

TEST DATA OF MGS15483R3

Regulated DC Power Supply
September 7, 2010

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Hidetaka Kobayashi
Hidetaka Kobayashi Design Engineer

COSEL CO.,LTD.

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(Final Page 18)

Model

MGS15483R3

Item

Input Current (by Input Voltage)

Object

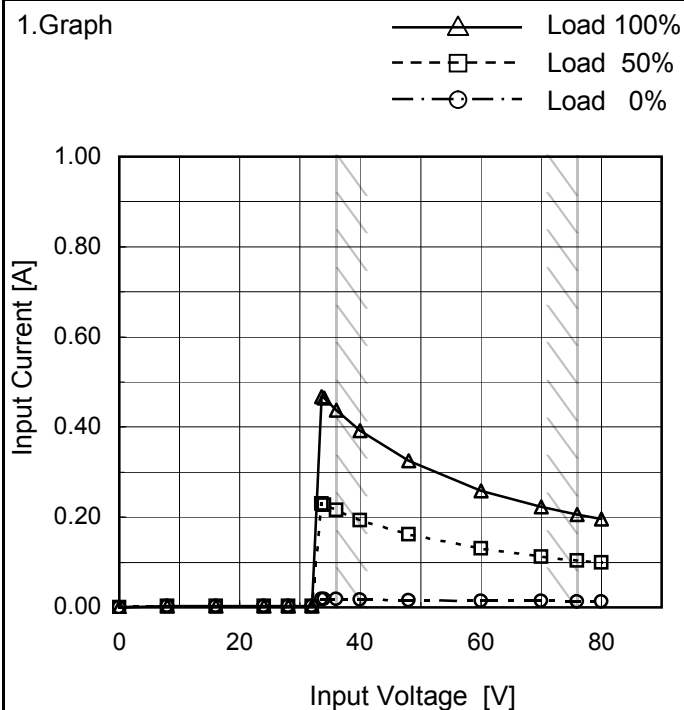
Temperature

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	0.003	0.003	0.003
16.0	0.003	0.003	0.003
24.0	0.003	0.003	0.003
28.0	0.003	0.003	0.003
32.0	0.003	0.003	0.003
33.6	0.019	0.231	0.468
34.0	0.019	0.227	0.464
36.0	0.018	0.215	0.437
40.0	0.017	0.194	0.391
48.0	0.016	0.162	0.325
60.0	0.014	0.130	0.259
70.0	0.014	0.113	0.223
76.0	0.013	0.104	0.205
80.0	0.013	0.099	0.195
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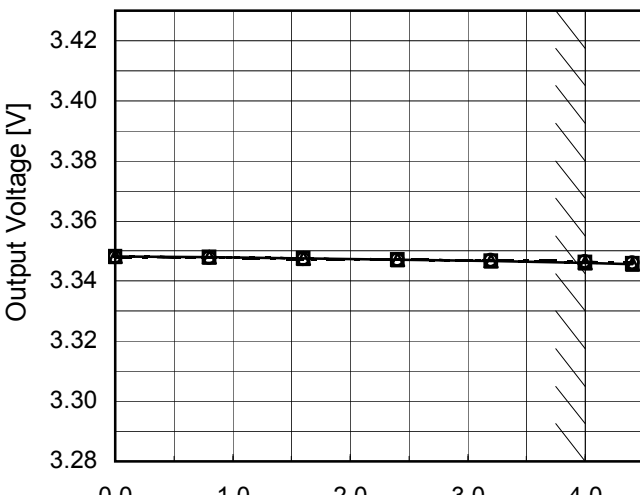
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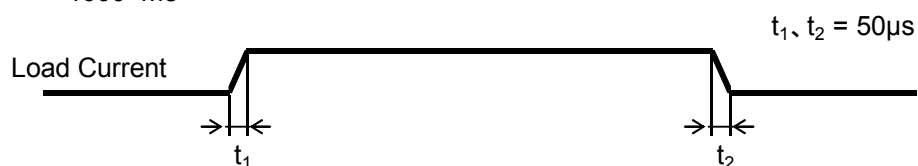
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COSEL

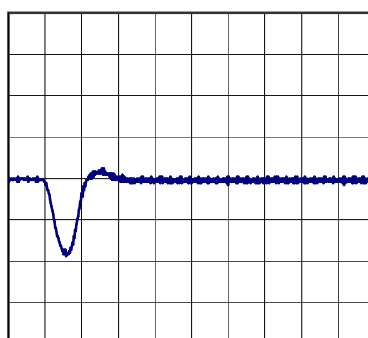
Model	MGS15483R3	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+3.3V4A	

Input Volt. 48 V
Cycle 1000 ms

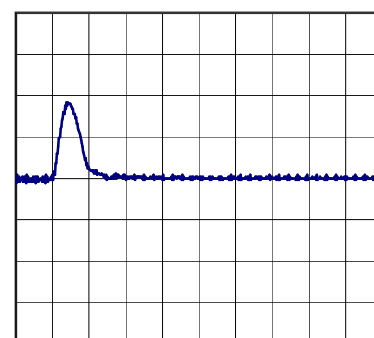


Min. Load (0A) \longleftrightarrow
Load 100% (4A)

100mV/div



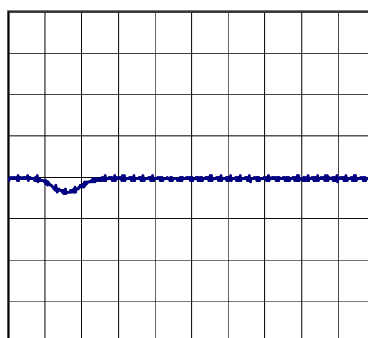
50µs/div



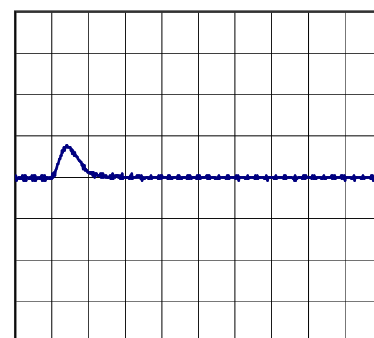
50µs/div

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

100mV/div



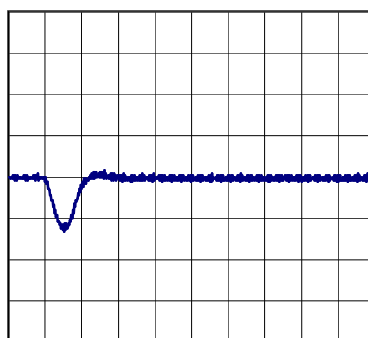
50µs/div



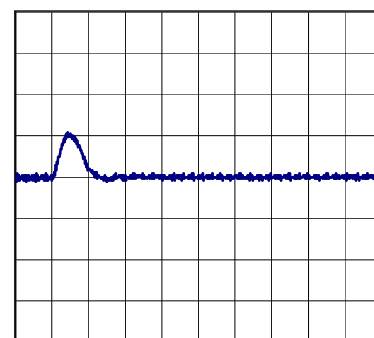
50µs/div

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

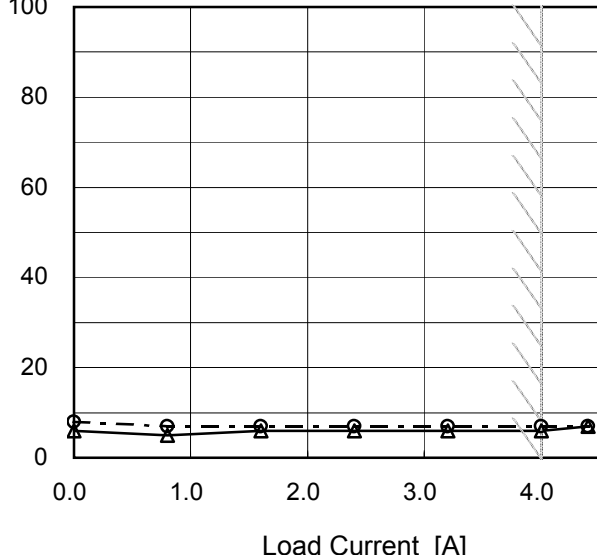
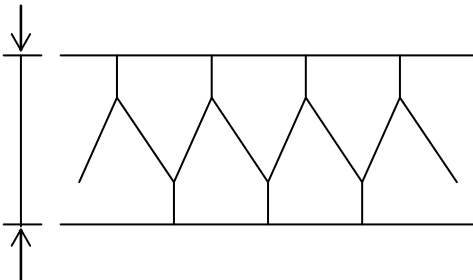
100mV/div



50µs/div



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<div><div><div>—△— Input Volt. 36V</div><div>- -○- - Input Volt. 76V</div></div></div> <div><p>Measured by 100 MHz Oscilloscope.</p><p>Ripple-Noise is shown as p-p in the figure below.</p><p>Note: Slanted line shows the range of the rated load current.</p></div> <div><div><div>Ripple Noise[mVp-p]</div></div><div>Fig.Complex Ripple Noise Wave Form</div></div>		<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>0.0</td><td>6</td><td>8</td></tr><tr><td>0.8</td><td>5</td><td>7</td></tr><tr><td>1.6</td><td>6</td><td>7</td></tr><tr><td>2.4</td><td>6</td><td>7</td></tr><tr><td>3.2</td><td>6</td><td>7</td></tr><tr><td>4.0</td><td>6</td><td>7</td></tr><tr><td>4.4</td><td>7</td><td>7</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]	0.0	6	8	0.8	5	7	1.6	6	7	2.4	6	7	3.2	6	7	4.0	6	7	4.4	7	7	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 36 [V]	Input Volt. 76 [V]																																							
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Model	MGS15483R3																																																					
Item	Ambient Temperature Drift	Testing Circuitry Figure A																																																				
Object	+3.3V4A																																																					
1.Graph		2.Values																																																				
<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> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>		<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>3.350</td><td>3.350</td><td>3.351</td></tr><tr><td>-40</td><td>3.352</td><td>3.352</td><td>3.352</td></tr><tr><td>-20</td><td>3.350</td><td>3.351</td><td>3.351</td></tr><tr><td>0</td><td>3.348</td><td>3.348</td><td>3.348</td></tr><tr><td>25</td><td>3.346</td><td>3.346</td><td>3.346</td></tr><tr><td>60</td><td>3.343</td><td>3.343</td><td>3.343</td></tr><tr><td>65</td><td>3.341</td><td>3.342</td><td>3.342</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	3.350	3.350	3.351	-40	3.352	3.352	3.352	-20	3.350	3.351	3.351	0	3.348	3.348	3.348	25	3.346	3.346	3.346	60	3.343	3.343	3.343	65	3.341	3.342	3.342	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																					
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																			
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Model		MGS15483R3	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 : 36 - 76V

Load Current : 0 - 4A

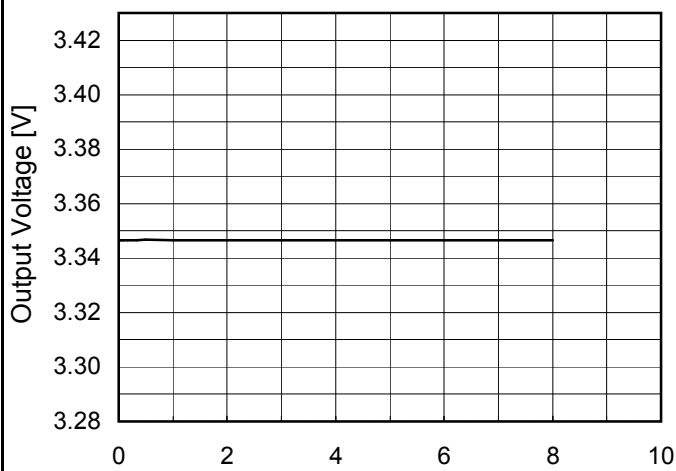
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

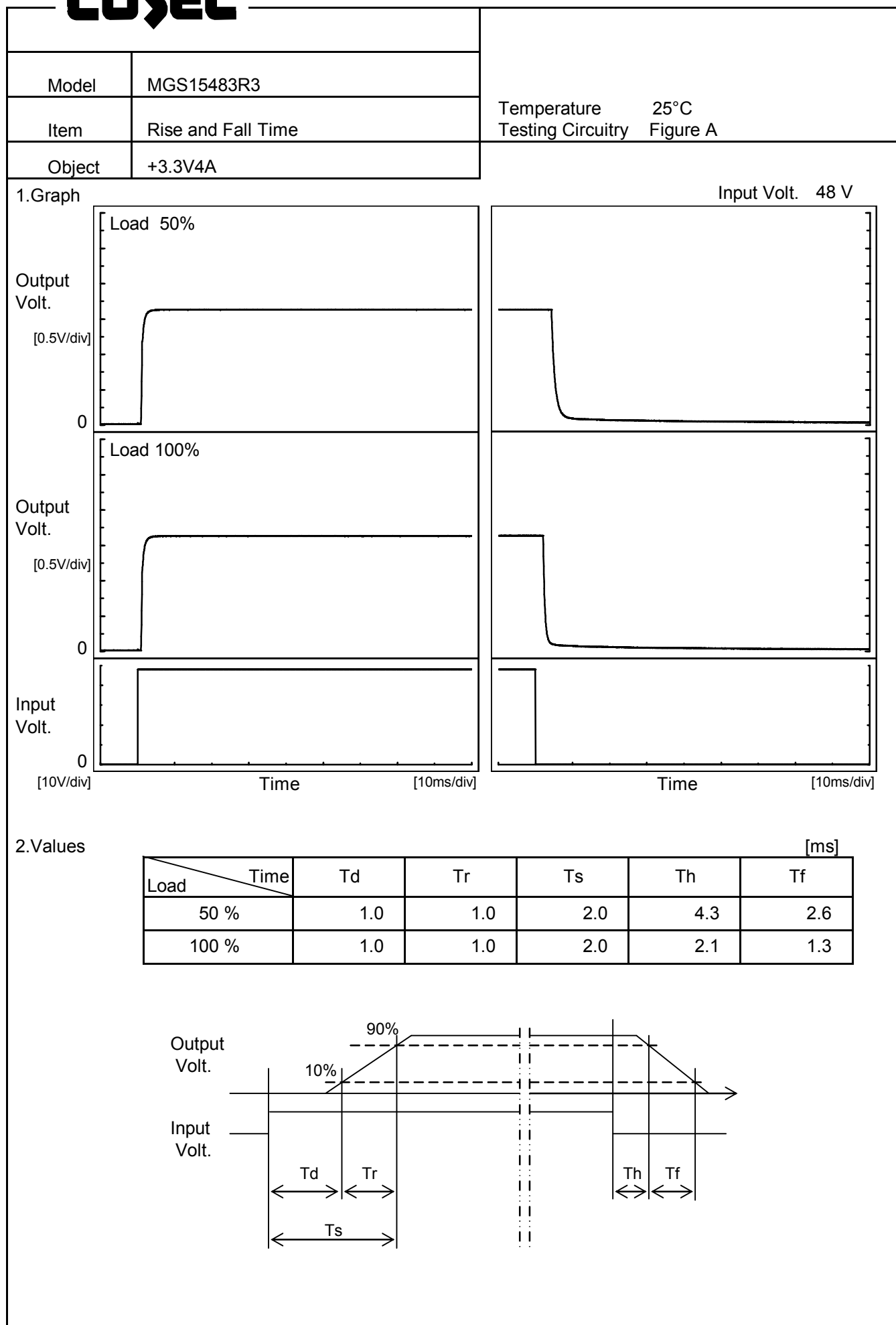
* Output Voltage Accuracy (Ratio) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	-40	36	0	3.354	±6	±0.2
Minimum Voltage	60	36	4	3.343		



Model	MGS15483R3																								
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. 48V</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>3.347</td></tr><tr><td>0.5</td><td>3.347</td></tr><tr><td>1.0</td><td>3.347</td></tr><tr><td>2.0</td><td>3.347</td></tr><tr><td>3.0</td><td>3.347</td></tr><tr><td>4.0</td><td>3.347</td></tr><tr><td>5.0</td><td>3.347</td></tr><tr><td>6.0</td><td>3.347</td></tr><tr><td>7.0</td><td>3.347</td></tr><tr><td>8.0</td><td>3.347</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.347	0.5	3.347	1.0	3.347	2.0	3.347	3.0	3.347	4.0	3.347	5.0	3.347	6.0	3.347	7.0	3.347	8.0	3.347
Time since start [H]	Output Voltage [V]																								
0.0	3.347																								
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Model	MGS15483R3																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
Object	+3.3V4A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<div><div><div></div><div></div><div></div></div><div><div>Input Volt. 36V</div><div>Input Volt. 48V</div><div>Input Volt. 76V</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. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>3.30</td><td>5.96</td><td>6.23</td><td>5.85</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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	3.30	5.96	6.23	5.85	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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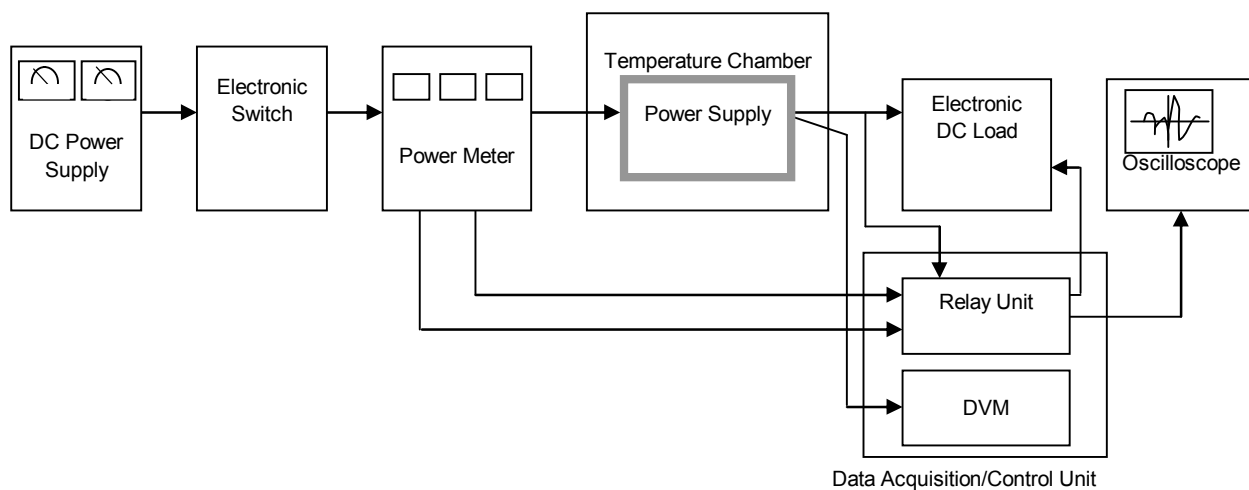


Figure A

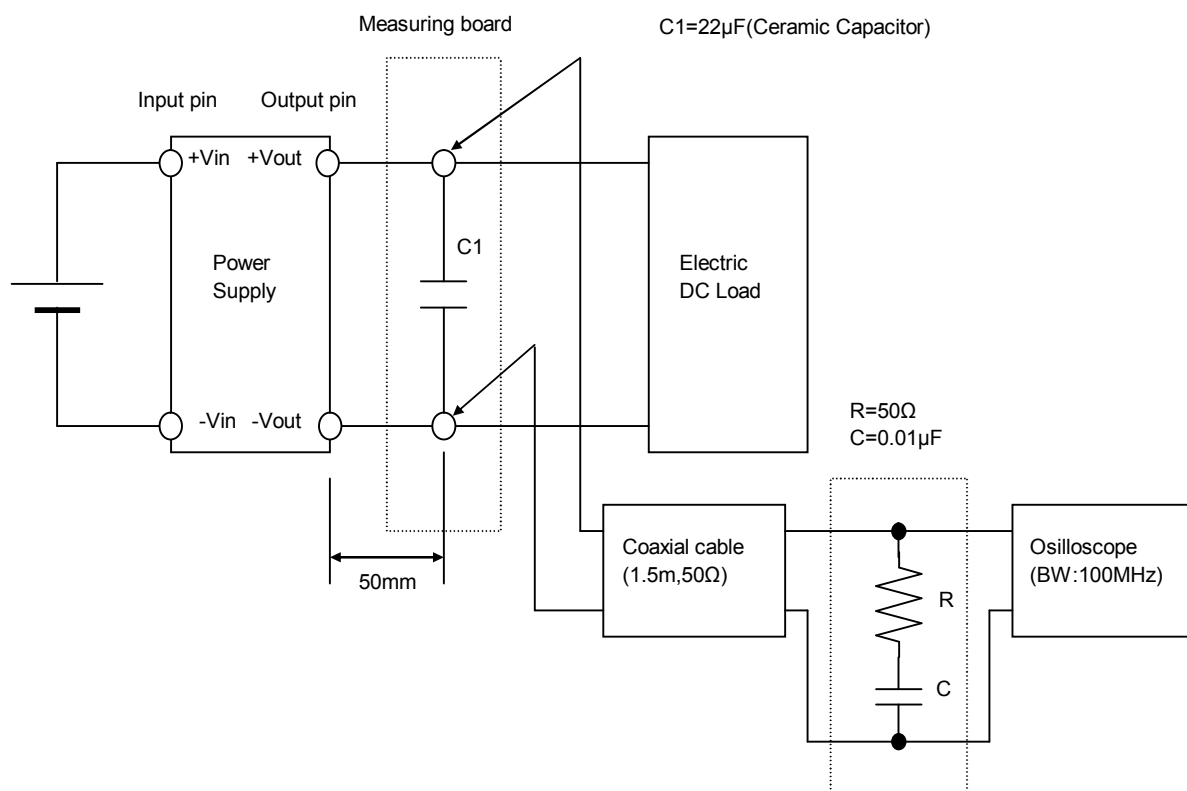


Figure B (Ripple and Ripple noise Characteristic)