

# TEST DATA OF SUS6483R3 SUCS6483R3

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		SUS6483R3/SUCS6483R3	
Item		Input Current (by Input Voltage)	
Object			

1.Graph

—△—

Load 100%

- - □ - -

Load 50%

- - ○ - -

Load 0%

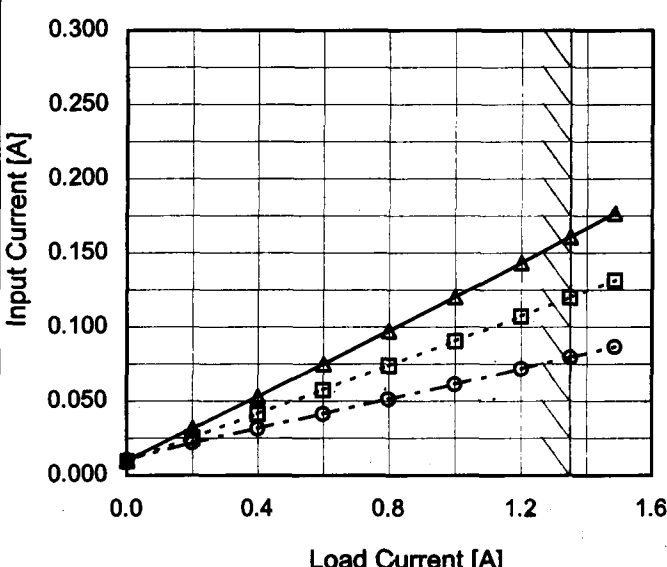
Input Voltage [V]	Load 100% [A]	Load 50% [A]	Load 0% [A]
0.0	0.000	0.000	0.000
8.0	0.000	0.000	0.000
16.0	0.000	0.000	0.000
24.0	0.001	0.001	0.001
31.4	0.011	0.097	0.188
33.0	0.011	0.092	0.177
36.0	0.010	0.083	0.160
40.0	0.010	0.075	0.143
48.0	0.009	0.064	0.119
60.0	0.010	0.053	0.097
70.0	0.010	0.047	0.085
76.0	0.011	0.045	0.079
80.0	0.011	0.044	0.076
-	-	-	-
-	-	-	-
-	-	-	-

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

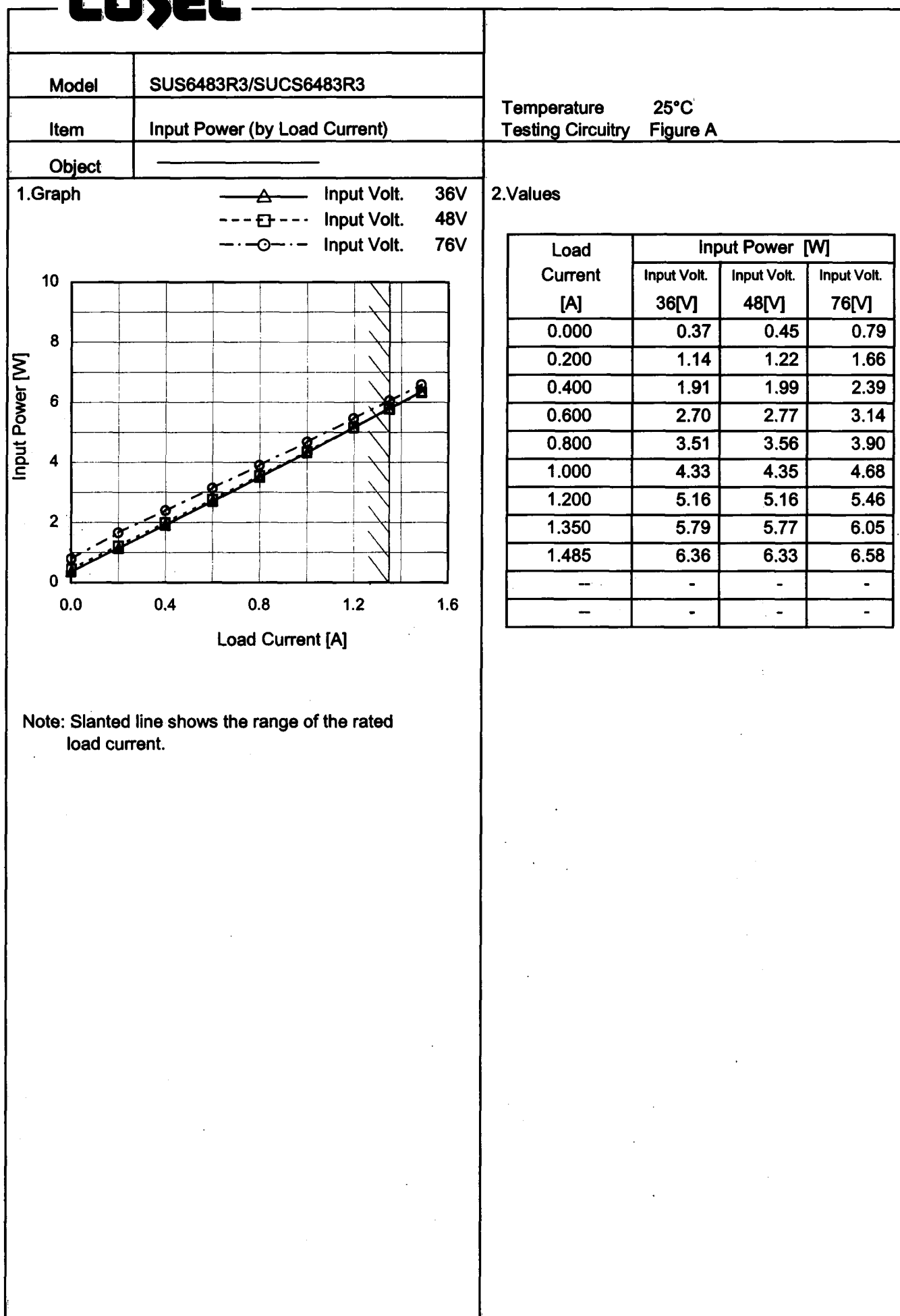
2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
8.0	0.000	0.000	0.000
16.0	0.000	0.000	0.000
24.0	0.001	0.001	0.001
31.4	0.011	0.097	0.188
33.0	0.011	0.092	0.177
36.0	0.010	0.083	0.160
40.0	0.010	0.075	0.143
48.0	0.009	0.064	0.119
60.0	0.010	0.053	0.097
70.0	0.010	0.047	0.085
76.0	0.011	0.045	0.079
80.0	0.011	0.044	0.076
-	-	-	-
-	-	-	-
-	-	-	-

# COSEL

Model		SUS6483R3/SUCS6483R3		
Item		Input Current (by Load Current)		
Object				
1.Graph				
		—△—	Input Volt. 36V	
		---□---	Input Volt. 48V	
		-○-	Input Volt. 76V	
				
2.Values				
		Input Current [A]		
Load Current [A]		Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.000		0.010	0.009	0.010
0.200		0.032	0.025	0.022
0.400		0.053	0.041	0.032
0.600		0.075	0.058	0.041
0.800		0.097	0.074	0.051
1.000		0.120	0.091	0.062
1.200		0.143	0.107	0.072
1.350		0.161	0.120	0.080
1.485		0.177	0.132	0.087
--		-	-	-
--		-	-	-
Note: Slanted line shows the range of the rated load current.				

# COSEL



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Model		SUS6483R3/SUCS6483R3		Temperature 25°C																																	
Item		Efficiency (by Input Voltage)		Testing Circuitry Figure A																																	
Object																																					
1.Graph				2.Values																																	
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div><div><div>---</div><div>△</div><div>---</div></div><div>Load 100%</div></div> <table><thead><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>33</td><td>74.4</td><td>76.6</td></tr><tr><td>36</td><td>74.7</td><td>77.4</td></tr><tr><td>40</td><td>74.4</td><td>77.7</td></tr><tr><td>48</td><td>73.1</td><td>77.6</td></tr><tr><td>55</td><td>71.6</td><td>77.1</td></tr><tr><td>60</td><td>70.3</td><td>76.5</td></tr><tr><td>70</td><td>67.3</td><td>75.1</td></tr><tr><td>76</td><td>65.2</td><td>74.0</td></tr><tr><td>80</td><td>63.8</td><td>73.3</td></tr></tbody></table>				Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	33	74.4	76.6	36	74.7	77.4	40	74.4	77.7	48	73.1	77.6	55	71.6	77.1	60	70.3	76.5	70	67.3	75.1	76	65.2	74.0	80	63.8	73.3		
Input Voltage [V]	Efficiency [%]																																				
	Load 50%	Load 100%																																			
33	74.4	76.6																																			
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40	74.4	77.7																																			
48	73.1	77.6																																			
55	71.6	77.1																																			
60	70.3	76.5																																			
70	67.3	75.1																																			
76	65.2	74.0																																			
80	63.8	73.3																																			
Note: Slanted line shows the range of the rated input voltage.																																					

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BC-3712

**COSEL**

Model		SUS6483R3/SUCS6483R3	
Item		Efficiency (by Load Current)	
Object			

1.Graph

—△—

Input Volt.

36V

---□---

Input Volt.

48V

---○---

Input Volt.

76V

Efficiency [%]

90

80

70

60

50

40

30

0.0

0.4

0.8

1.2

1.6

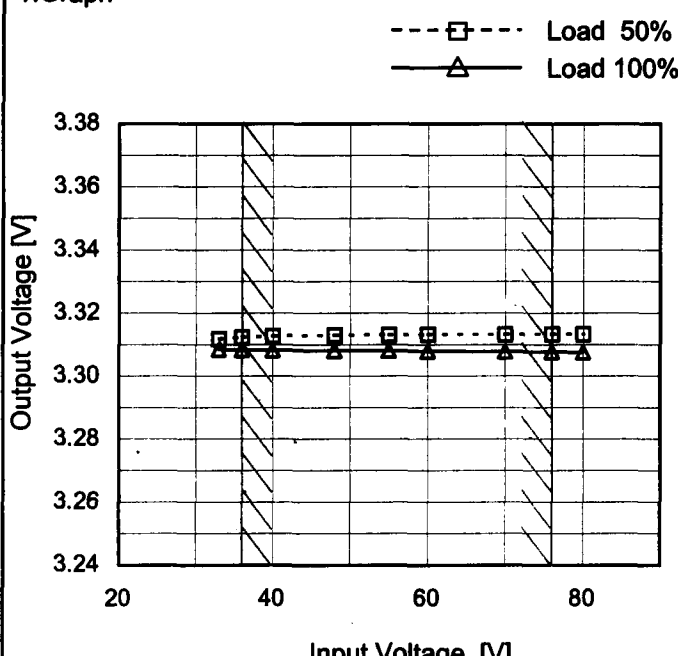
Load Current [A]

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.000	-	-	-
0.200	57.9	54.1	39.9
0.400	69.3	66.6	55.3
0.600	73.6	71.8	63.2
0.800	75.5	74.5	67.9
1.000	76.6	76.1	70.8
1.200	77.0	77.0	72.8
1.350	77.2	77.5	73.9
1.485	77.3	77.7	74.7
—	-	-	-
—	-	-	-

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

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Model	SUS6483R3/SUCS6483R3	Temperature 25°C Testing Circuitry Figure A																																	
Item	Line Regulation																																		
Object	+3.3V1.35A																																		
1.Graph		2.Values																																	
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div><p>Output Voltage [V]</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">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>33</td><td>3.312</td><td>3.309</td></tr><tr><td>36</td><td>3.312</td><td>3.308</td></tr><tr><td>40</td><td>3.313</td><td>3.308</td></tr><tr><td>48</td><td>3.313</td><td>3.308</td></tr><tr><td>55</td><td>3.313</td><td>3.308</td></tr><tr><td>60</td><td>3.313</td><td>3.308</td></tr><tr><td>70</td><td>3.313</td><td>3.308</td></tr><tr><td>76</td><td>3.313</td><td>3.308</td></tr><tr><td>80</td><td>3.313</td><td>3.308</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	33	3.312	3.309	36	3.312	3.308	40	3.313	3.308	48	3.313	3.308	55	3.313	3.308	60	3.313	3.308	70	3.313	3.308	76	3.313	3.308	80	3.313	3.308
Input Voltage [V]	Output Voltage [V]																																		
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70	3.313	3.308																																	
76	3.313	3.308																																	
80	3.313	3.308																																	

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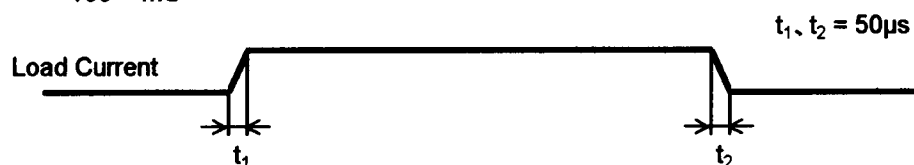
BC-3712

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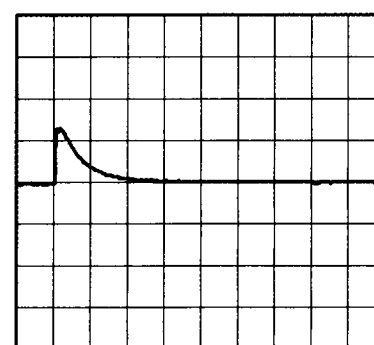
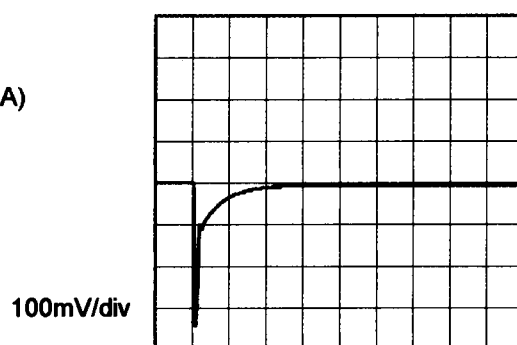
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Model	SUS6483R3/SUCS6483R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V1.35A		

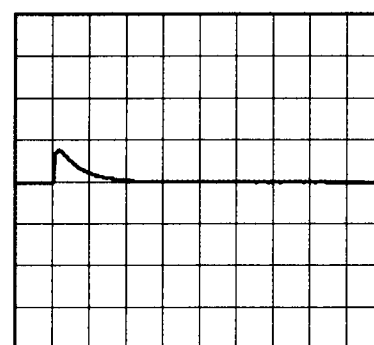
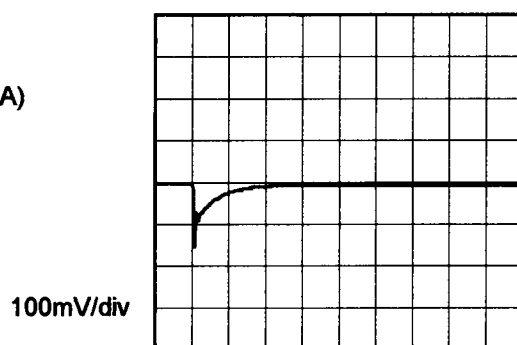
Input Volt. 48 V  
Cycle 100 mS



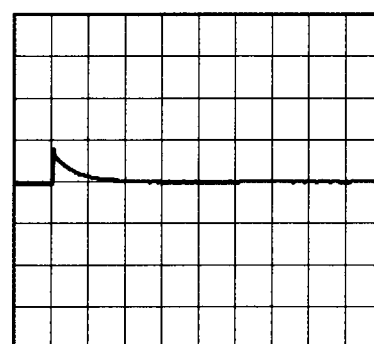
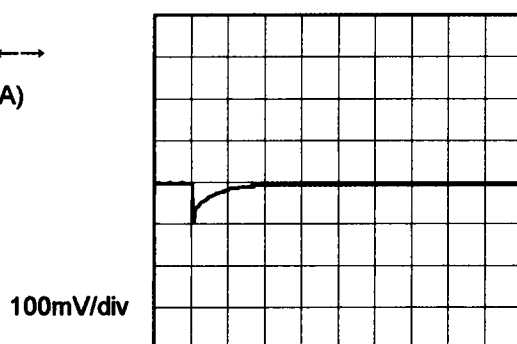
Min. Load (0A)  $\longleftrightarrow$   
Load 100% (1.35A)



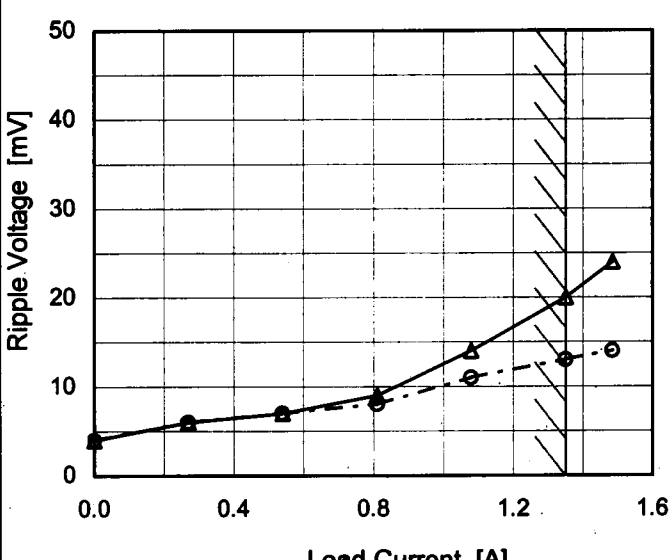
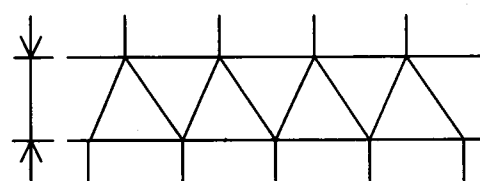
Min. Load (0A)  $\longleftrightarrow$   
Load 50% (0.675A)



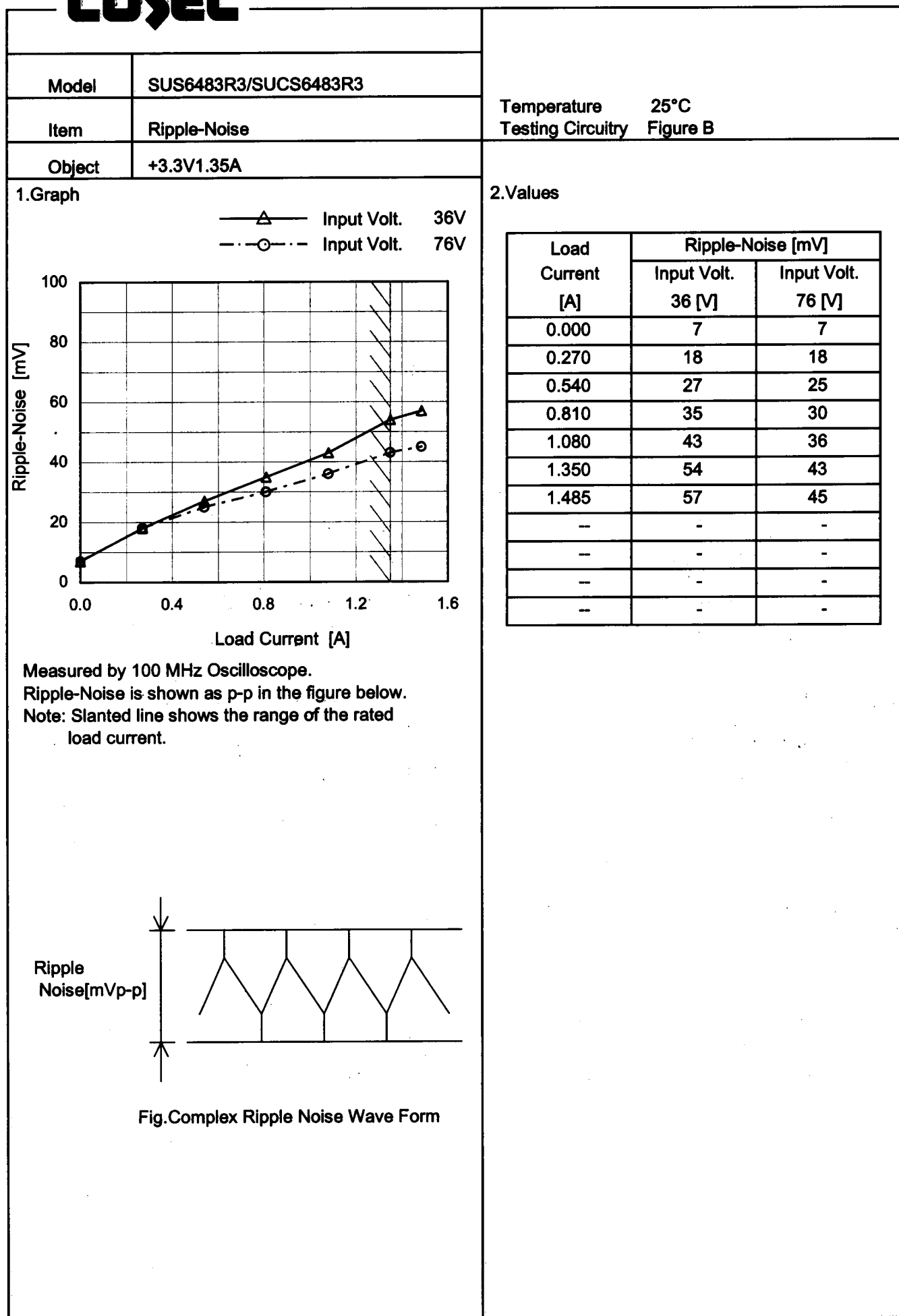
Load 50% (0.675A)  $\longleftrightarrow$   
Load 100% (1.35A)



# COSEL

Model		SUS6483R3/SUCS6483R3		Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure B																																							
Object		+3.3V1.35A																																									
1.Graph				2.Values																																							
<div><div><div><div></div><div>—△—</div><div>Input Volt. 36V</div></div><div><div></div><div>- -○- -</div><div>Input Volt. 76V</div></div></div><div></div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.000</td><td>4</td><td>4</td></tr><tr><td>0.270</td><td>6</td><td>6</td></tr><tr><td>0.540</td><td>7</td><td>7</td></tr><tr><td>0.810</td><td>9</td><td>8</td></tr><tr><td>1.080</td><td>14</td><td>11</td></tr><tr><td>1.350</td><td>20</td><td>13</td></tr><tr><td>1.485</td><td>24</td><td>14</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. 36 [V]	Input Volt. 76 [V]	0.000	4	4	0.270	6	6	0.540	7	7	0.810	9	8	1.080	14	11	1.350	20	13	1.485	24	14	—	-	-	—	-	-	—	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																										
	Input Volt. 36 [V]	Input Volt. 76 [V]																																									
0.000	4	4																																									
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1.485	24	14																																									
—	-	-																																									
—	-	-																																									
—	-	-																																									
--	-	-																																									
<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>																																											
<div><div><div>Ripple [mVp-p]</div><div></div></div><div>Fig.Complex Ripple Wave Form</div></div>																																											

# COSEL



**COSEL**

Model	SUS6483R3/SUCS6483R3																																								
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry    Figure B																																							
Object	+3.3V1.35A																																								
1.Graph		2.Values																																							
<div><div><div>---□---</div><div>△---</div></div><div>Load 50%</div><div>Load 100%</div></div> <p>Ripple Voltage [mV]</p> <p>Ambient Temperature [°C]</p> <p>Input Volt.    48V</p>		<table><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><tr><td>-60</td><td>10</td><td>22</td></tr><tr><td>-40</td><td>10</td><td>21</td></tr><tr><td>-20</td><td>10</td><td>20</td></tr><tr><td>0</td><td>9</td><td>18</td></tr><tr><td>25</td><td>8</td><td>16</td></tr><tr><td>55</td><td>8</td><td>14</td></tr><tr><td>60</td><td>8</td><td>14</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>		Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	10	22	-40	10	21	-20	10	20	0	9	18	25	8	16	55	8	14	60	8	14	—	-	-	—	-	-	—	-	-	—	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																								
	Load 50%	Load 100%																																							
-60	10	22																																							
-40	10	21																																							
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—	-	-																																							
—	-	-																																							
—	-	-																																							
—	-	-																																							
Measured by 100 MHz Oscilloscope.																																									
Note: Slanted line shows the range of the rated ambient temperature.																																									

### Testing Circuitry Figure A

	Input Volt.	36V
	Input Volt.	48V
	Input Volt.	76V



Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	3.322	3.323	3.323
-40	3.323	3.324	3.324
-20	3.322	3.322	3.322
0	3.319	3.318	3.318
25	3.312	3.311	3.311
55	3.302	3.301	3.300
60	3.300	3.298	3.297
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model		SUS6483R3/SUCS6483R3
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V1.35A	

### 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 : 36 - 76V

Load Current : 0 - 1.35A

\* 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]	Ratio [%]
Maximum Voltage	-40	76	0	3.329	±15	±0.5
Minimum Voltage	55	76	1.35	3.300		

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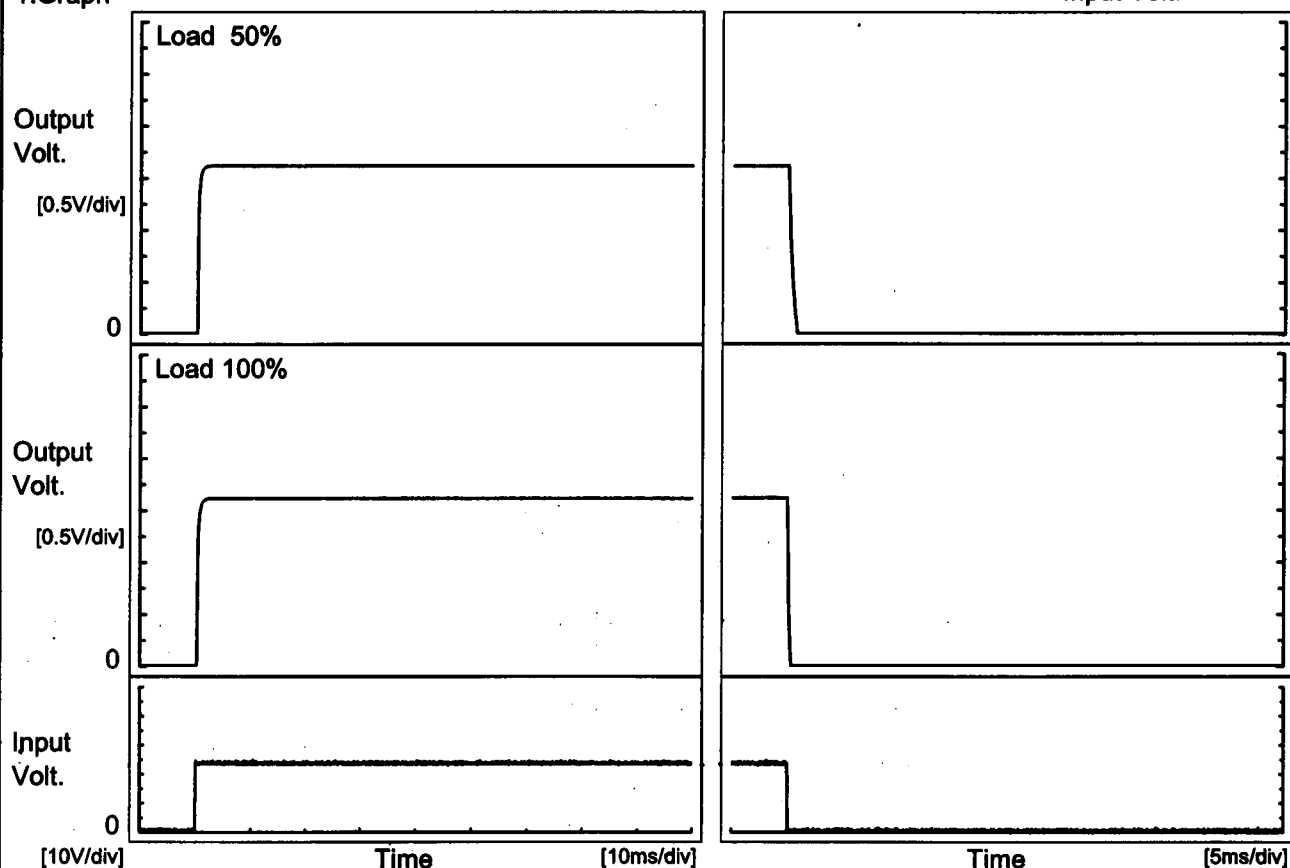
Model	SUS6483R3/SUCS6483R3																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+3.3V1.35A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><div><div>3.38</div><div>3.36</div><div>3.34</div><div>3.32</div><div>3.30</div><div>3.28</div><div>3.26</div><div>3.24</div></div><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>48V</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>3.313</td></tr><tr><td>0.5</td><td>3.310</td></tr><tr><td>1.0</td><td>3.310</td></tr><tr><td>2.0</td><td>3.310</td></tr><tr><td>3.0</td><td>3.310</td></tr><tr><td>4.0</td><td>3.310</td></tr><tr><td>5.0</td><td>3.310</td></tr><tr><td>6.0</td><td>3.310</td></tr><tr><td>7.0</td><td>3.310</td></tr><tr><td>8.0</td><td>3.310</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.313	0.5	3.310	1.0	3.310	2.0	3.310	3.0	3.310	4.0	3.310	5.0	3.310	6.0	3.310	7.0	3.310	8.0	3.310
Time since start [H]	Output Voltage [V]																								
0.0	3.313																								
0.5	3.310																								
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3.0	3.310																								
4.0	3.310																								
5.0	3.310																								
6.0	3.310																								
7.0	3.310																								
8.0	3.310																								

**COSEL**

Model	SUS6483R3/SUCS6483R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V1.35A		

## 1. Graph

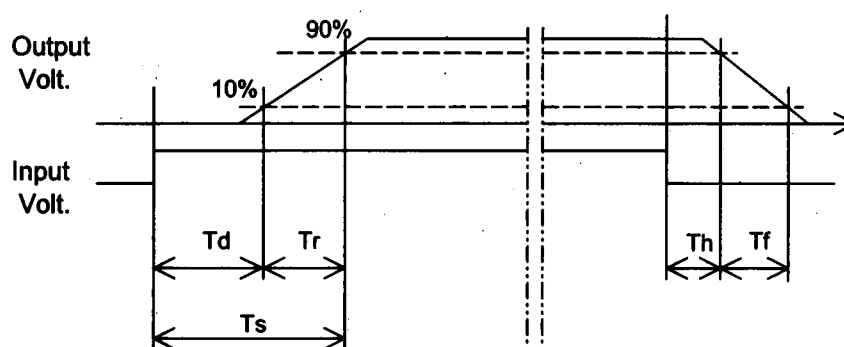
Input Volt. 48 V



## 2. Values

[ms]

Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.3	0.6	0.9	0.1	0.6
100 %		0.3	0.6	0.9	0.0	0.3



**COSEL**

Model	SUS6483R3/SUCS6483R3																																						
Item	Minimum Input Voltage for Regulated Output Voltage		Testing Circuitry Figure A																																				
Object	+3.3V1.35A																																						
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>Ambient Temperature [°C]</th><th>Load 50% [V]</th><th>Load 100% [V]</th></tr></thead><tbody><tr><td>-60</td><td>30.8</td><td>30.8</td></tr><tr><td>-40</td><td>30.4</td><td>30.5</td></tr><tr><td>-20</td><td>30.2</td><td>30.3</td></tr><tr><td>0</td><td>30.0</td><td>30.1</td></tr><tr><td>25</td><td>29.9</td><td>29.9</td></tr><tr><td>55</td><td>29.7</td><td>29.8</td></tr><tr><td>60</td><td>29.7</td><td>29.8</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> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>		Ambient Temperature [°C]	Load 50% [V]	Load 100% [V]	-60	30.8	30.8	-40	30.4	30.5	-20	30.2	30.3	0	30.0	30.1	25	29.9	29.9	55	29.7	29.8	60	29.7	29.8	--	-	-	--	-	-	--	-	-	--	-	-		
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Model	SUS6483R3/SUCS6483R3																																																									
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<div><div><div></div><div></div><div></div></div><div><div>Input Volt. 36V</div><div>Input Volt. 48V</div><div>Input Volt. 76V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>3.30</td><td>1.35</td><td>1.35</td><td>1.35</td></tr><tr><td>3.14</td><td>1.84</td><td>1.90</td><td>1.83</td></tr><tr><td>2.97</td><td>1.86</td><td>1.91</td><td>1.84</td></tr><tr><td>2.64</td><td>1.89</td><td>1.93</td><td>1.85</td></tr><tr><td>2.31</td><td>2.01</td><td>1.94</td><td>1.86</td></tr><tr><td>1.98</td><td>2.21</td><td>2.21</td><td>2.10</td></tr><tr><td>1.65</td><td>2.25</td><td>2.22</td><td>2.11</td></tr><tr><td>1.32</td><td>2.26</td><td>2.22</td><td>2.11</td></tr><tr><td>0.99</td><td>2.24</td><td>2.18</td><td>2.07</td></tr><tr><td>0.66</td><td>2.19</td><td>2.11</td><td>2.03</td></tr><tr><td>0.33</td><td>2.07</td><td>1.98</td><td>1.94</td></tr><tr><td>0.00</td><td>1.87</td><td>1.77</td><td>1.78</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	3.30	1.35	1.35	1.35	3.14	1.84	1.90	1.83	2.97	1.86	1.91	1.84	2.64	1.89	1.93	1.85	2.31	2.01	1.94	1.86	1.98	2.21	2.21	2.10	1.65	2.25	2.22	2.11	1.32	2.26	2.22	2.11	0.99	2.24	2.18	2.07	0.66	2.19	2.11	2.03	0.33	2.07	1.98	1.94	0.00	1.87	1.77	1.78
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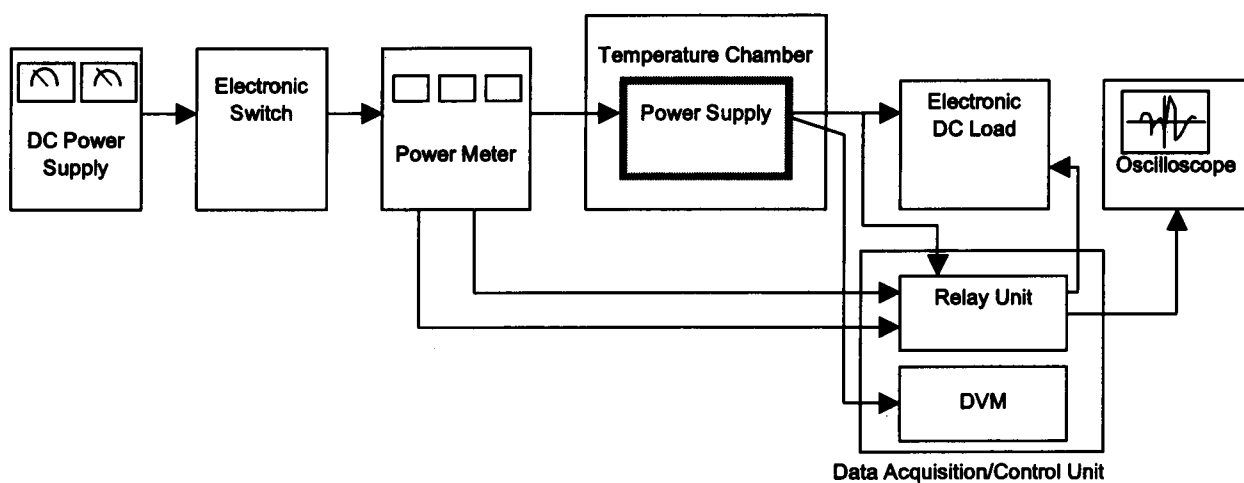


Figure A

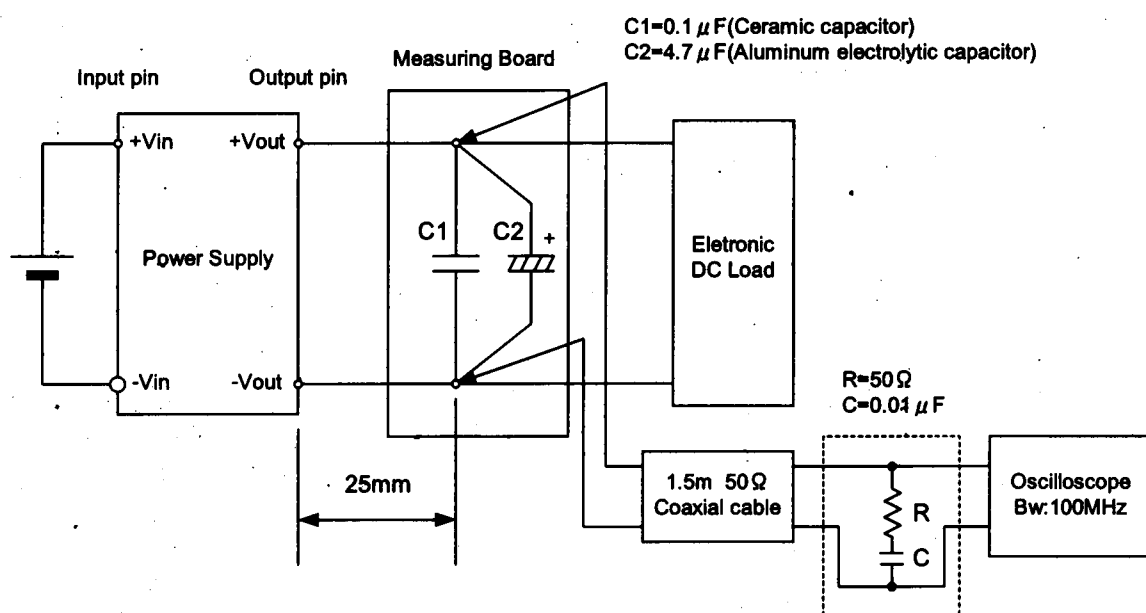


Figure B (Ripple and Ripple noise Characteristic)