

TEST DATA OF MGFS15243R3

Regulated DC Power Supply
September 13, 2010

Approved by : Kazunari Asano
Kazunari Asano Design Manager

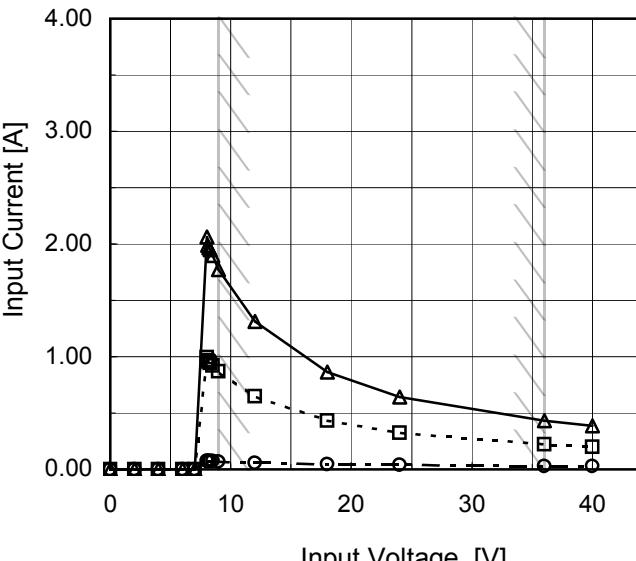
Prepared by : Ryoko Ueda
Ryoko Ueda Design Engineer

COSEL CO.,LTD.

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1.Graph	<p>Graph showing Input Power [W] vs Load Current [A] for MGFS15243R3 at various input voltages. The graph shows five curves for input voltages 9V, 12V, 18V, 24V, and 36V. A slanted line indicates the rated load current range.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>9[V]</th> <th>12[V]</th> <th>18[V]</th> <th>24[V]</th> <th>36[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.64</td><td>0.71</td><td>0.81</td><td>0.89</td><td>1.08</td></tr> <tr><td>0.8</td><td>3.42</td><td>3.46</td><td>3.56</td><td>3.64</td><td>3.78</td></tr> <tr><td>1.6</td><td>6.35</td><td>6.34</td><td>6.37</td><td>6.44</td><td>6.57</td></tr> <tr><td>2.4</td><td>9.44</td><td>9.34</td><td>9.33</td><td>9.39</td><td>9.47</td></tr> <tr><td>3.2</td><td>12.66</td><td>12.47</td><td>12.35</td><td>12.38</td><td>12.46</td></tr> <tr><td>4.0</td><td>16.05</td><td>15.72</td><td>15.50</td><td>15.46</td><td>15.53</td></tr> <tr><td>4.4</td><td>17.89</td><td>17.40</td><td>17.14</td><td>17.02</td><td>17.12</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>					Load Current [A]	9[V]	12[V]	18[V]	24[V]	36[V]	0.0	0.64	0.71	0.81	0.89	1.08	0.8	3.42	3.46	3.56	3.64	3.78	1.6	6.35	6.34	6.37	6.44	6.57	2.4	9.44	9.34	9.33	9.39	9.47	3.2	12.66	12.47	12.35	12.38	12.46	4.0	16.05	15.72	15.50	15.46	15.53	4.4	17.89	17.40	17.14	17.02	17.12	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-					
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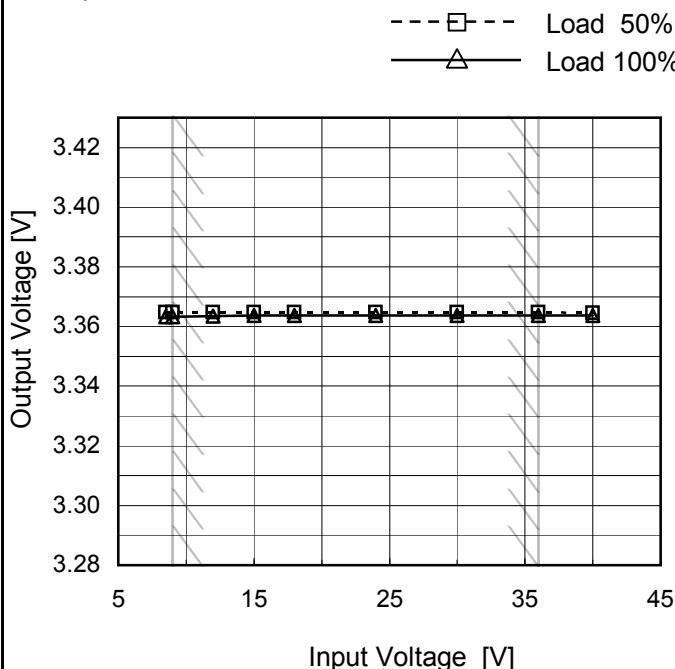
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Note: Slanted line shows the range of the rated load current.

Model	MGFS15243R3
Item	Line Regulation
Object	+3.3V4A

Temperature 25°C
Testing Circuitry Figure A

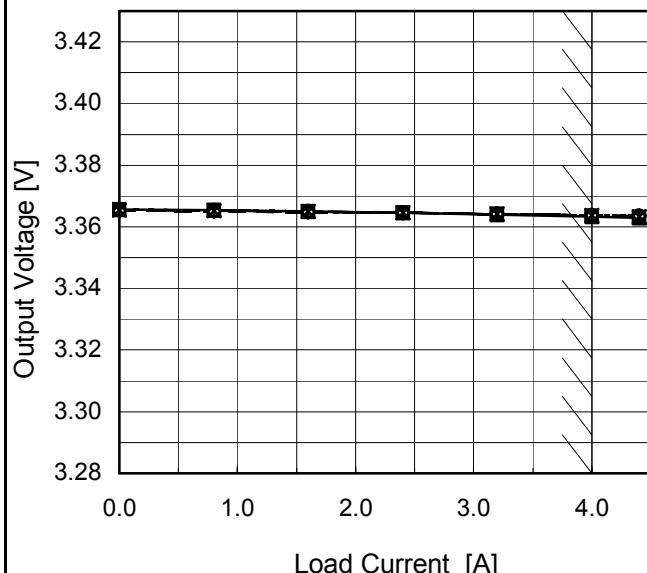
1. Graph



2. Values

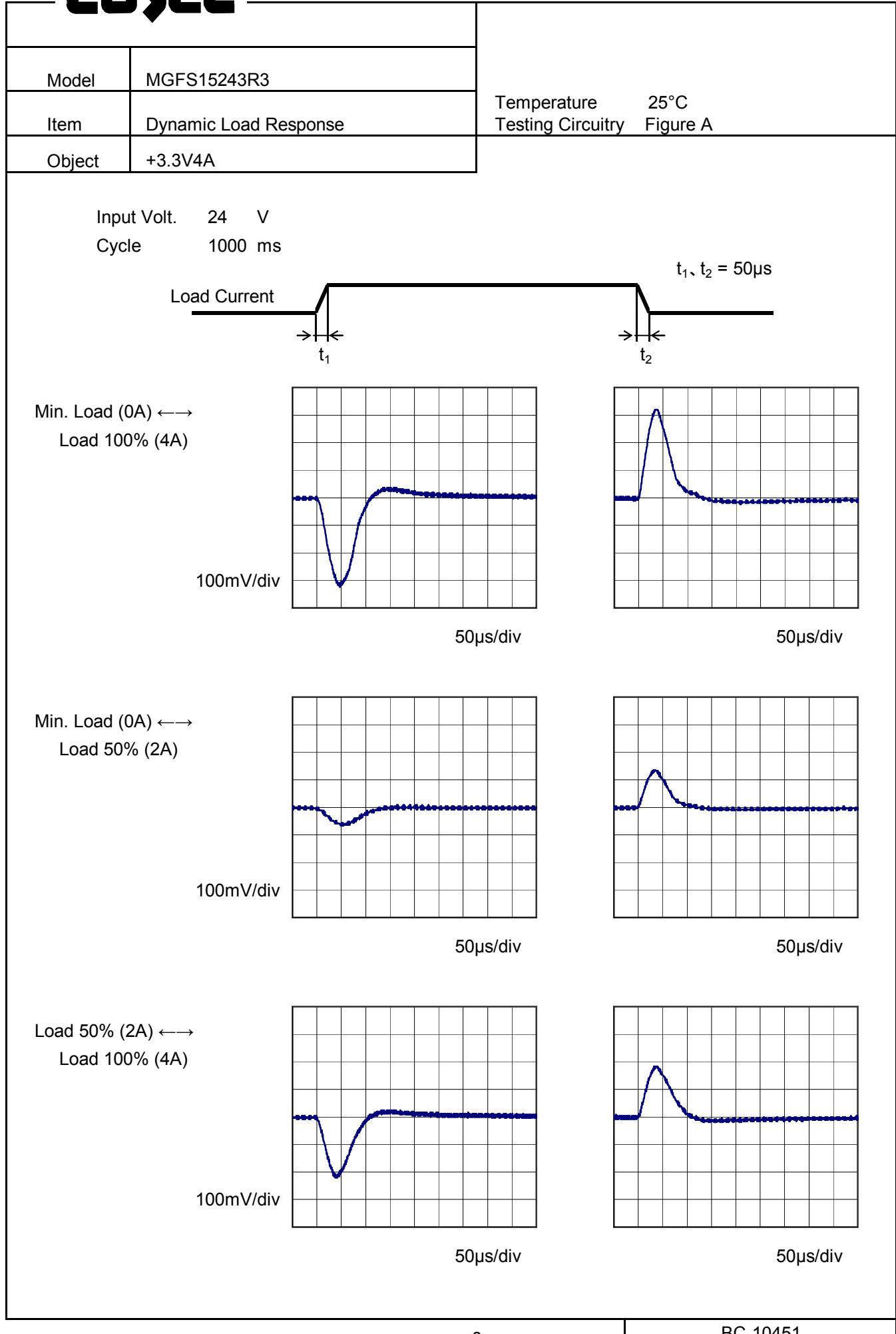
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.5	3.365	3.363
9.0	3.365	3.363
12.0	3.365	3.364
15.0	3.365	3.364
18.0	3.365	3.364
24.0	3.365	3.364
30.0	3.365	3.364
36.0	3.365	3.364
40.0	3.365	3.364

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

Model	MGFS15243R3	Temperature 25°C Testing Circuitry Figure A																																																																																	
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		<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 9[V]</th> <th>Input Volt. 12[V]</th> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> </tr> </thead> <tbody> <tr> <td>0.0</td> <td>3.366</td> <td>3.366</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> </tr> <tr> <td>0.8</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> </tr> <tr> <td>1.6</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> </tr> <tr> <td>2.4</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> <td>3.365</td> </tr> <tr> <td>3.2</td> <td>3.364</td> <td>3.364</td> <td>3.364</td> <td>3.364</td> <td>3.364</td> </tr> <tr> <td>4.0</td> <td>3.363</td> <td>3.364</td> <td>3.364</td> <td>3.364</td> <td>3.364</td> </tr> <tr> <td>4.4</td> <td>3.363</td> <td>3.363</td> <td>3.363</td> <td>3.364</td> <td>3.364</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>					Load Current [A]	Output Voltage [V]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.0	3.366	3.366	3.365	3.365	3.365	0.8	3.365	3.365	3.365	3.365	3.365	1.6	3.365	3.365	3.365	3.365	3.365	2.4	3.365	3.365	3.365	3.365	3.365	3.2	3.364	3.364	3.364	3.364	3.364	4.0	3.363	3.364	3.364	3.364	3.364	4.4	3.363	3.363	3.363	3.364	3.364	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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COSEL



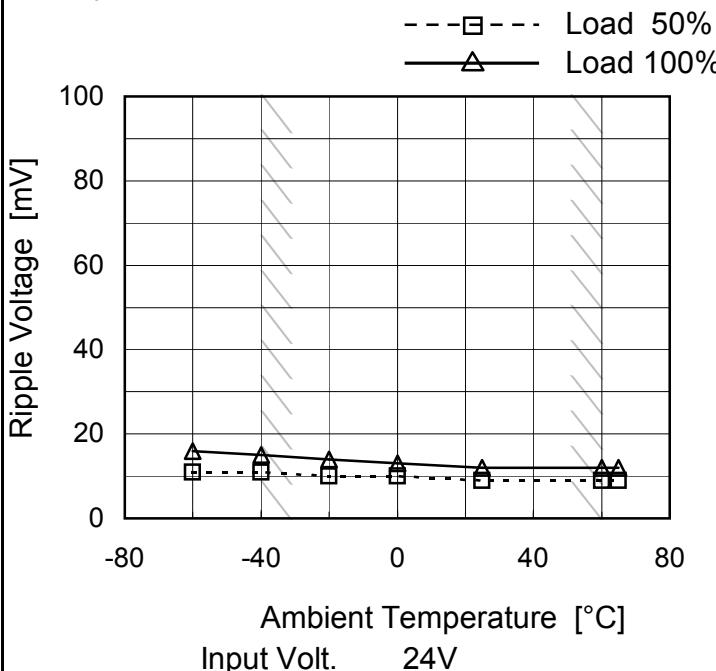
Model	MGFS15243R3																																							
Item	Ripple Voltage (by Load Current)	Temperature Testing Circuitry 25°C Figure B																																						
Object	+3.3V4A																																							
1.Graph																																								
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Model	MGFS15243R3																																						
Item	Ripple-Noise	Temperature 25°C Testing Circuitry Figure B																																					
Object	+3.3V4A																																						
1.Graph																																							
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Load Current [A]	Ripple-Noise [mV]																																						
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<p>Fig.Complex Ripple Noise Wave Form</p>																																							
- 10 -																																							
BC-10451																																							

Model	MGFS15243R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V4A

Testing Circuitry Figure B

1. Graph



2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	11	16
-40	11	15
-20	10	14
0	10	13
25	9	12
60	9	12
65	9	12
--	-	-
--	-	-
--	-	-
--	-	-

Measured by 100 MHz Oscilloscope.

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

Model	MGFS15243R3	Testing Circuitry Figure A																																																																																	
Item	Ambient Temperature Drift																																																																																		
Object	+3.3V4A																																																																																		
1.Graph	<p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p> <p>Input Volt.</p> <ul style="list-style-type: none"> 9V 12V 18V 24V 36V 	2.Values																																																																																	
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Model	MGFS15243R3	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+3.3V4A	

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 - 60°C

Input Voltage : 9 - 36V

Load Current : 0 - 4A

* 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

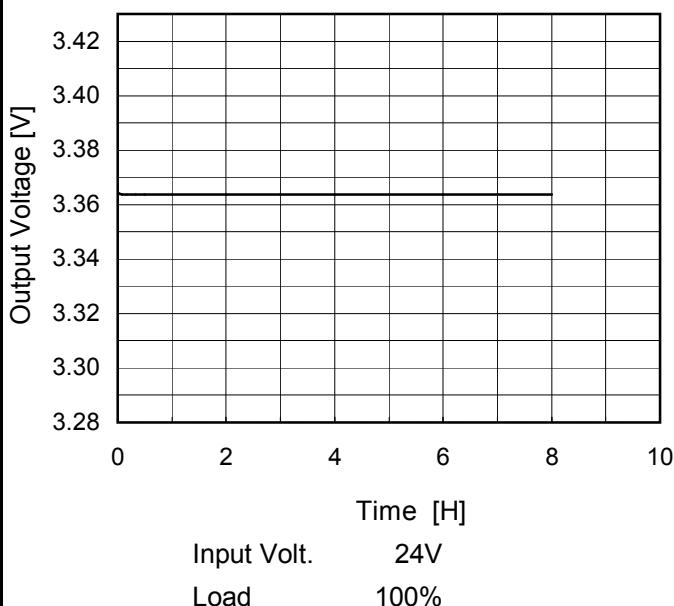
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	9	0	3.371	±6	±0.2
Minimum Voltage	60	36	4	3.360		

COSEL

Model	MGFS15243R3
Item	Time Lapse Drift
Object	+3.3V4A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

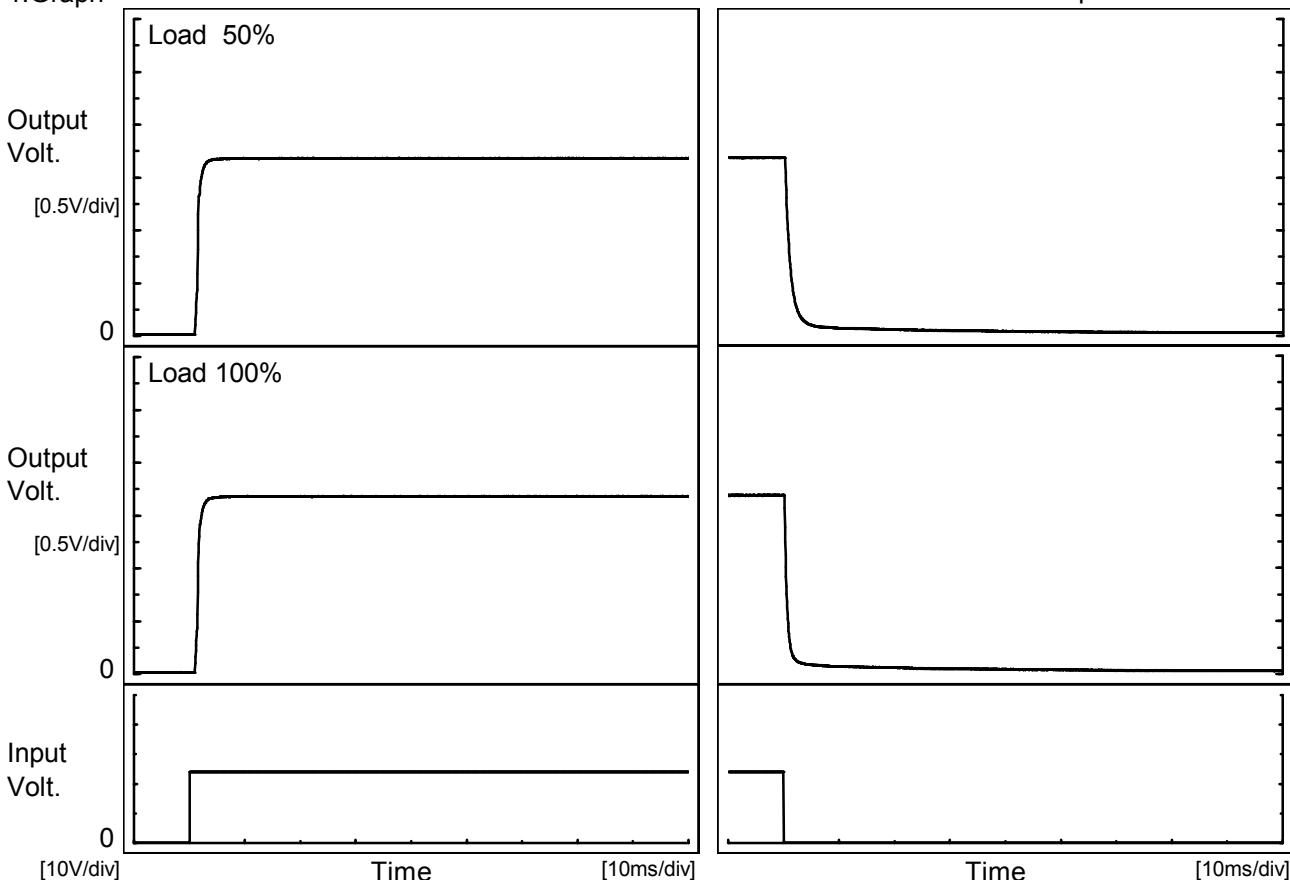
Time since start [H]	Output Voltage [V]
0.0	3.365
0.5	3.364
1.0	3.364
2.0	3.364
3.0	3.364
4.0	3.364
5.0	3.364
6.0	3.364
7.0	3.364
8.0	3.364

COSEL

Model	MGFS15243R3
Item	Rise and Fall Time
Object	+3.3V4A

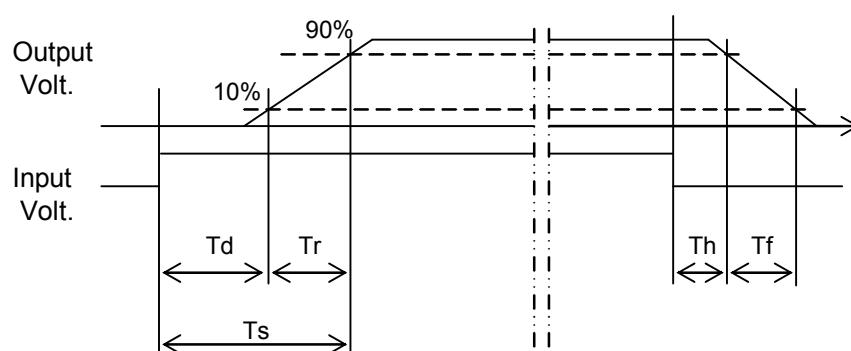
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

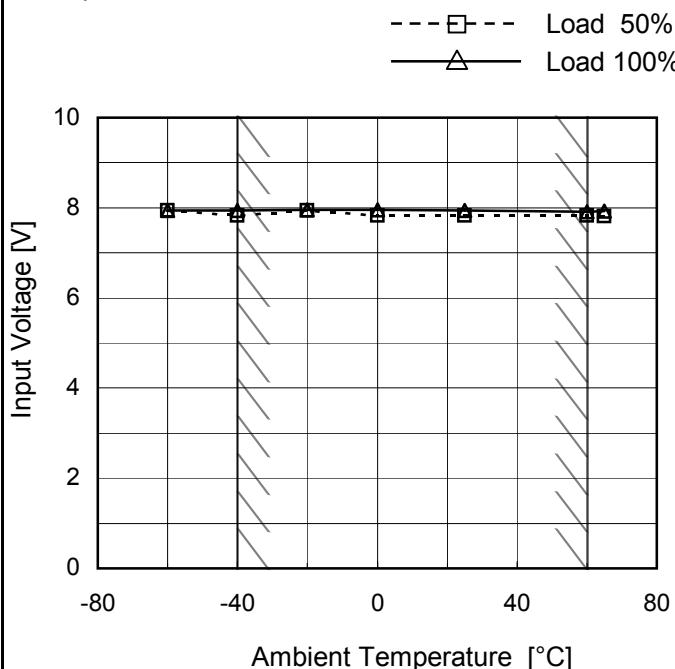
Load	Time	Td	Tr	Ts	Th	Tf
50 %		1.2	1.0	2.2	0.3	2.7
100 %		1.2	1.1	2.3	0.2	1.4



Model	MGFS15243R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V4A

Testing Circuitry Figure A

1. Graph



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

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	8.0	8.0
-40	7.9	8.0
-20	8.0	8.0
0	7.9	8.0
25	7.9	8.0
60	7.9	8.0
65	7.9	8.0
--	-	-
--	-	-
--	-	-
--	-	-

Model	MGFS15243R3	Temperature 25°C Testing Circuitry Figure A																																																																																							
Item	Overcurrent Protection																																																																																								
Object	+3.3V4A																																																																																								
1.Graph	<p>Output Voltage [V]</p> <p>Load Current [A]</p>	2.Values																																																																																							
	<p>—△— Input Volt. 9V</p> <p>—□— Input Volt. 12V</p> <p>—*— Input Volt. 18V</p> <p>—○— Input Volt. 24V</p> <p>—◇— Input Volt. 36V</p>	<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="5">Load Current [A]</th> </tr> <tr> <th>Input Volt. 9[V]</th> <th>Input Volt. 12[V]</th> <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>4.579</td> <td>5.028</td> <td>5.284</td> <td>5.346</td> <td>4.904</td> </tr> <tr> <td>3.14</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>2.97</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>2.64</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>2.31</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>1.98</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>1.65</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>1.32</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>0.99</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>0.66</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>0.33</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>0.00</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>					Output Voltage [V]	Load Current [A]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	3.30	4.579	5.028	5.284	5.346	4.904	3.14	-	-	-	-	-	2.97	-	-	-	-	-	2.64	-	-	-	-	-	2.31	-	-	-	-	-	1.98	-	-	-	-	-	1.65	-	-	-	-	-	1.32	-	-	-	-	-	0.99	-	-	-	-	-	0.66	-	-	-	-	-	0.33	-	-	-	-	-	0.00	-	-	-	-	-
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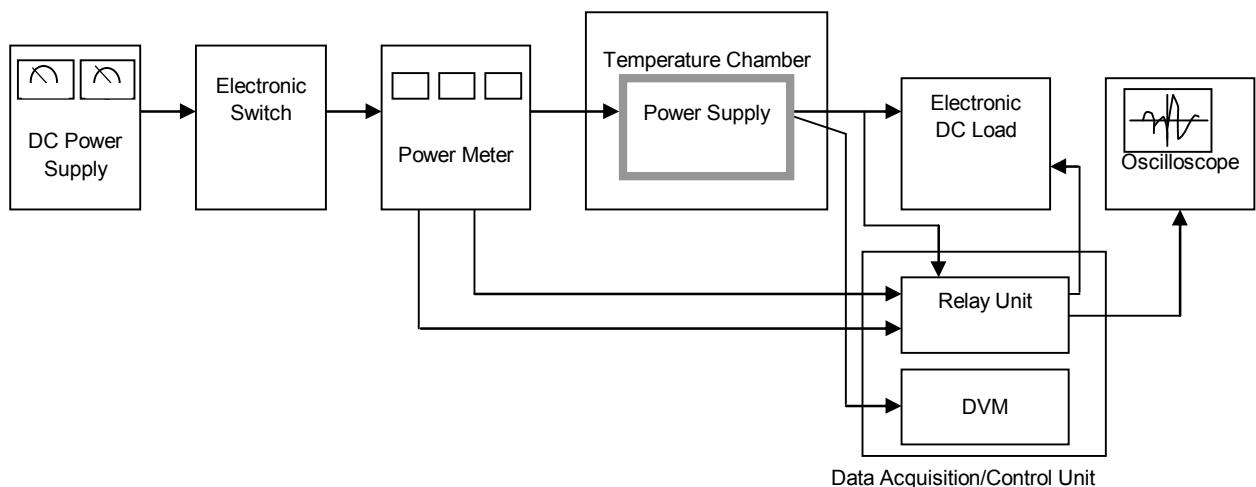


Figure A

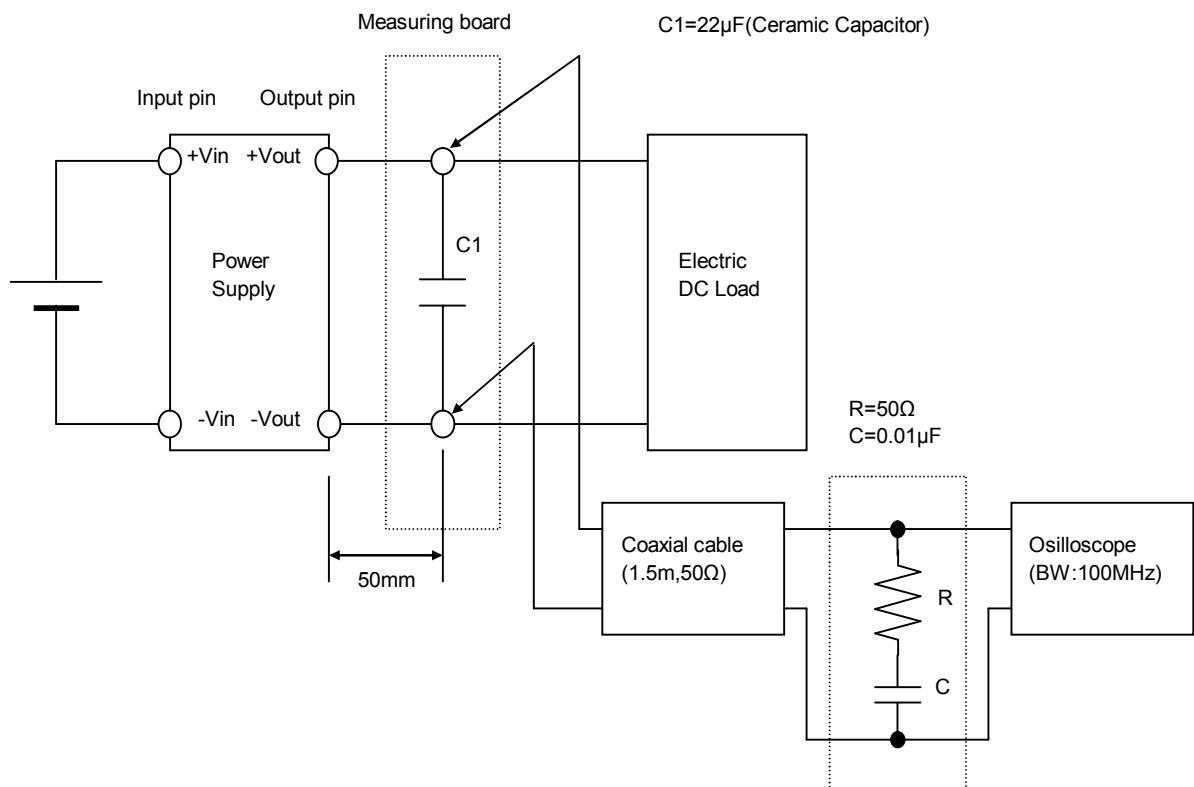


Figure B (Ripple and Ripple noise Characteristic)