

TEST DATA OF SUTW100515

Regulated DC Power Supply
February 19, 2009

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COSEL CO.,LTD.

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Item		Input Current (by Input Voltage)		Testing Circuitry		Figure A	
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1.Graph				2.Values			
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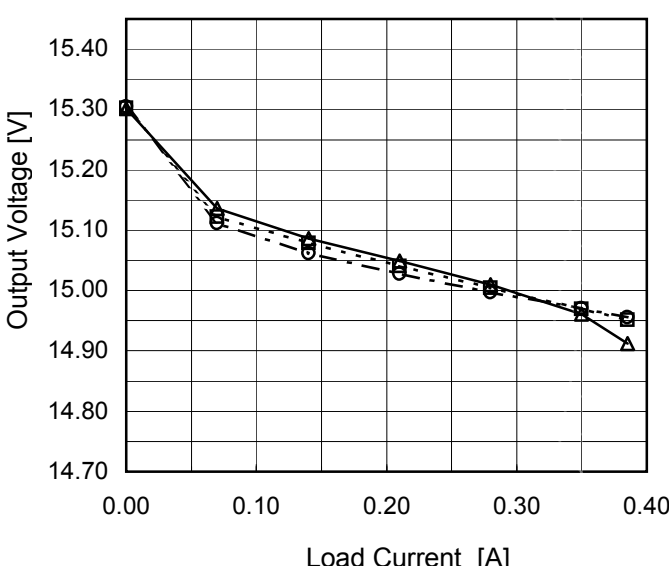
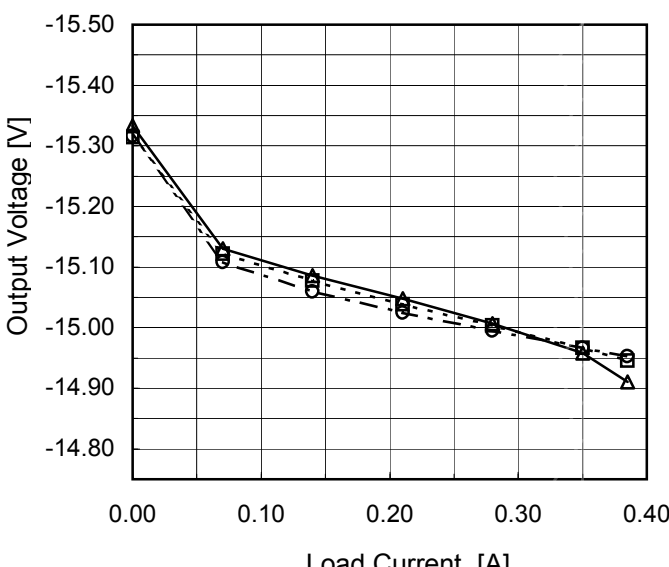
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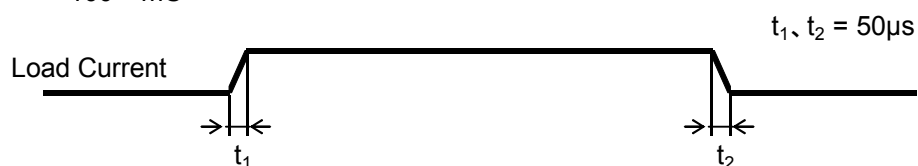
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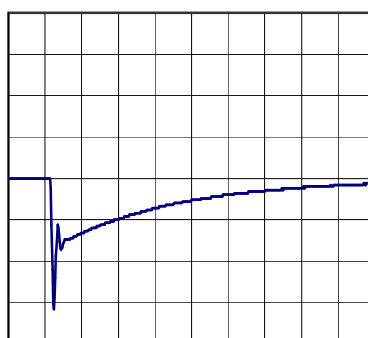
Model	SUTW100515	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+15V0.35A	

Input Volt. 48 V
Cycle 100 mS



Min. Load (0A) \longleftrightarrow
Load 100% (0.35A)

200mV/div



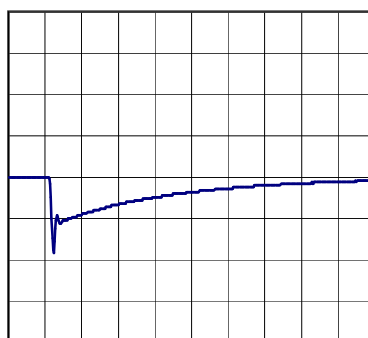
500µs/div



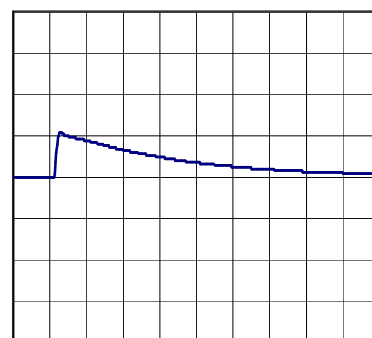
500µs/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.175A)

200mV/div



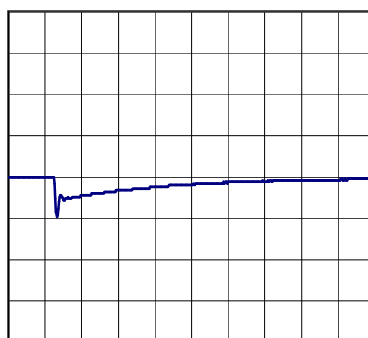
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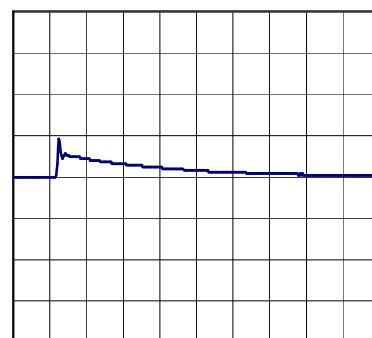
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Load 50% (0.175A) \longleftrightarrow
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200mV/div



500µs/div

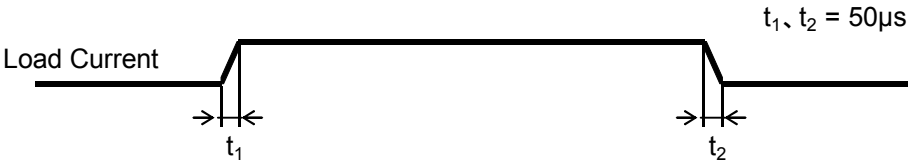


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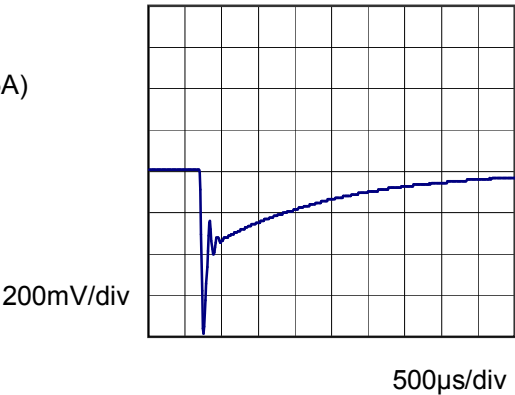


Model	SUTW100515	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	-15V0.35A	

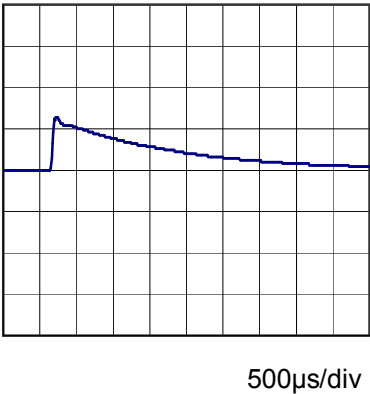
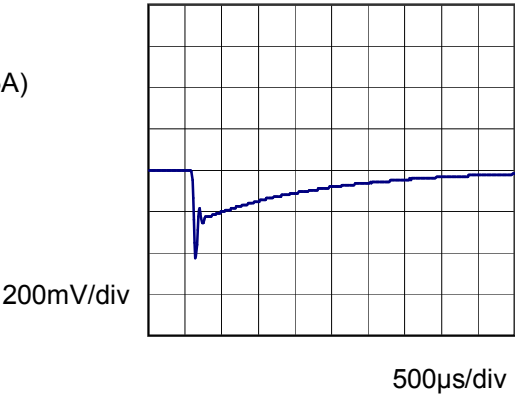
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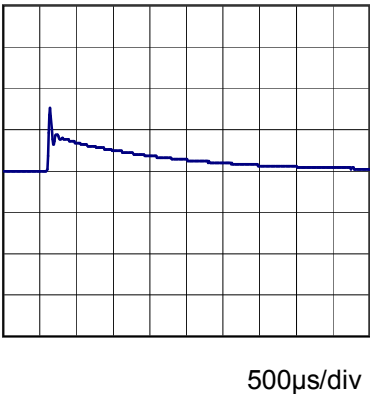
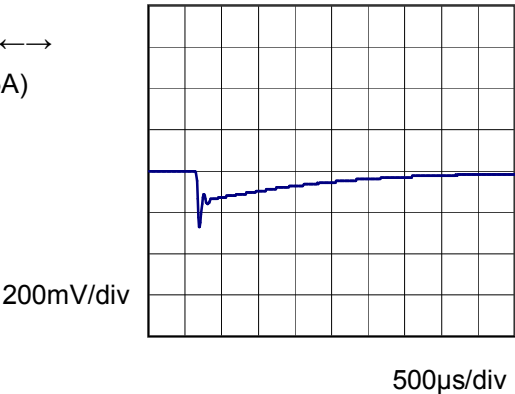
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Model	SUTW100515																																								
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<div><div><div>—△—</div><div>Input Volt.</div><div>4.5V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>9V</div></div></div> <p>Ripple-Noise [mV]</p> <p>Load Current [A]</p> <p>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.</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 4.5 [V]</th><th>Input Volt. 9 [V]</th></tr><tr><td>0.000</td><td>4</td><td>4</td></tr><tr><td>0.070</td><td>6</td><td>7</td></tr><tr><td>0.140</td><td>7</td><td>9</td></tr><tr><td>0.210</td><td>8</td><td>10</td></tr><tr><td>0.280</td><td>10</td><td>11</td></tr><tr><td>0.350</td><td>11</td><td>11</td></tr><tr><td>0.385</td><td>12</td><td>12</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. 4.5 [V]	Input Volt. 9 [V]	0.000	4	4	0.070	6	7	0.140	7	9	0.210	8	10	0.280	10	11	0.350	11	11	0.385	12	12	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
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<p>Ripple Noise[mVp-p]</p> <p>Fig.Complex Ripple Noise Wave Form</p>																																									

Model		SUTW100515	
Item		Ripple Voltage (by Ambient Temp.)	
Object		+15V0.35A	
1.Graph		2.Values	
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> 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Model	SUTW100515																																																						
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Note: Slanted line shows the range of the rated ambient temperature.																																																							



Model		SUTW100515	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 : 4.5 - 9V

Load Current (AVR 1) : 0 - 0.35A (AVR 2) : 0 - 0.35A

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

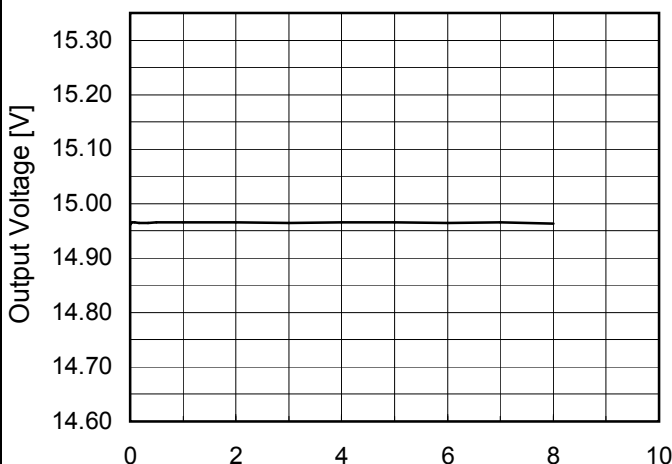
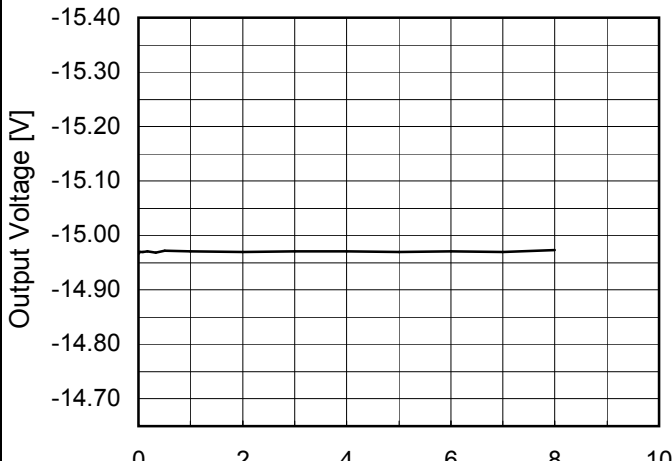
* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

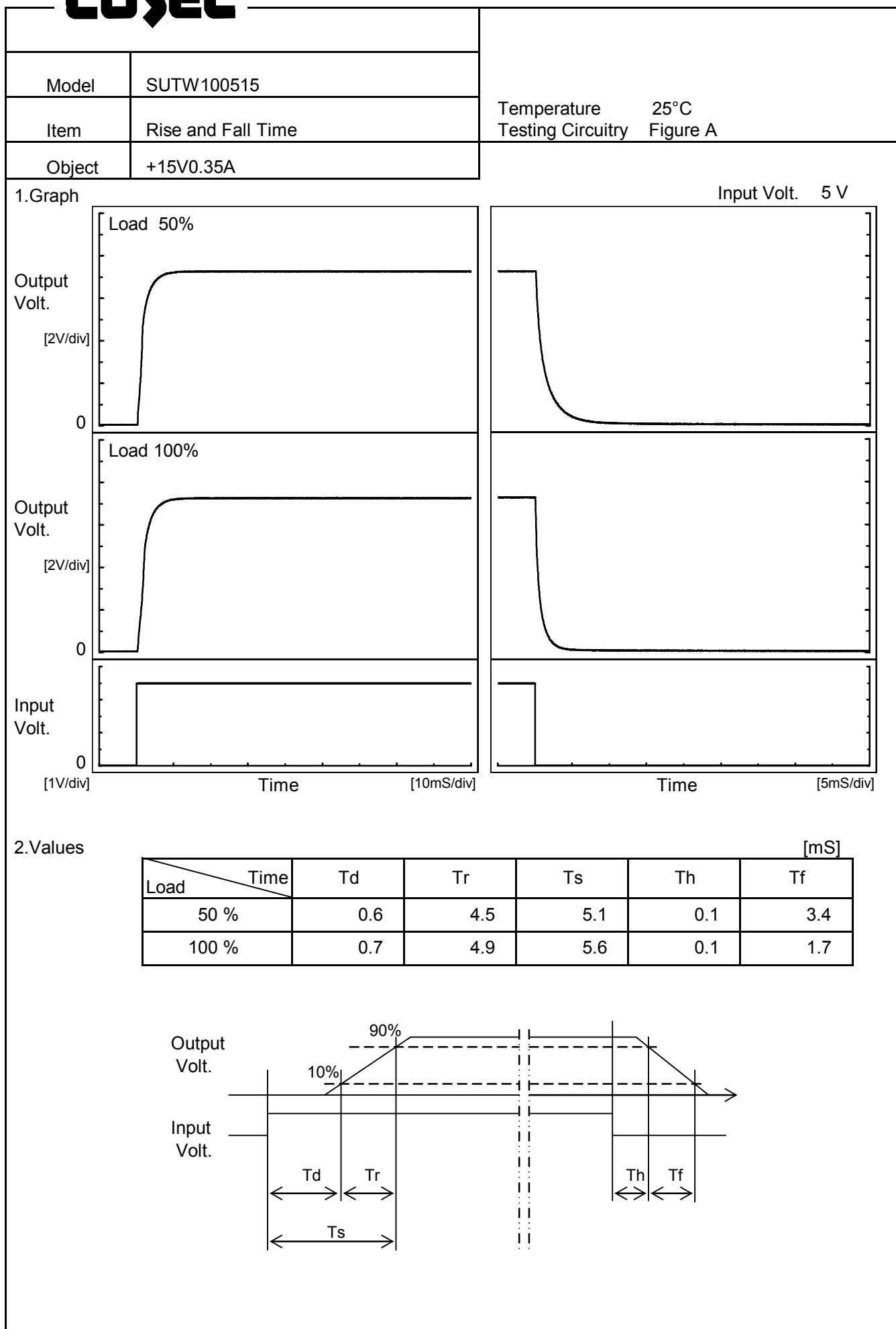
2. Values

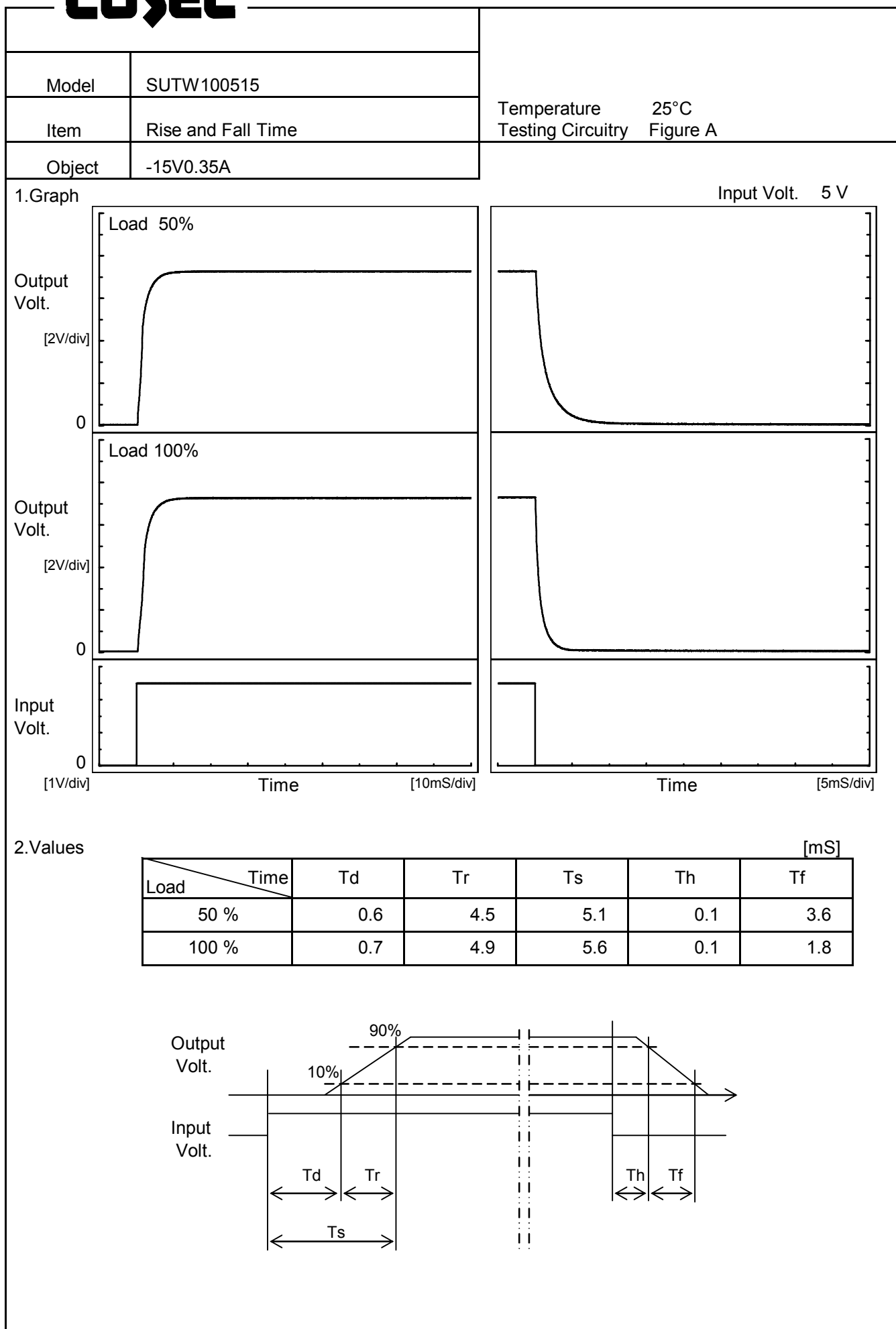
Object		+15V0.35A				
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	4.5	0	15.317	±359	±2.4
Minimum Voltage	55	4.5	0.35	14.599		

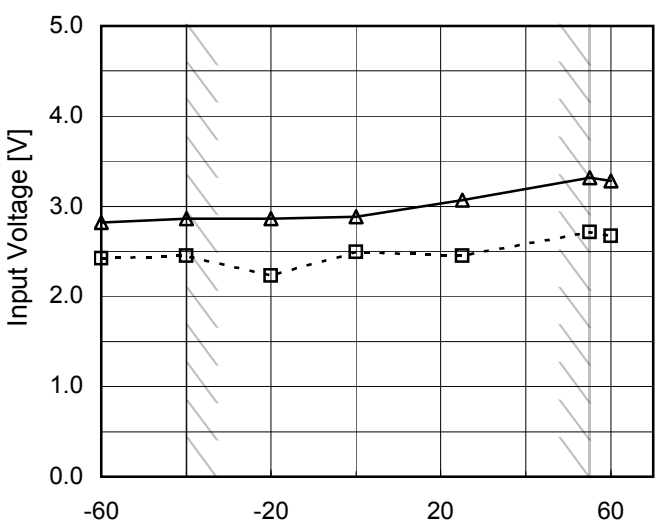
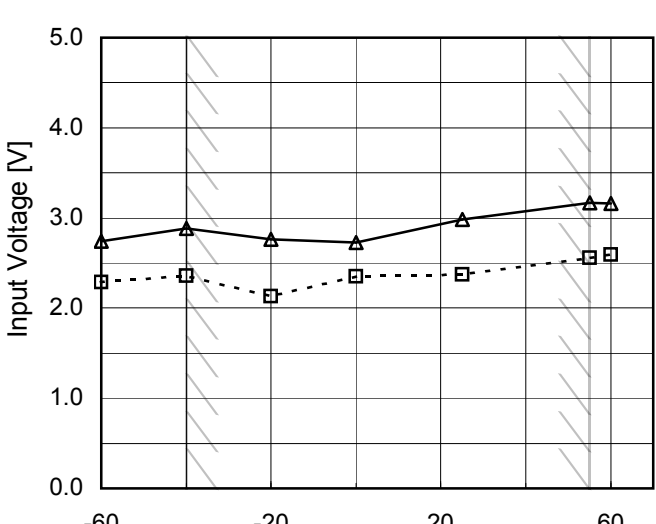
Object		-15V0.35A				
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	4.5	0	-15.339	±359	±2.4
Minimum Voltage	55	4.5	0.35	-14.622		



Model	SUTW100515																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+15V0.35A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 5V</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>14.961</td></tr><tr><td>0.5</td><td>14.966</td></tr><tr><td>1.0</td><td>14.966</td></tr><tr><td>2.0</td><td>14.965</td></tr><tr><td>3.0</td><td>14.965</td></tr><tr><td>4.0</td><td>14.966</td></tr><tr><td>5.0</td><td>14.965</td></tr><tr><td>6.0</td><td>14.965</td></tr><tr><td>7.0</td><td>14.966</td></tr><tr><td>8.0</td><td>14.964</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	14.961	0.5	14.966	1.0	14.966	2.0	14.965	3.0	14.965	4.0	14.966	5.0	14.965	6.0	14.965	7.0	14.966	8.0	14.964
Time since start [H]	Output Voltage [V]																								
0.0	14.961																								
0.5	14.966																								
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<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 5V</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>-14.967</td></tr><tr><td>0.5</td><td>-14.972</td></tr><tr><td>1.0</td><td>-14.970</td></tr><tr><td>2.0</td><td>-14.970</td></tr><tr><td>3.0</td><td>-14.971</td></tr><tr><td>4.0</td><td>-14.971</td></tr><tr><td>5.0</td><td>-14.970</td></tr><tr><td>6.0</td><td>-14.970</td></tr><tr><td>7.0</td><td>-14.970</td></tr><tr><td>8.0</td><td>-14.973</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	-14.967	0.5	-14.972	1.0	-14.970	2.0	-14.970	3.0	-14.971	4.0	-14.971	5.0	-14.970	6.0	-14.970	7.0	-14.970	8.0	-14.973
Time since start [H]	Output Voltage [V]																								
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8.0	-14.973																								





Model	SUTW100515																																								
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																							
Object	+15V0.35A																																								
1.Graph		2.Values																																							
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-60</td><td>2.5</td><td>2.9</td></tr><tr><td>-40</td><td>2.5</td><td>2.9</td></tr><tr><td>-20</td><td>2.3</td><td>2.9</td></tr><tr><td>0</td><td>2.5</td><td>2.9</td></tr><tr><td>25</td><td>2.5</td><td>3.1</td></tr><tr><td>55</td><td>2.8</td><td>3.4</td></tr><tr><td>60</td><td>2.7</td><td>3.3</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]	Input Voltage [V]		Load 50%	Load 100%	-60	2.5	2.9	-40	2.5	2.9	-20	2.3	2.9	0	2.5	2.9	25	2.5	3.1	55	2.8	3.4	60	2.7	3.3	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Input Voltage [V]																																								
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Ambient Temperature [°C]	Input Voltage [V]																																								
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Note: Slanted line shows the range of the rated ambient temperature.																																									

- 20 -

BC-10291

Model	SUTW100515																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
Object	+15V0.35A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<div><div><div></div><div></div><div></div></div><div><div>Input Volt. 4.5V</div><div>Input Volt. 5V</div><div>Input Volt. 9V</div></div><p>Output Voltage [V]</p><p>Load Current [A]</p></div>		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 4.5[V]</th><th>Input Volt. 5[V]</th><th>Input Volt. 9[V]</th></tr><tr><td>15.0</td><td>0.35</td><td>0.35</td><td>0.35</td></tr><tr><td>14.3</td><td>0.60</td><td>0.64</td><td>0.73</td></tr><tr><td>13.5</td><td>0.65</td><td>0.69</td><td>0.78</td></tr><tr><td>12.0</td><td>0.72</td><td>0.76</td><td>0.86</td></tr><tr><td>10.5</td><td>0.77</td><td>0.80</td><td>0.87</td></tr><tr><td>9.0</td><td>0.82</td><td>0.85</td><td>0.89</td></tr><tr><td>7.5</td><td>0.88</td><td>0.90</td><td>0.91</td></tr><tr><td>6.0</td><td>0.93</td><td>0.96</td><td>0.93</td></tr><tr><td>4.5</td><td>1.00</td><td>1.02</td><td>0.94</td></tr><tr><td>3.0</td><td>0.99</td><td>1.00</td><td>0.86</td></tr><tr><td>1.5</td><td>1.00</td><td>1.01</td><td>0.79</td></tr><tr><td>0.0</td><td>1.23</td><td>1.24</td><td>1.03</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	15.0	0.35	0.35	0.35	14.3	0.60	0.64	0.73	13.5	0.65	0.69	0.78	12.0	0.72	0.76	0.86	10.5	0.77	0.80	0.87	9.0	0.82	0.85	0.89	7.5	0.88	0.90	0.91	6.0	0.93	0.96	0.93	4.5	1.00	1.02	0.94	3.0	0.99	1.00	0.86	1.5	1.00	1.01	0.79	0.0	1.23	1.24	1.03
Output Voltage [V]	Load Current [A]																																																									
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Output Voltage [V]	Load Current [A]																																																									
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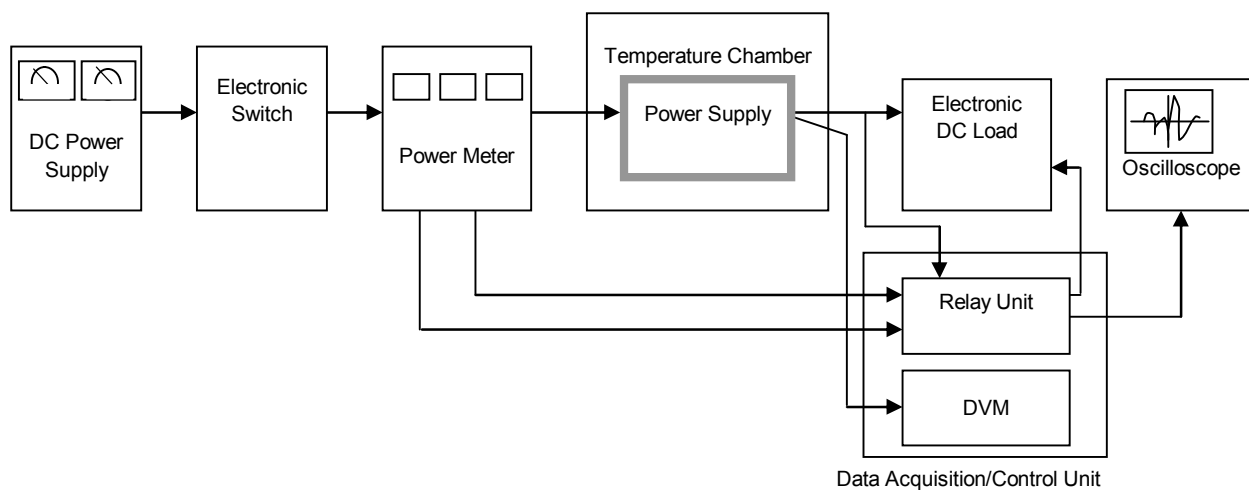


Figure A

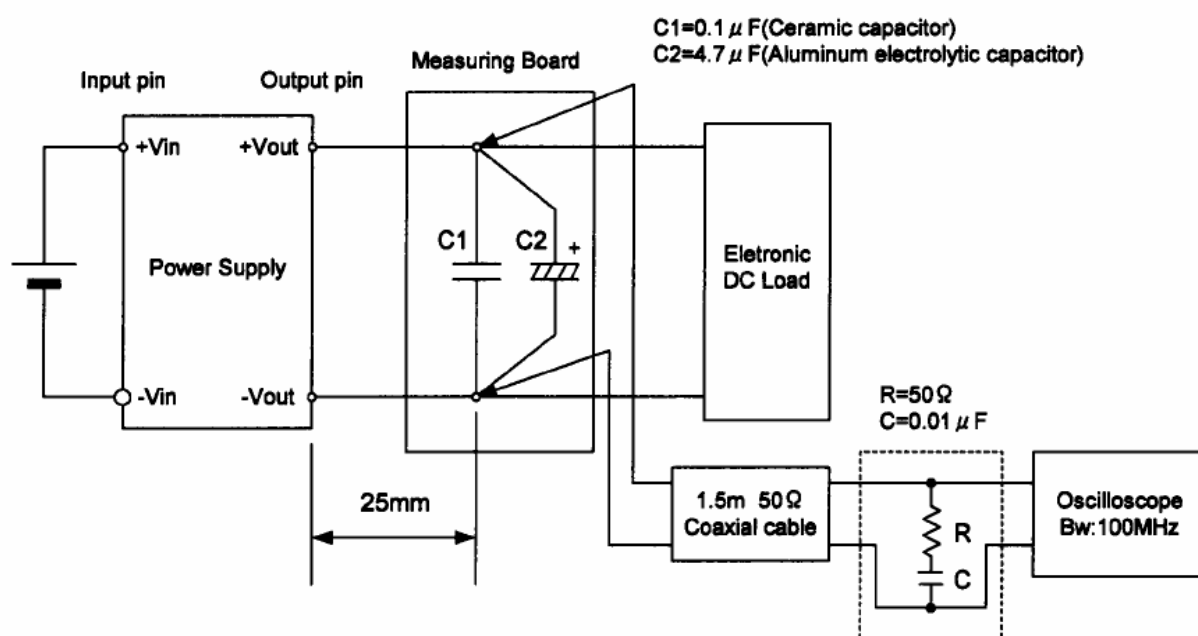


Figure B (Ripple and Ripple noise Characteristic)