

TEST DATA OF SUTS10243R3

Regulated DC Power Supply
February 12, 2009

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COSEL CO.,LTD.

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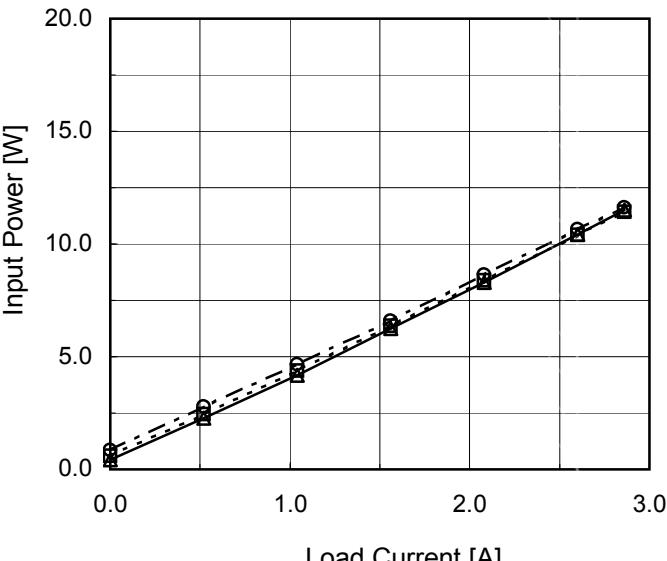
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Model	SUTS10243R3	Temperature Testing Circuitry 25°C Figure A																																																																																	
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1.Graph	<p style="text-align: center;"> △ Load 100% □ Load 50% ○ Load 0% </p> <p>Note: Slanted line shows the range of the rated input voltage.</p>	<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Load 0%</th> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>4.0</td><td>0.000</td><td>-0.001</td><td>0.000</td></tr> <tr><td>8.0</td><td>0.000</td><td>0.000</td><td>0.001</td></tr> <tr><td>12.0</td><td>0.001</td><td>0.001</td><td>0.001</td></tr> <tr><td>13.6</td><td>0.002</td><td>0.001</td><td>0.001</td></tr> <tr><td>14.8</td><td>0.024</td><td>0.354</td><td>0.719</td></tr> <tr><td>16.0</td><td>0.023</td><td>0.326</td><td>0.656</td></tr> <tr><td>18.0</td><td>0.023</td><td>0.291</td><td>0.577</td></tr> <tr><td>20.0</td><td>0.024</td><td>0.262</td><td>0.519</td></tr> <tr><td>24.0</td><td>0.024</td><td>0.218</td><td>0.431</td></tr> <tr><td>28.0</td><td>0.024</td><td>0.191</td><td>0.372</td></tr> <tr><td>32.0</td><td>0.025</td><td>0.173</td><td>0.328</td></tr> <tr><td>36.0</td><td>0.024</td><td>0.156</td><td>0.295</td></tr> <tr><td>40.0</td><td>0.025</td><td>0.143</td><td>0.269</td></tr> <tr><td>42.0</td><td>0.024</td><td>0.138</td><td>0.257</td></tr> <tr><td>43.6</td><td>0.025</td><td>0.135</td><td>0.249</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>			Input Voltage [V]	Input Current [A]			Load 0%	Load 50%	Load 100%	0.0	0.000	0.000	0.000	4.0	0.000	-0.001	0.000	8.0	0.000	0.000	0.001	12.0	0.001	0.001	0.001	13.6	0.002	0.001	0.001	14.8	0.024	0.354	0.719	16.0	0.023	0.326	0.656	18.0	0.023	0.291	0.577	20.0	0.024	0.262	0.519	24.0	0.024	0.218	0.431	28.0	0.024	0.191	0.372	32.0	0.025	0.173	0.328	36.0	0.024	0.156	0.295	40.0	0.025	0.143	0.269	42.0	0.024	0.138	0.257	43.6	0.025	0.135	0.249	--	-	-	-	--	-	-	-
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Note: Slanted line shows the range of the rated load current.

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1.Graph	<p>—△— Input Volt. 18V - - -□--- Input Volt. 24V - - ○--- Input Volt. 36V</p>  <p>The graph plots Input Power [W] on the Y-axis (0.0 to 20.0) against Load Current [A] on the X-axis (0.0 to 3.0). Three curves are shown for input voltages of 18V, 24V, and 36V. All curves show a linear increase in input power with load current. A slanted line is drawn across the graph, starting from approximately (0.5, 2.2) and ending at (2.8, 11.5), representing the rated load current range.</p>			
2.Values	Load Current [A]	Input Power [W]		
		Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00		0.43	0.59	0.86
0.52		2.27	2.44	2.78
1.04		4.17	4.37	4.65
1.56		6.26	6.36	6.60
2.08		8.29	8.37	8.63
2.60		10.42	10.40	10.66
2.86		11.51	11.42	11.62
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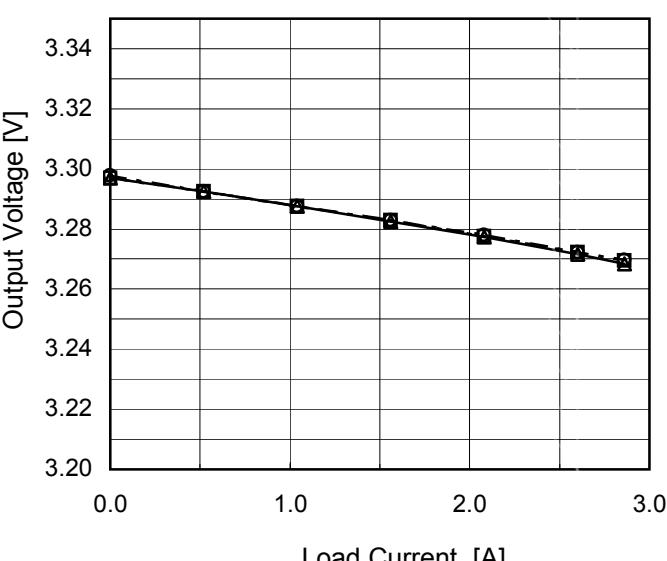
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<p>The graph plots Efficiency [%] on the y-axis (30 to 100) against Input Voltage [V] on the x-axis (10 to 50). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a slight decrease in efficiency as input voltage increases. A slanted line indicates the rated input voltage range.</p> <table border="1"> <thead> <tr> <th>Input Voltage [V]</th> <th>Efficiency Load 50% [%]</th> <th>Efficiency Load 100% [%]</th> </tr> </thead> <tbody> <tr><td>16</td><td>81.3</td><td>80.6</td></tr> <tr><td>18</td><td>81.0</td><td>81.6</td></tr> <tr><td>20</td><td>81.1</td><td>81.9</td></tr> <tr><td>24</td><td>81.6</td><td>81.9</td></tr> <tr><td>30</td><td>78.0</td><td>81.0</td></tr> <tr><td>36</td><td>75.6</td><td>79.9</td></tr> <tr><td>40</td><td>74.1</td><td>79.2</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>				Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	16	81.3	80.6	18	81.0	81.6	20	81.1	81.9	24	81.6	81.9	30	78.0	81.0	36	75.6	79.9	40	74.1	79.2	--	-	-	--	-	-
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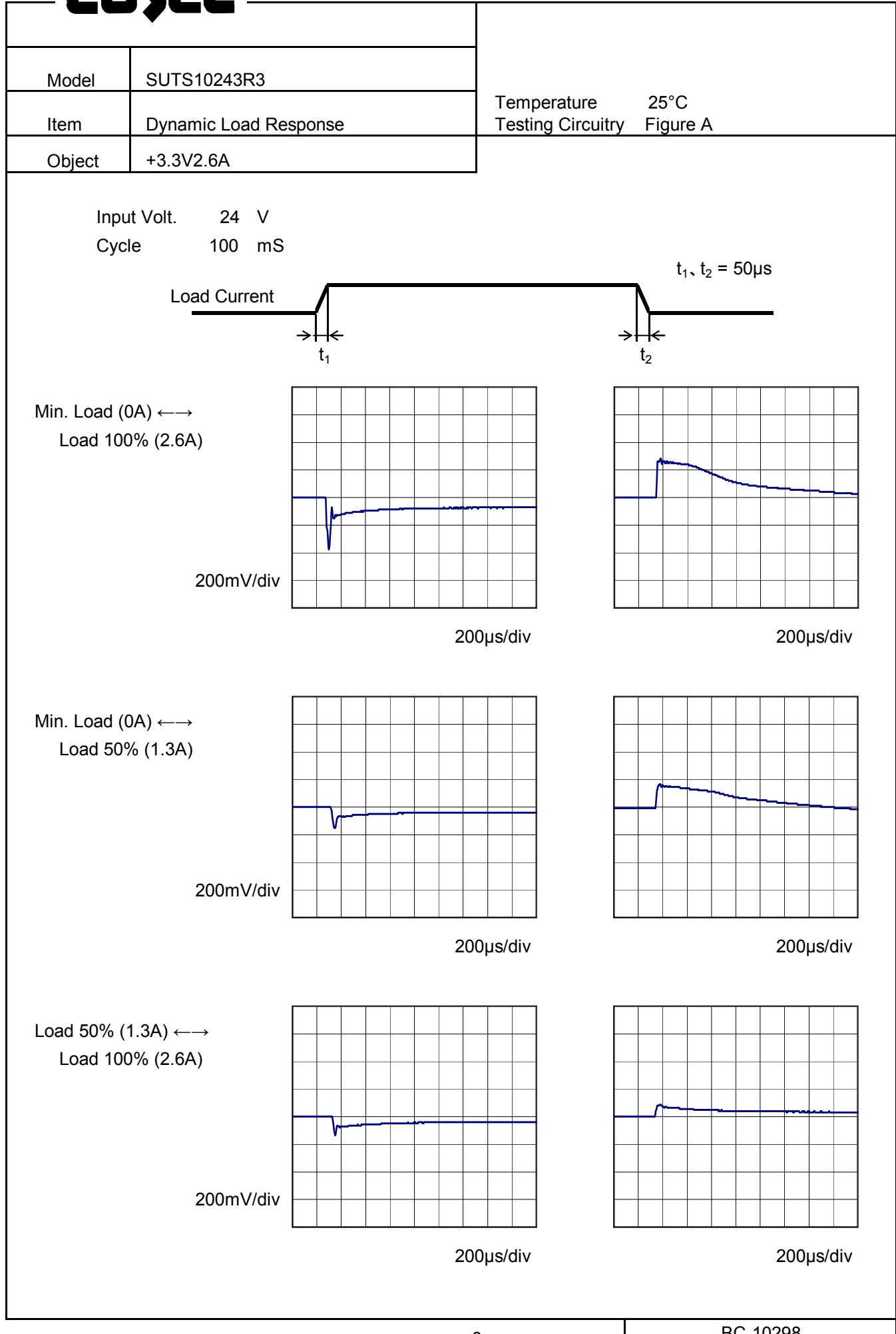
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<p>The graph plots Output Voltage [V] on the Y-axis (3.20 to 3.34) against Input Voltage [V] on the X-axis (10 to 50). Two sets of data points are shown: Load 50% (represented by squares) and Load 100% (represented by triangles). Both sets show a horizontal line at approximately 3.28V. A dashed line indicates the range of the rated input voltage.</p>		<table border="1"> <thead> <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> </thead> <tbody> <tr> <td>16</td> <td>3.285</td> <td>3.271</td> </tr> <tr> <td>18</td> <td>3.285</td> <td>3.272</td> </tr> <tr> <td>20</td> <td>3.285</td> <td>3.272</td> </tr> <tr> <td>24</td> <td>3.285</td> <td>3.273</td> </tr> <tr> <td>30</td> <td>3.285</td> <td>3.273</td> </tr> <tr> <td>36</td> <td>3.285</td> <td>3.273</td> </tr> <tr> <td>40</td> <td>3.285</td> <td>3.273</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%	Load 100%	16	3.285	3.271	18	3.285	3.272	20	3.285	3.272	24	3.285	3.273	30	3.285	3.273	36	3.285	3.273	40	3.285	3.273	--	-	-	--	-	-
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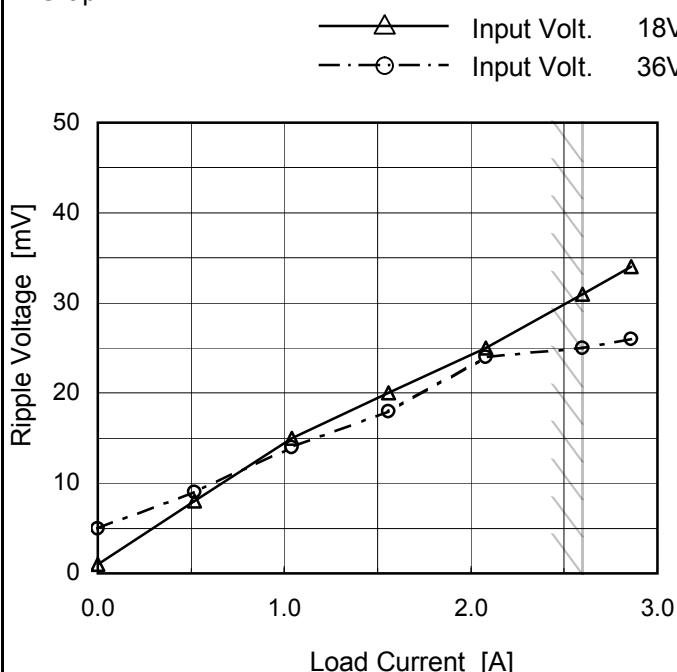
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Model	SUTS10243R3
Item	Ripple Voltage (by Load Current)
Object	+3.3V2.6A

Temperature 25°C
Testing Circuitry Figure B

1. Graph



2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	1	5
0.52	8	9
1.04	15	14
1.56	20	18
2.08	25	24
2.60	31	25
2.86	34	26
--	-	-
--	-	-
--	-	-
--	-	-

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]

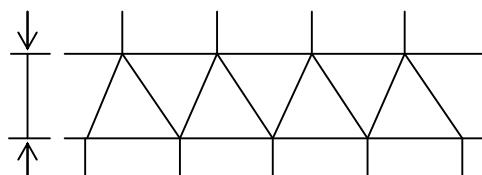
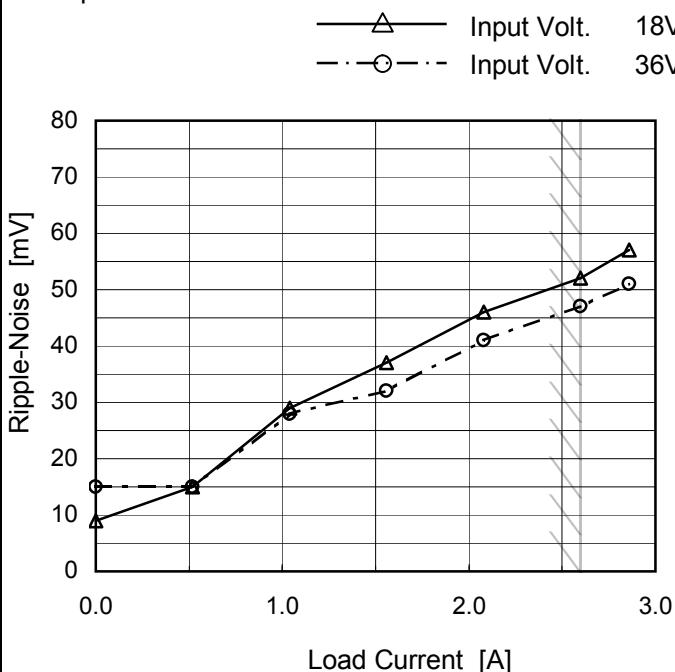


Fig.Complex Ripple Wave Form

Model	SUTS10243R3
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.

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	9	15
0.52	15	15
1.04	29	28
1.56	37	32
2.08	46	41
2.60	52	47
2.86	57	51
--	-	-
--	-	-
--	-	-
--	-	-

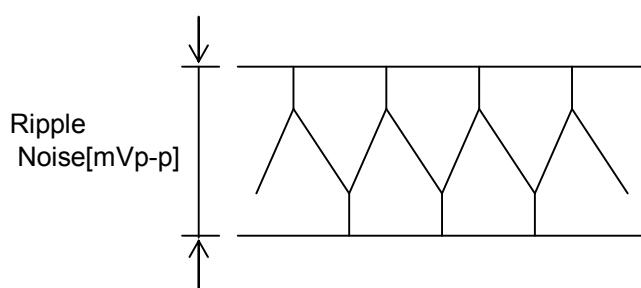
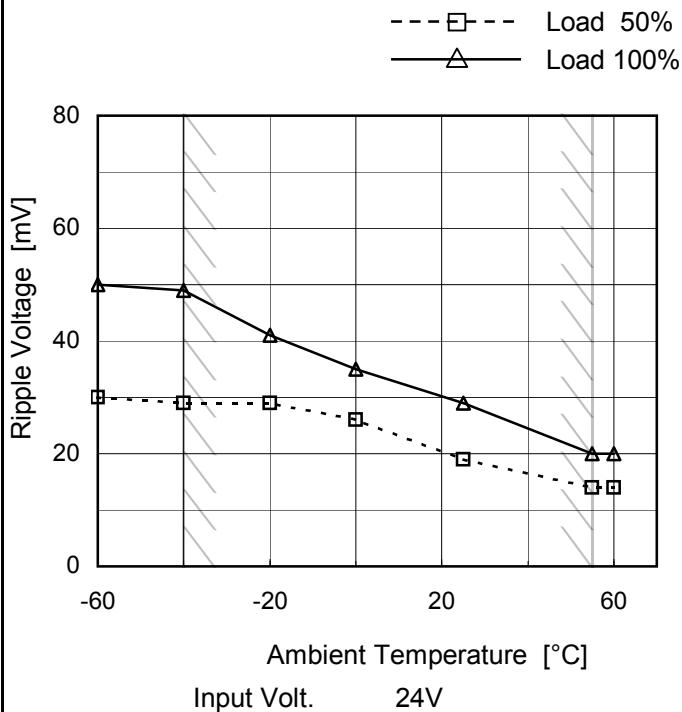


Fig.Complex Ripple Noise Wave Form

Model	SUTS10243R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V2.6A

1. Graph



Measured by 100 MHz Oscilloscope.

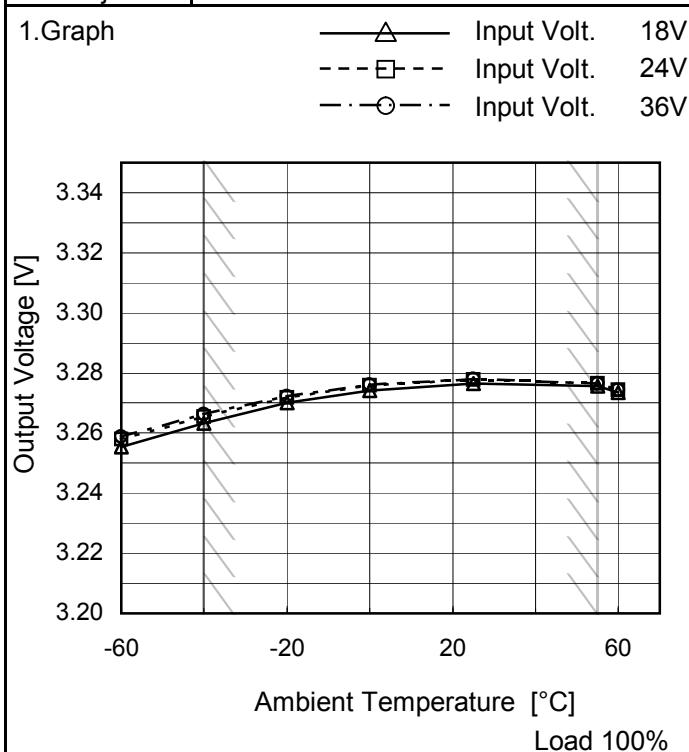
Note: Slanted line shows the range of the rated ambient temperature.

Testing Circuitry Figure B

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	30	50
-40	29	49
-20	29	41
0	26	35
25	19	29
55	14	20
60	14	20
--	-	-
--	-	-
--	-	-
--	-	-

Model	SUTS10243R3
Item	Ambient Temperature Drift
Object	+3.3V2.6A



Note: Slanted line shows the range of the rated ambient temperature.

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-60	3.255	3.258	3.259
-40	3.263	3.265	3.266
-20	3.270	3.272	3.272
0	3.274	3.276	3.276
25	3.277	3.278	3.278
55	3.276	3.276	3.277
60	3.274	3.274	3.274
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model	SUTS10243R3	Testing Circuitry Figure A
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 = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

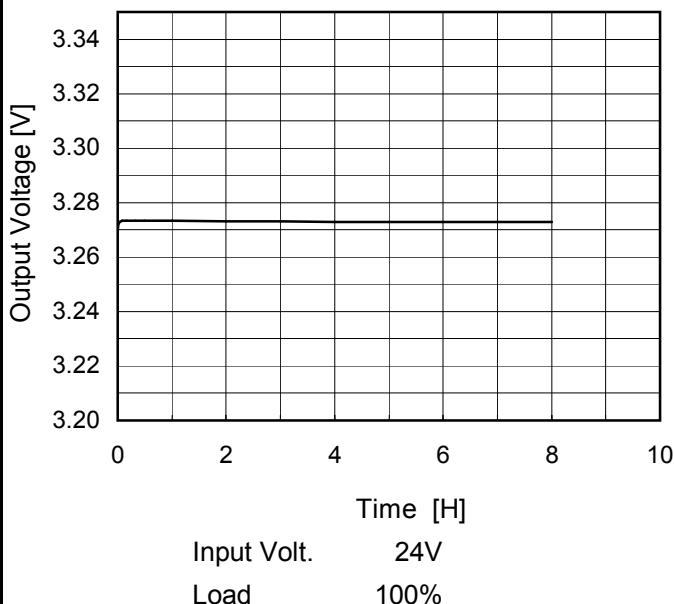
2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	36	0	3.303	± 20	± 0.6
Minimum Voltage	-40	18	2.6	3.263		

COSEL

Model	SUTS10243R3
Item	Time Lapse Drift
Object	+3.3V2.6A

1. Graph



Temperature 25°C
Testing Circuitry Figure A

2. Values

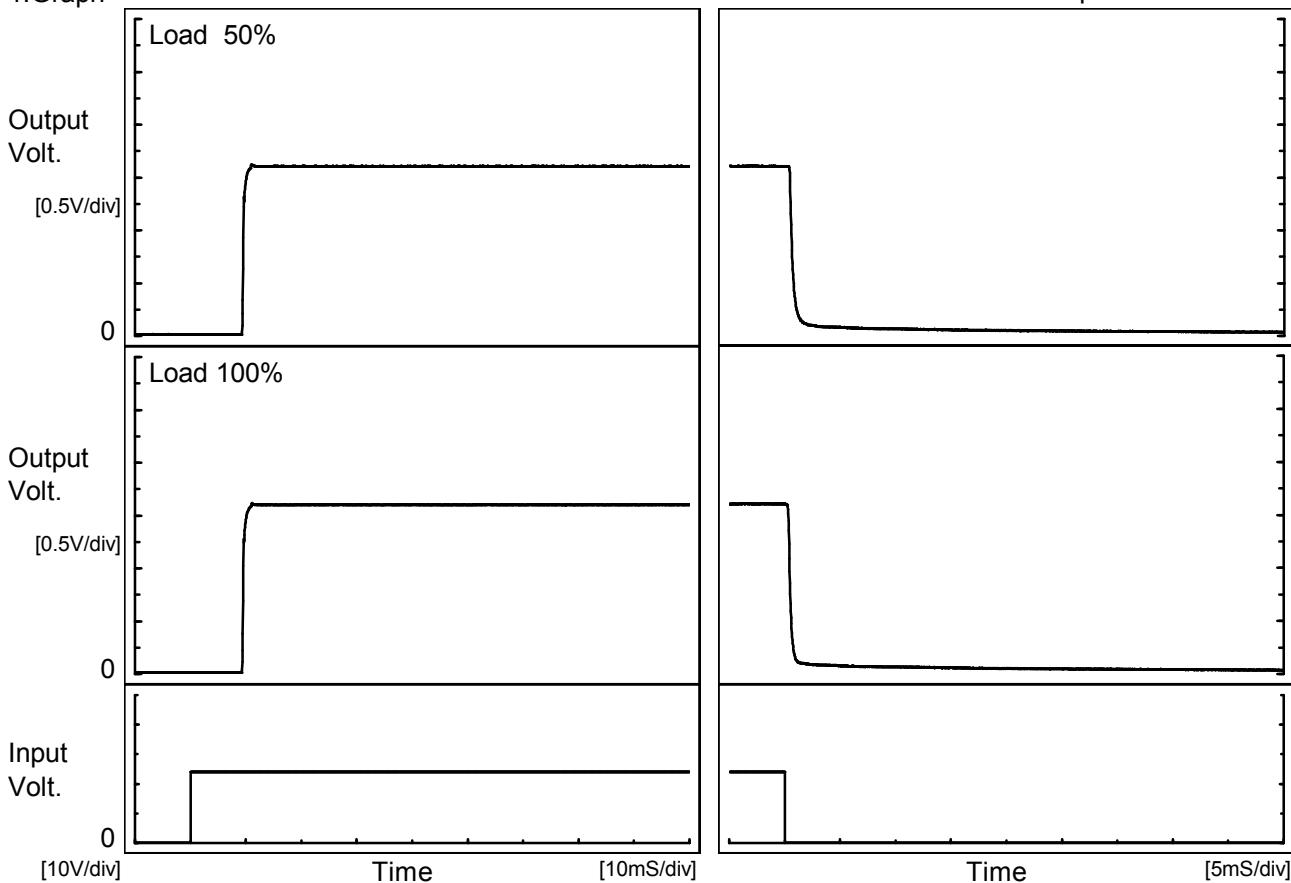
Time since start [H]	Output Voltage [V]
0.0	3.269
0.5	3.273
1.0	3.273
2.0	3.273
3.0	3.273
4.0	3.273
5.0	3.273
6.0	3.273
7.0	3.273
8.0	3.273

COSEL

Model	SUTS10243R3
Item	Rise and Fall Time
Object	+3.3V2.6A

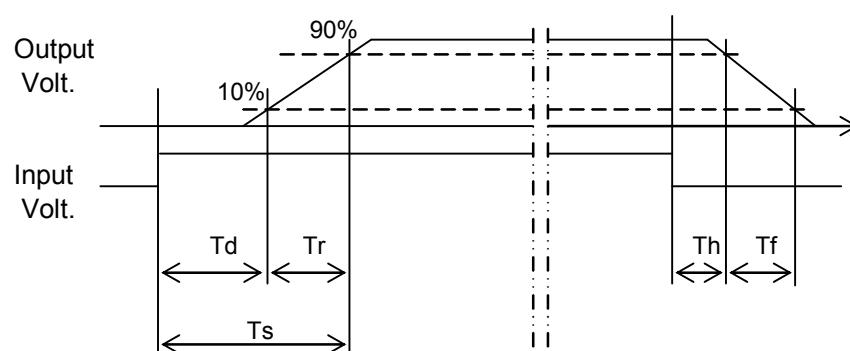
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

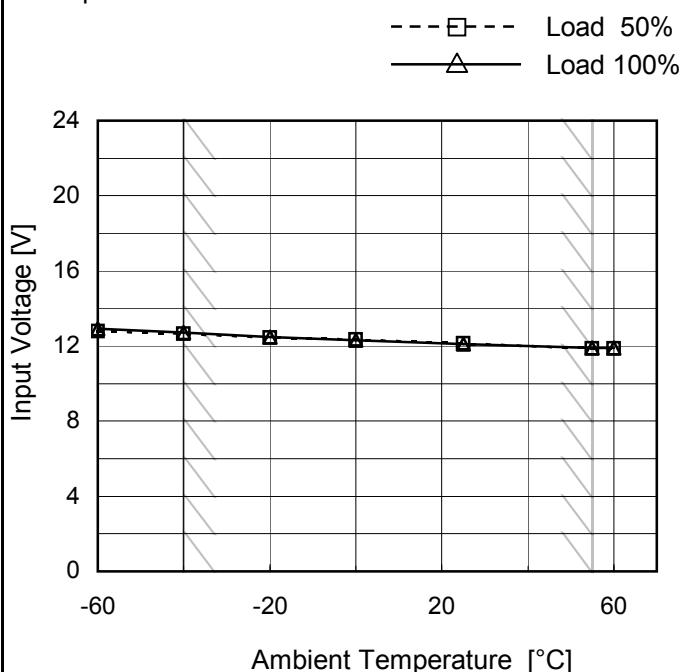
Load	Time	Td	Tr	Ts	Th	Tf	[mS]
50 %		9.4	0.7	10.1	0.4	0.8	
100 %		9.4	0.8	10.2	0.3	0.6	



Model	SUTS10243R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V2.6A

Testing Circuitry Figure A

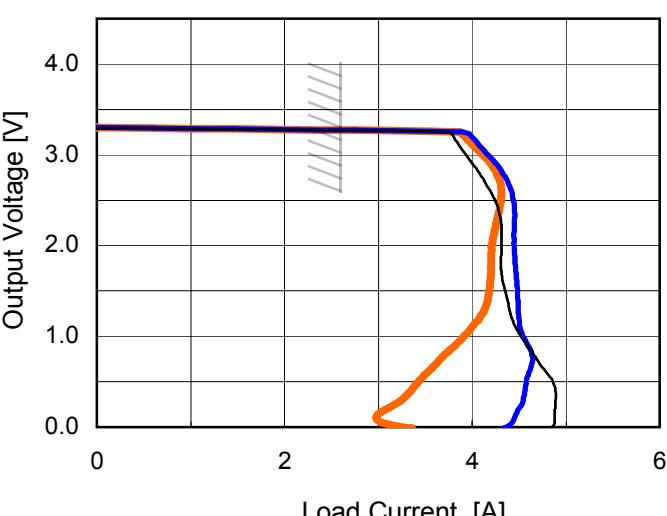
1. Graph



2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	12.8	13.0
-40	12.7	12.8
-20	12.5	12.5
0	12.4	12.4
25	12.2	12.1
55	11.9	11.9
60	11.9	11.9
--	-	-
--	-	-
--	-	-
--	-	-

Note: Slanted line shows the range of the rated ambient temperature.

Model	SUTS10243R3																																																									
Item	Overcurrent Protection	Temperature Testing Circuitry	25°C Figure A																																																							
Object	+3.3V2.6A																																																									
1.Graph	<p>— Input Volt. 18V — Input Volt. 24V — Input Volt. 36V</p>  <p>Note: Slanted line shows the range of the rated load current.</p>																																																									
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="3">Load Current [A]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> </tr> </thead> <tbody> <tr><td>3.30</td><td>2.76</td><td>2.75</td><td>2.74</td></tr> <tr><td>3.14</td><td>3.84</td><td>4.06</td><td>3.97</td></tr> <tr><td>2.97</td><td>3.95</td><td>4.18</td><td>4.12</td></tr> <tr><td>2.64</td><td>4.16</td><td>4.40</td><td>4.31</td></tr> <tr><td>2.31</td><td>4.30</td><td>4.45</td><td>4.27</td></tr> <tr><td>1.98</td><td>4.31</td><td>4.45</td><td>4.21</td></tr> <tr><td>1.65</td><td>4.32</td><td>4.47</td><td>4.20</td></tr> <tr><td>1.32</td><td>4.39</td><td>4.49</td><td>4.15</td></tr> <tr><td>0.99</td><td>4.52</td><td>4.54</td><td>3.92</td></tr> <tr><td>0.66</td><td>4.74</td><td>4.64</td><td>3.61</td></tr> <tr><td>0.33</td><td>4.89</td><td>4.56</td><td>3.29</td></tr> <tr><td>0.00</td><td>4.82</td><td>4.33</td><td>3.35</td></tr> </tbody> </table>			Output Voltage [V]	Load Current [A]			Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	3.30	2.76	2.75	2.74	3.14	3.84	4.06	3.97	2.97	3.95	4.18	4.12	2.64	4.16	4.40	4.31	2.31	4.30	4.45	4.27	1.98	4.31	4.45	4.21	1.65	4.32	4.47	4.20	1.32	4.39	4.49	4.15	0.99	4.52	4.54	3.92	0.66	4.74	4.64	3.61	0.33	4.89	4.56	3.29	0.00	4.82	4.33	3.35
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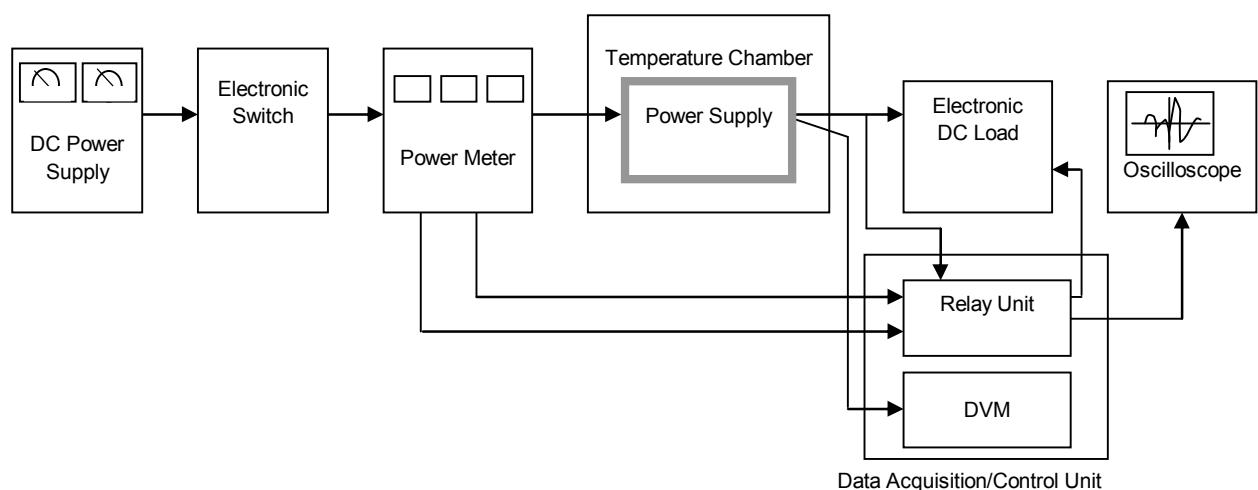


Figure A

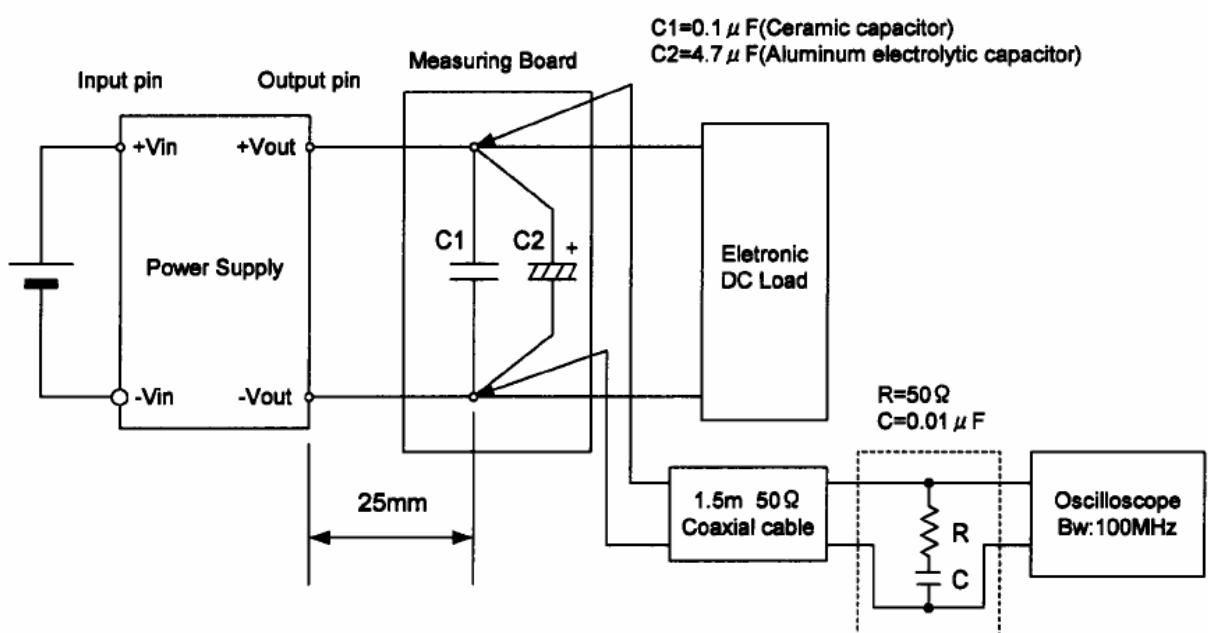


Figure B (Ripple and Ripple noise Characteristic)