



TEST DATA OF SUS10243R3 SUCS10243R3

Regulated DC Power Supply
Mar 28, 2005

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COSEL CO.,LTD.

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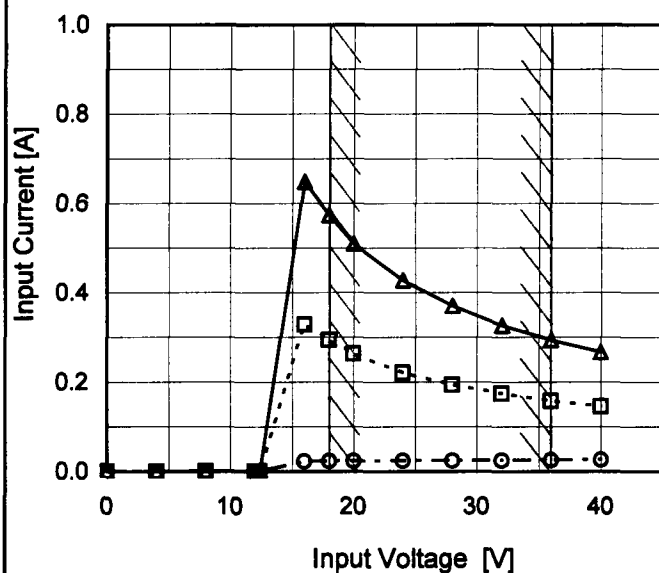
Model SUS10243R3/SUCS10243R3

Item Input Current (by Input Voltage)

Object _____

1. Graph

—△— Load 100%
 ---□--- Load 50%
 -·-○-·- Load 0%



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

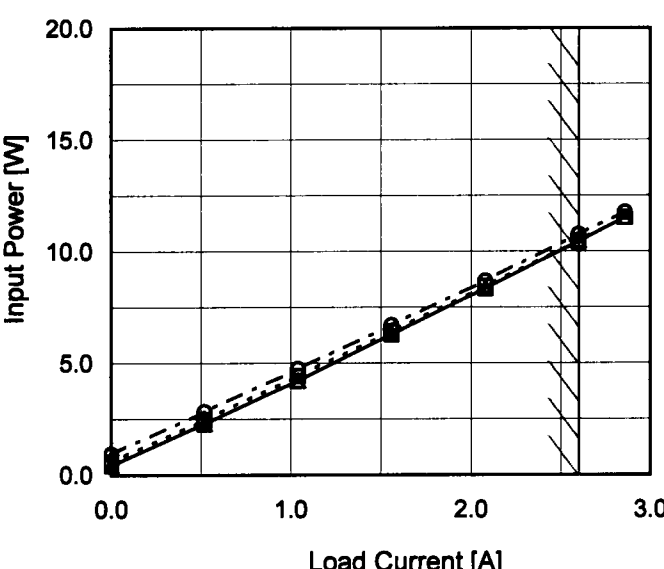
Temperature 25°C
 Testing Circuitry Figure A

2. Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
4.0	0.000	0.000	0.000
8.0	0.001	0.001	0.001
12.0	0.001	0.001	0.001
12.4	0.001	0.001	0.001
16.0	0.023	0.329	0.648
18.0	0.024	0.294	0.574
20.0	0.024	0.264	0.510
24.0	0.024	0.222	0.428
28.0	0.025	0.194	0.371
32.0	0.025	0.175	0.327
36.0	0.026	0.158	0.294
40.0	0.027	0.146	0.268
--	-	-	-
--	-	-	-
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Model		SUS10243R3/SUCS10243R3		Temperature 25°C																																																				
Item		Input Power (by Load Current)		Testing Circuitry Figure A																																																				
Object																																																								
1.Graph		<div><div><div>—△—</div>Input Volt. 18V</div><div><div>---□---</div>Input Volt. 24V</div><div><div>-·-○-·-</div>Input Volt. 36V</div></div> 																																																						
				2.Values																																																				
				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 18[V]</th><th>Input Volt. 24[V]</th><th>Input Volt. 36[V]</th></tr><tr><td>0.00</td><td>0.43</td><td>0.59</td><td>0.94</td></tr><tr><td>0.52</td><td>2.31</td><td>2.48</td><td>2.83</td></tr><tr><td>1.04</td><td>4.23</td><td>4.42</td><td>4.74</td></tr><tr><td>1.56</td><td>6.30</td><td>6.41</td><td>6.69</td></tr><tr><td>2.08</td><td>8.35</td><td>8.43</td><td>8.68</td></tr><tr><td>2.60</td><td>10.44</td><td>10.46</td><td>10.76</td></tr><tr><td>2.86</td><td>11.53</td><td>11.51</td><td>11.76</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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.00	0.43	0.59	0.94	0.52	2.31	2.48	2.83	1.04	4.23	4.42	4.74	1.56	6.30	6.41	6.69	2.08	8.35	8.43	8.68	2.60	10.44	10.46	10.76	2.86	11.53	11.51	11.76	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Note: Slanted line shows the range of the rated load current.

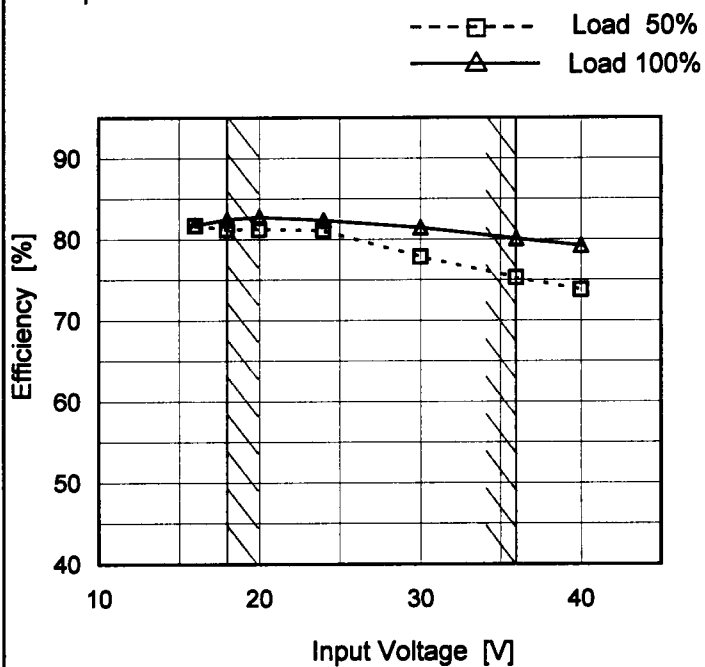
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Model SUS10243R3/SUCS10243R3

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%
16	81.7	81.8
18	81.2	82.5
20	81.2	82.7
24	81.1	82.4
30	77.9	81.4
36	75.3	80.1
40	73.8	79.2
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--	-	-

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Model SUS10243R3/SUCS10243R3

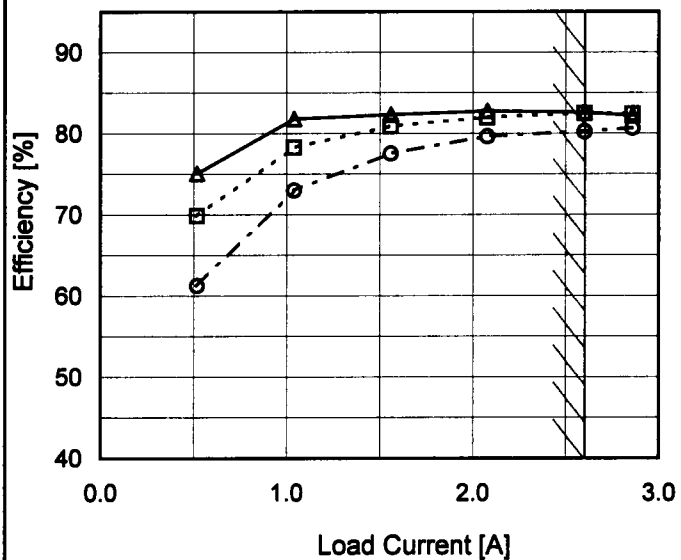
Item Efficiency (by Load Current)

Object

Temperature 25°C
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 18V
 ---□--- Input Volt. 24V
 ---○--- Input Volt. 36V



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

2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-	-	-
0.52	75.1	69.9	61.2
1.04	81.8	78.3	73.0
1.56	82.3	80.9	77.5
2.08	82.7	82.0	79.6
2.60	82.6	82.5	80.2
2.86	82.2	82.4	80.7
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

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Model	SUS10243R3/SUCS10243R3	Temperature 25°C Testing Circuitry Figure A																															
Item	Line Regulation																																
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>Input Voltage [V]</th><th>Output Voltage [V] Load 50%</th><th>Output Voltage [V] Load 100%</th></tr></thead><tbody><tr><td>16</td><td>3.308</td><td>3.298</td></tr><tr><td>18</td><td>3.308</td><td>3.299</td></tr><tr><td>20</td><td>3.308</td><td>3.300</td></tr><tr><td>24</td><td>3.308</td><td>3.301</td></tr><tr><td>30</td><td>3.308</td><td>3.302</td></tr><tr><td>36</td><td>3.308</td><td>3.302</td></tr><tr><td>40</td><td>3.308</td><td>3.303</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>		Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%	16	3.308	3.298	18	3.308	3.299	20	3.308	3.300	24	3.308	3.301	30	3.308	3.302	36	3.308	3.302	40	3.308	3.303	--	-	-	--	-	-		
Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%																															
16	3.308	3.298																															
18	3.308	3.299																															
20	3.308	3.300																															
24	3.308	3.301																															
30	3.308	3.302																															
36	3.308	3.302																															
40	3.308	3.303																															
--	-	-																															
--	-	-																															
Note: Slanted line shows the range of the rated input voltage.																																	

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Model SUS10243R3/SUCS10243R3

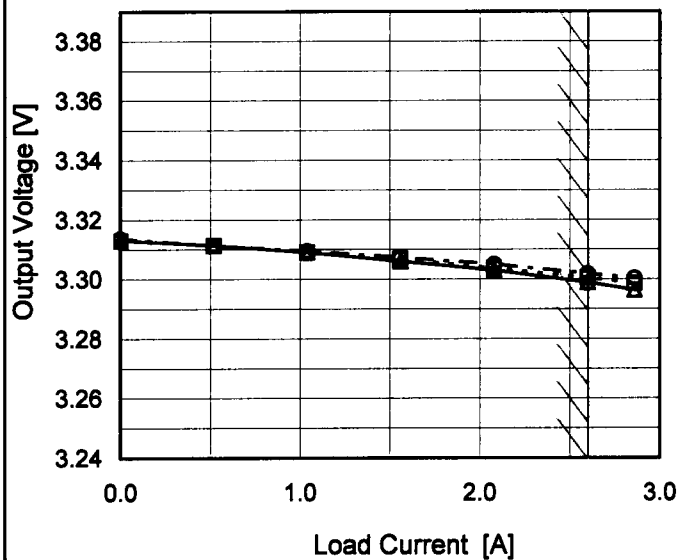
Item Load Regulation

Object +3.3V2.6A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 18V
---□--- Input Volt. 24V
---○--- Input Volt. 36V



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

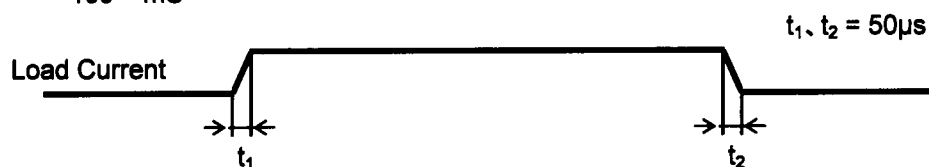
2. Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	3.313	3.313	3.314
0.52	3.311	3.311	3.311
1.04	3.309	3.309	3.310
1.56	3.306	3.307	3.307
2.08	3.303	3.304	3.305
2.60	3.299	3.300	3.302
2.86	3.296	3.299	3.300
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



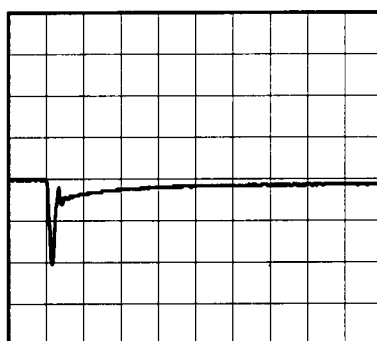
Model	SUS10243R3/SUCS10243R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V2.6A		

Input Volt. 24 V
Cycle 100 mS

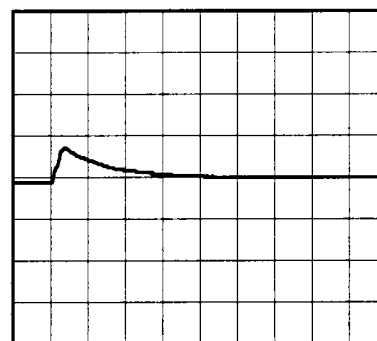


Min. Load (0A) \longleftrightarrow
Load 100% (2.6A)

200mV/div



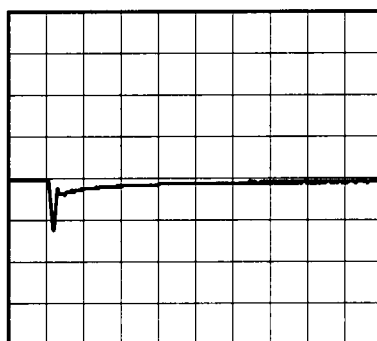
200µs/div



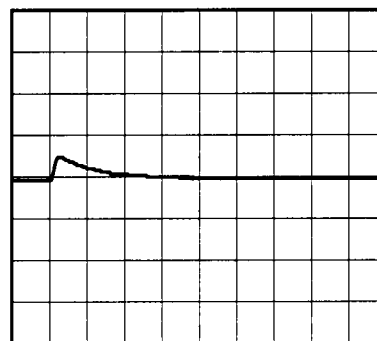
200µs/div

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

200mV/div



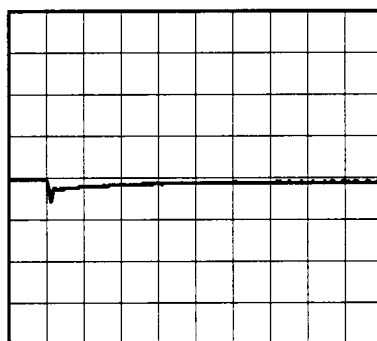
200µs/div



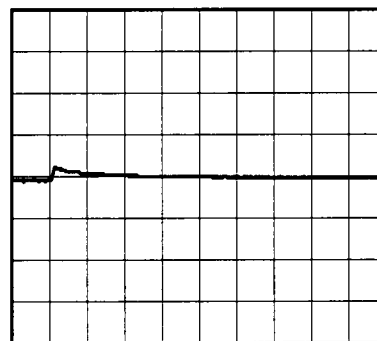
200µs/div

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

200mV/div



200µs/div



200µs/div

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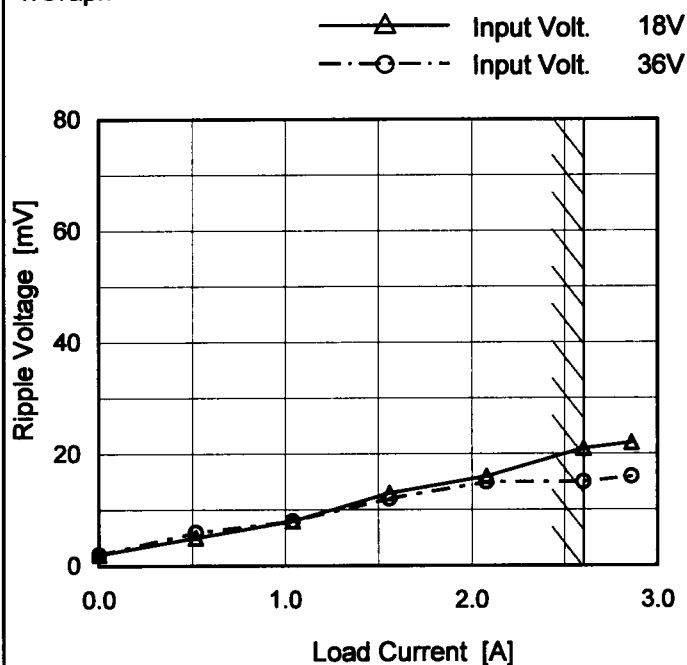
Model SUS10243R3/SUCS10243R3

Item Ripple Voltage (by Load Current)

Object +3.3V2.6A

Temperature 25°C
Testing Circuitry Figure B

1. Graph



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.

Ripple [mVp-p]

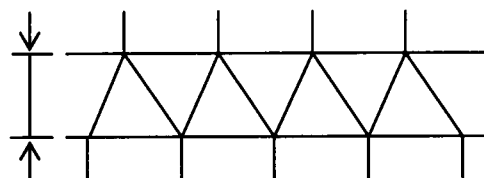


Fig. Complex Ripple Wave Form

2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	2	2
0.52	5	6
1.04	8	8
1.56	13	12
2.08	16	15
2.60	21	15
2.86	22	16
—	—	—
—	—	—
—	—	—
—	—	—

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Model	SUS10243R3/SUCS10243R3	Temperature 25°C Testing Circuitry Figure B		
Item	Ripple-Noise			
Object	+3.3V2.6A			
1.Graph		2.Values		
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COSEL

Model		SUS10243R3/SUCS10243R3	
Item		Ripple Voltage (by Ambient Temp.)	
Object		+3.3V2.6A	
1.Graph		2.Values	

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Model		SUS10243R3/SUCS10243R3																																																				
Item		Ambient Temperature Drift																																																				
Object		+3.3V2.6A																																																				
1.Graph		2.Values																																																				
<div><div><div><div><div></div><div></div></div><div>—△—</div><div>Input Volt.</div><div>18V</div></div><div><div><div></div><div></div></div><div>---□---</div><div>Input Volt.</div><div>24V</div></div><div><div><div></div><div></div></div><div>-·-○-·-</div><div>Input Volt.</div><div>36V</div></div></div><div><p>Output Voltage [V]</p><p>Ambient Temperature [°C]</p><p>Load 100%</p></div></div> <div>Note: Slanted line shows the range of the rated ambient temperature.</div>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 18[V]</th><th>Input Volt. 24[V]</th><th>Input Volt. 36[V]</th></tr><tr><td>-60</td><td>3.281</td><td>3.283</td><td>3.285</td></tr><tr><td>-40</td><td>3.286</td><td>3.289</td><td>3.291</td></tr><tr><td>-20</td><td>3.291</td><td>3.294</td><td>3.296</td></tr><tr><td>0</td><td>3.296</td><td>3.298</td><td>3.299</td></tr><tr><td>25</td><td>3.298</td><td>3.300</td><td>3.301</td></tr><tr><td>55</td><td>3.299</td><td>3.301</td><td>3.302</td></tr><tr><td>60</td><td>3.299</td><td>3.301</td><td>3.302</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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	-60	3.281	3.283	3.285	-40	3.286	3.289	3.291	-20	3.291	3.294	3.296	0	3.296	3.298	3.299	25	3.298	3.300	3.301	55	3.299	3.301	3.302	60	3.299	3.301	3.302	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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COSEL

		Testing Circuitry Figure A
Model	SUS10243R3/SUCS10243R3	
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 : 18 - 36V

Load Current : 0 - 2.6A

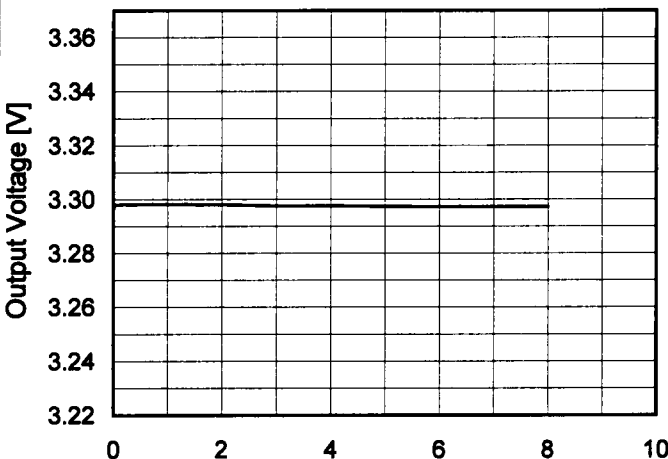
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* 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	36	0	3.314	±14	±0.4
Minimum Voltage	-40	18	2.6	3.286		

COSEL

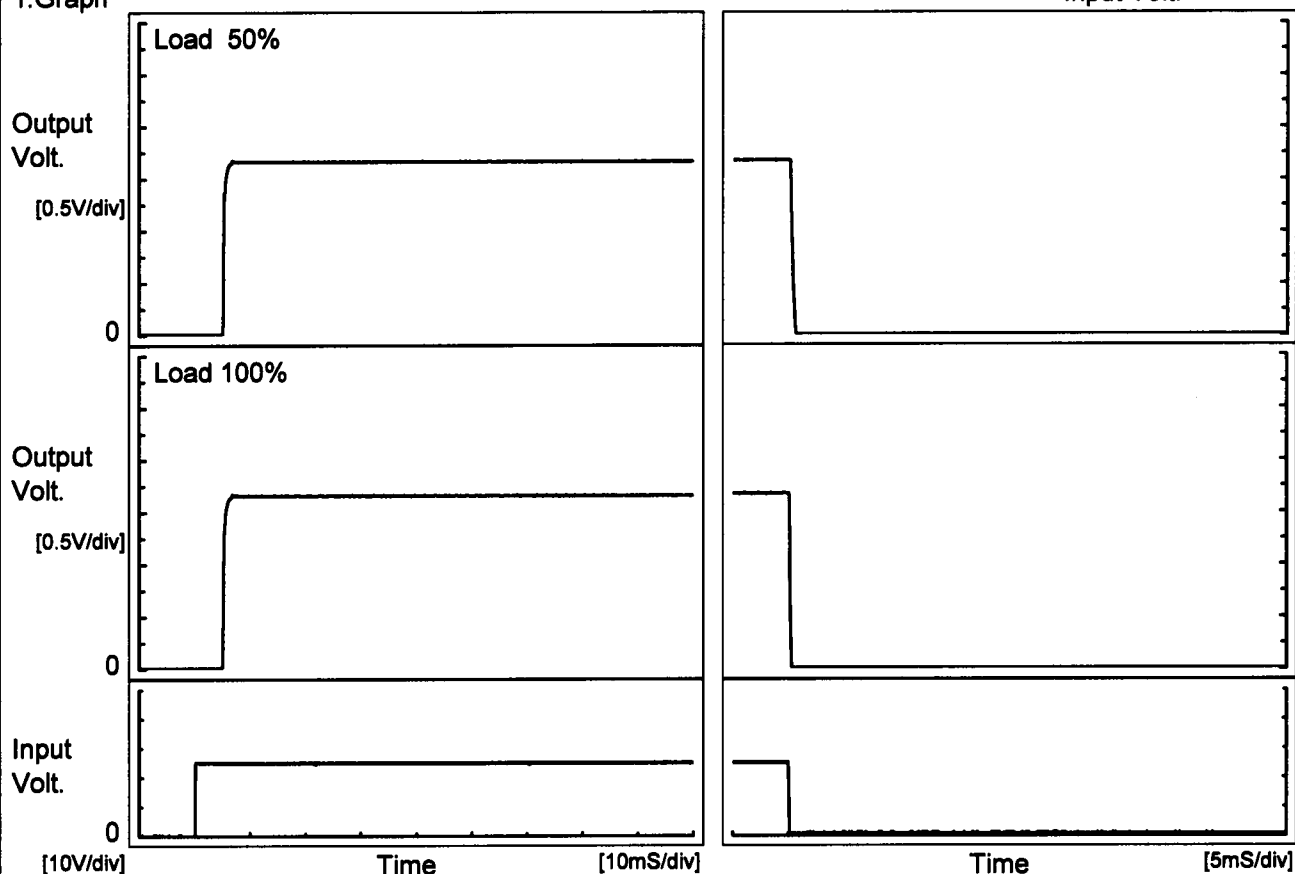
Model	SUS10243R3/SUCS10243R3	Temperature 25°C Testing Circuitry Figure A																							
Item	Time Lapse Drift																								
Object	+3.3V2.6A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 24V Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>3.297</td></tr><tr><td>0.5</td><td>3.298</td></tr><tr><td>1.0</td><td>3.298</td></tr><tr><td>2.0</td><td>3.298</td></tr><tr><td>3.0</td><td>3.298</td></tr><tr><td>4.0</td><td>3.298</td></tr><tr><td>5.0</td><td>3.297</td></tr><tr><td>6.0</td><td>3.297</td></tr><tr><td>7.0</td><td>3.297</td></tr><tr><td>8.0</td><td>3.297</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.297	0.5	3.298	1.0	3.298	2.0	3.298	3.0	3.298	4.0	3.298	5.0	3.297	6.0	3.297	7.0	3.297	8.0	3.297
Time since start [H]	Output Voltage [V]																								
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6.0	3.297																								
7.0	3.297																								
8.0	3.297																								

COSEL

Model	SUS10243R3/SUCS10243R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V2.6A		

1.Graph

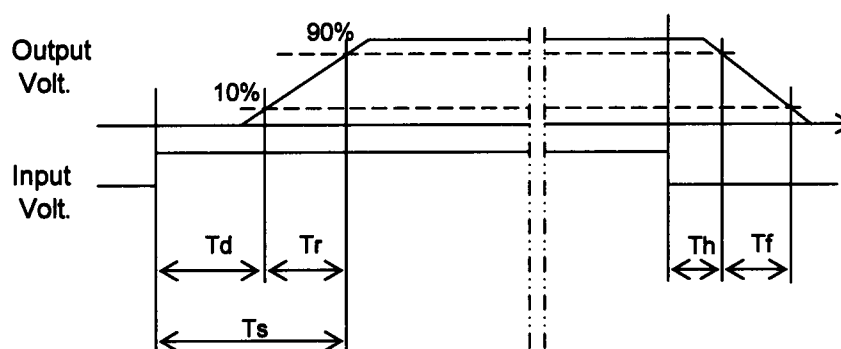
Input Volt. 24 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	5.1	0.6	5.7	0.2	0.4
100 %	5.0	0.7	5.7	0.1	0.2



COSEL

		Testing Circuitry Figure A																																				
Model	SUS10243R3/SUCS10243R3																																					
Item	Minimum Input Voltage for Regulated Output Voltage																																					
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>Ambient Temperature [°C]</th><th>Load 50% [V]</th><th>Load 100% [V]</th></tr></thead><tbody><tr><td>-60</td><td>11.9</td><td>12.5</td></tr><tr><td>-40</td><td>11.7</td><td>12.3</td></tr><tr><td>-20</td><td>11.6</td><td>11.6</td></tr><tr><td>0</td><td>11.3</td><td>11.5</td></tr><tr><td>25</td><td>11.1</td><td>11.1</td></tr><tr><td>55</td><td>11.0</td><td>11.0</td></tr><tr><td>60</td><td>11.0</td><td>10.9</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></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	11.9	12.5	-40	11.7	12.3	-20	11.6	11.6	0	11.3	11.5	25	11.1	11.1	55	11.0	11.0	60	11.0	10.9	--	-	-	--	-	-	--	-	-	--	-	-	
Ambient Temperature [°C]	Load 50% [V]	Load 100% [V]																																				
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Model		SUS10243R3/SUCS10243R3	Temperature	25°C
Item		Overcurrent Protection	Testing Circuitry	Figure A
Object		+3.3V2.6A		

1.Graph

————— Input Volt. 18V
————— Input Volt. 24V
————— Input Volt. 36V

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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
3.30	2.89	2.93	2.96
3.14	3.98	4.20	4.13
2.97	4.16	4.41	4.36
2.64	4.43	4.73	4.63
2.31	4.65	4.86	4.71
1.98	4.74	4.96	4.70
1.65	4.81	4.99	4.61
1.32	4.89	5.05	4.46
0.99	5.03	5.11	4.14
0.66	5.31	4.96	3.83
0.33	5.26	4.83	3.57
0.00	4.99	4.66	3.25

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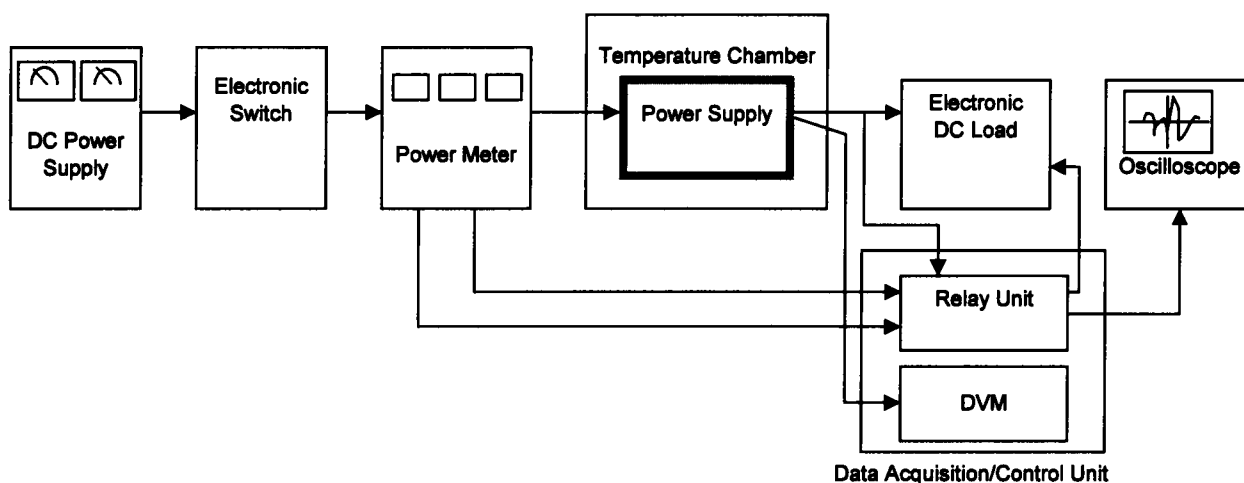


Figure A

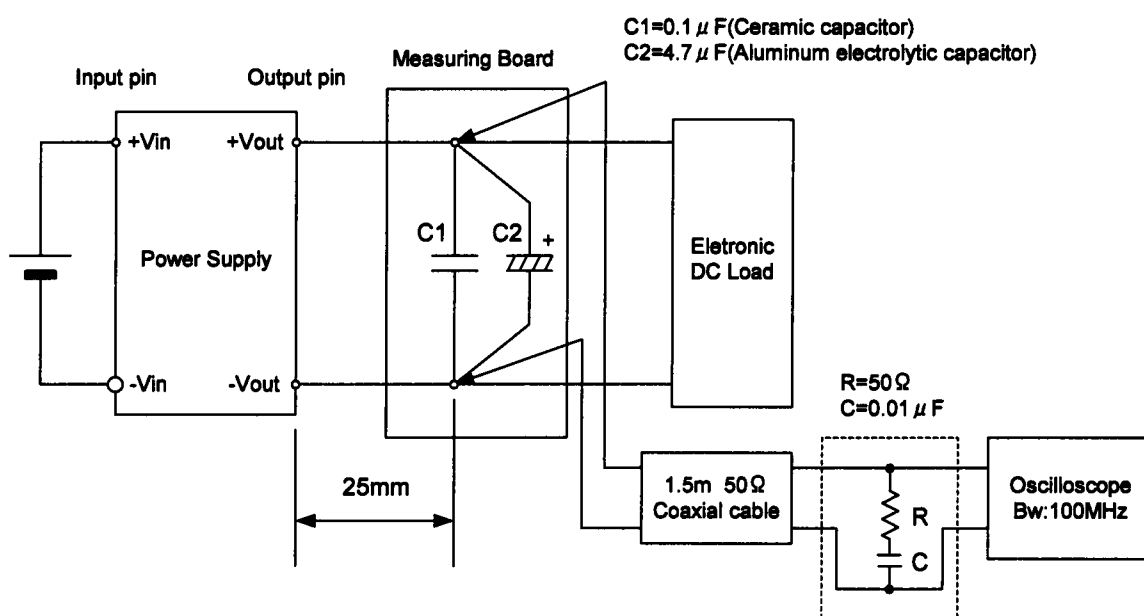


Figure B (Ripple and Ripple noise Characteristic)