

TEST DATA OF MGS15123R3

Regulated DC Power Supply
September 10, 2010

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Shintaro Mizukami
Shintaro Mizukami Design Engineer

COSEL CO.,LTD.

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Model	MGS15123R3																																																																																	
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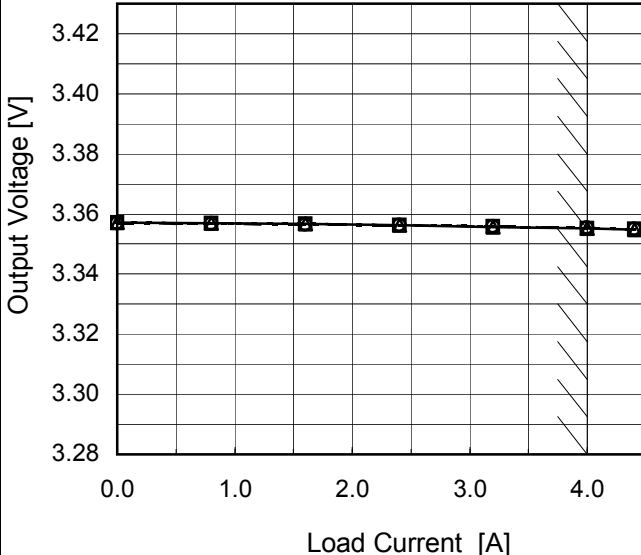
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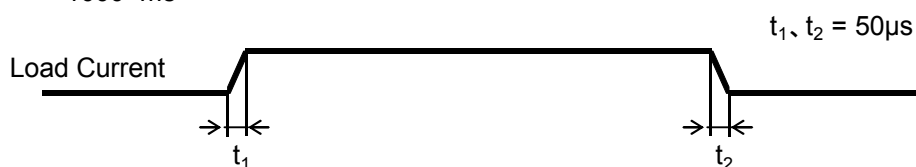
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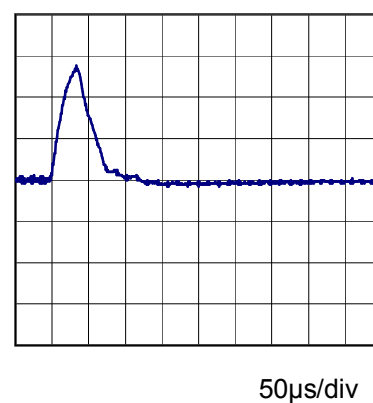
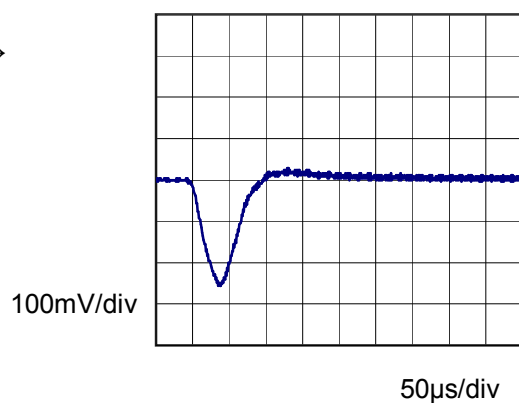


Model	MGS15123R3	Temperature 25°C Testing Circuitry Figure A	
Item	Dynamic Load Response		
Object	+3.3V4A		

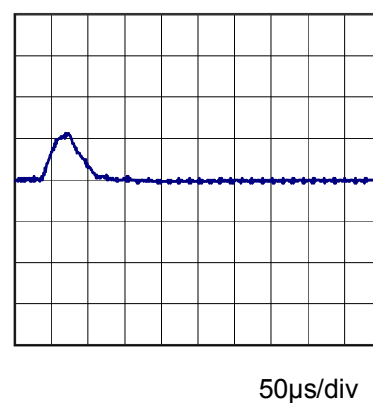
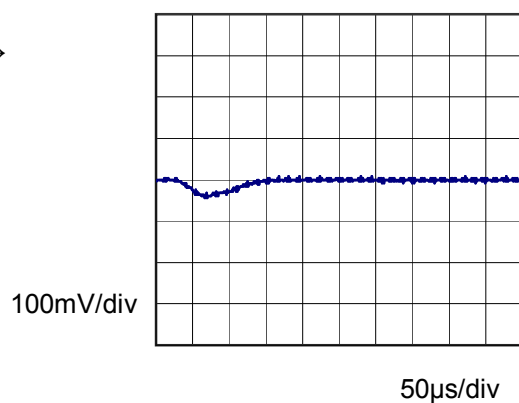
Input Volt. 12 V
Cycle 1000 ms



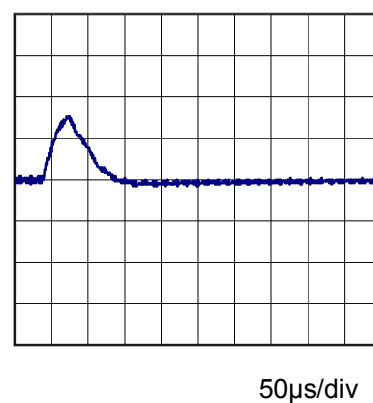
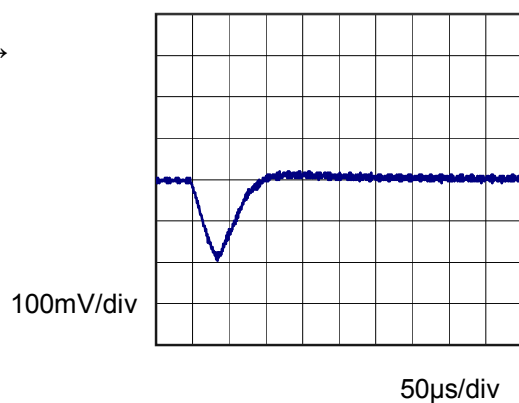
Min. Load (0A) \longleftrightarrow
Load 100% (4A)



Min. Load (0A) \longleftrightarrow
Load 50% (2A)



Load 50% (2A) \longleftrightarrow
Load 100% (4A)



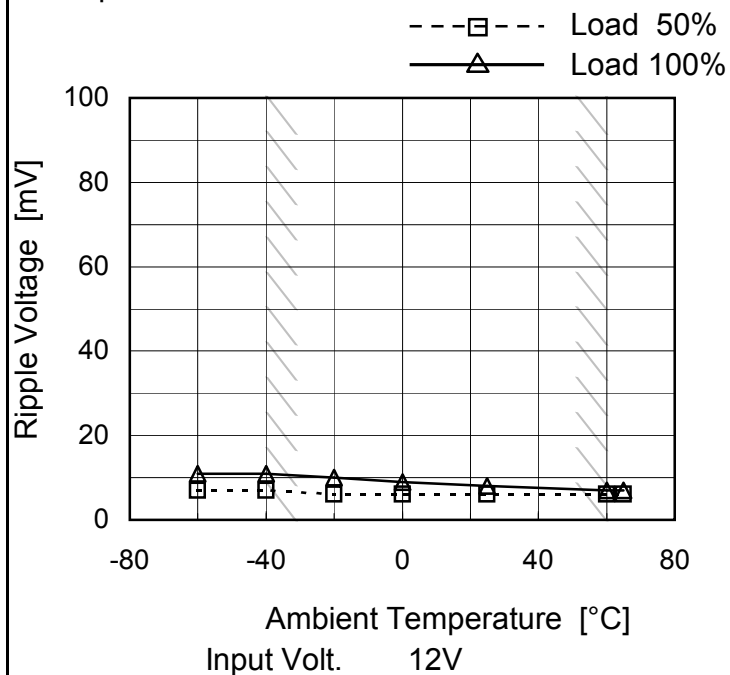
Model MGS15123R3

Item Ripple Voltage (by Ambient Temp.)

Object +3.3V4A

Testing Circuitry Figure B

1. Graph



Measured by 100 MHz Oscilloscope.

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

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	7	11
-40	7	11
-20	6	10
0	6	9
25	6	8
60	6	7
65	6	7
--	-	-
--	-	-
--	-	-
--	-	-

Model	MGS15123R3																																																						
Item	Ambient Temperature Drift	Testing Circuitry Figure A																																																					
Object	+3.3V4A																																																						
1.Graph		2.Values																																																					
<div><div>—△— Input Volt. 9V</div><div>---□--- Input Volt. 12V</div><div>-·-○-·- Input Volt. 18V</div></div> <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 9[V]</th><th>Input Volt. 12[V]</th><th>Input Volt. 18[V]</th></tr><tr><td>-60</td><td>3.365</td><td>3.366</td><td>3.366</td></tr><tr><td>-40</td><td>3.365</td><td>3.365</td><td>3.365</td></tr><tr><td>-20</td><td>3.362</td><td>3.362</td><td>3.362</td></tr><tr><td>0</td><td>3.358</td><td>3.358</td><td>3.358</td></tr><tr><td>25</td><td>3.356</td><td>3.356</td><td>3.356</td></tr><tr><td>60</td><td>3.350</td><td>3.350</td><td>3.350</td></tr><tr><td>65</td><td>3.349</td><td>3.349</td><td>3.349</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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	-60	3.365	3.366	3.366	-40	3.365	3.365	3.365	-20	3.362	3.362	3.362	0	3.358	3.358	3.358	25	3.356	3.356	3.356	60	3.350	3.350	3.350	65	3.349	3.349	3.349	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																						
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]																																																				
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0	3.358	3.358	3.358																																																				
25	3.356	3.356	3.356																																																				
60	3.350	3.350	3.350																																																				
65	3.349	3.349	3.349																																																				
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Note: Slanted line shows the range of the rated ambient temperature.																																																							



Model		MGS15123R3	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 - 18V

Load Current : 0 - 4A

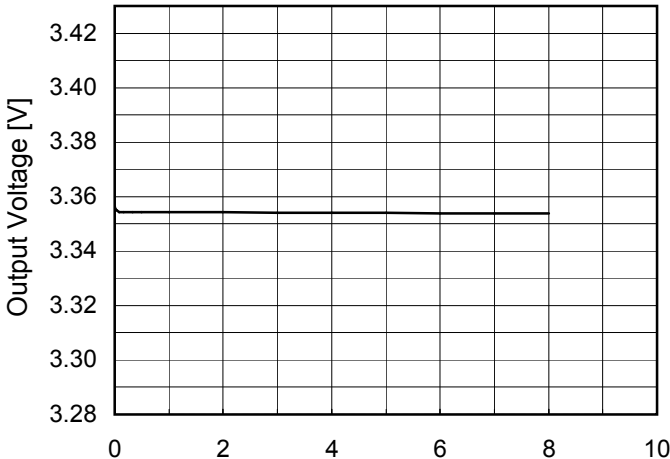
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

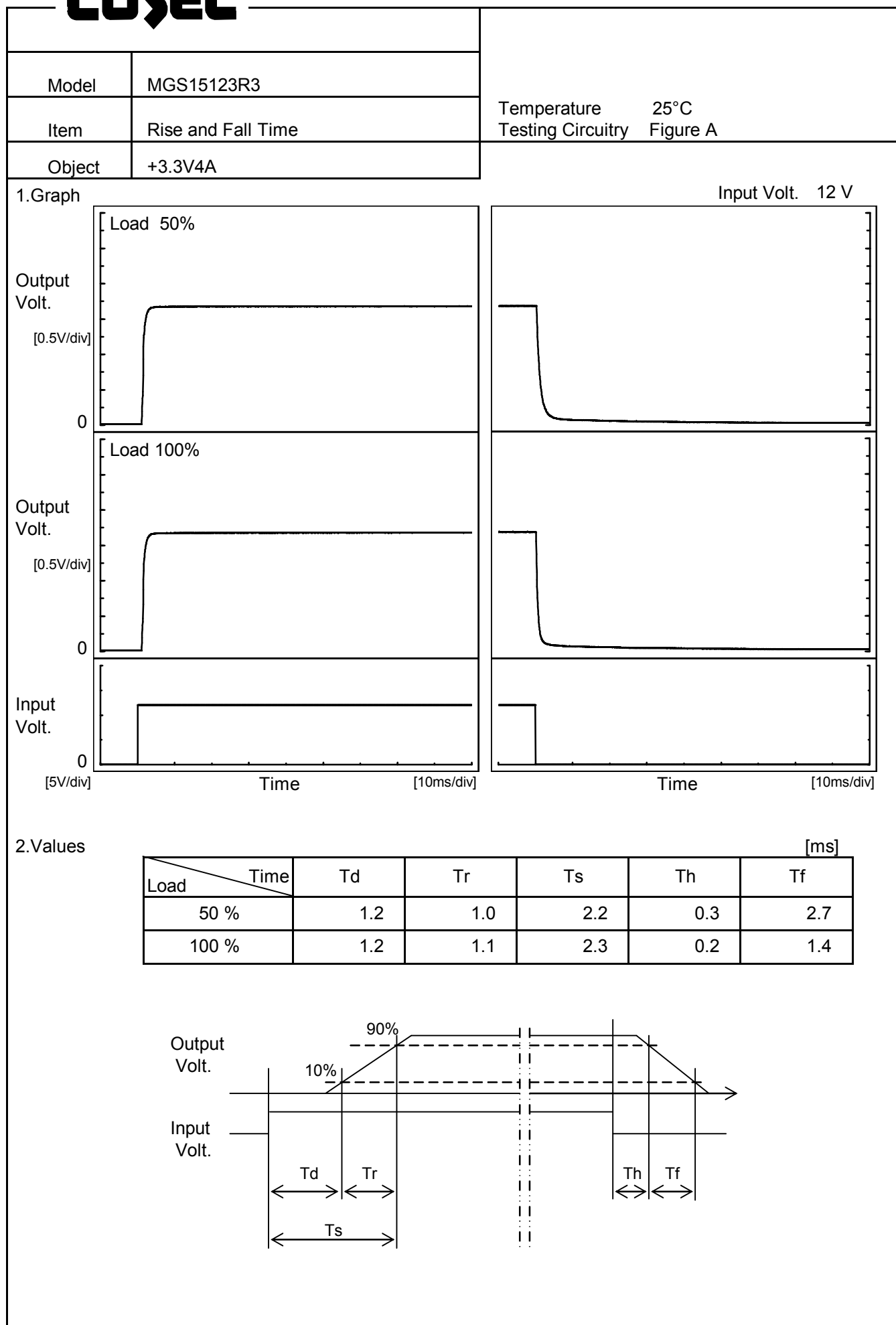
* Output Voltage Accuracy (Ratio) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	-40	9	0	3.367	±9	±0.3
Minimum Voltage	60	18	4	3.350		



Model	MGS15123R3																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+3.3V4A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 12V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>3.357</td></tr><tr><td>0.5</td><td>3.354</td></tr><tr><td>1.0</td><td>3.354</td></tr><tr><td>2.0</td><td>3.354</td></tr><tr><td>3.0</td><td>3.354</td></tr><tr><td>4.0</td><td>3.354</td></tr><tr><td>5.0</td><td>3.354</td></tr><tr><td>6.0</td><td>3.354</td></tr><tr><td>7.0</td><td>3.354</td></tr><tr><td>8.0</td><td>3.354</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.357	0.5	3.354	1.0	3.354	2.0	3.354	3.0	3.354	4.0	3.354	5.0	3.354	6.0	3.354	7.0	3.354	8.0	3.354
Time since start [H]	Output Voltage [V]																								
0.0	3.357																								
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8.0	3.354																								



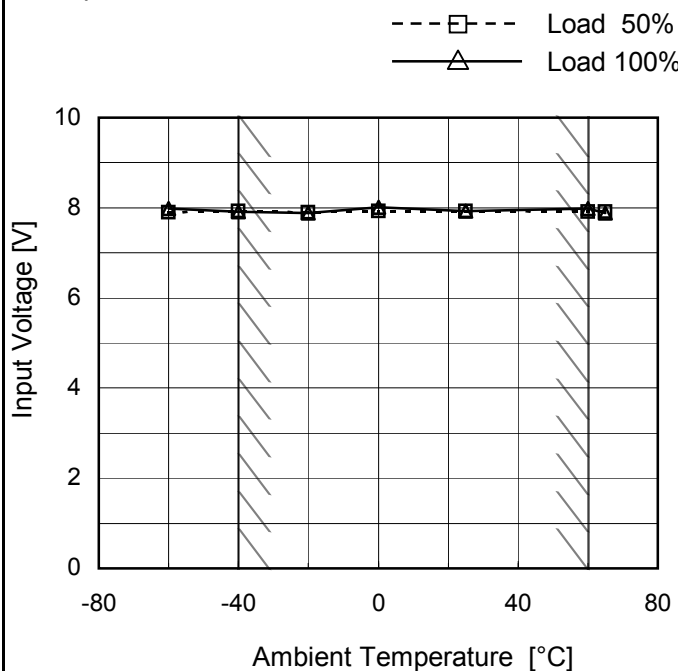
Model MGS15123R3

Item Minimum Input Voltage
for Regulated Output Voltage

Object +3.3V4A

Testing Circuitry Figure A

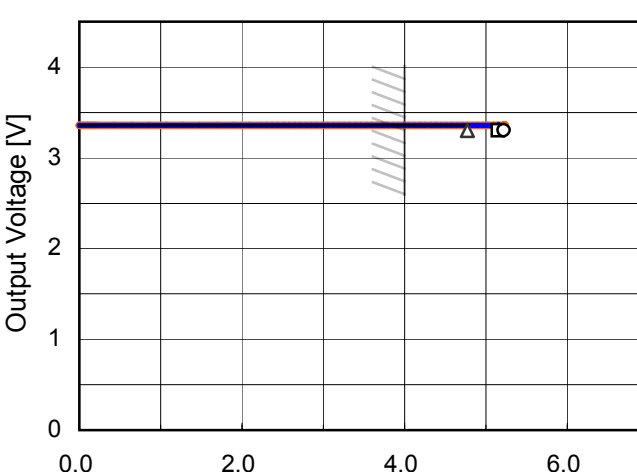
1. Graph



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

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	7.9	8.0
-40	8.0	8.0
-20	7.9	7.9
0	8.0	8.1
25	8.0	8.0
60	8.0	8.0
65	8.0	7.9
--	-	-
--	-	-
--	-	-
--	-	-

Model	MGS15123R3																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
Object	+3.3V4A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<div><div><div>—△</div><div>Input Volt.</div><div>9V</div></div><div><div>—□</div><div>Input Volt.</div><div>12V</div></div><div><div>—○</div><div>Input Volt.</div><div>18V</div></div></div>  <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when overcurrent protection is activated.</p>		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 9[V]</th><th>Input Volt. 12[V]</th><th>Input Volt. 18[V]</th></tr><tr><td>3.30</td><td>4.77</td><td>5.15</td><td>5.22</td></tr><tr><td>3.14</td><td>-</td><td>-</td><td>-</td></tr><tr><td>2.97</td><td>-</td><td>-</td><td>-</td></tr><tr><td>2.64</td><td>-</td><td>-</td><td>-</td></tr><tr><td>2.31</td><td>-</td><td>-</td><td>-</td></tr><tr><td>1.98</td><td>-</td><td>-</td><td>-</td></tr><tr><td>1.65</td><td>-</td><td>-</td><td>-</td></tr><tr><td>1.32</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.99</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.66</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.33</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	3.30	4.77	5.15	5.22	3.14	-	-	-	2.97	-	-	-	2.64	-	-	-	2.31	-	-	-	1.98	-	-	-	1.65	-	-	-	1.32	-	-	-	0.99	-	-	-	0.66	-	-	-	0.33	-	-	-	0.00	-	-	-
Output Voltage [V]	Load Current [A]																																																									
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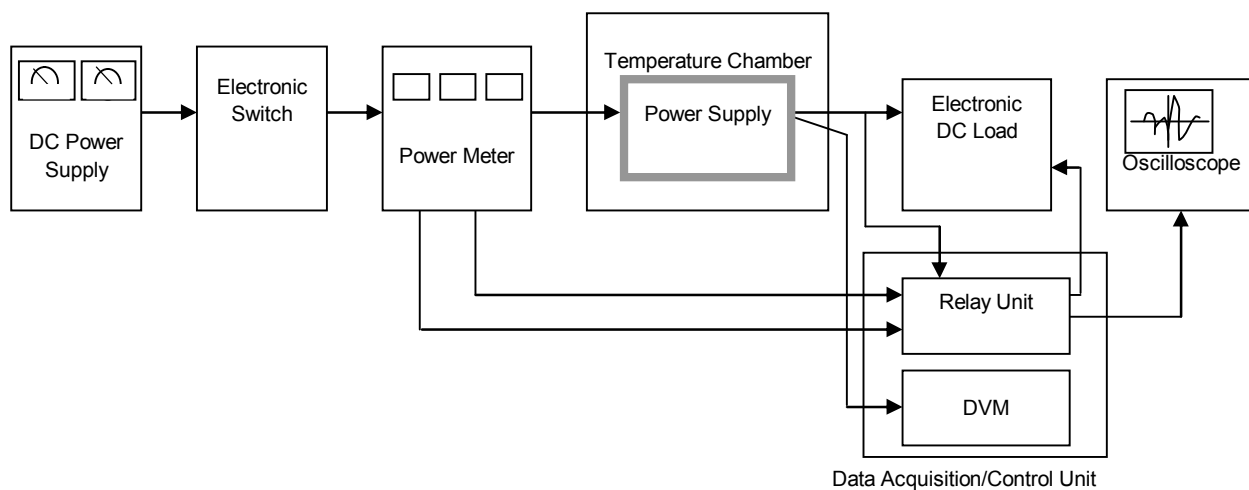


Figure A

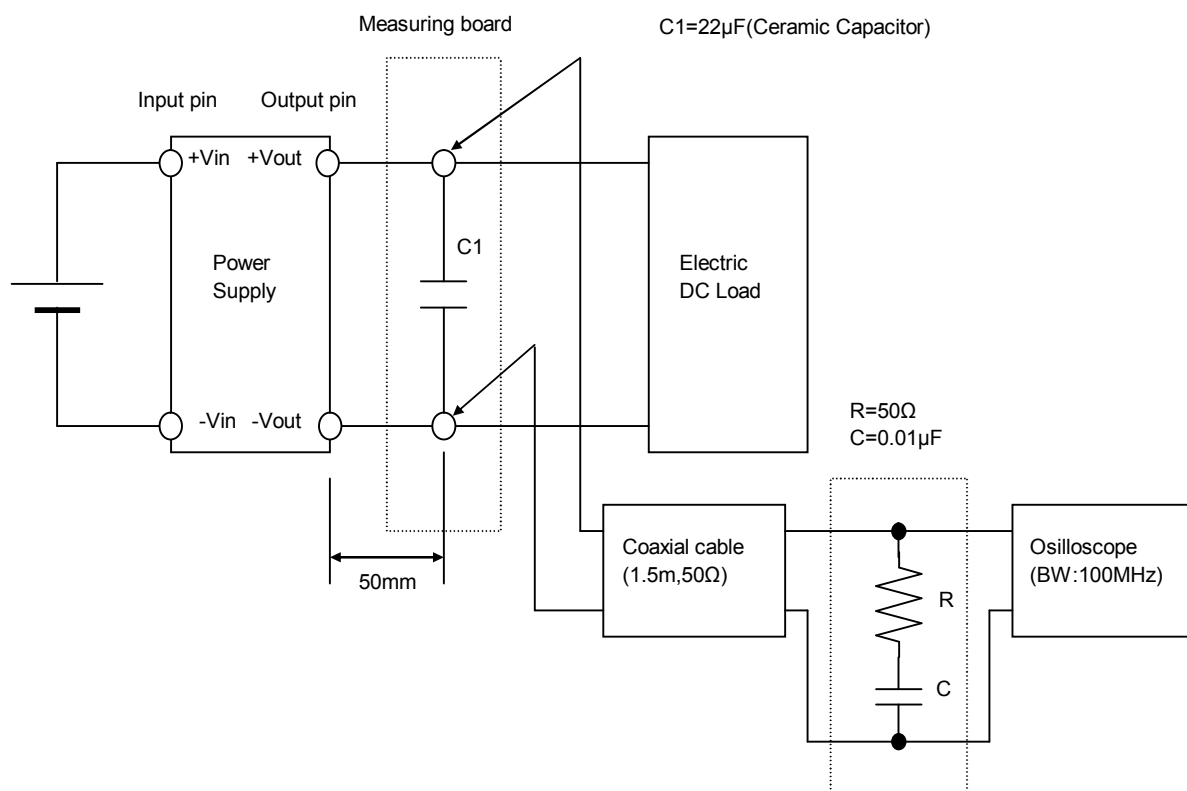


Figure B (Ripple and Ripple noise Characteristic)