

TEST DATA OF SUTW61215

Regulated DC Power Supply
March 17, 2009

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Sho Saito
Sho Saito Design Engineer

COSEL CO.,LTD.

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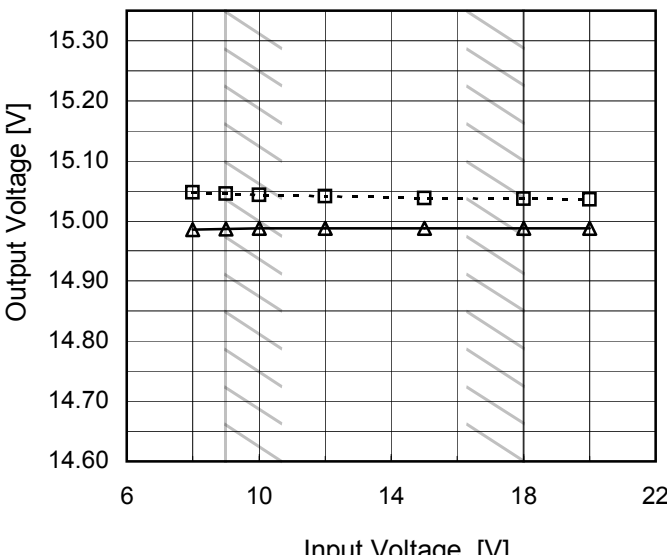
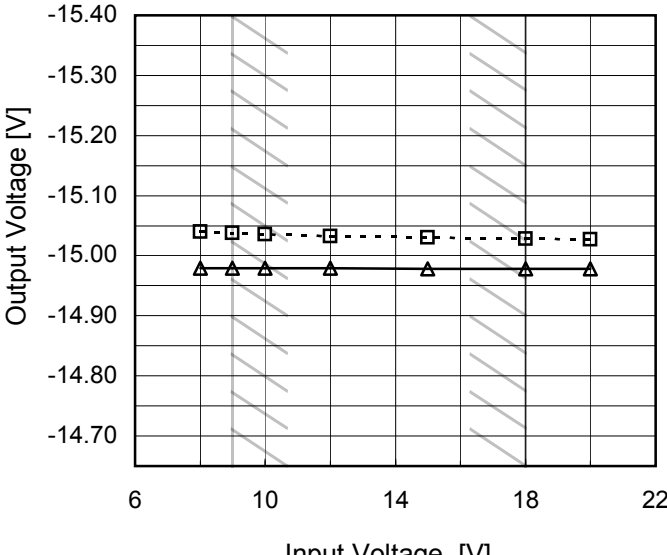
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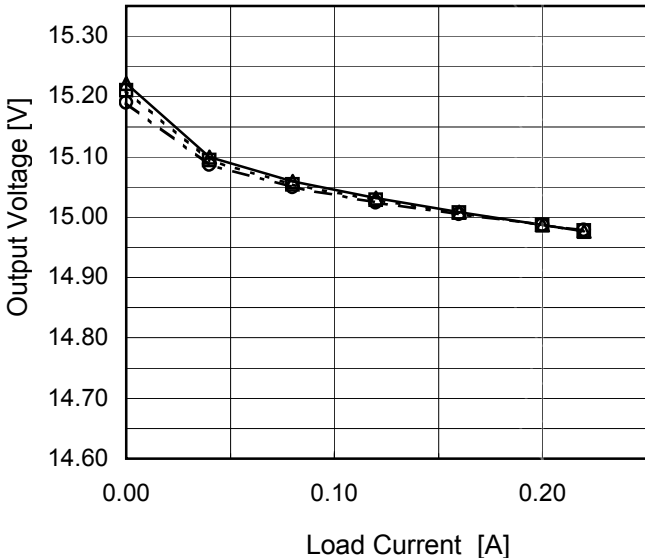
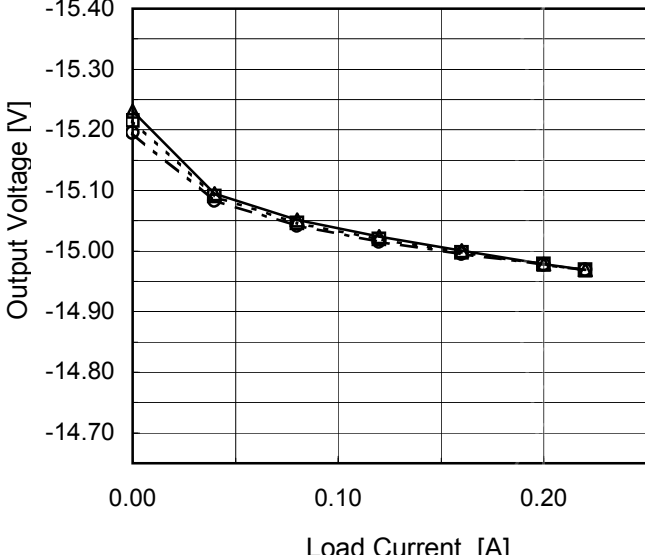
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Model	SUTW61215																																																					
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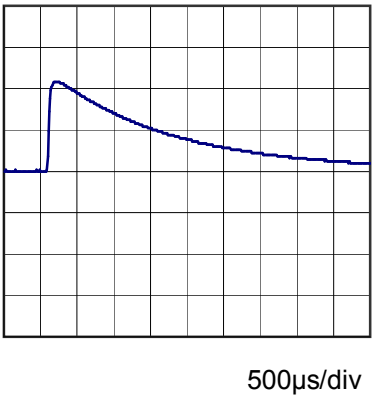
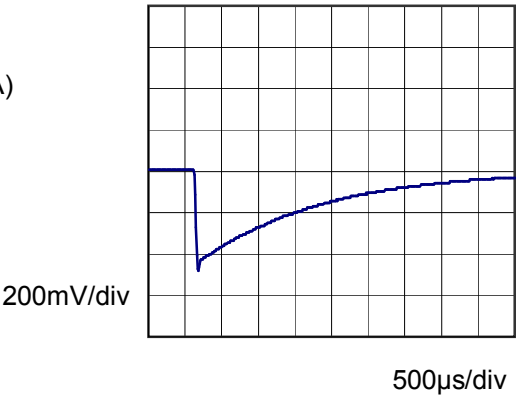


Model	SUTW61215	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+15V0.2A	

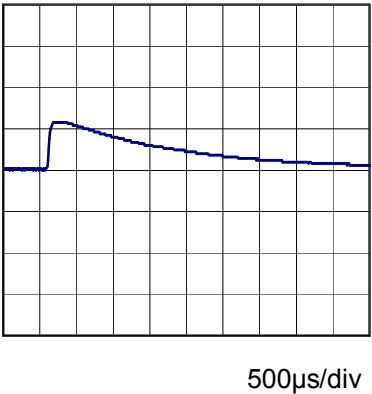
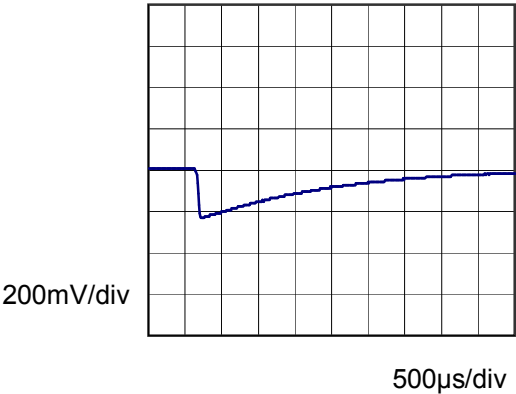
Input Volt. 12 V
Cycle 100 mS



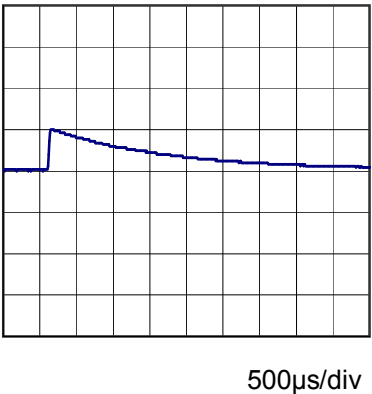
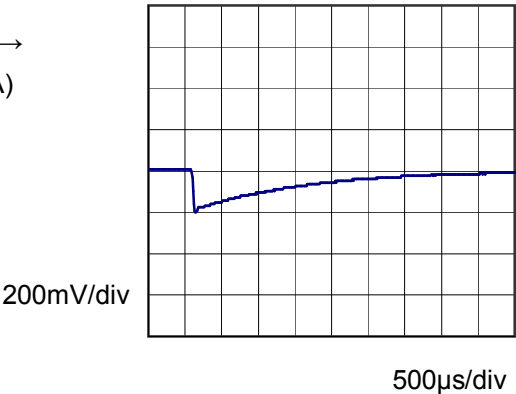
Min. Load (0A) \longleftrightarrow
Load 100% (0.2A)



Min. Load (0A) \longleftrightarrow
Load 50% (0.1A)



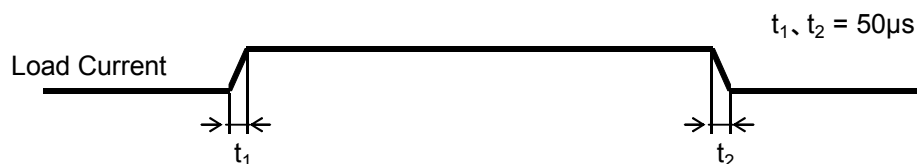
Load 50% (0.1A) \longleftrightarrow
Load 100% (0.2A)



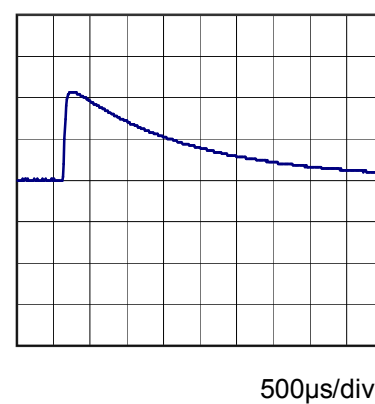
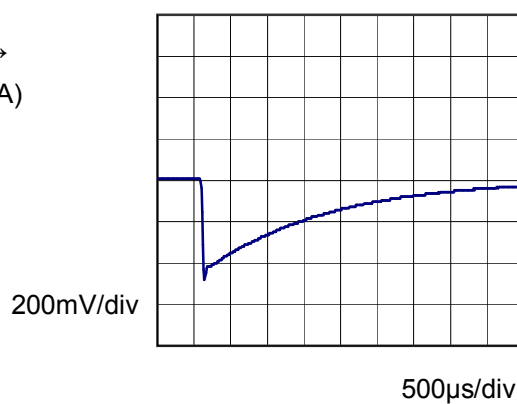


Model	SUTW61215	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	-15V0.2A	

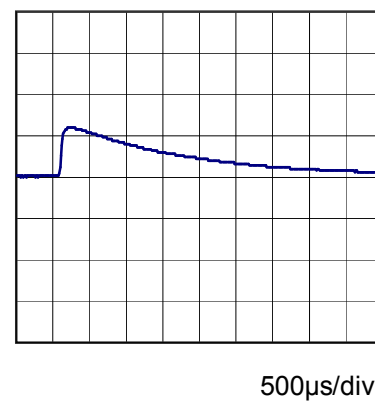
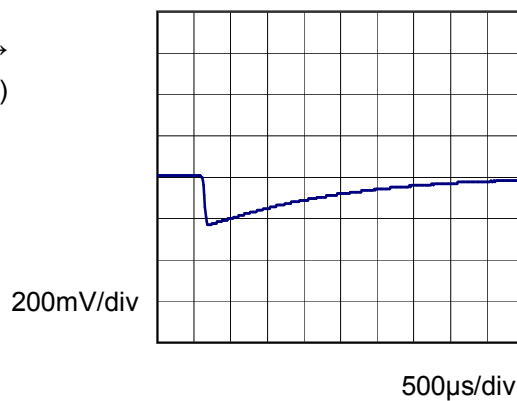
Input Volt. 12 V
Cycle 100 mS



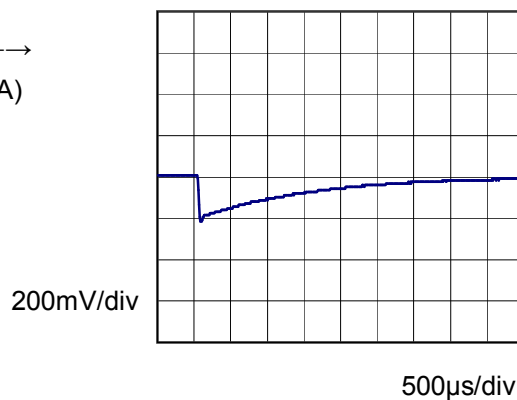
Min. Load (0A) \longleftrightarrow
Load 100% (0.2A)



Min. Load (0A) \longleftrightarrow
Load 50% (0.1A)



Load 50% (0.1A) \longleftrightarrow
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Model	SUTW61215																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
Object	+15V0.2A																																								
1.Graph		2.Values																																							
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Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
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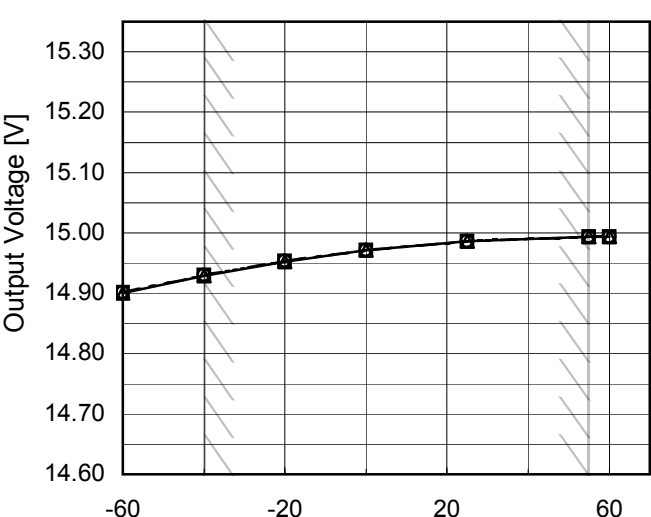
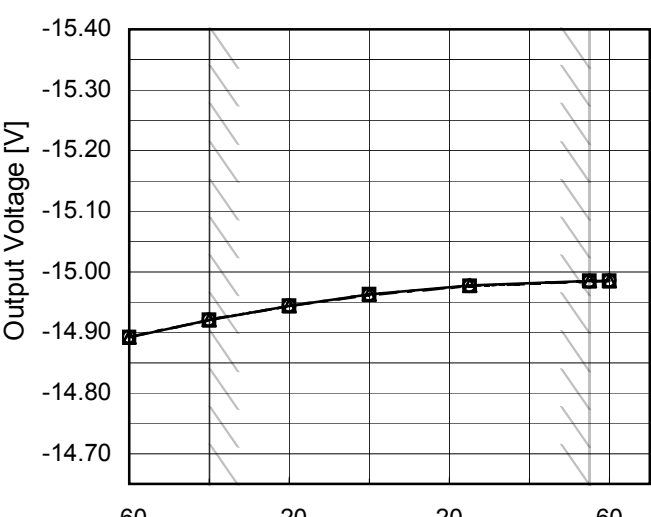
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Item	Ripple-Noise	Temperature	25°C																																						
Object	+15V0.2A	Testing Circuitry	Figure B																																						
1.Graph		2.Values																																							
<div><div><div>—△— Input Volt. 9V</div><div>-·-○-·- Input Volt. 18V</div></div><p>Ripple-Noise [mV]</p><p>Load Current [A]</p></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><p>Ripple Noise[mVp-p]</p></div> <div><p>Fig.Complex Ripple Noise Wave Form</p></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 9 [V]</th><th>Input Volt. 18 [V]</th></tr><tr><td>0.00</td><td>2</td><td>3</td></tr><tr><td>0.04</td><td>4</td><td>3</td></tr><tr><td>0.08</td><td>5</td><td>4</td></tr><tr><td>0.12</td><td>7</td><td>5</td></tr><tr><td>0.16</td><td>9</td><td>6</td></tr><tr><td>0.20</td><td>12</td><td>7</td></tr><tr><td>0.22</td><td>14</td><td>8</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. 9 [V]	Input Volt. 18 [V]	0.00	2	3	0.04	4	3	0.08	5	4	0.12	7	5	0.16	9	6	0.20	12	7	0.22	14	8	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 9 [V]	Input Volt. 18 [V]																																							
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Model	SUTW61215																																								
Item	Ripple-Noise	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
Object	-15V0.2A																																								
1.Graph		2.Values																																							
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<p>Fig.Complex Ripple Noise Wave Form</p>																																									

Model	SUTW61215																																								
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry Figure B																																							
Object	+15V0.2A																																								
1.Graph		2.Values																																							
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <p>Ripple Voltage [mV]</p> <p>Ambient Temperature [°C]</p> <p>Input Volt. 12V</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-60</td><td>5</td><td>9</td></tr><tr><td>-40</td><td>5</td><td>9</td></tr><tr><td>-20</td><td>5</td><td>9</td></tr><tr><td>0</td><td>5</td><td>8</td></tr><tr><td>25</td><td>4</td><td>8</td></tr><tr><td>55</td><td>4</td><td>8</td></tr><tr><td>60</td><td>4</td><td>8</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>		Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	5	9	-40	5	9	-20	5	9	0	5	8	25	4	8	55	4	8	60	4	8	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																								
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Ambient Temperature [°C]	Ripple Voltage [mV]																																								
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- 14 -

BC-10273

Model	SUTW61215																																																						
Item	Ambient Temperature Drift		Testing Circuitry Figure A																																																				
Object	+15V0.2A																																																						
1.Graph		2.Values																																																					
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Ambient Temperature [°C]	Output Voltage [V]																																																						
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Note: Slanted line shows the range of the rated ambient temperature.																																																							



Model		SUTW61215	Testing Circuitry Figure A
Item		Output Voltage Accuracy	

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 : 9 - 18V

Load Current (AVR 1) : 0 - 0.2A (AVR 2) : 0 - 0.2A

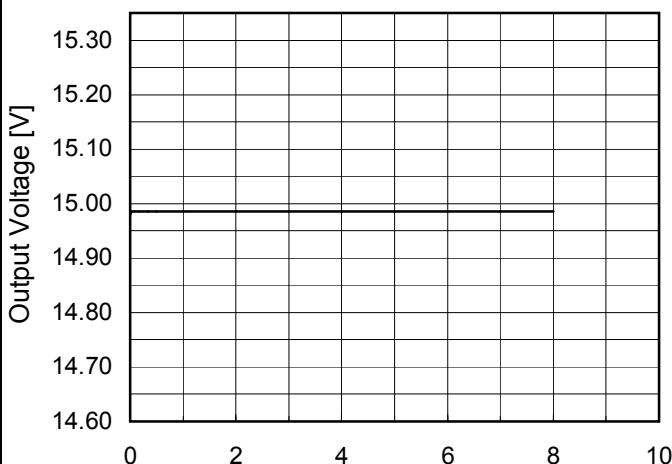
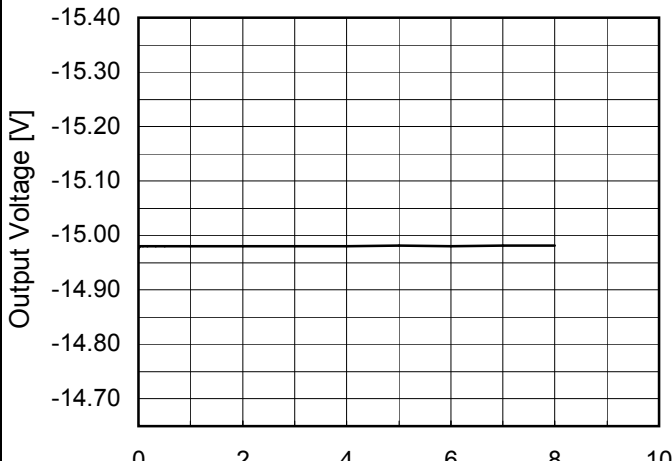
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

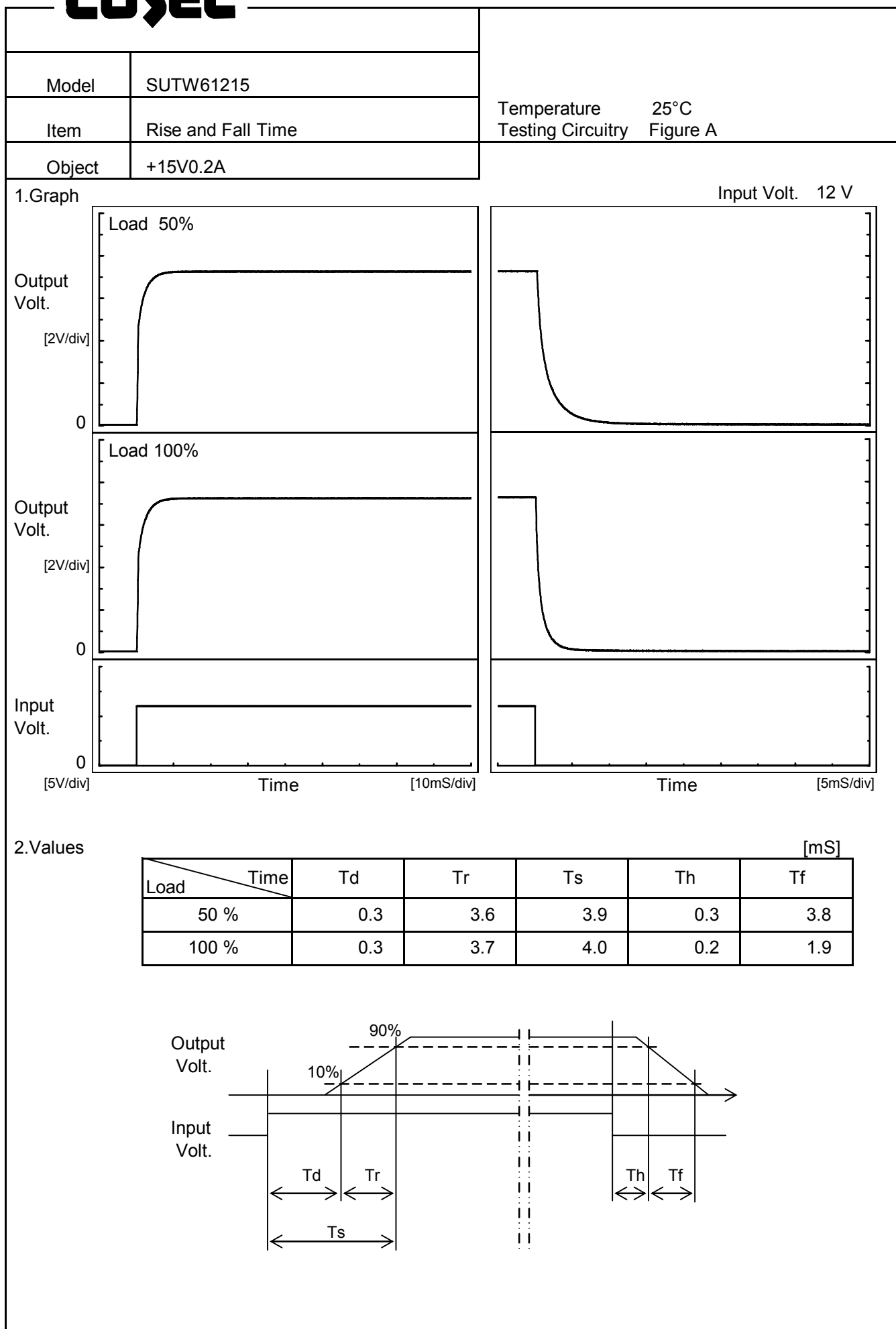
* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

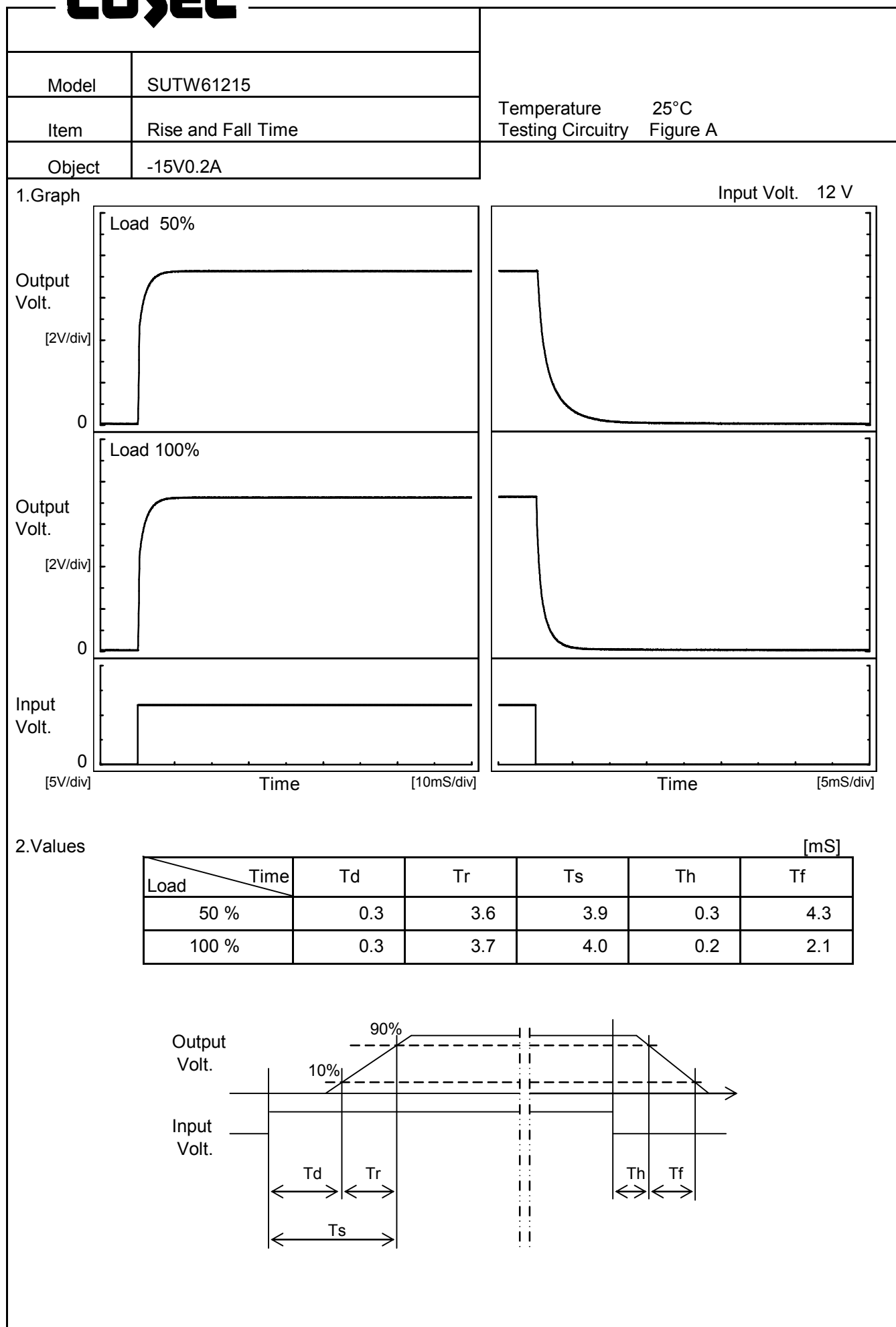
2. Values

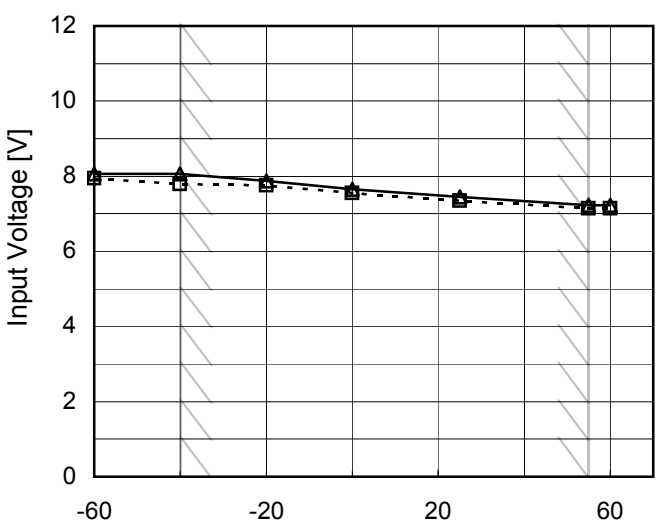
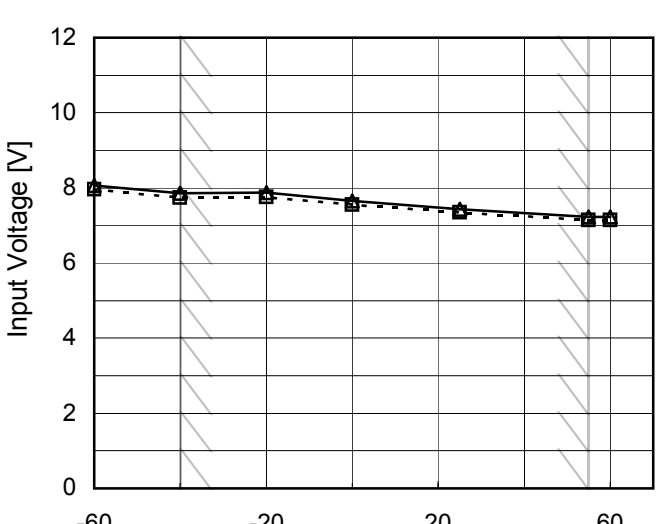
Object		+15V0.2A				
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	15.236	±264	±1.8
Minimum Voltage	-40	9	0.2	14.708		

Object		-15V0.2A				
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	-15.245	±261	±1.7
Minimum Voltage	-40	9	0.2	-14.723		

Model	SUTW61215																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+15V0.2A																								
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>14.980</td></tr><tr><td>0.5</td><td>14.986</td></tr><tr><td>1.0</td><td>14.986</td></tr><tr><td>2.0</td><td>14.986</td></tr><tr><td>3.0</td><td>14.986</td></tr><tr><td>4.0</td><td>14.986</td></tr><tr><td>5.0</td><td>14.986</td></tr><tr><td>6.0</td><td>14.986</td></tr><tr><td>7.0</td><td>14.986</td></tr><tr><td>8.0</td><td>14.985</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	14.980	0.5	14.986	1.0	14.986	2.0	14.986	3.0	14.986	4.0	14.986	5.0	14.986	6.0	14.986	7.0	14.986	8.0	14.985
Time since start [H]	Output Voltage [V]																								
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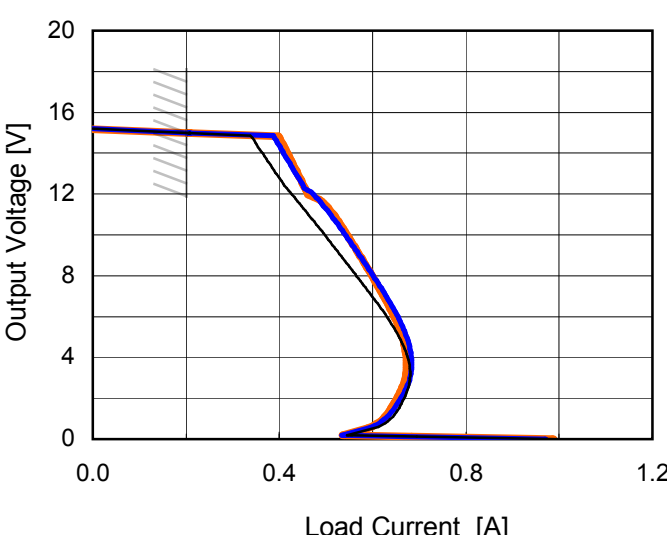
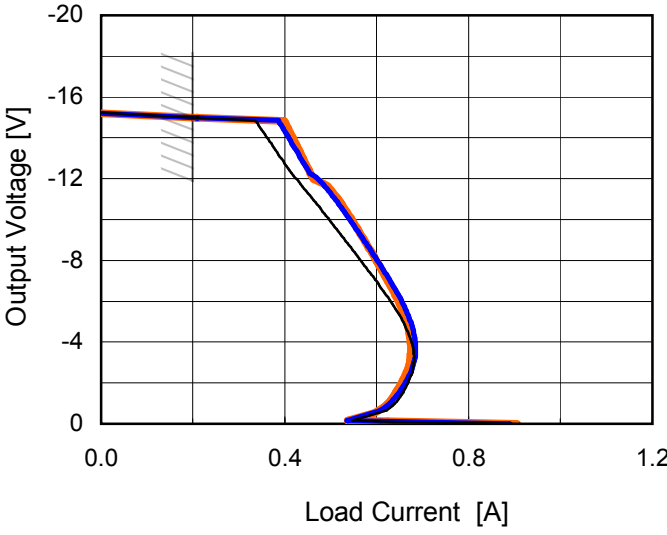




Model	SUTW61215																																								
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																							
Object	+15V0.2A																																								
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BC-10273

Model	SUTW61215																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
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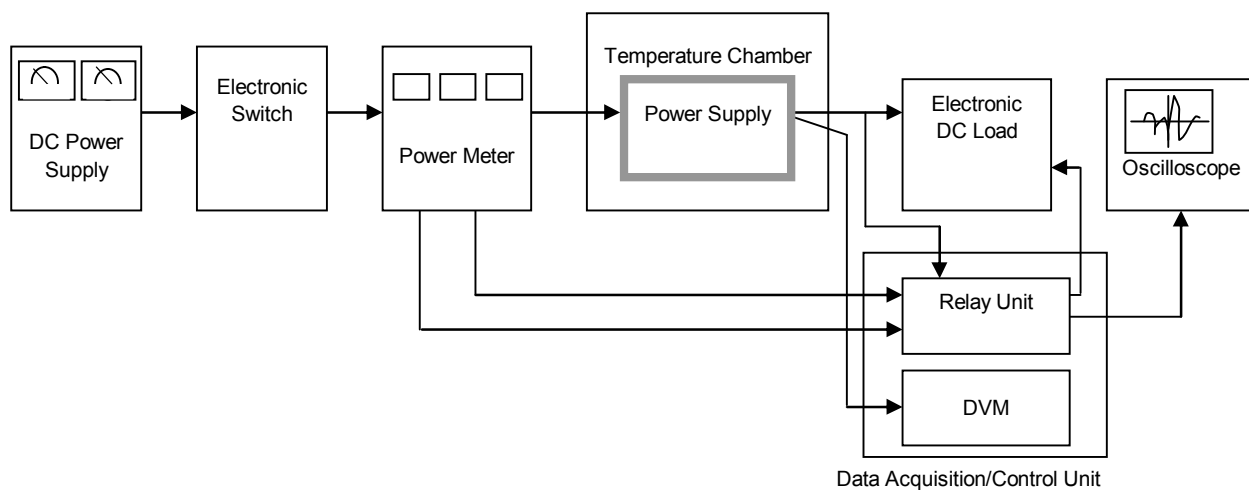


Figure A

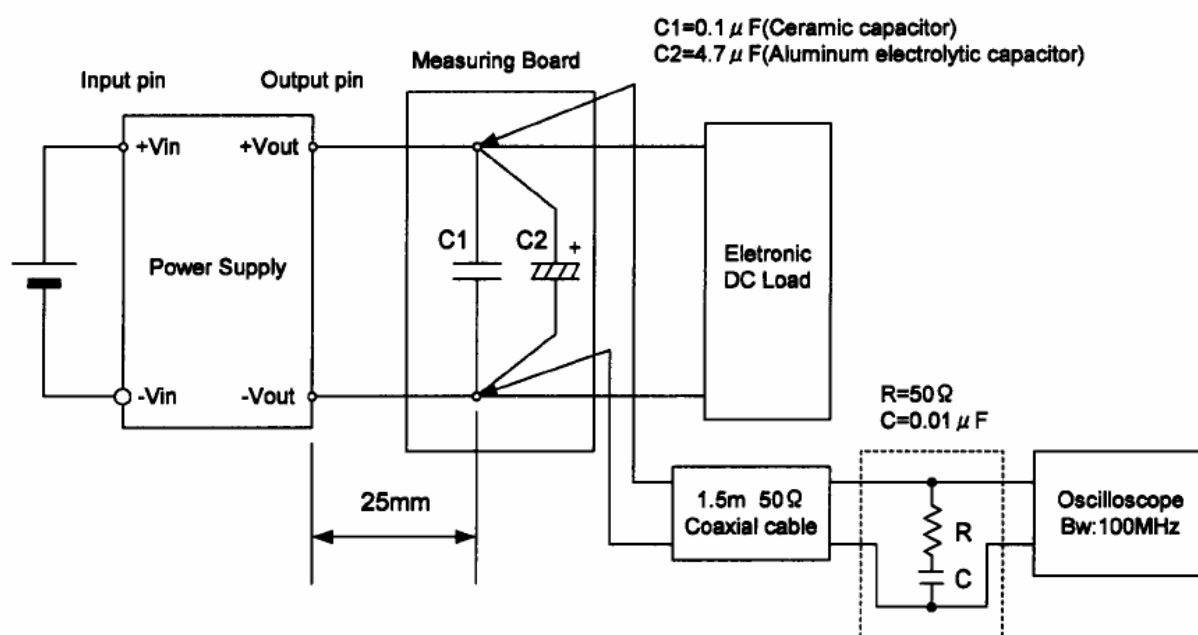


Figure B (Ripple and Ripple noise Characteristic)