



TEST DATA OF SUS10123R3 SUCS10123R3

Regulated DC Power Supply
Mar 24, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Yoshimichi Hirokawa
Yoshimichi Hirokawa Design Engineer

COSEL CO.,LTD.

CONTENTS

1.Input Current (by Input Voltage)	1
2.Input Current (by Load Current)	2
3.Input Power (by Load Current)	3
4.Efficiency (by Input Voltage)	4
5.Efficiency (by Load Current)	5
6.Line Regulation	6
7.Load Regulation	7
8.Dynamic Load Response	8
9.Ripple Voltage (by Load Current)	9
10.Ripple-Noise	10
11.Ripple Voltage (by Ambient Temperature)	11
12.Ambient Temperature Drift	12
13.Output Voltage Accuracy	13
14.Time Lapse Drift	14
15.Rise and Fall Time	15
16.Minimum Input Voltage for Regulated Output Voltage	16
17.Overcurrent Protection	17
18.Figure of Testing Circuitry	18

(Final Page 18)

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Model

SUS10123R3/SUCS10123R3

Item

Input Current (by Input Voltage)

Object

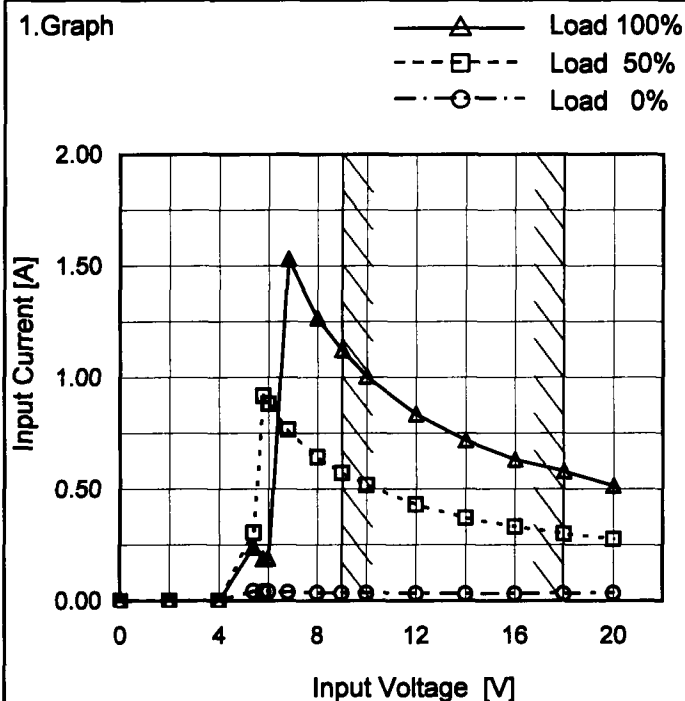
Temperature

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	0.000	0.000	0.000
2.0	0.000	0.000	0.000
4.0	0.000	0.000	0.000
5.4	0.043	0.304	0.240
5.8	0.042	0.918	0.187
6.0	0.041	0.882	0.188
6.8	0.039	0.766	1.532
8.0	0.037	0.644	1.266
9.0	0.035	0.572	1.123
10.0	0.034	0.517	1.005
12.0	0.033	0.432	0.837
14.0	0.032	0.371	0.718
16.0	0.032	0.331	0.632
18.0	0.033	0.301	0.581
20.0	0.034	0.276	0.514
--	-	-	-
--	-	-	-
--	-	-	-

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Model		SUS10123R3/SUCS10123R3	
Item		Input Current (by Load Current)	
Object			

1.Graph

—△—

Input Volt.

9V

---□---

Input Volt.

12V

-○-

Input Volt.

18V

Input Current [A]

2.00

1.50

1.00

0.50

0.00

0.0

1.0

2.0

3.0

Load Current [A]

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

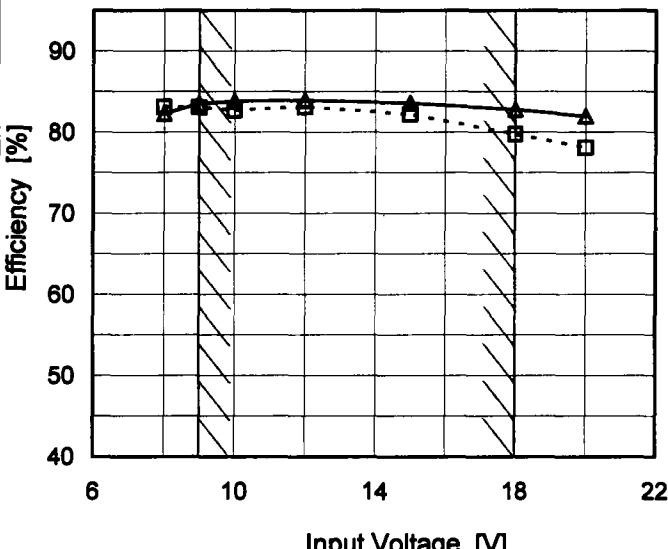
2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	0.033	0.032	0.032
0.52	0.248	0.191	0.139
1.04	0.472	0.354	0.248
1.56	0.699	0.526	0.352
2.08	0.933	0.693	0.471
2.60	1.173	0.866	0.581
2.86	1.300	0.955	0.636
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

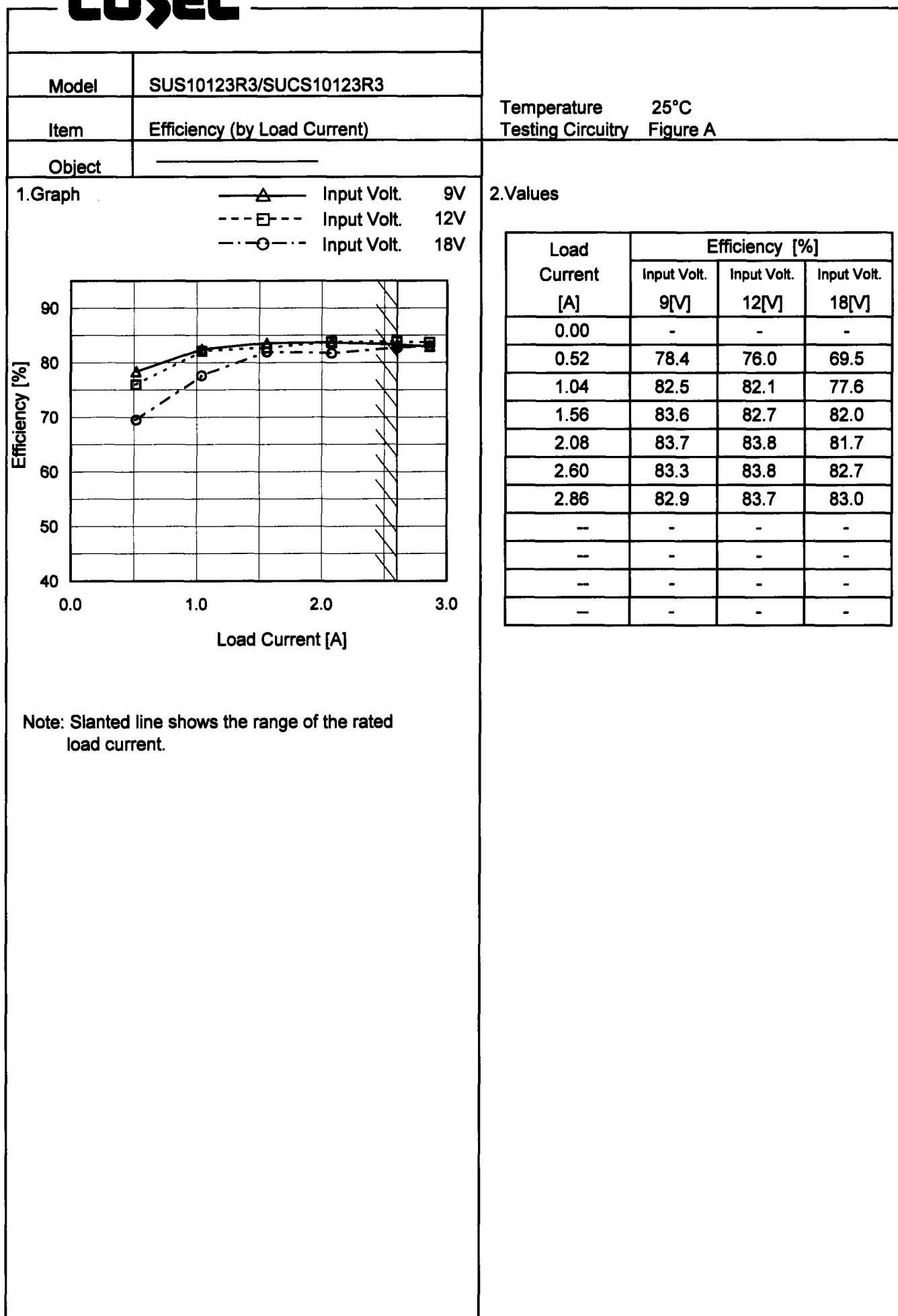
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Model		SUS10123R3/SUCS10123R3		Temperature		25°C																																																				
Item		Input Power (by Load Current)		Testing Circuitry		Figure A																																																				
Object																																																										
1. Graph		<div><div>—△—</div>Input Volt. 9V</div> <div><div>---□---</div>Input Volt. 12V</div> <div><div>-·-○-·-</div>Input Volt. 18V</div>																																																								
<div>Input Power [W]</div> <div>Load Current [A]</div>				2. Values																																																						
				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 9[V]</th><th>Input Volt. 12[V]</th><th>Input Volt. 18[V]</th></tr><tr><td>0.00</td><td>0.30</td><td>0.38</td><td>0.60</td></tr><tr><td>0.52</td><td>2.21</td><td>2.28</td><td>2.49</td></tr><tr><td>1.04</td><td>4.18</td><td>4.20</td><td>4.44</td></tr><tr><td>1.56</td><td>6.17</td><td>6.24</td><td>6.29</td></tr><tr><td>2.08</td><td>8.20</td><td>8.20</td><td>8.41</td></tr><tr><td>2.60</td><td>10.28</td><td>10.22</td><td>10.36</td></tr><tr><td>2.86</td><td>11.36</td><td>11.25</td><td>11.35</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]	Input Power [W]			Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	0.00	0.30	0.38	0.60	0.52	2.21	2.28	2.49	1.04	4.18	4.20	4.44	1.56	6.17	6.24	6.29	2.08	8.20	8.20	8.41	2.60	10.28	10.22	10.36	2.86	11.36	11.25	11.35	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Model		SUS10123R3/SUCS10123R3		Temperature 25°C																																	
Item		Efficiency (by Input Voltage)		Testing Circuitry Figure A																																	
Object																																					
1.Graph				2.Values																																	
<div><div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div><p>Efficiency [%]</p><p>Input Voltage [V]</p><p>Note: Slanted line shows the range of the rated input voltage.</p></div>				<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>8</td><td>83.1</td><td>82.3</td></tr><tr><td>9</td><td>83.1</td><td>83.5</td></tr><tr><td>10</td><td>82.7</td><td>83.8</td></tr><tr><td>12</td><td>83.1</td><td>84.0</td></tr><tr><td>15</td><td>82.2</td><td>83.6</td></tr><tr><td>18</td><td>79.7</td><td>82.8</td></tr><tr><td>20</td><td>78.1</td><td>82.0</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	8	83.1	82.3	9	83.1	83.5	10	82.7	83.8	12	83.1	84.0	15	82.2	83.6	18	79.7	82.8	20	78.1	82.0	--	-	-	--	-	-
Input Voltage [V]	Efficiency [%]																																				
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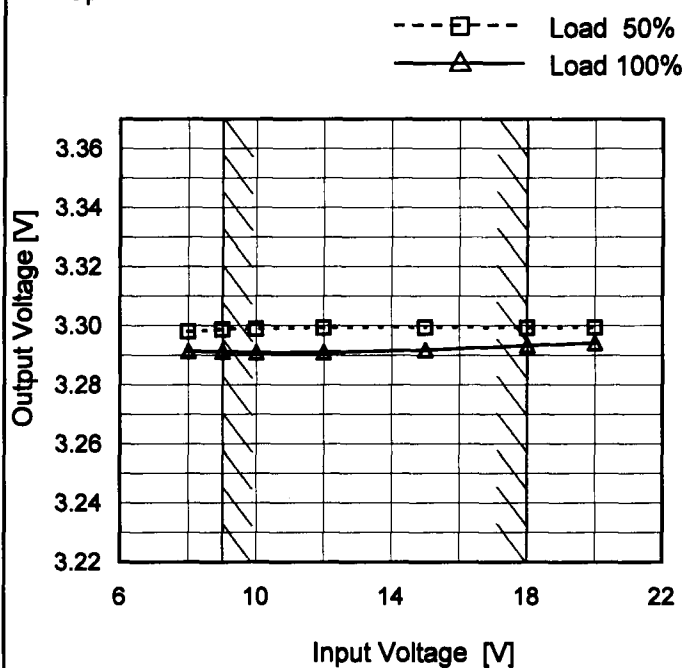
Model SUS10123R3/SUCS10123R3

Item Line Regulation

Object +3.3V2.6A

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]	Output Voltage [V]	
	Load 50%	Load 100%
8	3.298	3.291
9	3.299	3.291
10	3.299	3.291
12	3.299	3.291
15	3.299	3.292
18	3.299	3.293
20	3.299	3.294
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--	-	-

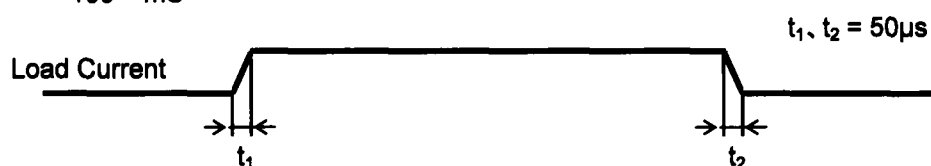
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Model	SUS10123R3/SUCS10123R3																																																					
Item	Load Regulation	Temperature	25°C																																																			
Object	+3.3V2.6A	Testing Circuitry	Figure A																																																			
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Note: Slanted line shows the range of the rated load current.																																																						

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Model	SUS10123R3/SUCS10123R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V2.6A		

Input Volt. 12 V
Cycle 100 mS

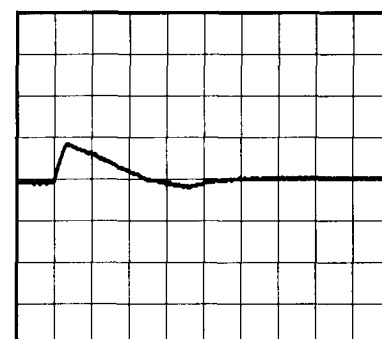


Min. Load (0A) \longleftrightarrow
Load 100% (2.6A)

200mV/div



200µs/div



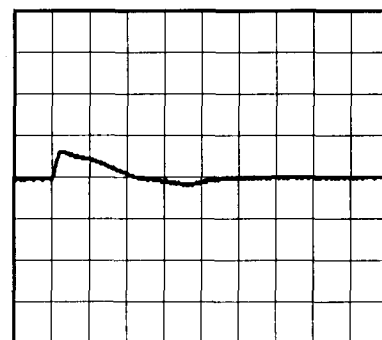
200µs/div

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

200mV/div



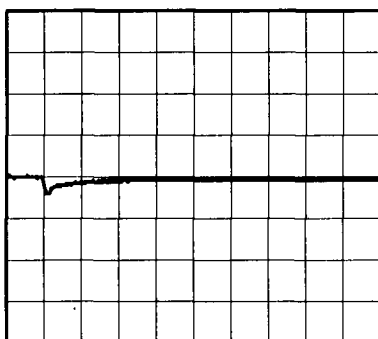
200µs/div



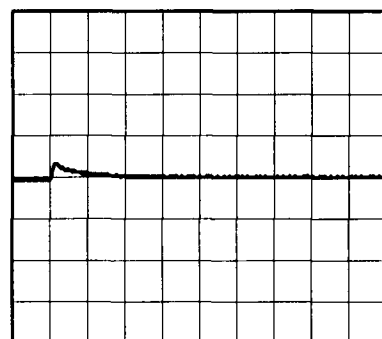
200µs/div

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

200mV/div



200µs/div



200µs/div

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Model		SUS10123R3/SUCS10123R3		Temperature Testing Circuitry	25°C Figure B																																						
Item		Ripple Voltage (by Load Current)																																									
Object		+3.3V2.6A																																									
1.Graph				2.Values																																							
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Input Volt.</div><div>9V</div></div><div><div>Input Volt.</div><div>18V</div></div></div><div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 9 [V]</th><th>Input Volt. 18 [V]</th></tr><tr><td>0.00</td><td>2</td><td>3</td></tr><tr><td>0.52</td><td>5</td><td>6</td></tr><tr><td>1.04</td><td>8</td><td>8</td></tr><tr><td>1.56</td><td>12</td><td>11</td></tr><tr><td>2.08</td><td>16</td><td>13</td></tr><tr><td>2.60</td><td>20</td><td>15</td></tr><tr><td>2.86</td><td>22</td><td>16</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 Voltage [mV]		Input Volt. 9 [V]	Input Volt. 18 [V]	0.00	2	3	0.52	5	6	1.04	8	8	1.56	12	11	2.08	16	13	2.60	20	15	2.86	22	16	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																										
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<p>Measured by 100 MHz Oscilloscope.</p> <p>Ripple Voltage is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																											
<div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><p>Ripple [mVp-p]</p><p>Fig.Complex Ripple Wave Form</p></div></div>																																											

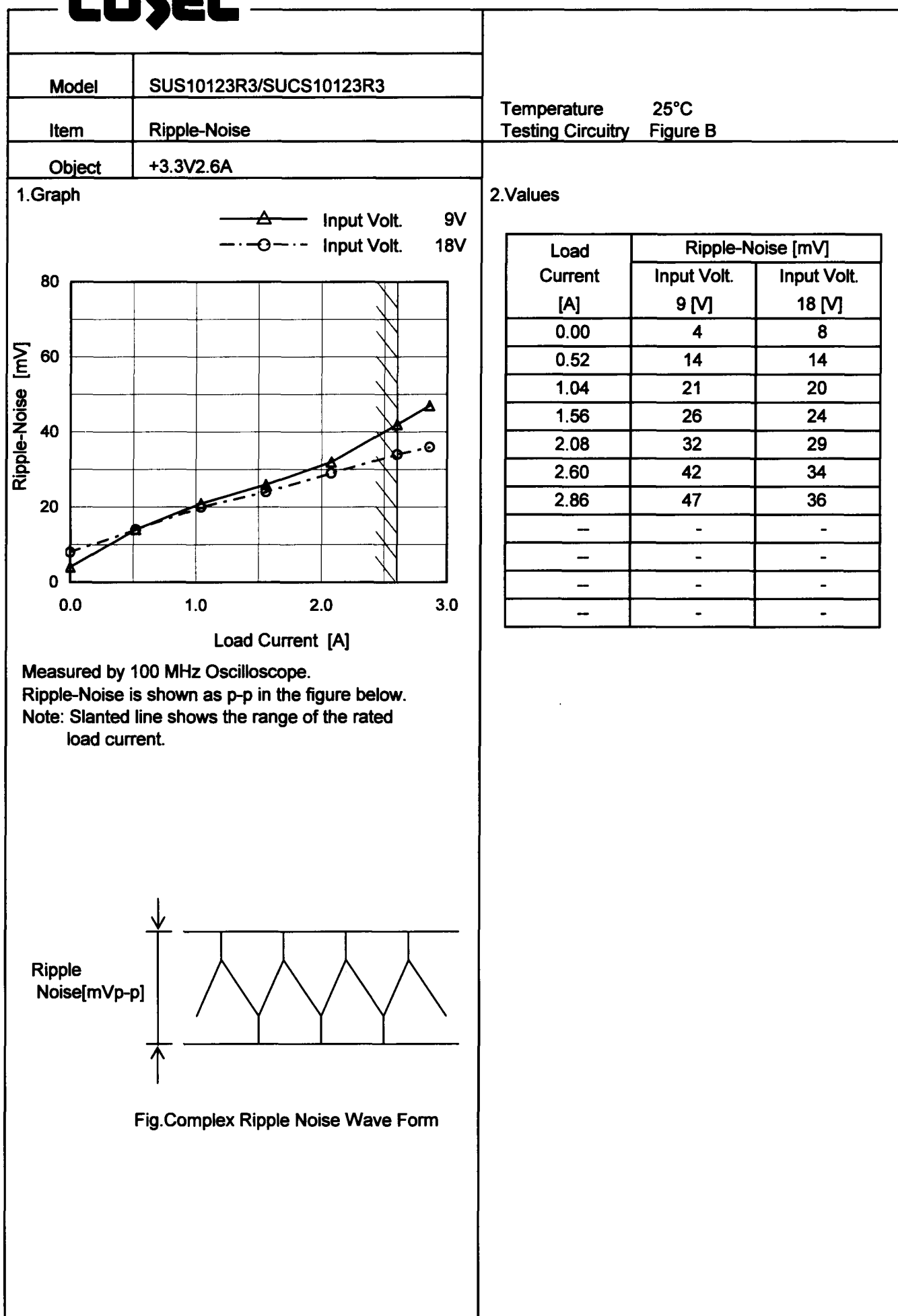
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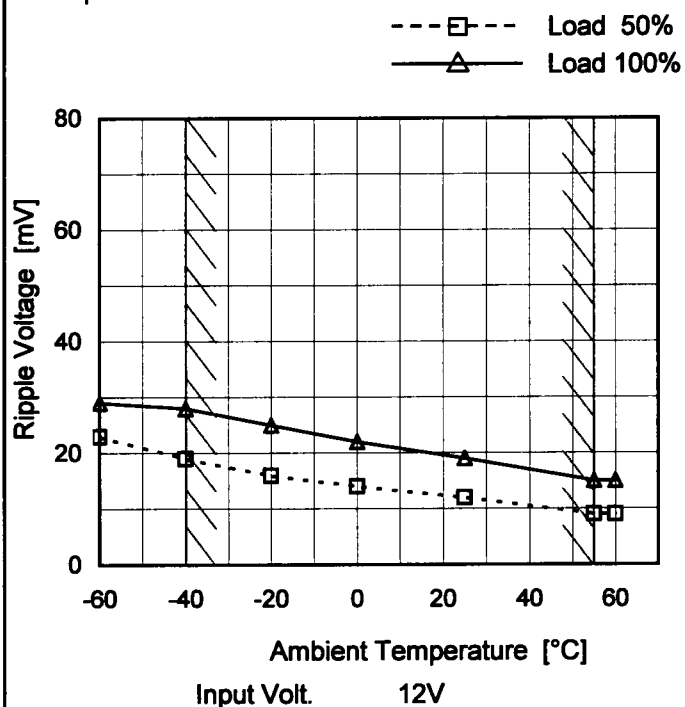
Model SUS10123R3/SUCS10123R3

Item Ripple Voltage (by Ambient Temp.)

Object +3.3V2.6A

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	23	29
-40	19	28
-20	16	25
0	14	22
25	12	19
55	9	15
60	9	15
—	—	—
—	—	—
—	—	—
—	—	—

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Model		SUS10123R3/SUCS10123R3																																																				
Item		Ambient Temperature Drift																																																				
Object		+3.3V2.6A																																																				
1.Graph		2.Values																																																				
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		Testing Circuitry Figure A
Model	SUS10123R3/SUCS10123R3	
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 : 9 - 18V

Load Current : 0 - 2.6A

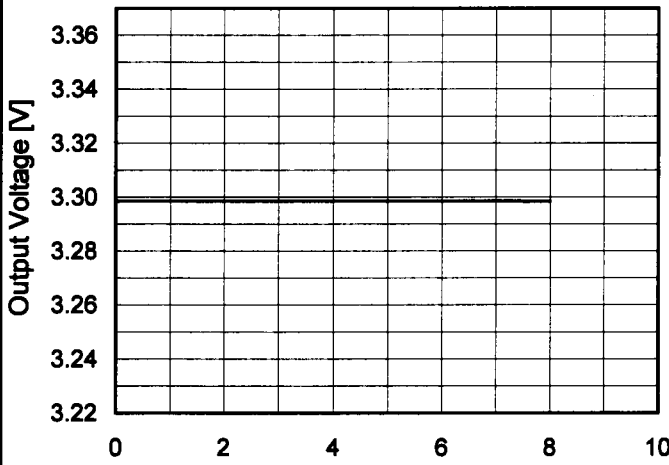
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

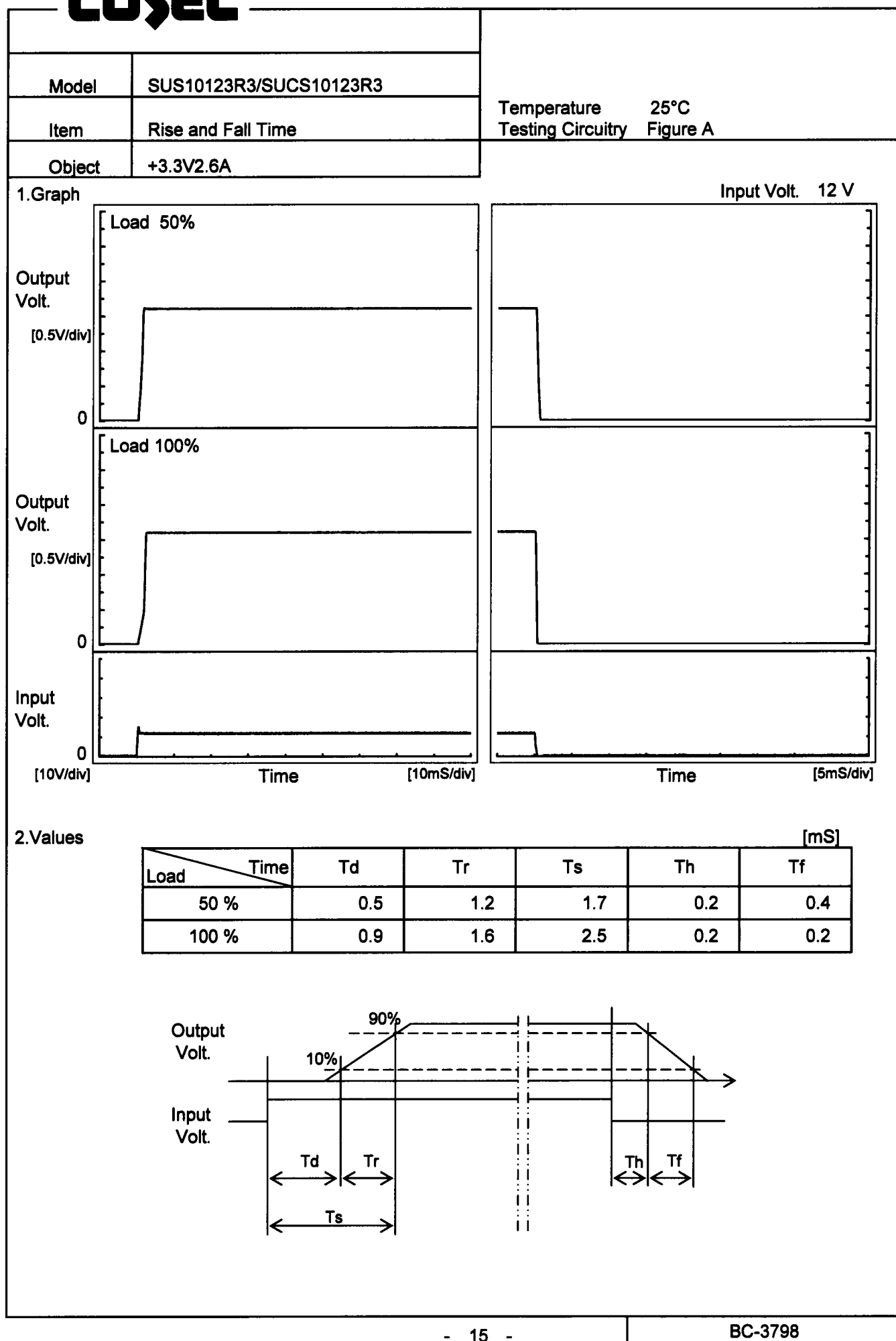
2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	9	0	3.305	±14	±0.4
Minimum Voltage	-40	9	2.6	3.277		

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Model	SUS10123R3/SUCS10123R3																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+3.3V2.6A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 12V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>3.298</td></tr><tr><td>0.5</td><td>3.299</td></tr><tr><td>1.0</td><td>3.299</td></tr><tr><td>2.0</td><td>3.299</td></tr><tr><td>3.0</td><td>3.299</td></tr><tr><td>4.0</td><td>3.299</td></tr><tr><td>5.0</td><td>3.299</td></tr><tr><td>6.0</td><td>3.299</td></tr><tr><td>7.0</td><td>3.299</td></tr><tr><td>8.0</td><td>3.299</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.298	0.5	3.299	1.0	3.299	2.0	3.299	3.0	3.299	4.0	3.299	5.0	3.299	6.0	3.299	7.0	3.299	8.0	3.299
Time since start [H]	Output Voltage [V]																								
0.0	3.298																								
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Model	SUS10123R3/SUCS10123R3																																								
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																							
Object	+3.3V2.6A																																								
1.Graph		2.Values																																							
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <table><thead><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-60</td><td>4.8</td><td>6.0</td></tr><tr><td>-40</td><td>5.1</td><td>6.3</td></tr><tr><td>-20</td><td>5.3</td><td>6.5</td></tr><tr><td>0</td><td>5.5</td><td>6.7</td></tr><tr><td>25</td><td>5.8</td><td>6.9</td></tr><tr><td>55</td><td>6.2</td><td>7.2</td></tr><tr><td>60</td><td>6.2</td><td>7.3</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]	Input Voltage [V]		Load 50%	Load 100%	-60	4.8	6.0	-40	5.1	6.3	-20	5.3	6.5	0	5.5	6.7	25	5.8	6.9	55	6.2	7.2	60	6.2	7.3	—	-	-	--	-	-	--	-	-	--	-	-		
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Note: Slanted line shows the range of the rated ambient temperature.																																									

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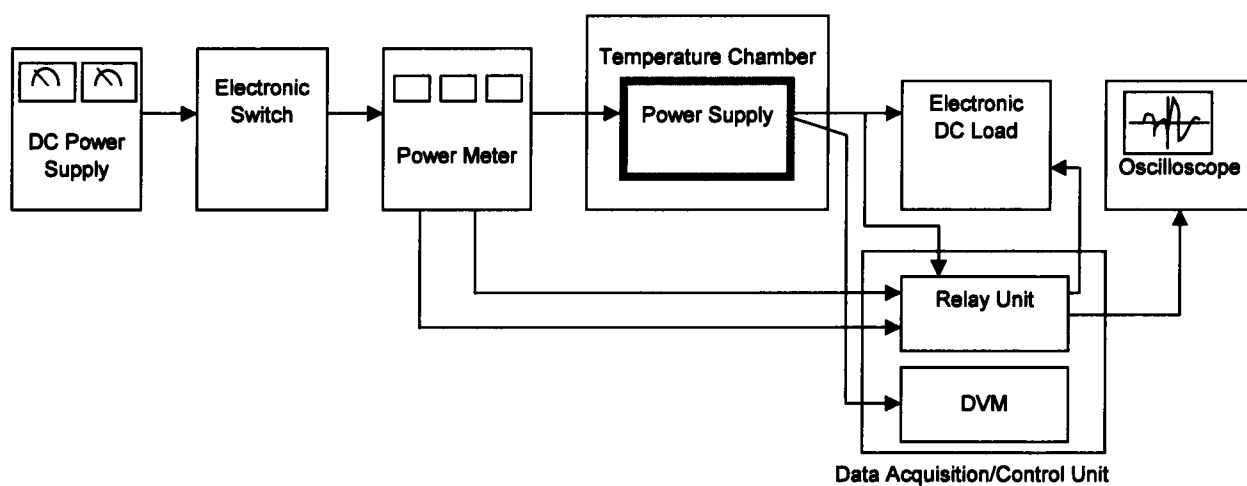


Figure A

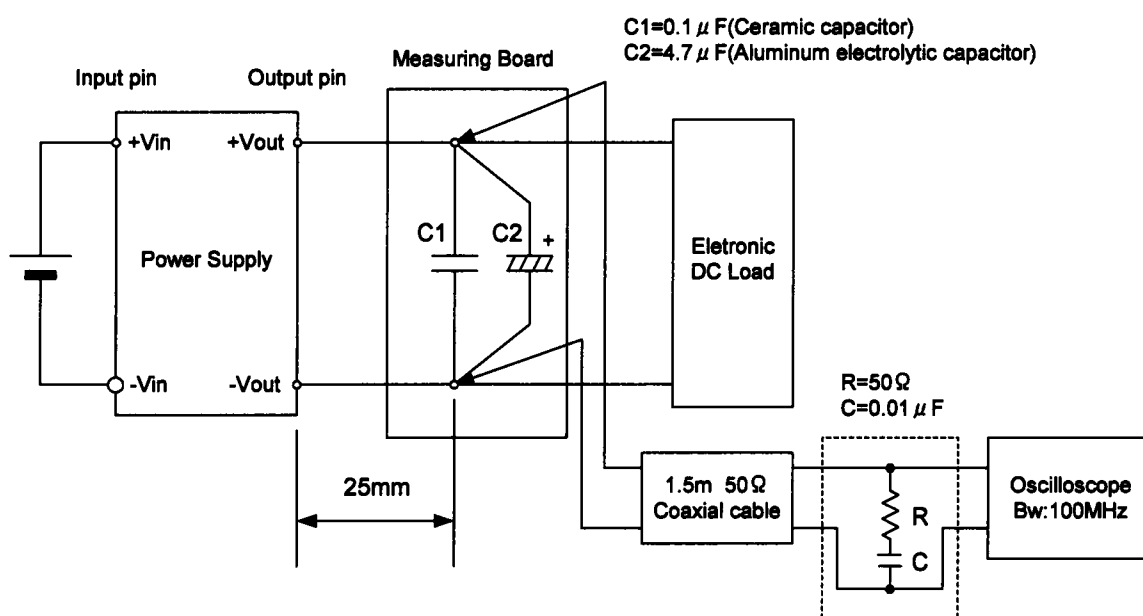


Figure B (Ripple and Ripple noise Characteristic)