

TEST DATA OF SUTW31212

Regulated DC Power Supply
March 5, 2009

Approved by : Kazunari Asano
Kazunari Asano Design Manager

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Sho Saito Design Engineer

COSEL CO.,LTD.

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Model	SUTW31212																																																																																	
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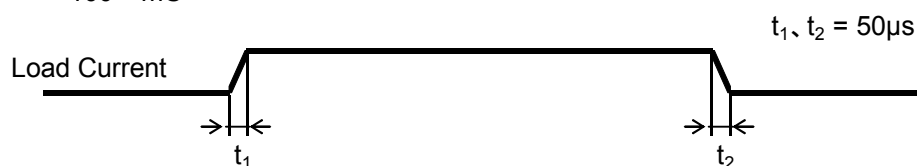
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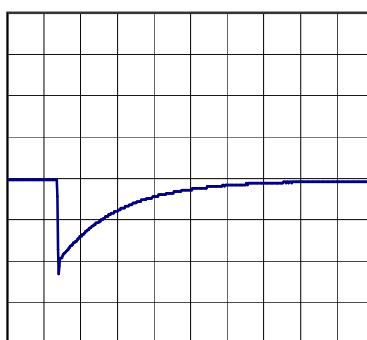
Model	SUTW31212	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+12V0.13A	

Input Volt. 12 V
Cycle 100 mS

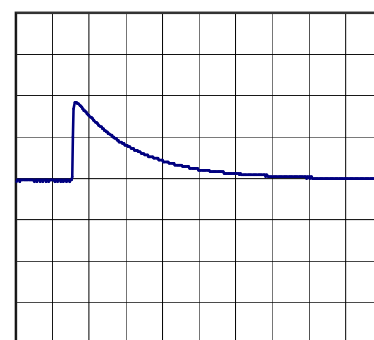


Min. Load (0A) \longleftrightarrow
Load 100% (0.13A)

200mV/div



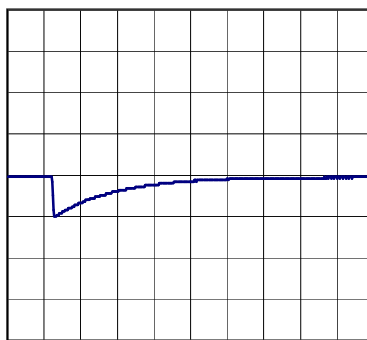
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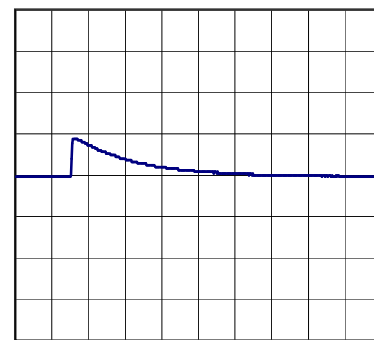
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Min. Load (0A) \longleftrightarrow
Load 50% (0.065A)

200mV/div



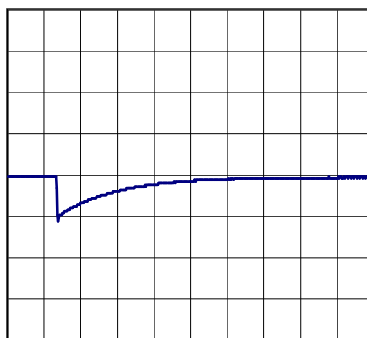
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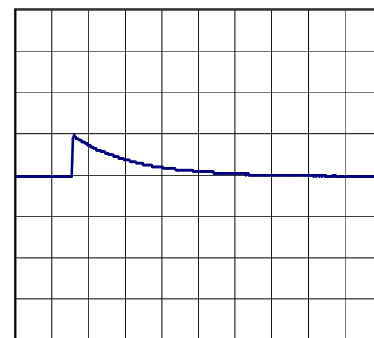
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Load 50% (0.065A) \longleftrightarrow
Load 100% (0.13A)

200mV/div



1ms/div

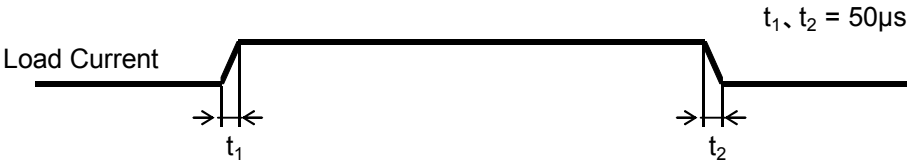


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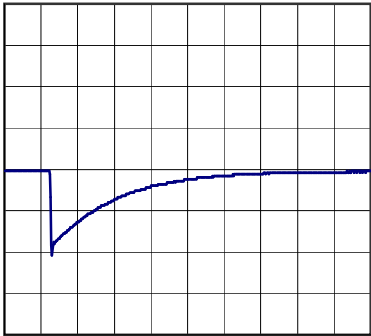
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Input Volt. 12 V
Cycle 100 mS

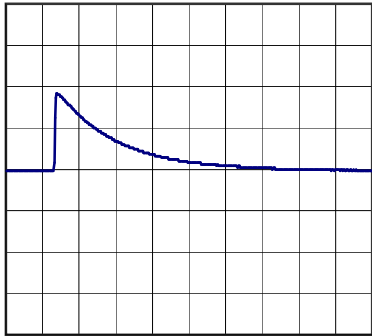


Min. Load (0A) \longleftrightarrow
Load 100% (0.13A)

200mV/div



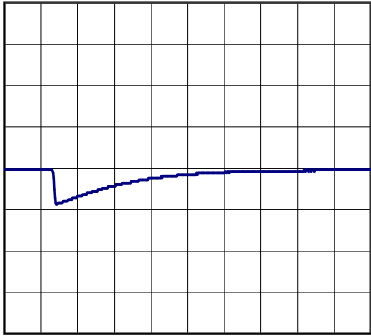
1ms/div



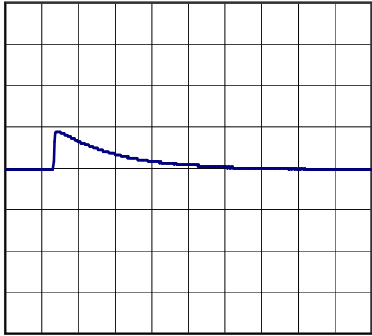
1ms/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.065A)

200mV/div



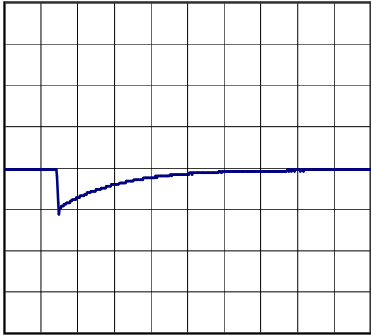
1ms/div



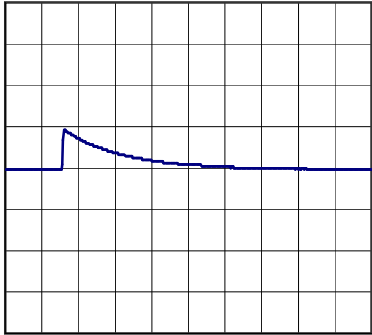
1ms/div

Load 50% (0.065A) \longleftrightarrow
Load 100% (0.13A)

200mV/div



1ms/div



1ms/div

Model	SUTW31212																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
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[°C]	9[V]	12[V]	18[V]	-60	12.037	12.037	12.037	-40	12.058	12.057	12.057	-20	12.073	12.073	12.073	0	12.085	12.084	12.084	25	12.093	12.092	12.092	55	12.094	12.093	12.093	60	12.093	12.092	12.092	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	Ambient Temperature [°C]	9[V]	12[V]	18[V]	-60	-12.035	-12.038	-12.039	-40	-12.056	-12.059	-12.060	-20	-12.073	-12.074	-12.076	0	-12.085	-12.086	-12.087	25	-12.093	-12.094	-12.095	55	-12.095	-12.096	-12.096	60	-12.094	-12.095	-12.095	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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		Testing Circuitry Figure A
Model	SUTW31212	
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 - 0.13A (AVR 2) : 0 - 0.13A

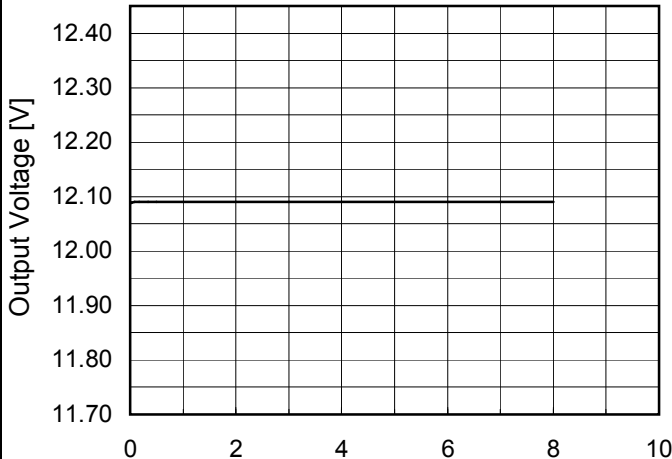
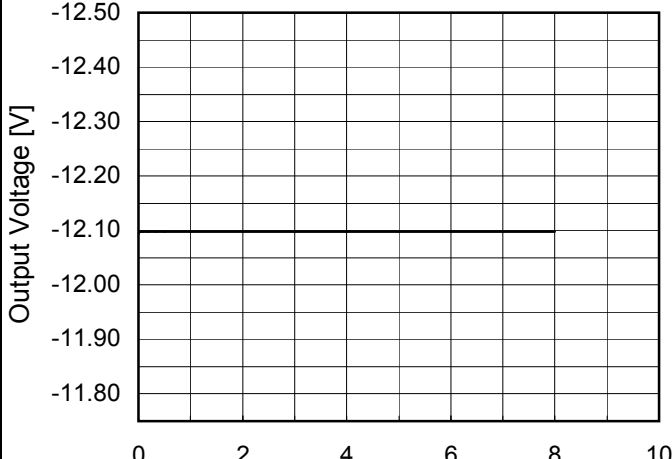
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

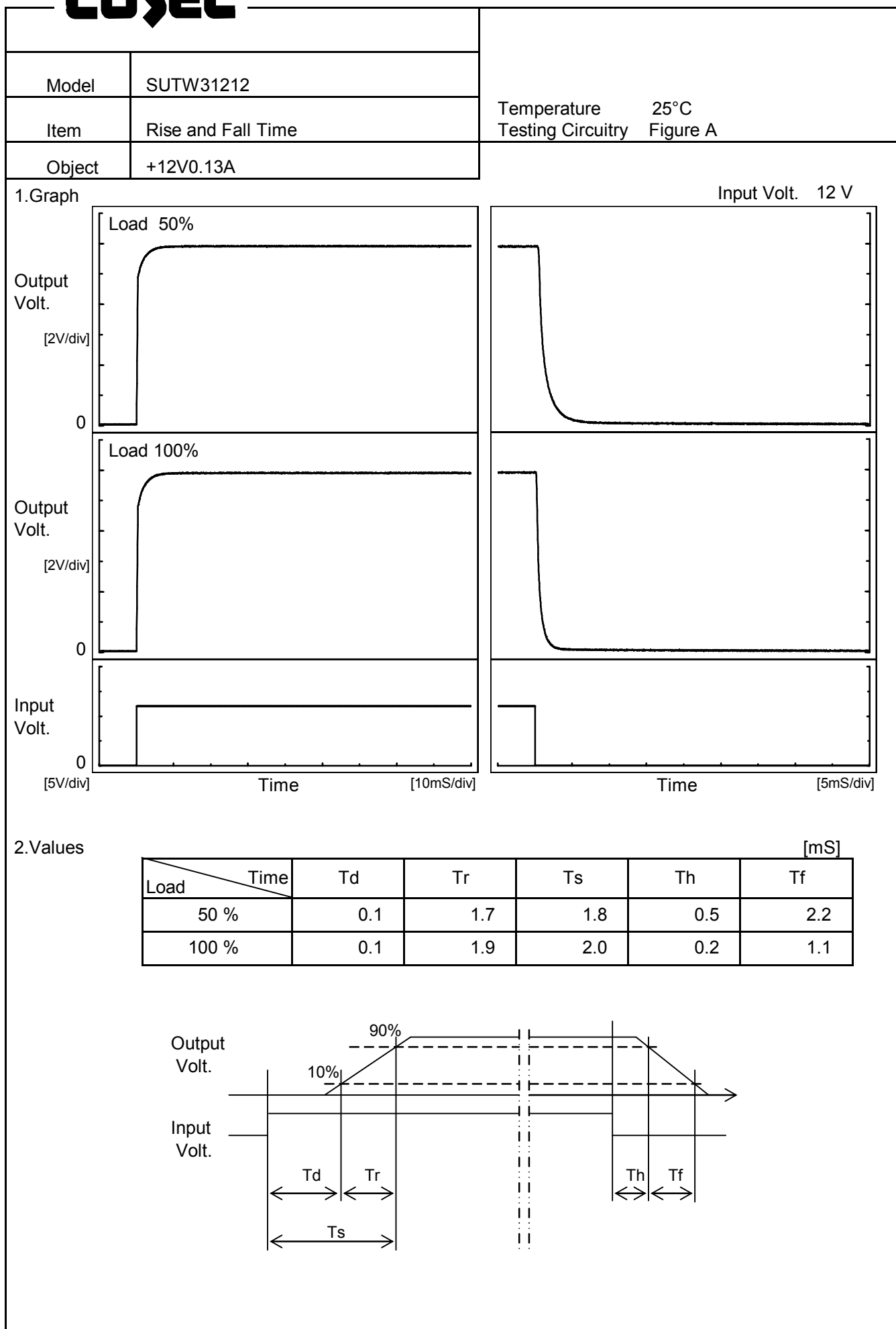
* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

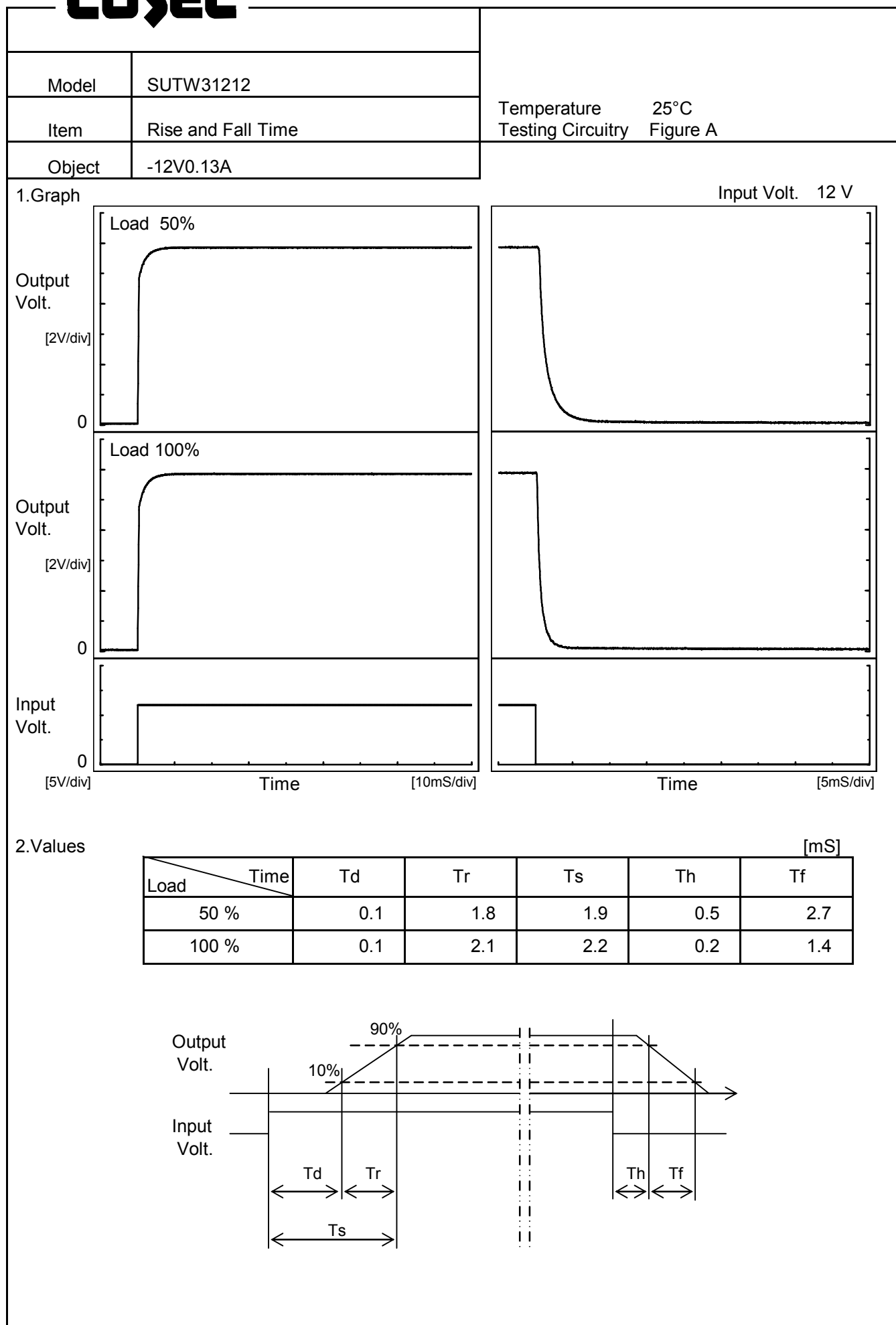
2. Values

Object		+12V0.13A				
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	12.335	±257	±2.1
Minimum Voltage	-40	9	0.13	11.821		

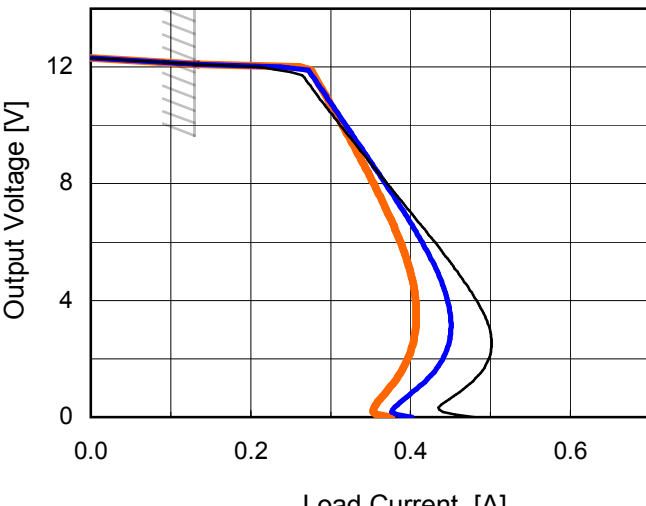
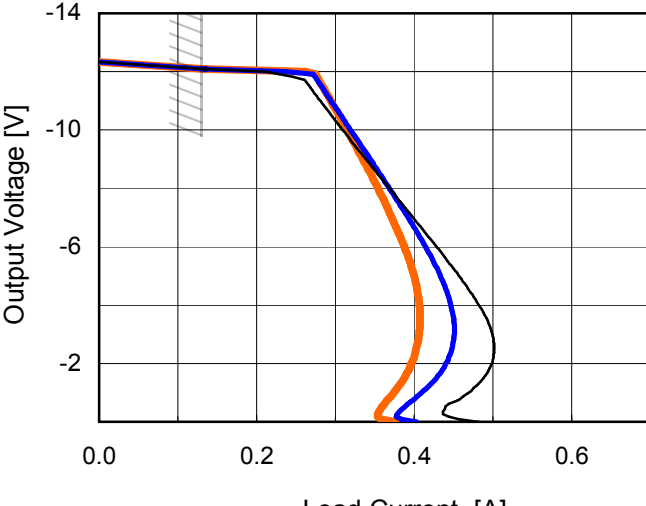
Object		-12V0.13A				
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	-12.347	±255	±2.1
Minimum Voltage	-40	9	0.13	-11.837		

Model	SUTW31212																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+12V0.13A																								
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>12.087</td></tr><tr><td>0.5</td><td>12.090</td></tr><tr><td>1.0</td><td>12.090</td></tr><tr><td>2.0</td><td>12.090</td></tr><tr><td>3.0</td><td>12.090</td></tr><tr><td>4.0</td><td>12.090</td></tr><tr><td>5.0</td><td>12.090</td></tr><tr><td>6.0</td><td>12.090</td></tr><tr><td>7.0</td><td>12.090</td></tr><tr><td>8.0</td><td>12.090</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	12.087	0.5	12.090	1.0	12.090	2.0	12.090	3.0	12.090	4.0	12.090	5.0	12.090	6.0	12.090	7.0	12.090	8.0	12.090
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		Testing Circuitry Figure A																																			
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Item	Minimum Input Voltage for Regulated Output Voltage																																				
Object	+12V0.13A																																				
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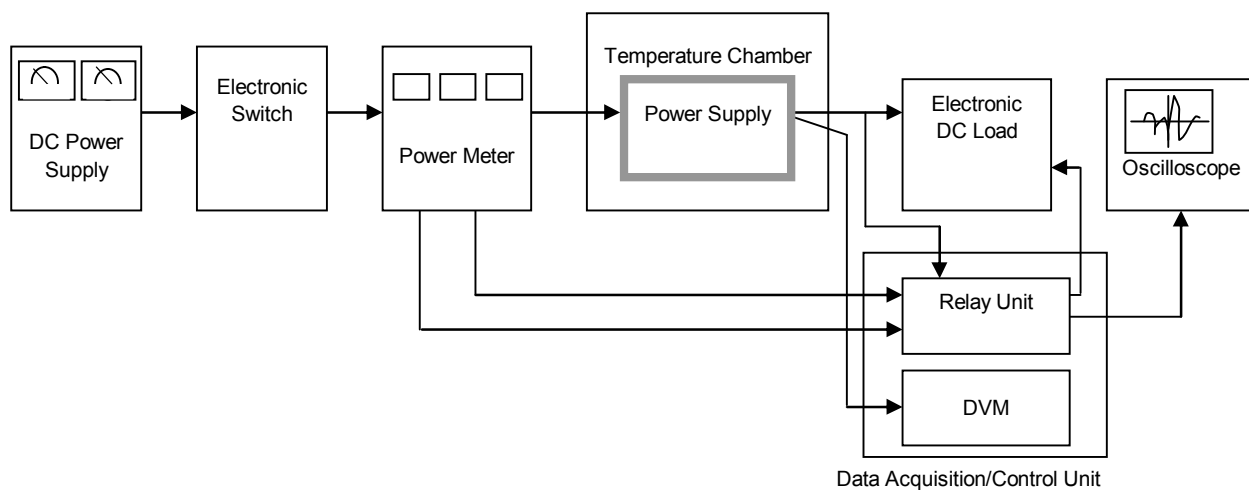


Figure A

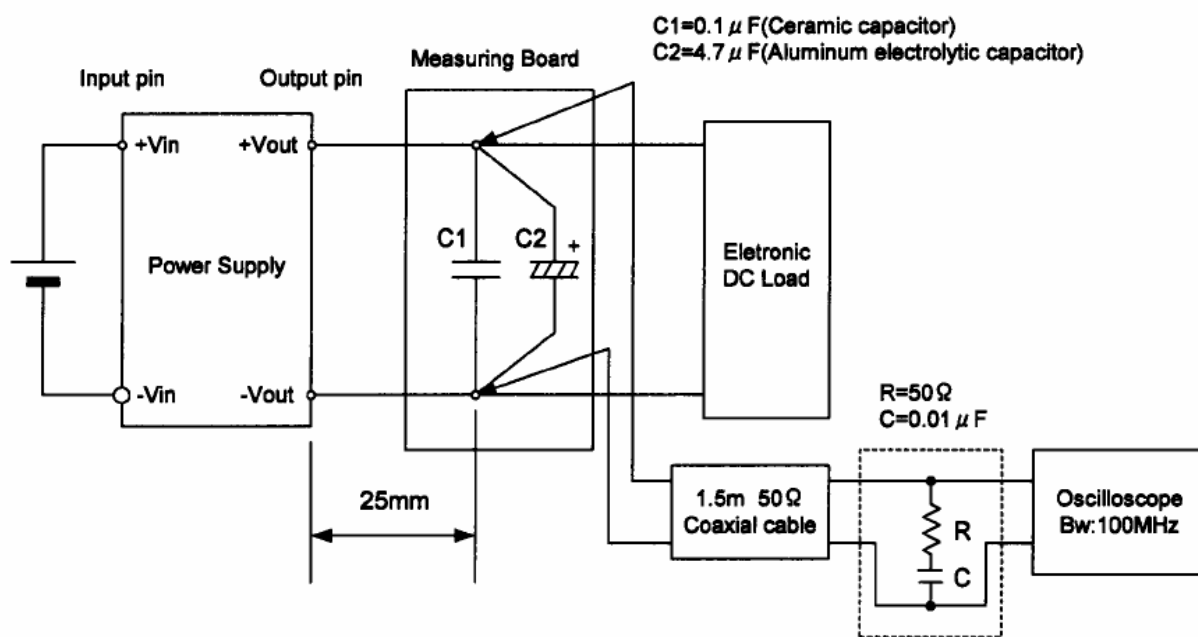


Figure B (Ripple and Ripple noise Characteristic)