

TEST DATA OF SUS10053R3 SUCS10053R3

Regulated DC Power Supply
Mar 28, 2005

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Yoshimichi Hirokawa Design Engineer

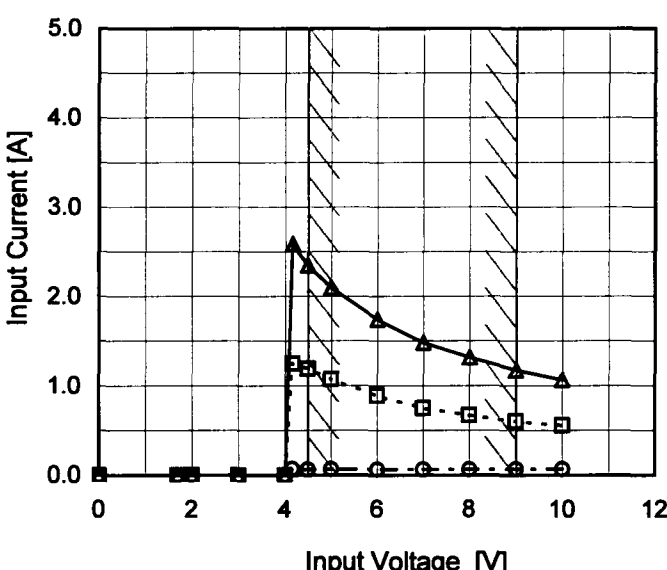
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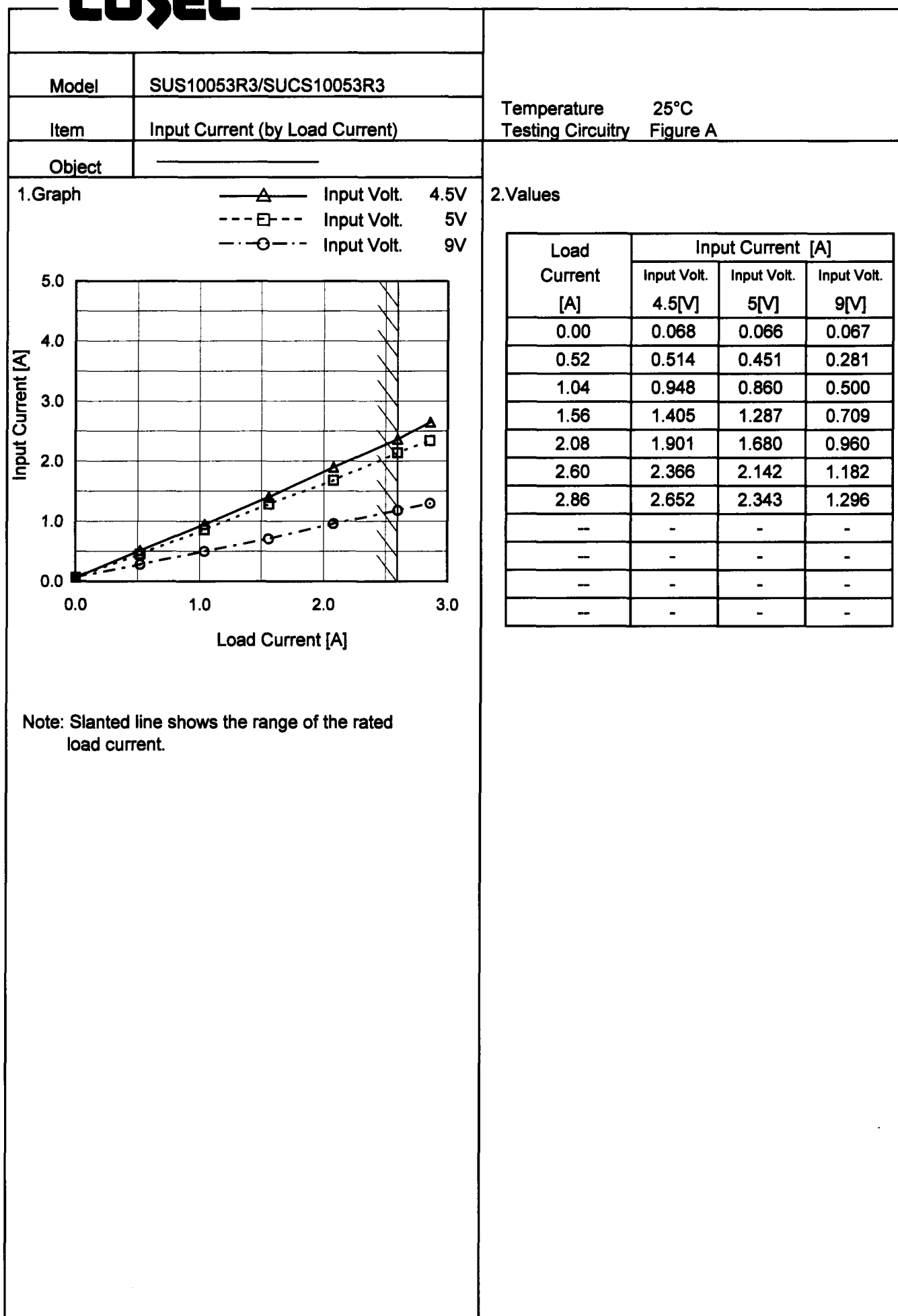
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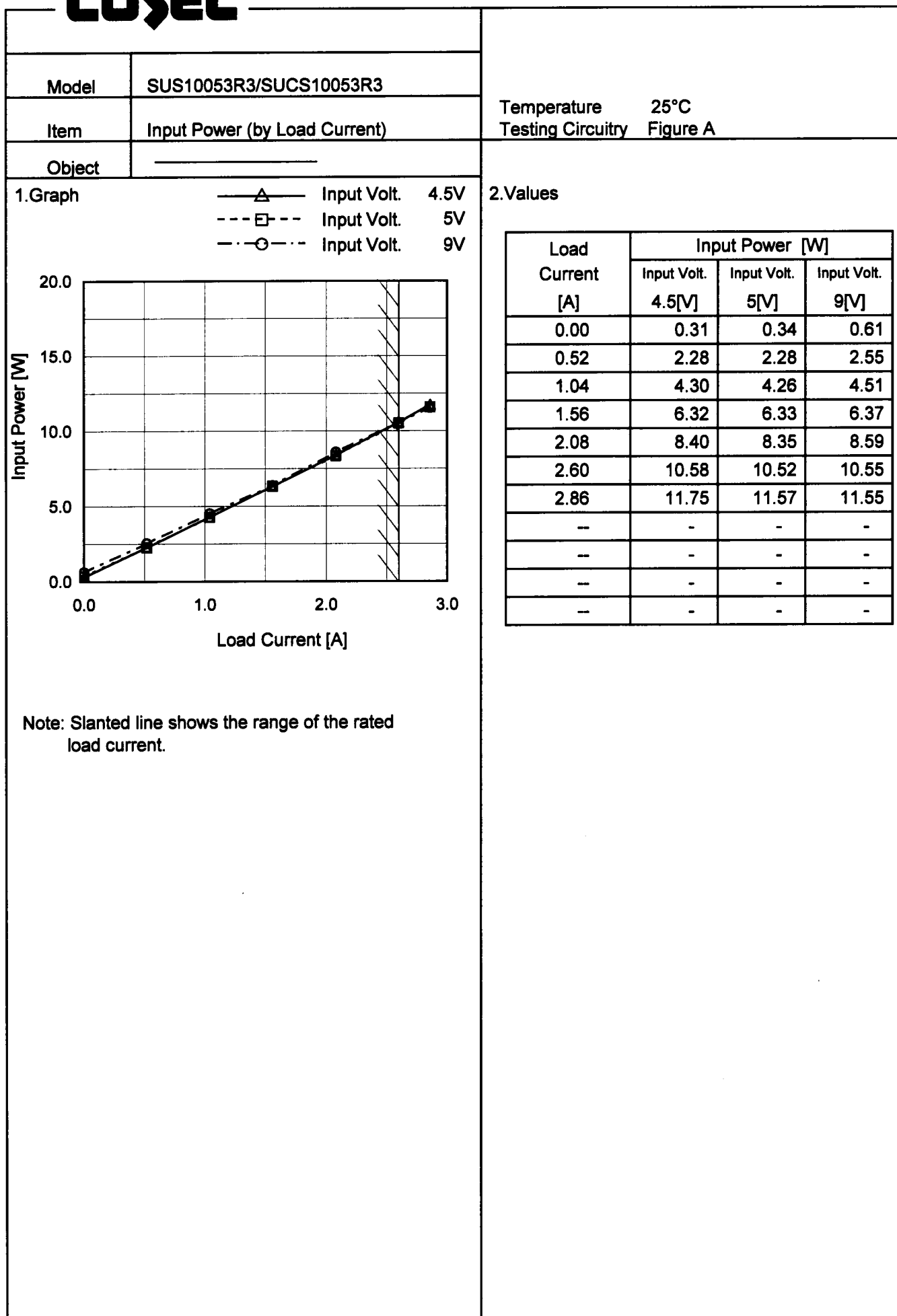
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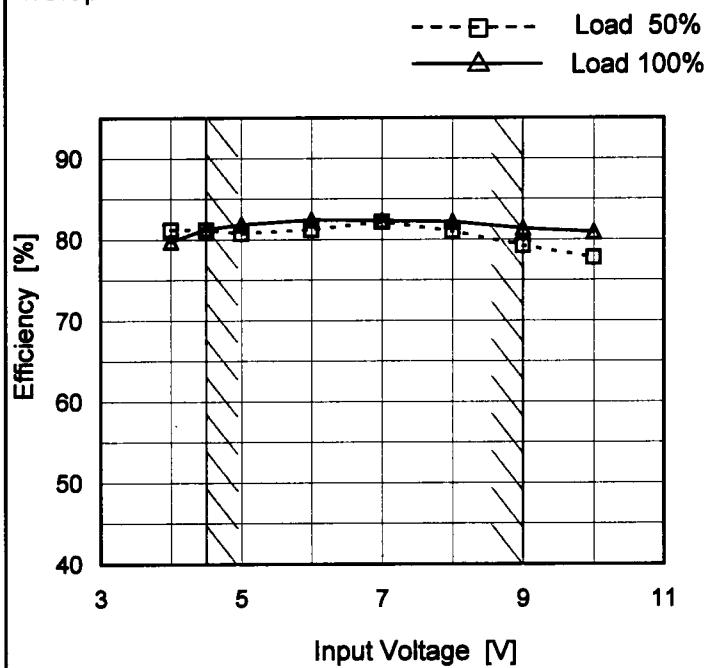
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Model SUS10053R3/SUCS10053R3

Item Efficiency (by Input Voltage)

Object
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
4.0	81.2	79.7
4.5	81.2	81.3
5.0	80.7	81.8
6.0	81.2	82.4
7.0	82.2	82.3
8.0	81.0	82.2
9.0	79.2	81.4
10.0	77.8	80.9
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<div><div><div>—△—</div><div>---□---</div><div>- -○- -</div></div><div><div>Input Volt.</div><div>Input Volt.</div><div>Input Volt.</div></div><div><div>4.5V</div><div>5V</div><div>9V</div></div></div> <div><p>Efficiency [%]</p><p>Load Current [A]</p></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>0.52</td><td>75.7</td><td>75.7</td><td>67.6</td></tr><tr><td>1.04</td><td>80.3</td><td>80.9</td><td>76.6</td></tr><tr><td>1.56</td><td>81.8</td><td>81.7</td><td>81.3</td></tr><tr><td>2.08</td><td>82.0</td><td>82.5</td><td>80.3</td></tr><tr><td>2.60</td><td>81.3</td><td>81.7</td><td>81.5</td></tr><tr><td>2.86</td><td>80.4</td><td>81.6</td><td>81.9</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	-	-	-	0.52	75.7	75.7	67.6	1.04	80.3	80.9	76.6	1.56	81.8	81.7	81.3	2.08	82.0	82.5	80.3	2.60	81.3	81.7	81.5	2.86	80.4	81.6	81.9	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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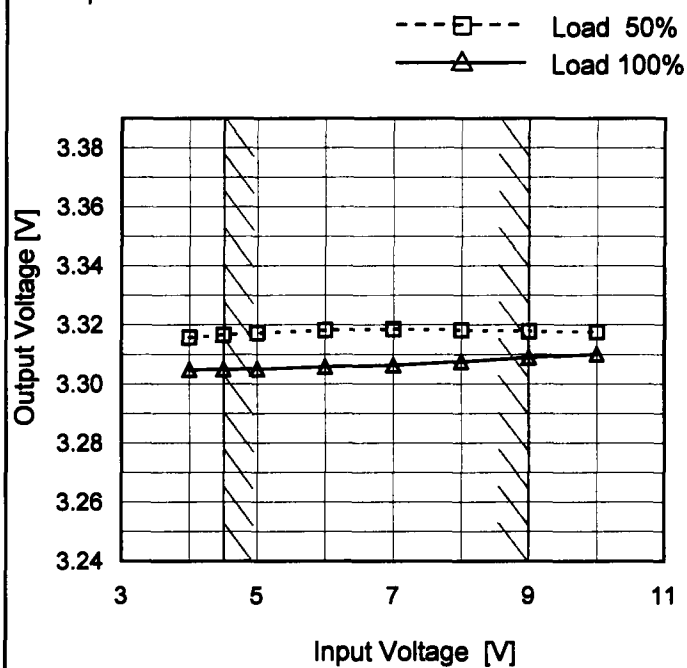
Model SUS10053R3/SUCS10053R3

Item Line Regulation

Object +3.3V2.6A

Temperature 25°C
Testing Circuitry Figure A

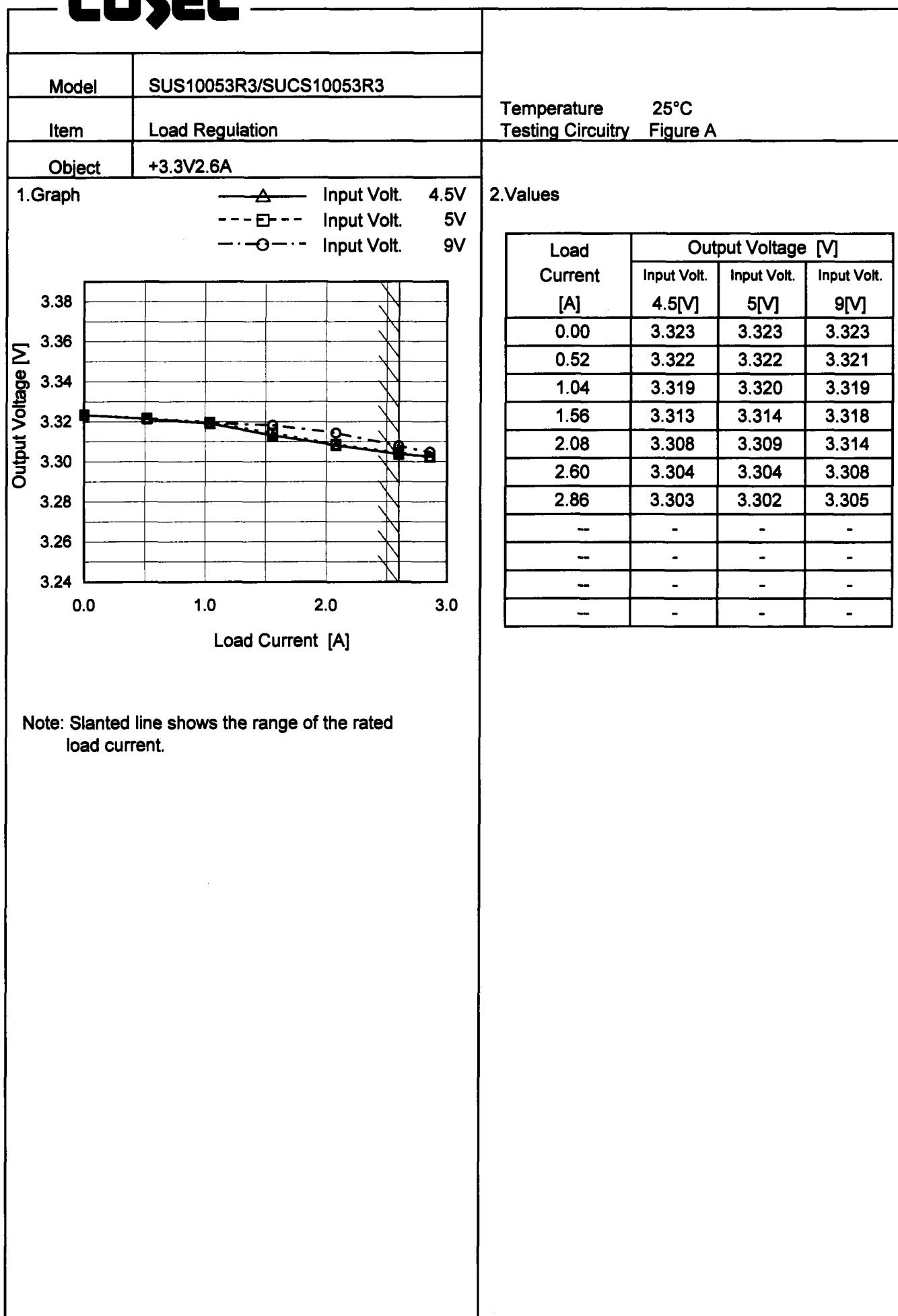
1. Graph



2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
4.0	3.316	3.305
4.5	3.317	3.305
5.0	3.317	3.305
6.0	3.318	3.306
7.0	3.319	3.306
8.0	3.318	3.308
9.0	3.318	3.309
10.0	3.318	3.310
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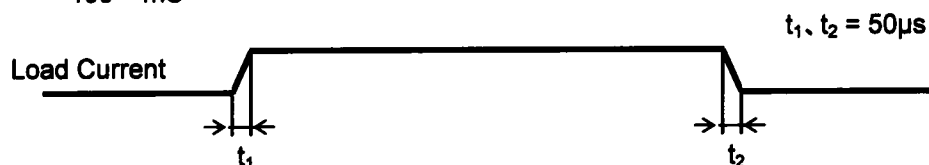
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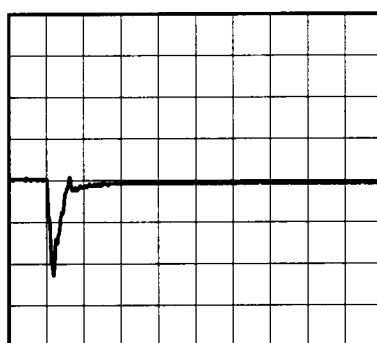
Model	SUS10053R3/SUCS10053R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V2.6A		

Input Volt. 5 V
Cycle 100 mS

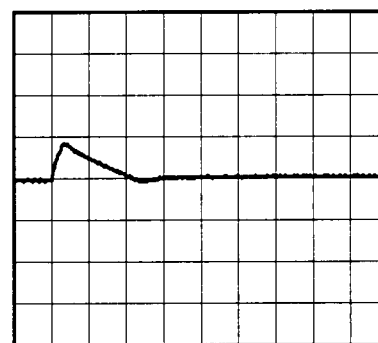


Min. Load (0A) \longleftrightarrow
Load 100% (2.6A)

200mV/div



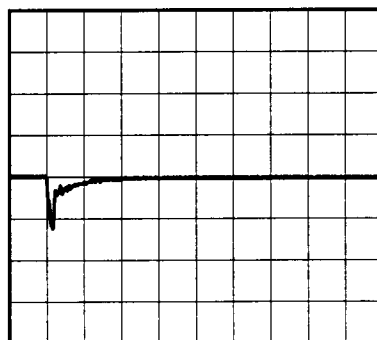
200µs/div



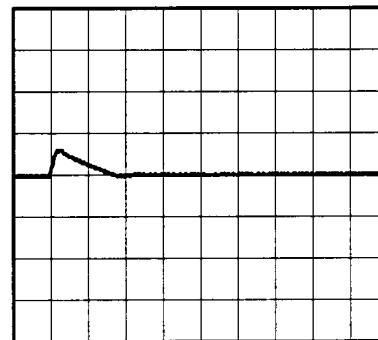
200µs/div

Min. Load (0A) \longleftrightarrow
Load 50% (1.3A)

200mV/div



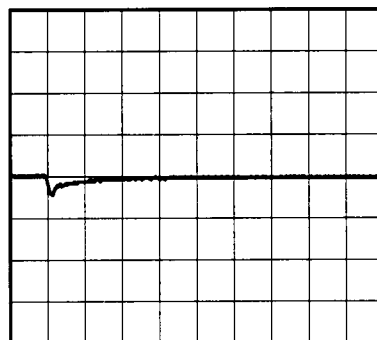
200µs/div



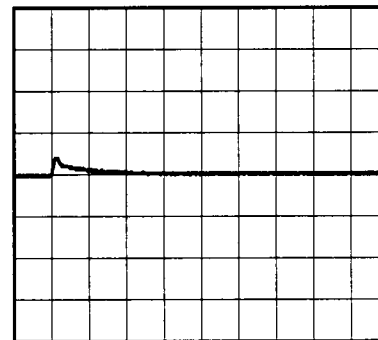
200µs/div

Load 50% (1.3A) \longleftrightarrow
Load 100% (2.6A)

200mV/div

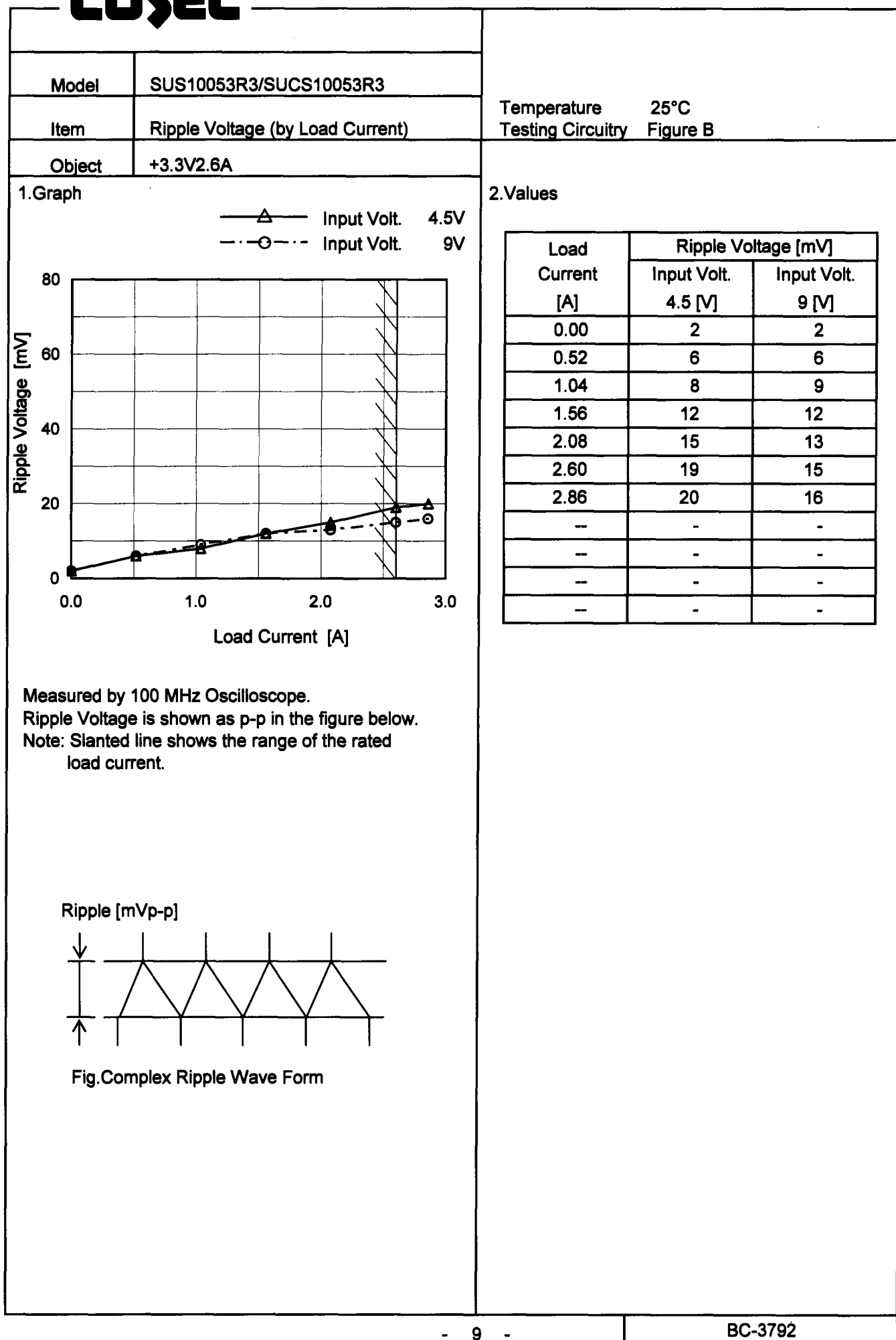


200µs/div



200µs/div

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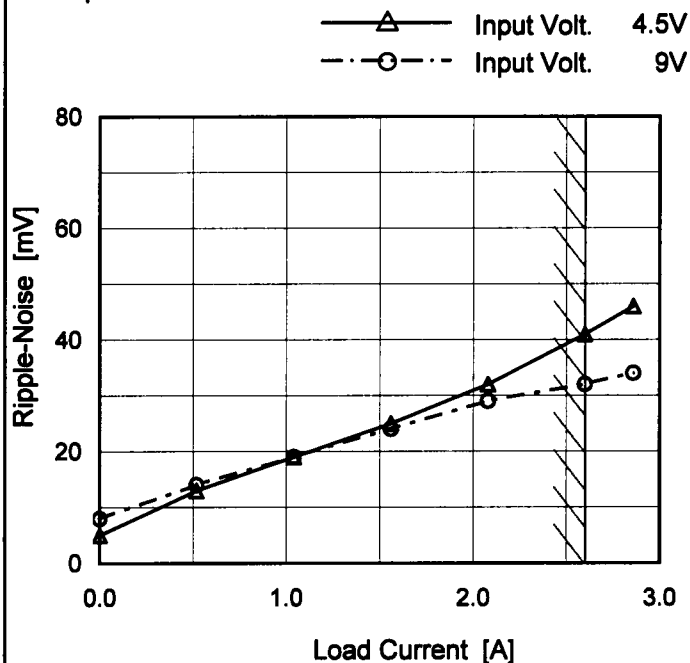
Model SUS10053R3/SUCS10053R3

Item Ripple-Noise

Object +3.3V2.6A

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.

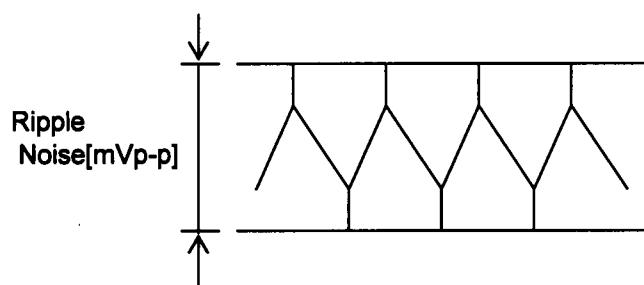


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 4.5 [V]	Input Volt. 9 [V]
0.00	5	8
0.52	13	14
1.04	19	19
1.56	25	24
2.08	32	29
2.60	41	32
2.86	46	34
--	-	-
--	-	-
--	-	-
--	-	-

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		Testing Circuitry Figure A
Model	SUS10053R3/SUCS10053R3	
Item	Output Voltage Accuracy	
Object	+3.3V2.6A	

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 : 4.5 - 9V

Load Current : 0 - 2.6A

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

* 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	55	4.5	0	3.327	±26	±0.8
Minimum Voltage	-40	4.5	2.6	3.276		

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Model	SUS10053R3/SUCS10053R3	Temperature 25°C Testing Circuitry Figure A																							
Item	Time Lapse Drift																								
Object	+3.3V2.6A																								
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><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. 5V</div><div>Load 100%</div></div></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>3.316</td></tr><tr><td>0.5</td><td>3.318</td></tr><tr><td>1.0</td><td>3.318</td></tr><tr><td>2.0</td><td>3.318</td></tr><tr><td>3.0</td><td>3.318</td></tr><tr><td>4.0</td><td>3.318</td></tr><tr><td>5.0</td><td>3.318</td></tr><tr><td>6.0</td><td>3.318</td></tr><tr><td>7.0</td><td>3.318</td></tr><tr><td>8.0</td><td>3.318</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.316	0.5	3.318	1.0	3.318	2.0	3.318	3.0	3.318	4.0	3.318	5.0	3.318	6.0	3.318	7.0	3.318	8.0	3.318
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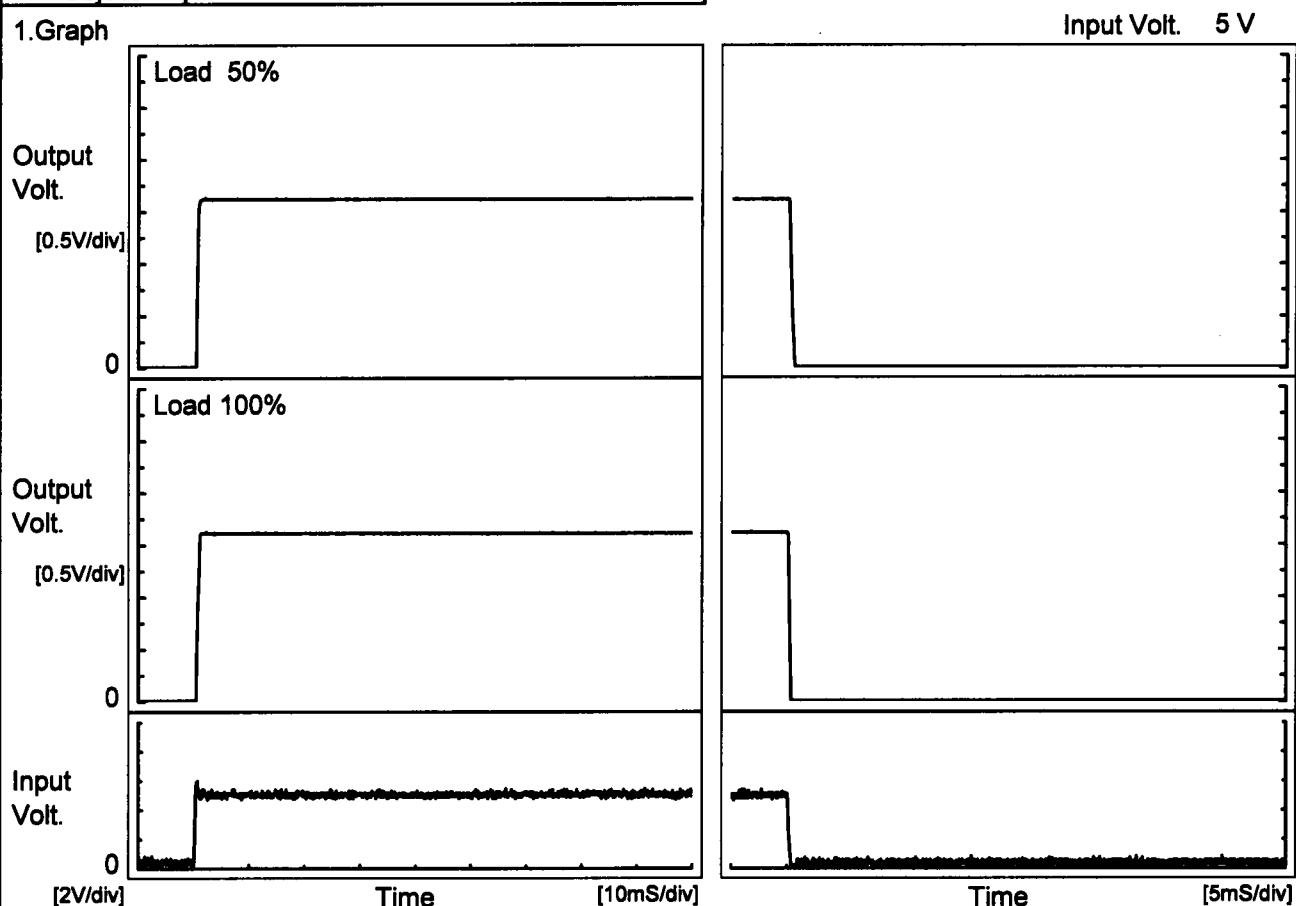
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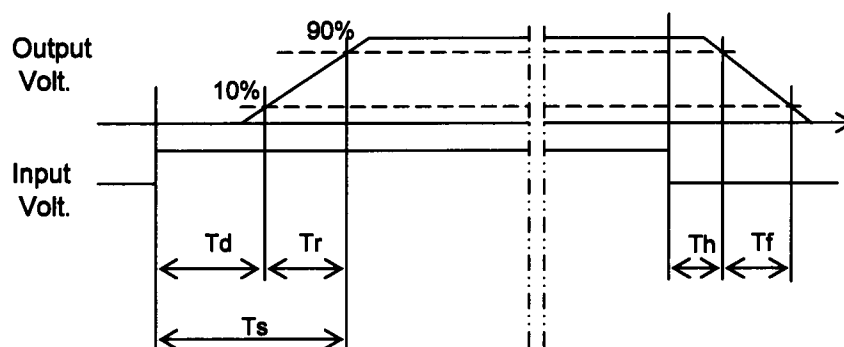
Model	SUS10053R3/SUCS10053R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V2.6A		

1.Graph



2.Values

		[mS]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.5	0.4	0.9	0.2	0.4
100 %		0.4	0.7	1.1	0.1	0.2



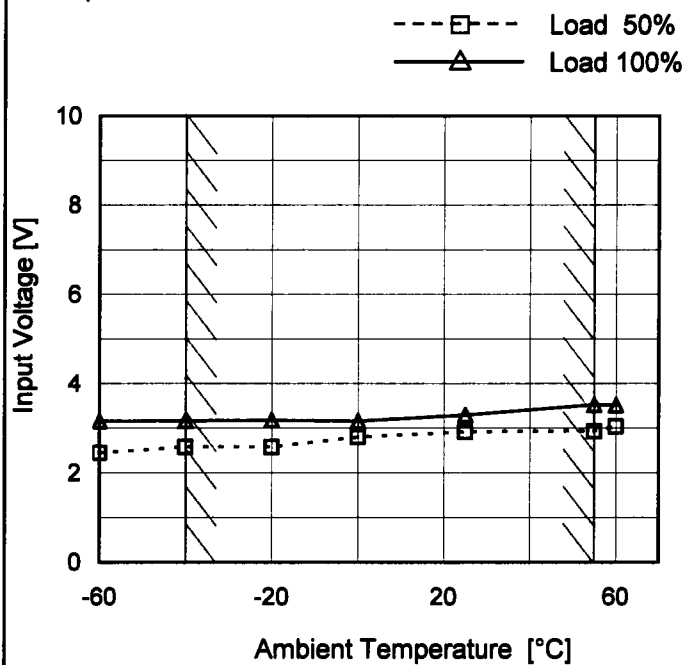
Model SUS10053R3/SUCS10053R3

Item Minimum Input Voltage
for Regulated Output Voltage

Object +3.3V2.6A

Testing Circuitry Figure A

1. Graph



2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	2.5	3.2
-40	2.6	3.2
-20	2.6	3.2
0	2.8	3.2
25	3.0	3.3
55	3.0	3.6
60	3.1	3.6
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—	—	—
—	—	—
—	—	—

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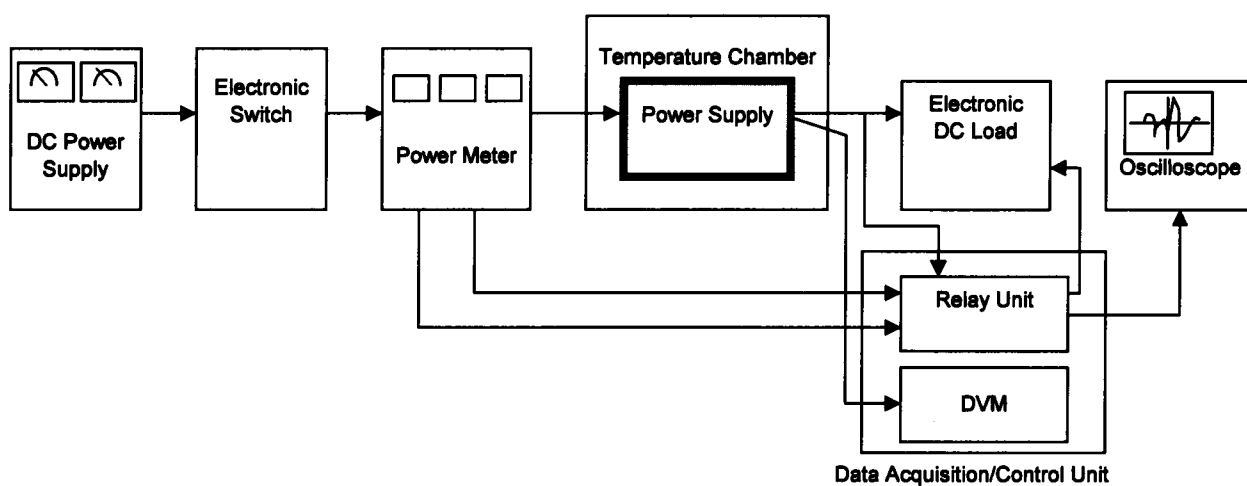


Figure A

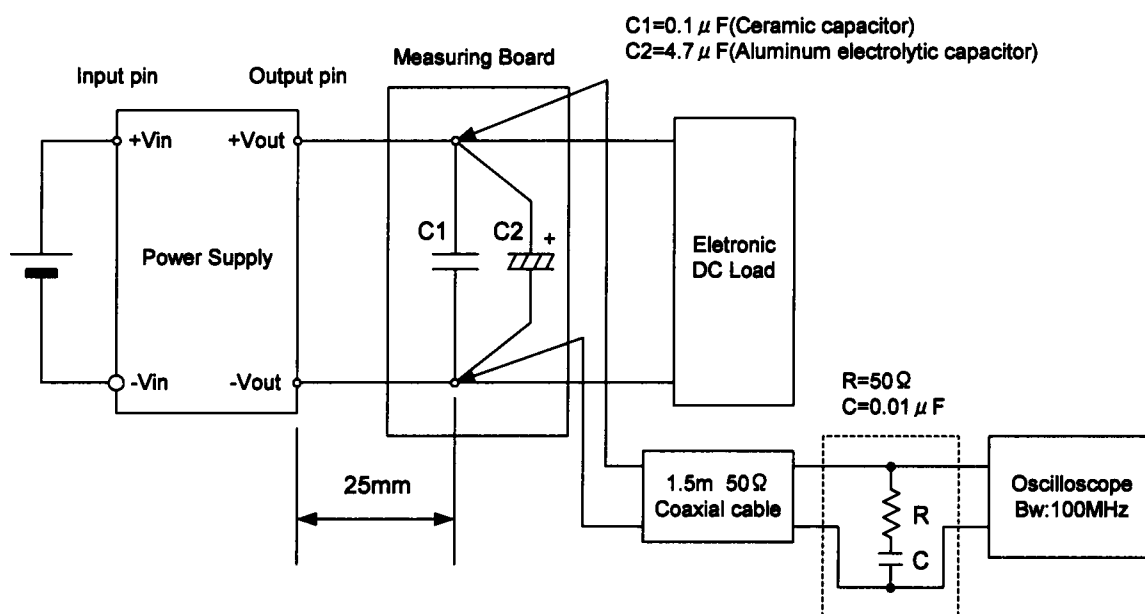


Figure B(Ripple and Ripple noise Characteristic)