr><td>3.0</td><td>3.304</td></tr><tr><td>4.0</td><td>3.304</td></tr><tr><td>5.0</td><td>3.304</td></tr><tr><td>6.0</td><td>3.304</td></tr><tr><td>7.0</td><td>3.305</td></tr><tr><td>8.0</td><td>3.305</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.304	0.5	3.305	1.0	3.305	2.0	3.305	3.0	3.304	4.0	3.304	5.0	3.304	6.0	3.304	7.0	3.305	8.0	3.305
Time since start [H]	Output Voltage [V]																								
0.0	3.304																								
0.5	3.305																								
1.0	3.305																								
2.0	3.305																								
3.0	3.304																								
4.0	3.304																								
5.0	3.304																								
6.0	3.304																								
7.0	3.305																								
8.0	3.305																								

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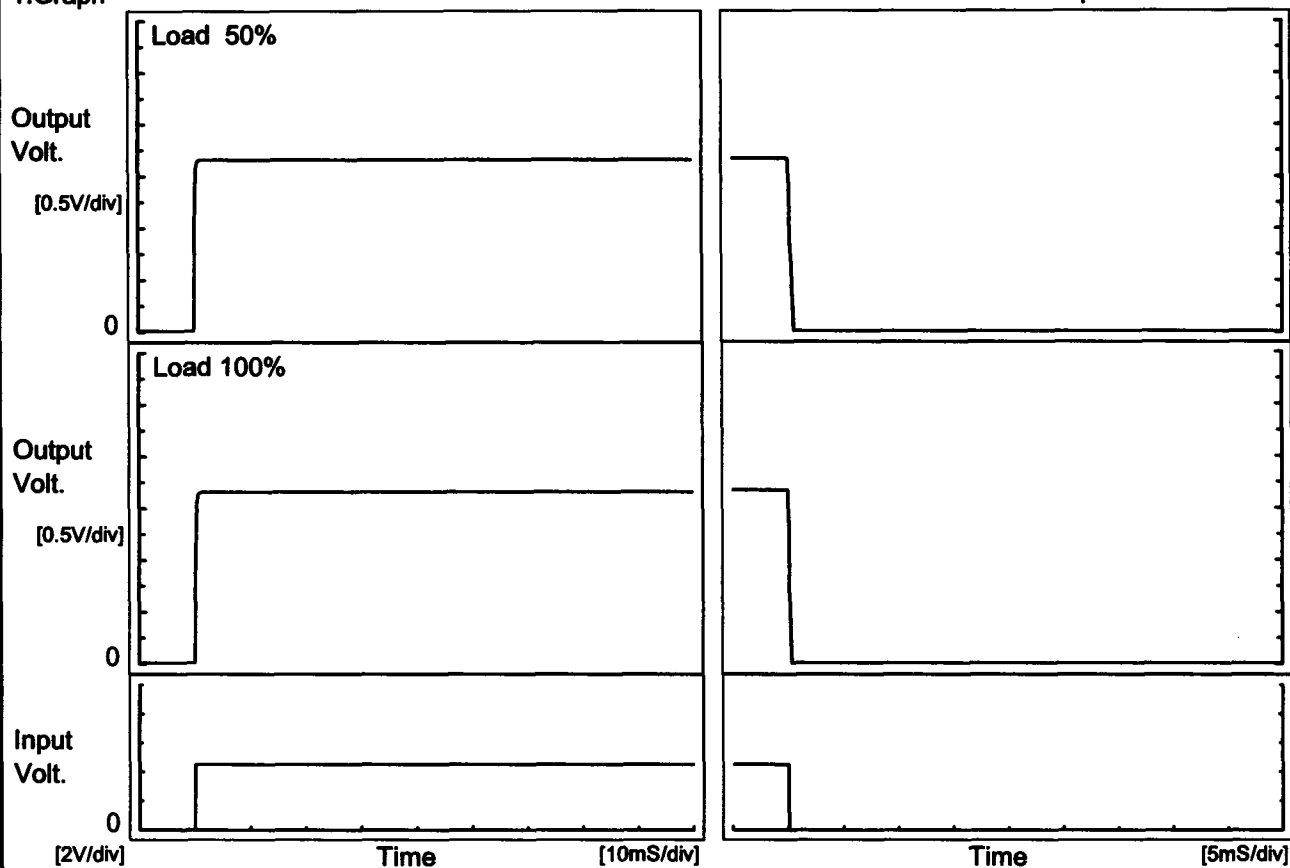
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Model	SUCS1R5053R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V0.4A		

1.Graph

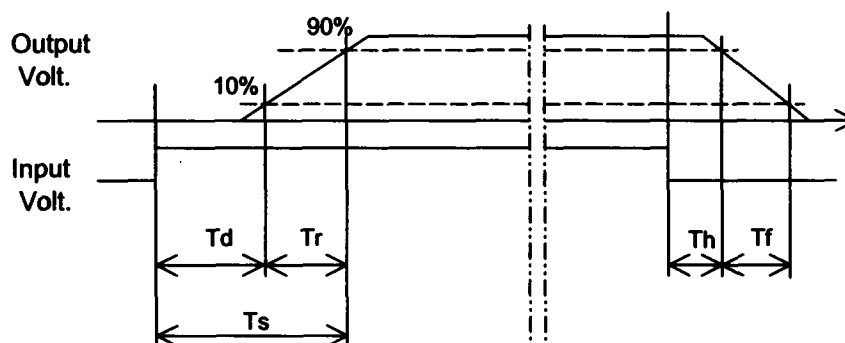
Input Volt. 4.5 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	0.4	0.5	0.1	1.0
100 %	0.1	0.4	0.5	0.0	0.5

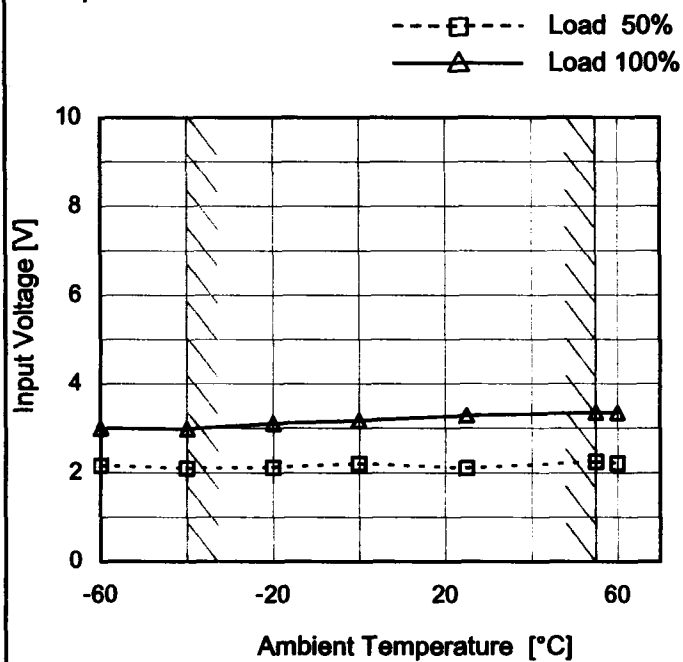


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Model	SUCS1R5053R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V0.4A

Testing Circuitry Figure A

1. Graph



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

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	2.2	3.0
-40	2.1	3.0
-20	2.2	3.2
0	2.2	3.2
25	2.1	3.3
55	2.3	3.4
60	2.3	3.4
—	—	—
—	—	—
—	—	—
—	—	—

BC-3618

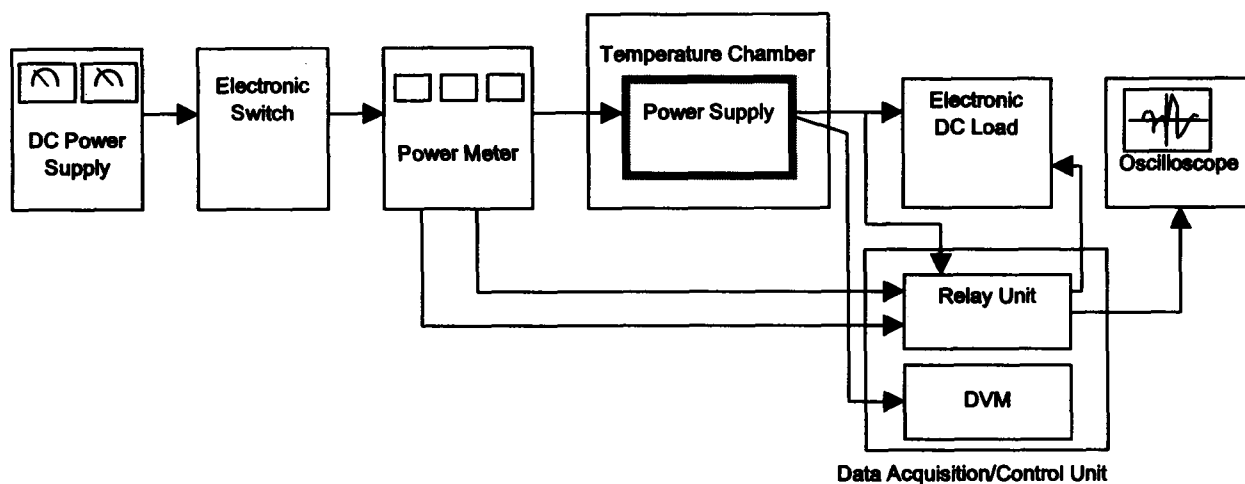


Figure A

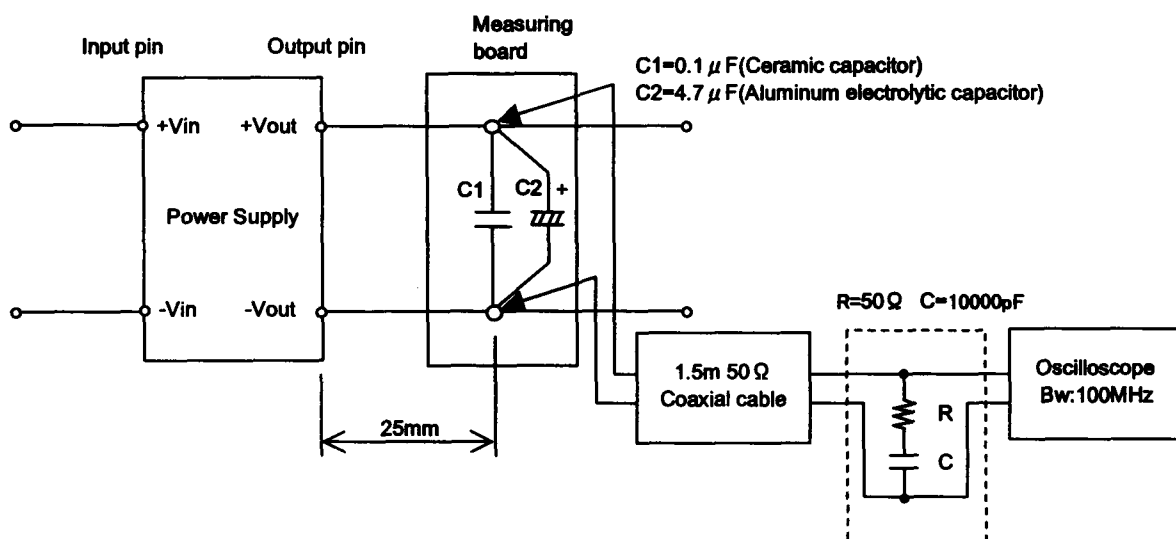


Figure B (Ripple and Ripple noise Characteristic)