



TEST DATA OF SUS3483R3

Regulated DC Power Supply
Mar 7, 2005

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COSEL CO.,LTD.

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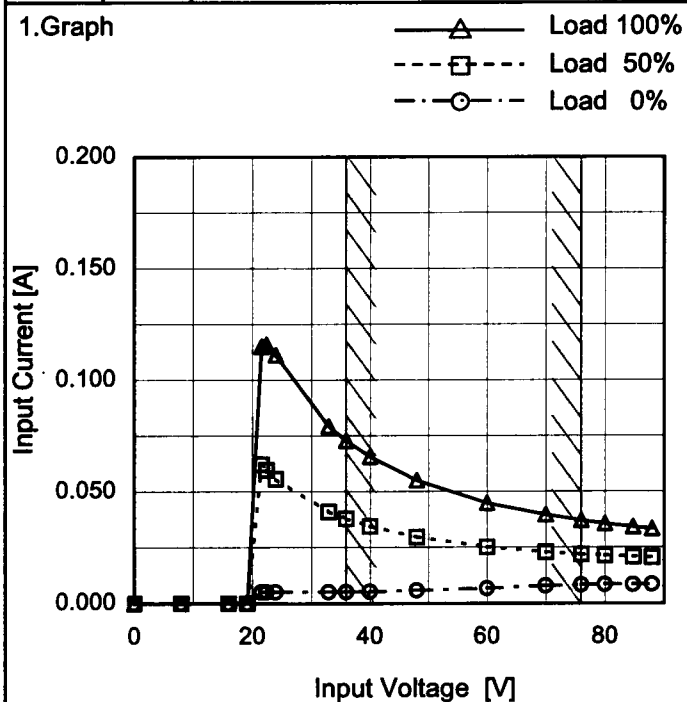
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Model SUS3483R3

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
8.0	0.000	0.000	0.000
16.0	0.000	0.000	0.000
19.2	0.000	0.000	0.000
21.6	0.005	0.062	0.115
22.4	0.005	0.060	0.116
24.0	0.005	0.056	0.111
33.0	0.005	0.041	0.079
36.0	0.005	0.038	0.073
40.0	0.005	0.035	0.066
48.0	0.006	0.030	0.055
60.0	0.007	0.025	0.045
70.0	0.008	0.023	0.040
76.0	0.008	0.022	0.037
80.0	0.008	0.021	0.036
84.8	0.008	0.021	0.034
88.0	0.009	0.021	0.033
--	-	-	-

Model

SUS3483R3

Item

Input Current (by Load Current)

Object

1.Graph

—△—

Input Volt.

36V

---□---

Input Volt.

48V

-·-○-·-

Input Volt.

76V

Input Current [A]

0.10

0.08

0.06

0.04

0.02

0.00

0.0

0.2

0.4

0.6

Load Current [A]

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.005	0.006	0.008
0.12	0.018	0.015	0.013
0.24	0.031	0.025	0.019
0.36	0.045	0.035	0.025
0.48	0.059	0.045	0.031
0.60	0.073	0.055	0.037
0.66	0.080	0.060	0.040
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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

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Model

SUS3483R3

Item

Input Power (by Load Current)

Temperature

25°C

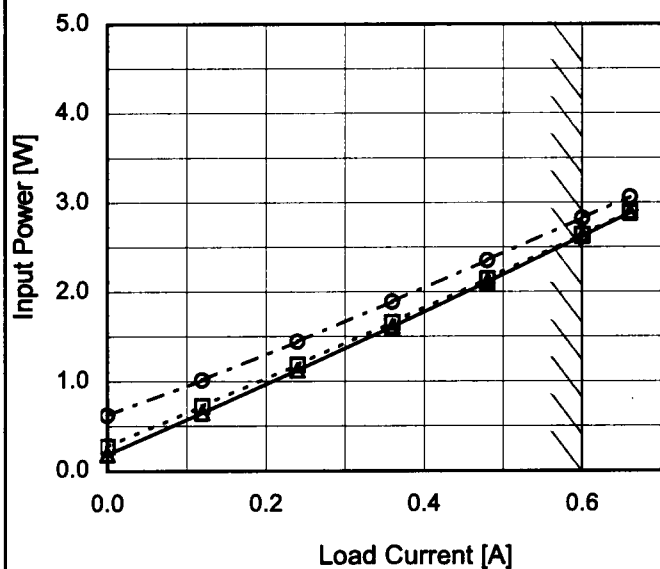
Testing Circuitry

Figure A

Object

1.Graph

—△— Input Volt. 36V
 - - - □ - - - Input Volt. 48V
 - · - ○ - · - Input Volt. 76V



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

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.18	0.27	0.62
0.12	0.65	0.72	1.01
0.24	1.12	1.19	1.45
0.36	1.61	1.66	1.89
0.48	2.11	2.15	2.35
0.60	2.62	2.64	2.82
0.66	2.88	2.89	3.06
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SUS3483R3																																
Item	Efficiency (by Input Voltage)	Temperature	25°C																														
		Testing Circuitry	Figure A																														
Object																																	
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>Input Voltage [V]</th><th>Load 50% Efficiency [%]</th><th>Load 100% Efficiency [%]</th></tr></thead><tbody><tr><td>30</td><td>73.3</td><td>74.9</td></tr><tr><td>36</td><td>72.4</td><td>75.3</td></tr><tr><td>40</td><td>71.5</td><td>75.3</td></tr><tr><td>48</td><td>69.4</td><td>74.8</td></tr><tr><td>55</td><td>67.3</td><td>74.0</td></tr><tr><td>60</td><td>65.5</td><td>73.2</td></tr><tr><td>70</td><td>61.6</td><td>71.3</td></tr><tr><td>76</td><td>59.1</td><td>69.9</td></tr><tr><td>80</td><td>57.5</td><td>69.0</td></tr></tbody></table>		Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]	30	73.3	74.9	36	72.4	75.3	40	71.5	75.3	48	69.4	74.8	55	67.3	74.0	60	65.5	73.2	70	61.6	71.3	76	59.1	69.9	80	57.5	69.0		
Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]																															
30	73.3	74.9																															
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76	59.1	69.9																															
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Note: Slanted line shows the range of the rated input voltage.																																	

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Model		SUS3483R3																																																				
Item		Efficiency (by Load Current)																																																				
Object																																																						
1.Graph		2.Values																																																				
<div><div><div><div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div>---□---</div><div>Input Volt.</div><div>48V</div></div><div><div>-○-</div><div>Input Volt.</div><div>76V</div></div></div><div><p>Efficiency [%]</p><p>Load Current [A]</p></div></div><div><p>Note: Slanted line shows the range of the rated load current.</p></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.12</td><td>60.9</td><td>54.6</td><td>39.0</td></tr><tr><td>0.24</td><td>70.3</td><td>66.6</td><td>54.6</td></tr><tr><td>0.36</td><td>73.5</td><td>71.3</td><td>62.6</td></tr><tr><td>0.48</td><td>74.8</td><td>73.5</td><td>67.1</td></tr><tr><td>0.60</td><td>75.3</td><td>74.7</td><td>69.9</td></tr><tr><td>0.66</td><td>75.3</td><td>75.1</td><td>70.9</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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.00	-	-	-	0.12	60.9	54.6	39.0	0.24	70.3	66.6	54.6	0.36	73.5	71.3	62.6	0.48	74.8	73.5	67.1	0.60	75.3	74.7	69.9	0.66	75.3	75.1	70.9	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Efficiency [%]																																																					
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																			
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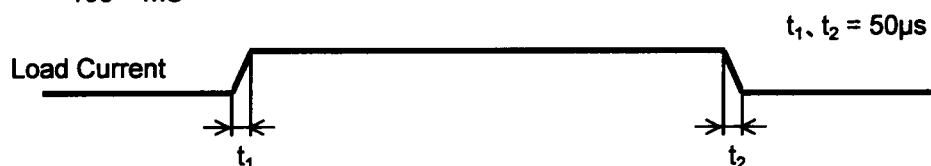
Model	SUS3483R3	Temperature 25°C Testing Circuitry Figure A																															
Item	Line Regulation																																
Object	+3.3V0.6A																																
1.Graph		2.Values																															
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <table><thead><tr><th>Input Voltage [V]</th><th>Output Voltage [V] Load 50%</th><th>Output Voltage [V] Load 100%</th></tr></thead><tbody><tr><td>30</td><td>3.292</td><td>3.291</td></tr><tr><td>36</td><td>3.292</td><td>3.291</td></tr><tr><td>40</td><td>3.292</td><td>3.290</td></tr><tr><td>48</td><td>3.292</td><td>3.290</td></tr><tr><td>55</td><td>3.292</td><td>3.290</td></tr><tr><td>60</td><td>3.292</td><td>3.290</td></tr><tr><td>70</td><td>3.292</td><td>3.290</td></tr><tr><td>76</td><td>3.292</td><td>3.290</td></tr><tr><td>80</td><td>3.292</td><td>3.290</td></tr></tbody></table> <p>Note: Slanted line shows the range of the rated input voltage.</p>		Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%	30	3.292	3.291	36	3.292	3.291	40	3.292	3.290	48	3.292	3.290	55	3.292	3.290	60	3.292	3.290	70	3.292	3.290	76	3.292	3.290	80	3.292	3.290		
Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%																															
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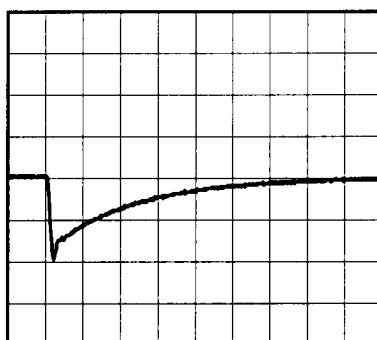
Model	SUS3483R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V0.6A		

Input Volt. 48 V
Cycle 100 mS

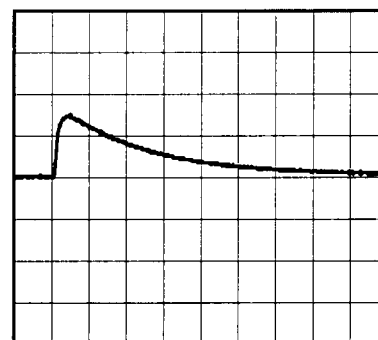


Min. Load (0A) \longleftrightarrow
Load 100% (0.6A)

100mV/div



200µs/div



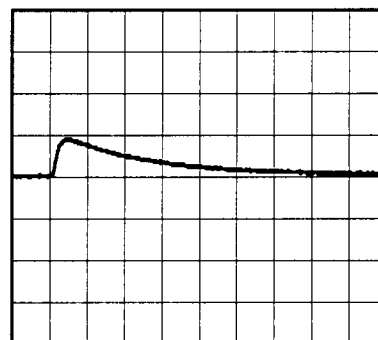
200µs/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.3A)

100mV/div



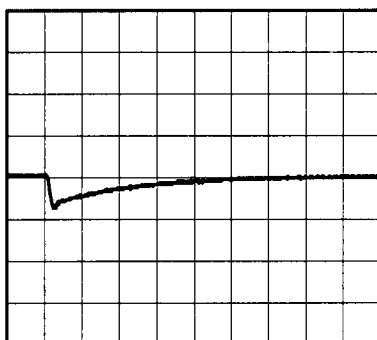
200µs/div



200µs/div

Load 50% (0.3A) \longleftrightarrow
Load 100% (0.6A)

100mV/div



200µs/div



200µs/div

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Model		SUS3483R3		Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure B																																							
Object		+3.3V0.6A																																									
1.Graph				2.Values																																							
<div><div><div>—△— Input Volt. 36V</div><div>- -○- - Input Volt. 76V</div></div><div>Ripple Voltage [mV]</div><div>Load Current [A]</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>0.00</td><td>2</td><td>2</td></tr><tr><td>0.12</td><td>2</td><td>2</td></tr><tr><td>0.24</td><td>4</td><td>3</td></tr><tr><td>0.36</td><td>7</td><td>4</td></tr><tr><td>0.48</td><td>9</td><td>6</td></tr><tr><td>0.60</td><td>13</td><td>6</td></tr><tr><td>0.66</td><td>16</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 Voltage [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0.00	2	2	0.12	2	2	0.24	4	3	0.36	7	4	0.48	9	6	0.60	13	6	0.66	16	9	--	-	-	--	-	-	--	-	-	--	-	-
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<div>Measured by 100 MHz Oscilloscope.</div> <div>Ripple Voltage is shown as p-p in the figure below.</div> <div>Note: Slanted line shows the range of the rated load current.</div>																																											
<div><div>Ripple [mVp-p]</div><div>Fig.Complex Ripple Wave Form</div></div>																																											

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Model	SUS3483R3	Temperature 25°C Testing Circuitry Figure B																																							
Item	Ripple-Noise																																								
Object	+3.3V0.6A																																								
1.Graph		2.Values																																							
<div><div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div>- - ○ - -</div><div>Input Volt.</div><div>76V</div></div></div> <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. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.00</td><td>5</td><td>13</td></tr><tr><td>0.12</td><td>10</td><td>12</td></tr><tr><td>0.24</td><td>17</td><td>14</td></tr><tr><td>0.36</td><td>24</td><td>17</td></tr><tr><td>0.48</td><td>30</td><td>22</td></tr><tr><td>0.60</td><td>36</td><td>25</td></tr><tr><td>0.66</td><td>39</td><td>27</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. 36 [V]	Input Volt. 76 [V]	0.00	5	13	0.12	10	12	0.24	17	14	0.36	24	17	0.48	30	22	0.60	36	25	0.66	39	27	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
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<p>Fig.Complex Ripple Noise Wave Form</p>																																									

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Model		SUS3483R3	
Item		Ripple Voltage (by Ambient Temp.)	
Object		+3.3V0.6A	
1.Graph		2.Values	

□

Load 50%

—

△

—

Load 100%

Ripple Voltage [mV]

Ambient Temperature [°C]

Input Volt. 48V

Measured by 100 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	12	18
-40	10	17
-20	10	16
0	9	15
25	8	13
55	7	10
60	7	10
—	-	-
—	-	-
—	-	-
—	-	-

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Model		SUS3483R3																																																				
Item		Ambient Temperature Drift																																																				
Object		+3.3V0.6A																																																				
1.Graph		2.Values																																																				
<div><div><div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div>---□---</div><div>Input Volt.</div><div>48V</div></div><div><div>---○---</div><div>Input Volt.</div><div>76V</div></div></div><p>Output Voltage [V]</p><p>Ambient Temperature [°C]</p><p>Load 100%</p></div>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>-60</td><td>3.289</td><td>3.290</td><td>3.290</td></tr><tr><td>-40</td><td>3.293</td><td>3.293</td><td>3.293</td></tr><tr><td>-20</td><td>3.294</td><td>3.294</td><td>3.294</td></tr><tr><td>0</td><td>3.294</td><td>3.294</td><td>3.294</td></tr><tr><td>25</td><td>3.292</td><td>3.292</td><td>3.291</td></tr><tr><td>55</td><td>3.286</td><td>3.286</td><td>3.286</td></tr><tr><td>60</td><td>3.285</td><td>3.285</td><td>3.285</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>		Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	-60	3.289	3.290	3.290	-40	3.293	3.293	3.293	-20	3.294	3.294	3.294	0	3.294	3.294	3.294	25	3.292	3.292	3.291	55	3.286	3.286	3.286	60	3.285	3.285	3.285	—	-	-	-	—	-	-	-	—	-	-	-	—	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																					
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—	-	-	-																																																			
—	-	-	-																																																			
Note: Slanted line shows the range of the rated ambient temperature.																																																						



		Testing Circuitry Figure A
Model	SUS3483R3	
Item	Output Voltage Accuracy	
Object	+3.3V0.6A	

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 : 36 - 76V

Load Current : 0 - 0.6A

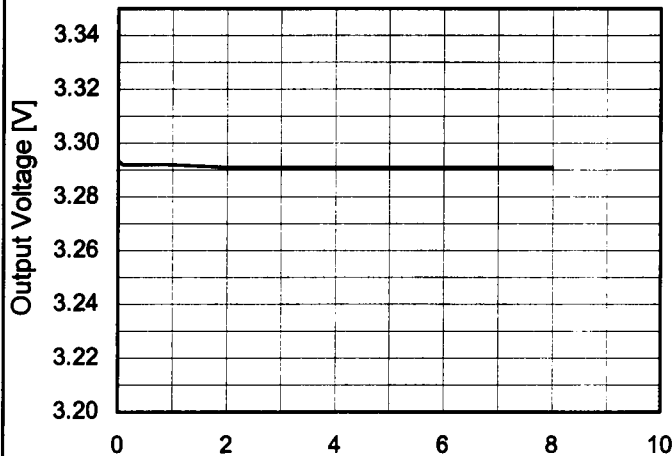
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* 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	0	76	0	3.297	±6	±0.2
Minimum Voltage	55	76	0.6	3.286		

COSEL

Model	SUS3483R3	Temperature 25°C Testing Circuitry Figure A																							
Item	Time Lapse Drift																								
Object	+3.3V0.6A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 48V Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>3.294</td></tr><tr><td>0.5</td><td>3.292</td></tr><tr><td>1.0</td><td>3.292</td></tr><tr><td>2.0</td><td>3.291</td></tr><tr><td>3.0</td><td>3.291</td></tr><tr><td>4.0</td><td>3.291</td></tr><tr><td>5.0</td><td>3.291</td></tr><tr><td>6.0</td><td>3.291</td></tr><tr><td>7.0</td><td>3.291</td></tr><tr><td>8.0</td><td>3.291</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.294	0.5	3.292	1.0	3.292	2.0	3.291	3.0	3.291	4.0	3.291	5.0	3.291	6.0	3.291	7.0	3.291	8.0	3.291
Time since start [H]	Output Voltage [V]																								
0.0	3.294																								
0.5	3.292																								
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3.0	3.291																								
4.0	3.291																								
5.0	3.291																								
6.0	3.291																								
7.0	3.291																								
8.0	3.291																								

COSEL

Model

SUS3483R3

Item

Rise and Fall Time

Temperature

25°C

Testing Circuitry

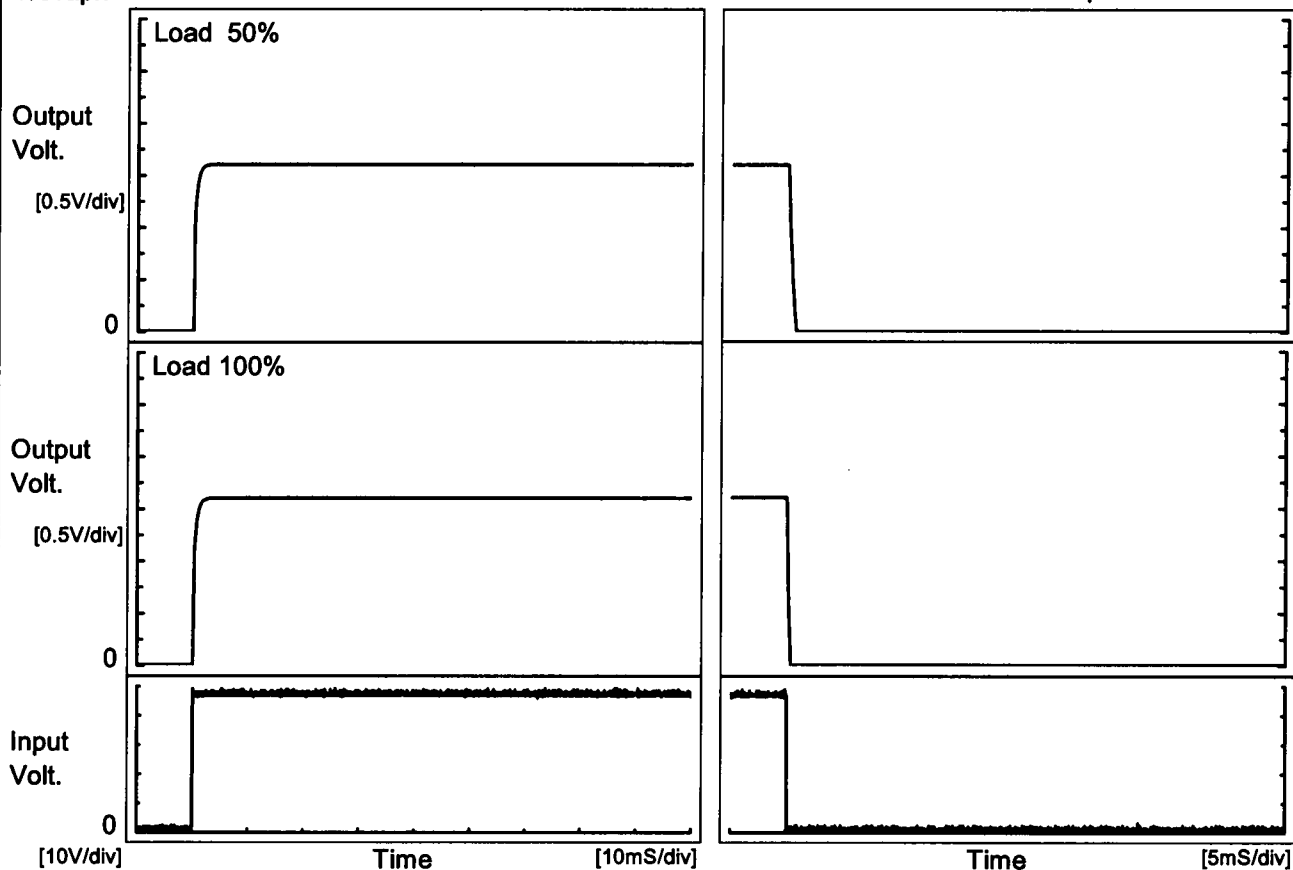
Figure A

Object

+3.3V0.6A

1.Graph

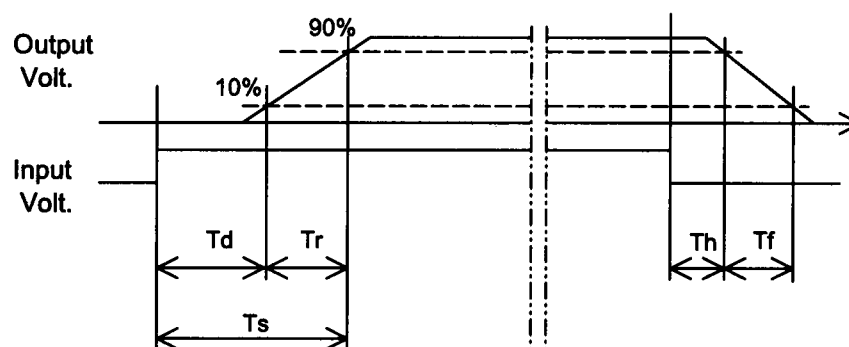
Input Volt. 48 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	1.0	1.1	0.1	0.6
100 %	0.1	1.1	1.2	0.1	0.3



COSEL

Model		SUS3483R3	
Item		Minimum Input Voltage for Regulated Output Voltage	
Object		+3.3V0.6A	
1.Graph		2.Values	

COSEL

Model	SUS3483R3																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
Object	+3.3V0.6A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<div><div><div></div>Input Volt. 36V</div><div><div></div>Input Volt. 48V</div><div><div></div>Input Volt. 76V</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>0.60</td><td>0.60</td><td>0.60</td></tr><tr><td>3.14</td><td>0.89</td><td>0.96</td><td>0.92</td></tr><tr><td>2.97</td><td>0.91</td><td>0.98</td><td>0.93</td></tr><tr><td>2.64</td><td>0.96</td><td>1.01</td><td>0.95</td></tr><tr><td>2.31</td><td>1.00</td><td>1.05</td><td>0.97</td></tr><tr><td>1.98</td><td>1.05</td><td>1.08</td><td>0.99</td></tr><tr><td>1.65</td><td>1.09</td><td>1.11</td><td>1.00</td></tr><tr><td>1.32</td><td>1.12</td><td>1.12</td><td>1.00</td></tr><tr><td>0.99</td><td>1.14</td><td>1.11</td><td>0.97</td></tr><tr><td>0.66</td><td>1.11</td><td>1.06</td><td>0.93</td></tr><tr><td>0.33</td><td>1.06</td><td>0.98</td><td>0.86</td></tr><tr><td>0.00</td><td>0.99</td><td>0.94</td><td>0.85</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	3.30	0.60	0.60	0.60	3.14	0.89	0.96	0.92	2.97	0.91	0.98	0.93	2.64	0.96	1.01	0.95	2.31	1.00	1.05	0.97	1.98	1.05	1.08	0.99	1.65	1.09	1.11	1.00	1.32	1.12	1.12	1.00	0.99	1.14	1.11	0.97	0.66	1.11	1.06	0.93	0.33	1.06	0.98	0.86	0.00	0.99	0.94	0.85
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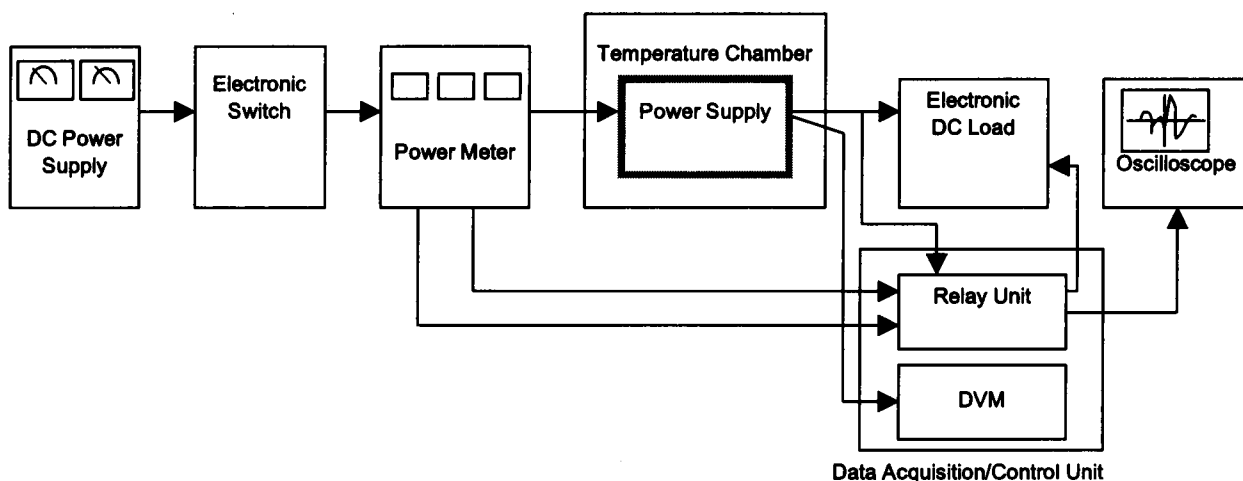


Figure A

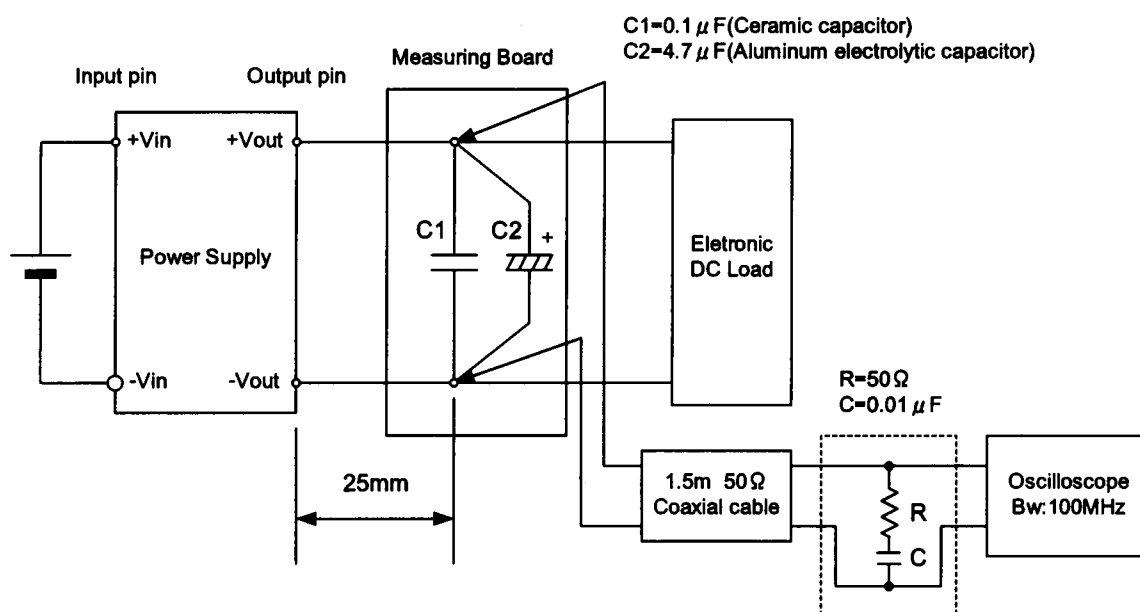


Figure B (Ripple and Ripple noise Characteristic)