

TEST DATA OF SUW61212 SUCW61212

Regulated DC Power Supply
Feb 24, 2005

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COSEL CO.,LTD.

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(Final Page 22)

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Model

SUW61212/SUCW61212

Item

Input Current (by Input Voltage)

Object

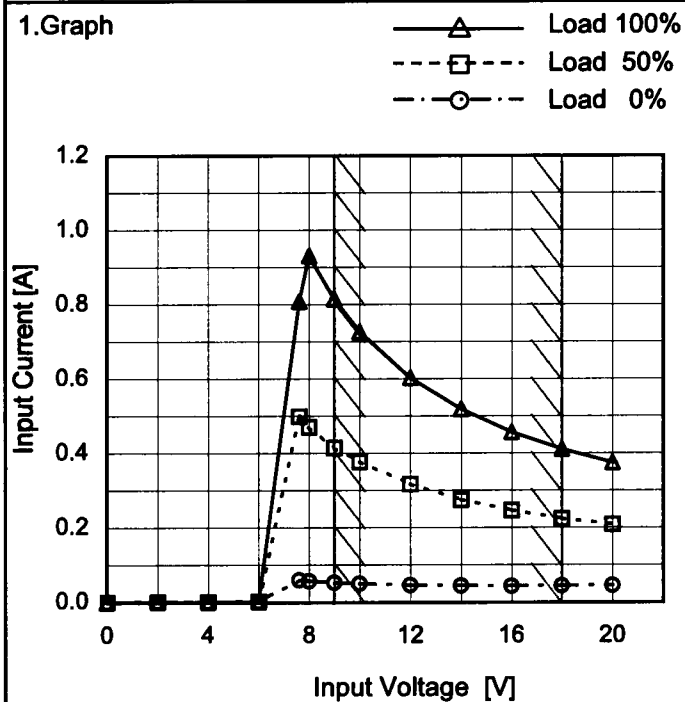
Temperature

25°C

Testing Circuitry

Figure A

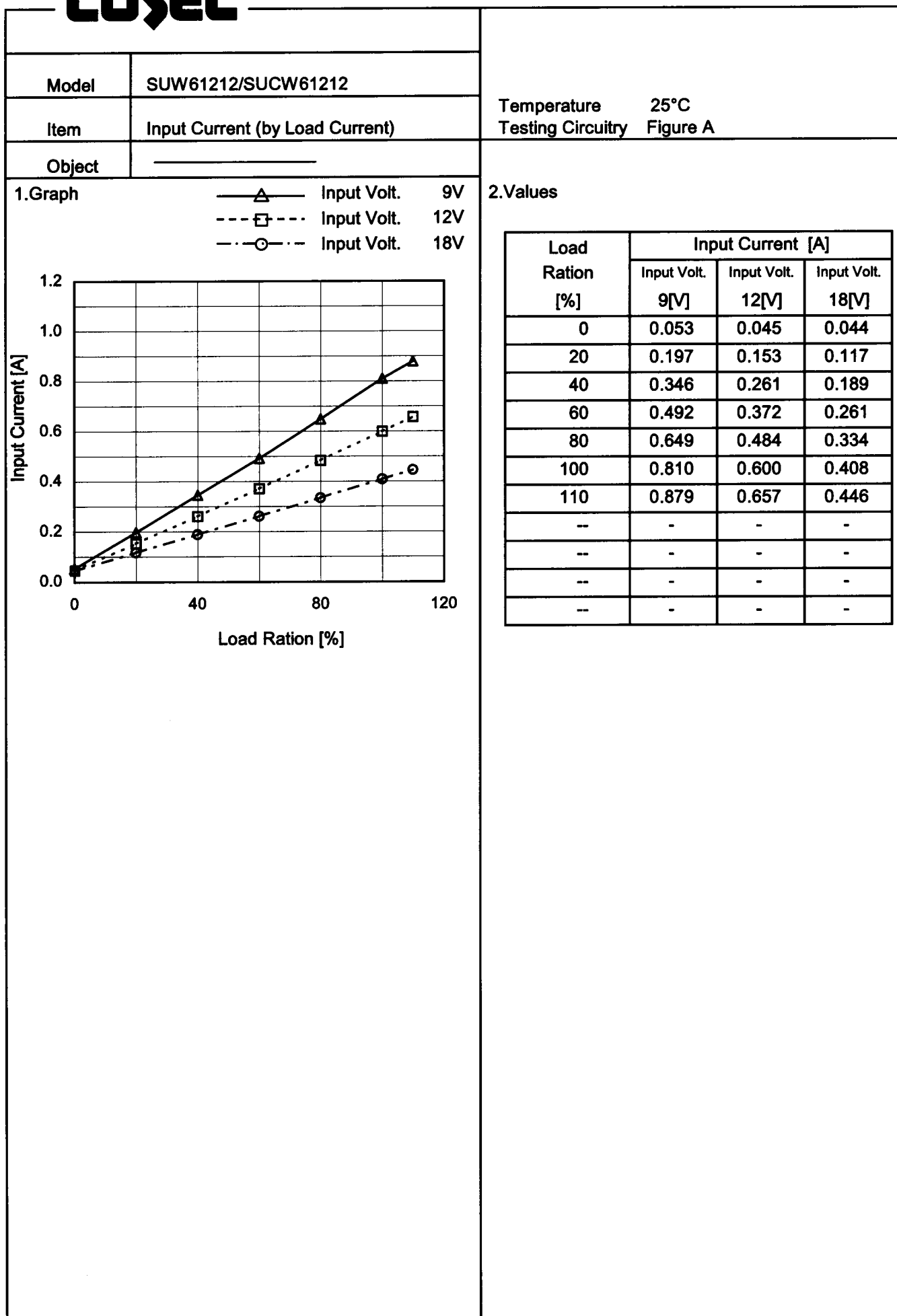
1.Graph



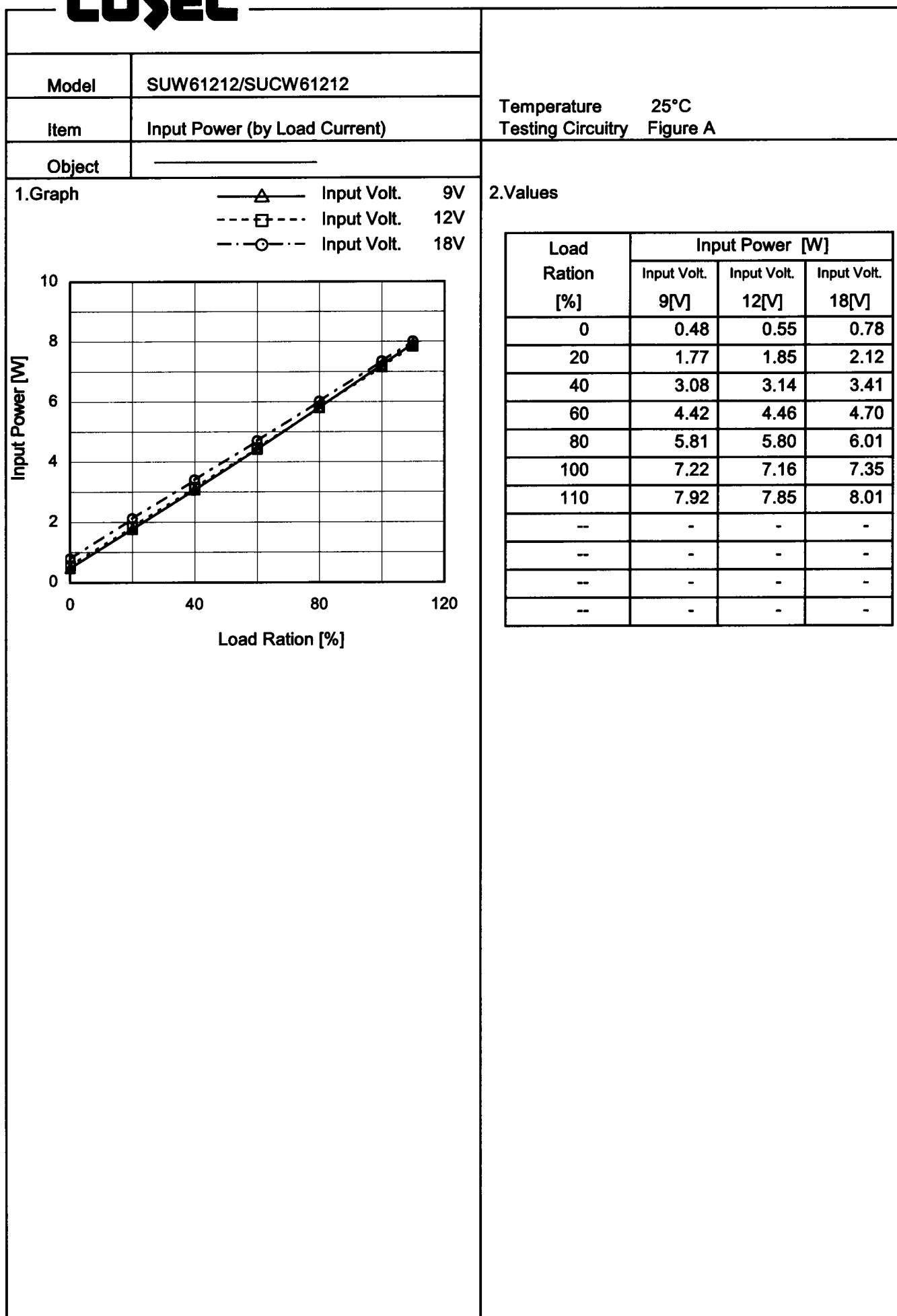
2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.001	0.001	0.001
4.0	0.001	0.001	0.001
6.0	0.002	0.002	0.002
7.6	0.059	0.499	0.808
8.0	0.057	0.471	0.931
9.0	0.053	0.415	0.815
10.0	0.050	0.378	0.727
12.0	0.046	0.317	0.603
14.0	0.044	0.275	0.519
16.0	0.043	0.247	0.457
18.0	0.044	0.224	0.411
20.0	0.045	0.208	0.375
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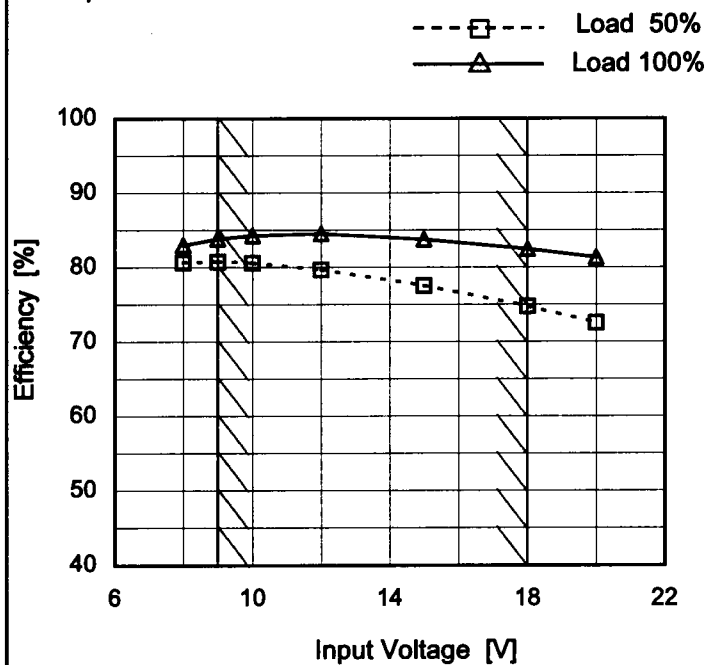
Model SUW61212/SUCW61212

Item Efficiency (by Input Voltage)

Object

Temperature 25°C
Testing Circuitry Figure A

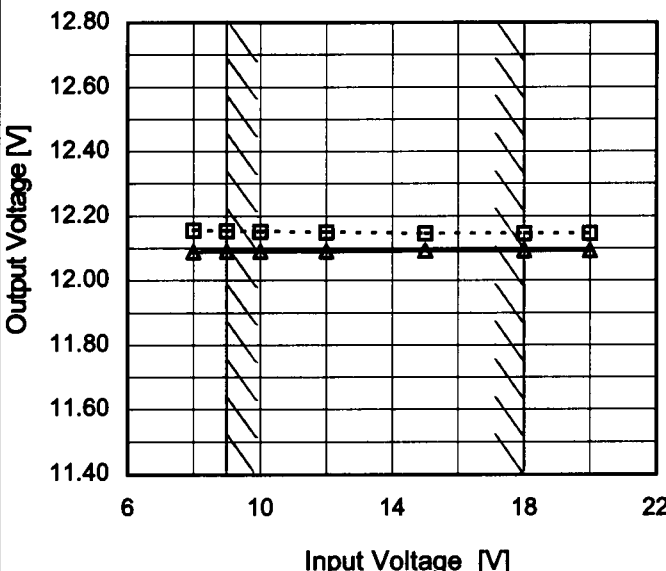
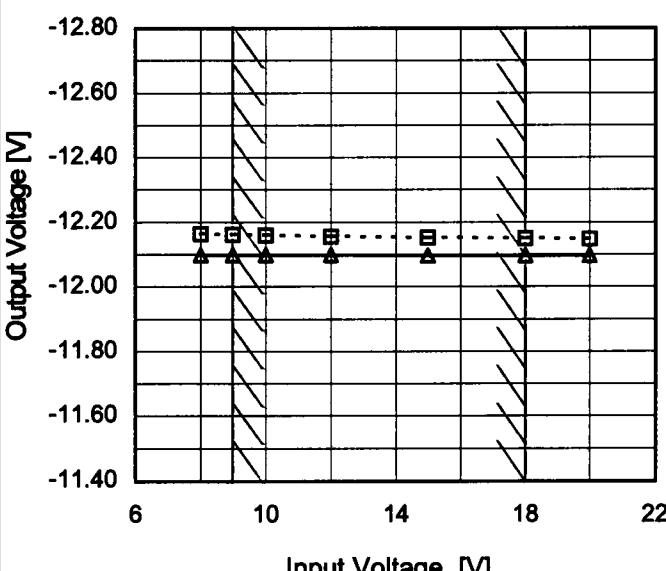
1. Graph



2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8	80.6	83.0
9	80.8	83.8
10	80.6	84.3
12	79.7	84.5
15	77.6	83.8
18	74.8	82.5
20	72.5	81.3
--	-	-
--	-	-

BC-3704

Model	SUW61212/SUCW61212	Temperature25℃ Testing CircuitryFigure A																															
Item	Line Regulation																																
Object	+12V0.25A																																
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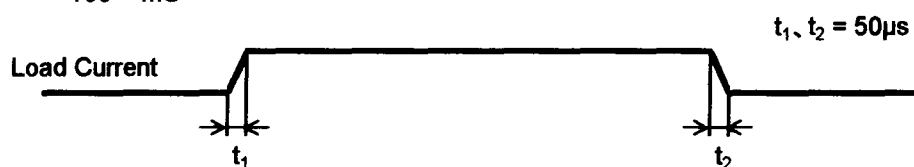
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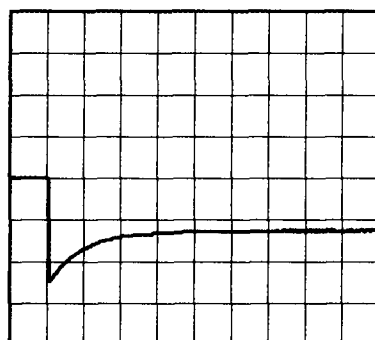
Model	SUW61212/SUCW61212	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+12V0.25A		

Input Volt. 12 V
Cycle 100 mS



Min. Load (0A) \longleftrightarrow
Load 100% (0.25A)

200mV/div



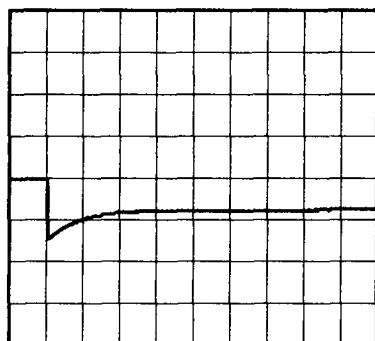
2ms/div



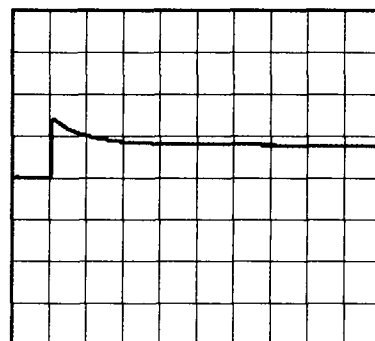
2ms/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.125A)

200mV/div



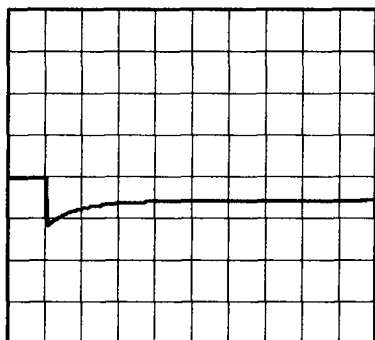
2ms/div



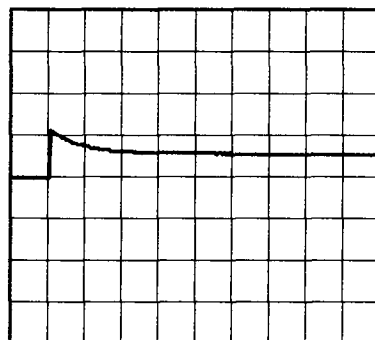
2ms/div

Load 50% (0.125A) \longleftrightarrow
Load 100% (0.25A)

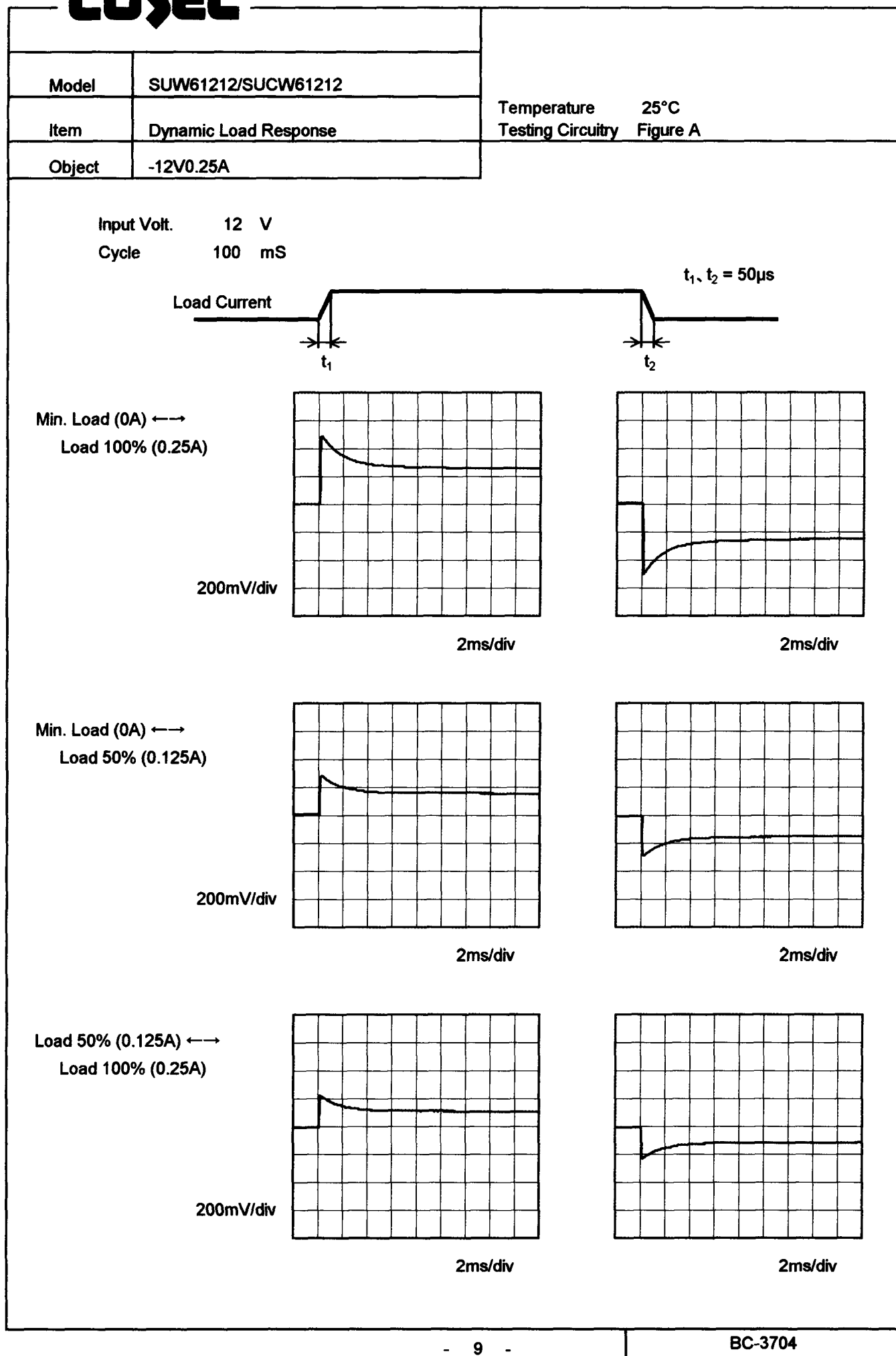
200mV/div



2ms/div



2ms/div

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Model		SUW61212/SUCW61212																																							
Item		Ripple Voltage (by Load Current)																																							
Object		+12V0.25A																																							
1.Graph		2.Values																																							
<div><div><div>—△— Input Volt. 9V</div><div>- -○- - Input Volt. 18V</div></div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 9 [V]</th><th>Input Volt. 18 [V]</th></tr><tr><td>0.000</td><td>2</td><td>2</td></tr><tr><td>0.050</td><td>2</td><td>3</td></tr><tr><td>0.100</td><td>3</td><td>3</td></tr><tr><td>0.150</td><td>4</td><td>3</td></tr><tr><td>0.200</td><td>5</td><td>4</td></tr><tr><td>0.250</td><td>8</td><td>5</td></tr><tr><td>0.275</td><td>9</td><td>5</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 Voltage [mV]		Input Volt. 9 [V]	Input Volt. 18 [V]	0.000	2	2	0.050	2	3	0.100	3	3	0.150	4	3	0.200	5	4	0.250	8	5	0.275	9	5	--	-	-	--	-	-	--	-	-	--	-	-
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<p>Measured by 100 MHz Oscilloscope.</p> <p>Ripple Voltage 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>Ripple [mVp-p]</div><p>Fig.Complex Ripple Wave Form</p></div>																																									

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Model		SUW61212/SUCW61212		Temperature Testing Circuitry	25°C Figure B
Item		Ripple Voltage (by Load Current)			
Object		-12V0.25A			
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> 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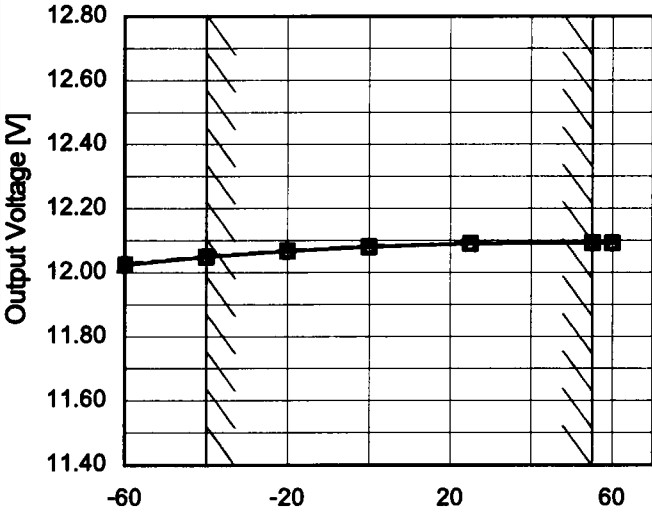
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<div><div><div>Ripple Noise[mVp-p]</div></div><p>Fig.Complex Ripple Noise Wave Form</p></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 9 [V]</th><th>Input Volt. 18 [V]</th></tr><tr><td>0.000</td><td>3</td><td>3</td></tr><tr><td>0.050</td><td>4</td><td>4</td></tr><tr><td>0.100</td><td>4</td><td>4</td></tr><tr><td>0.150</td><td>5</td><td>5</td></tr><tr><td>0.200</td><td>6</td><td>5</td></tr><tr><td>0.250</td><td>9</td><td>5</td></tr><tr><td>0.275</td><td>11</td><td>6</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]	0.000	3	3	0.050	4	4	0.100	4	4	0.150	5	5	0.200	6	5	0.250	9	5	0.275	11	6	--	-	-	--	-	-	--	-	-	--	-	-
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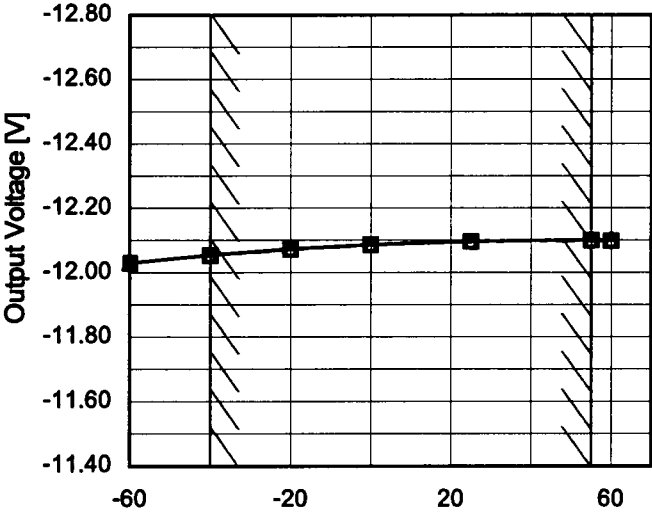
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Model		SUW61212/SUCW61212	
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Model		SUW61212/SUCW61212																																							
Item		Ripple Voltage (by Ambient Temp.)																																							
Object		+12V0.25A																																							
1.Graph																																									
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Model		SUW61212/SUCW61212																																																				
Item		Ambient Temperature Drift																																																				
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Note: Slanted line shows the range of the rated ambient temperature.

- 15 -

BC-3704



		Testing Circuitry Figure A
Model	SUW61212/SUCW61212	
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 - 0.25A (AVR 2): 0 - 0.25A

* Other Output : Rated Load

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

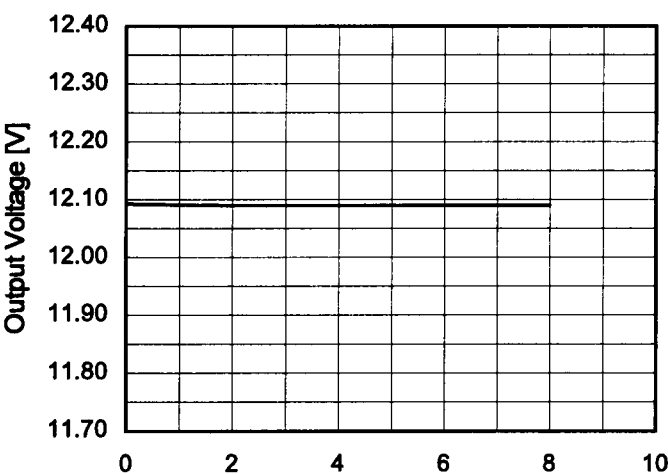
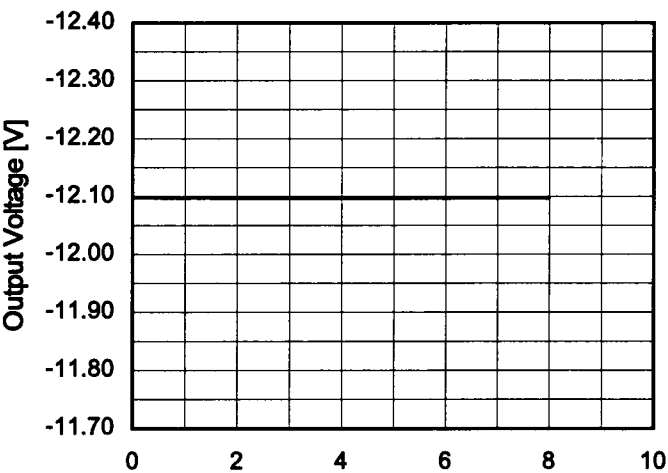
* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

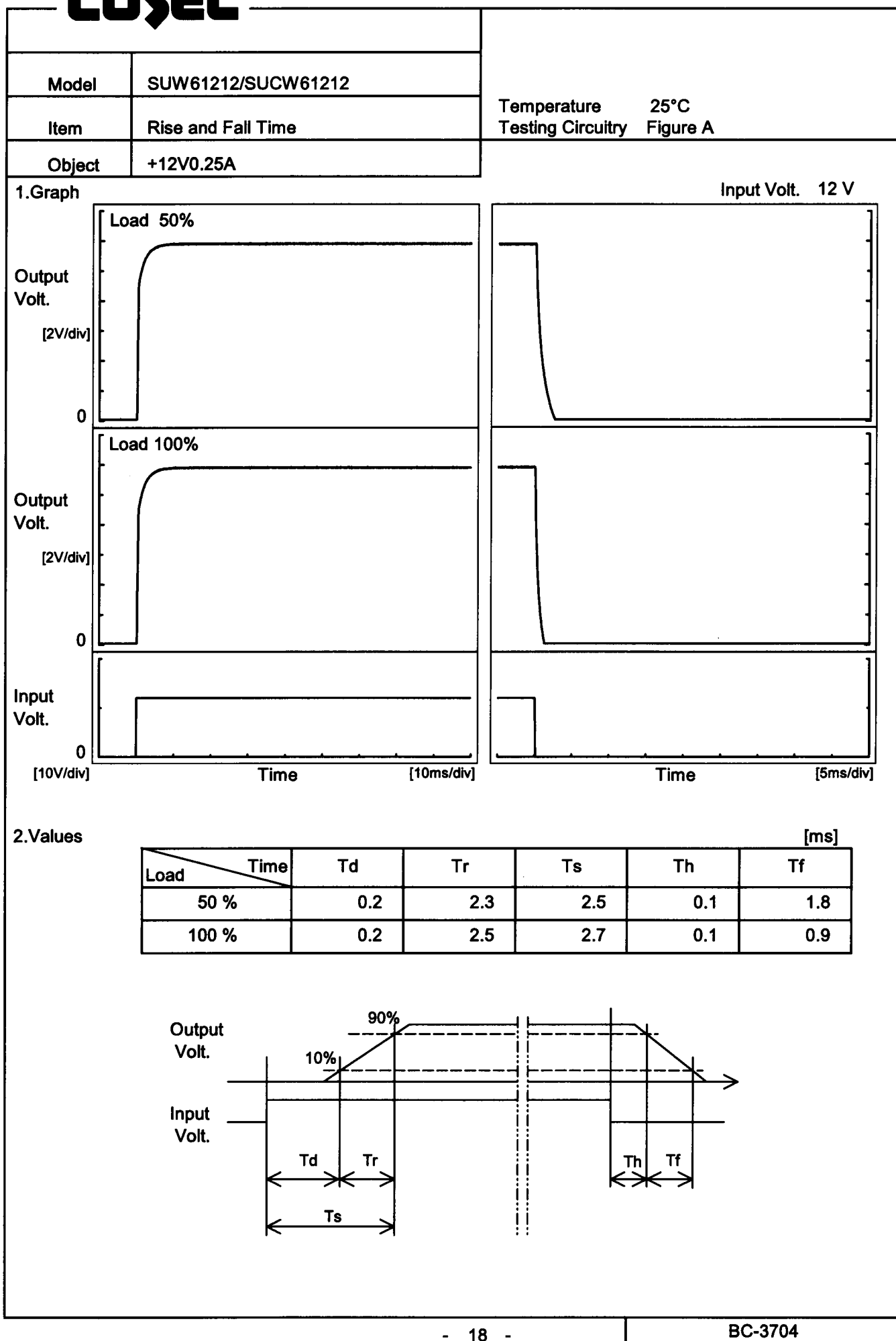
2. Values

Object	+12V0.25A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	12.373	±162	±1.4
Minimum Voltage	-40	9	0.25	12.049		

Object	-12V0.25A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	-12.390	±168	±1.4
Minimum Voltage	-40	18	0.25	-12.054		

COSEL

Model	SUW61212/SUCW61212																								
Item	Time Lapse Drift		Temperature 25°C																						
Object	+12V0.25A		Testing Circuitry Figure A																						
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>12.093</td></tr><tr><td>0.5</td><td>12.092</td></tr><tr><td>1.0</td><td>12.091</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	12.093	0.5	12.092	1.0	12.091	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
Time since start [H]	Output Voltage [V]																								
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0.5	12.092																								
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2.0	12.090																								
3.0	12.090																								
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5.0	12.090																								
6.0	12.090																								
7.0	12.090																								
8.0	12.090																								
Object	-12V0.25A																								
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>-12.099</td></tr><tr><td>0.5</td><td>-12.098</td></tr><tr><td>1.0</td><td>-12.098</td></tr><tr><td>2.0</td><td>-12.097</td></tr><tr><td>3.0</td><td>-12.097</td></tr><tr><td>4.0</td><td>-12.097</td></tr><tr><td>5.0</td><td>-12.097</td></tr><tr><td>6.0</td><td>-12.097</td></tr><tr><td>7.0</td><td>-12.097</td></tr><tr><td>8.0</td><td>-12.097</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	-12.099	0.5	-12.098	1.0	-12.098	2.0	-12.097	3.0	-12.097	4.0	-12.097	5.0	-12.097	6.0	-12.097	7.0	-12.097	8.0	-12.097
Time since start [H]	Output Voltage [V]																								
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7.0	-12.097																								
8.0	-12.097																								

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COSEL

Model SUW61212/SUCW61212

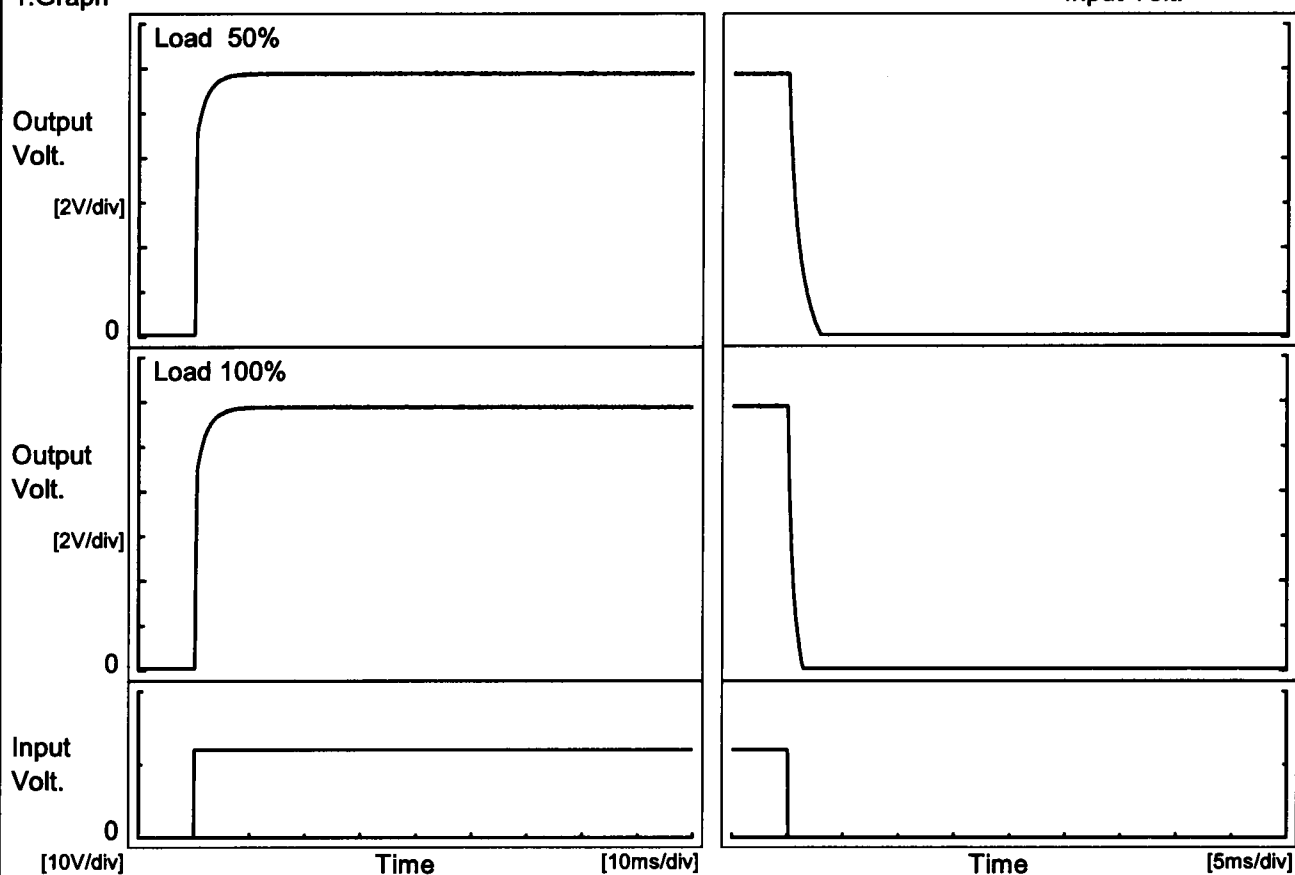
Item Rise and Fall Time

Temperature 25°C
Testing Circuitry Figure A

Object -12V0.25A

1.Graph

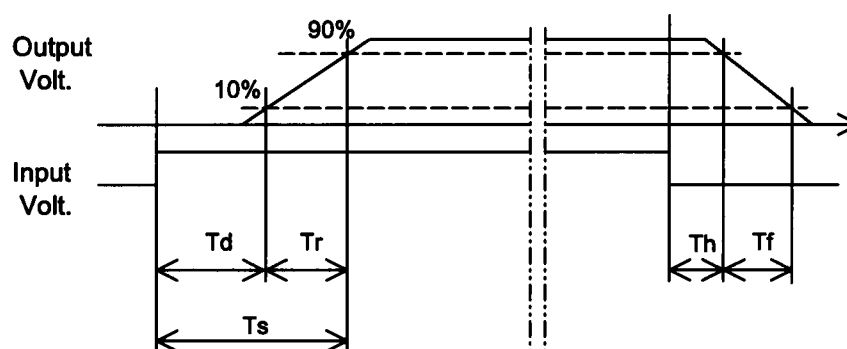
Input Volt. 12 V



2.Values

[ms]

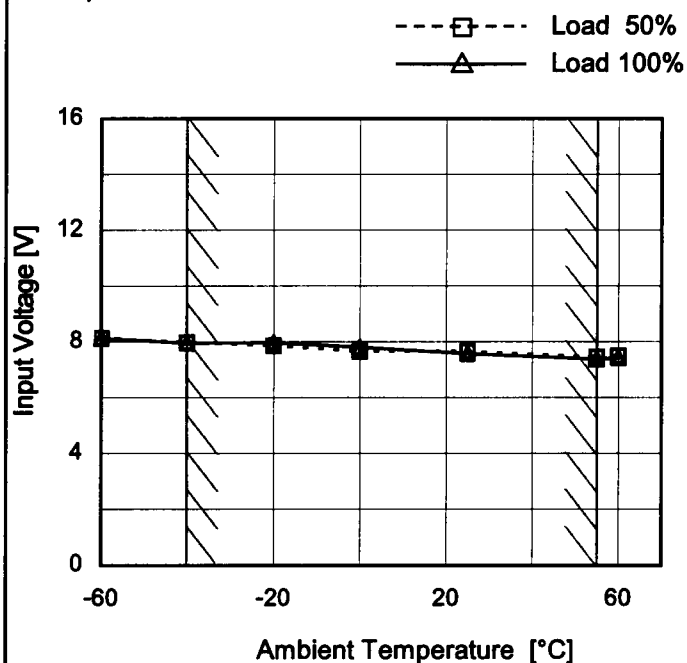
Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.2	2.4	2.6	0.1	2.0
100 %	0.2	2.5	2.7	0.1	1.0



COSEL

Model	SUW61212/SUCW61212
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V0.25A

1.Graph



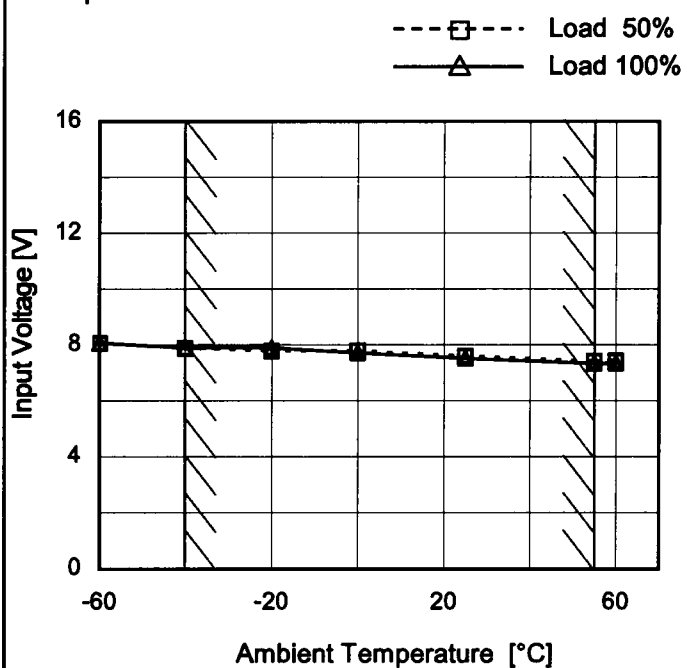
Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	8.2	8.2
-40	8.0	8.0
-20	7.9	8.0
0	7.7	7.8
25	7.7	7.6
55	7.5	7.4
60	7.5	7.5
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--	-	-
--	-	-
--	-	-

Object	-12V0.25A
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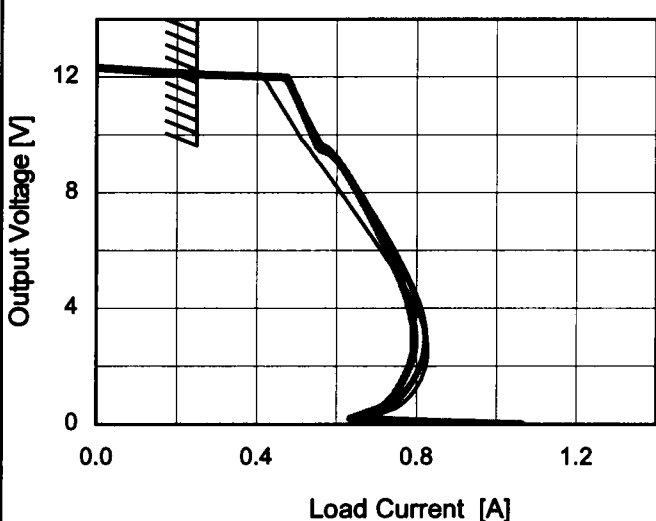
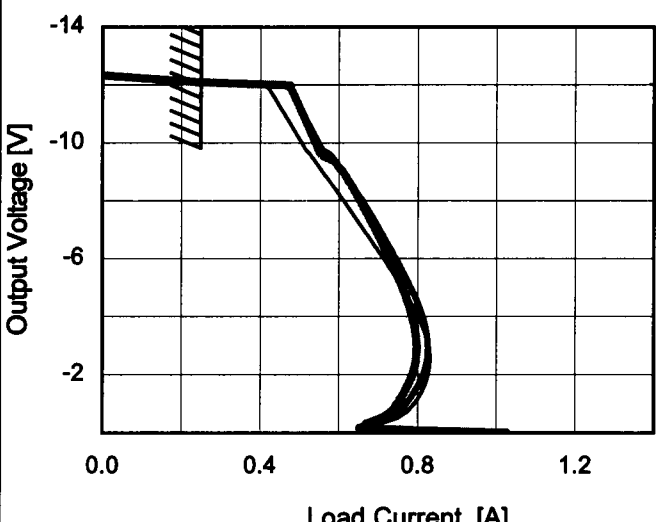
1.Graph



2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	8.1	8.1
-40	7.9	7.9
-20	7.8	7.9
0	7.8	7.8
25	7.6	7.6
55	7.5	7.4
60	7.5	7.4
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--	-	-

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

Model	SUW61212/SUCW61212																																																										
Item	Overcurrent Protection																																																										
Object	+12V0.25A																																																										
1.Graph		2.Values																																																									
<div><div><div></div><div></div><div></div></div><div>Input Volt. 9V Input Volt. 12V Input Volt. 18V</div></div> 		<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>12.0</td><td>0.25</td><td>0.25</td><td>0.25</td></tr><tr><td>11.4</td><td>0.44</td><td>0.49</td><td>0.49</td></tr><tr><td>10.8</td><td>0.47</td><td>0.52</td><td>0.51</td></tr><tr><td>9.6</td><td>0.53</td><td>0.58</td><td>0.55</td></tr><tr><td>8.4</td><td>0.59</td><td>0.64</td><td>0.64</td></tr><tr><td>7.2</td><td>0.65</td><td>0.69</td><td>0.68</td></tr><tr><td>6.0</td><td>0.71</td><td>0.75</td><td>0.73</td></tr><tr><td>4.8</td><td>0.77</td><td>0.79</td><td>0.76</td></tr><tr><td>3.6</td><td>0.81</td><td>0.82</td><td>0.79</td></tr><tr><td>2.4</td><td>0.83</td><td>0.82</td><td>0.79</td></tr><tr><td>1.2</td><td>0.80</td><td>0.78</td><td>0.76</td></tr><tr><td>0.0</td><td>1.09</td><td>1.06</td><td>1.06</td></tr></table>			Output Voltage [V]	Load Current [A]			Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	12.0	0.25	0.25	0.25	11.4	0.44	0.49	0.49	10.8	0.47	0.52	0.51	9.6	0.53	0.58	0.55	8.4	0.59	0.64	0.64	7.2	0.65	0.69	0.68	6.0	0.71	0.75	0.73	4.8	0.77	0.79	0.76	3.6	0.81	0.82	0.79	2.4	0.83	0.82	0.79	1.2	0.80	0.78	0.76	0.0	1.09	1.06	1.06
Output Voltage [V]	Load Current [A]																																																										
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Output Voltage [V]	Load Current [A]																																																										
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Note: Slanted line shows the range of the rated load current.																																																											

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BC-3704

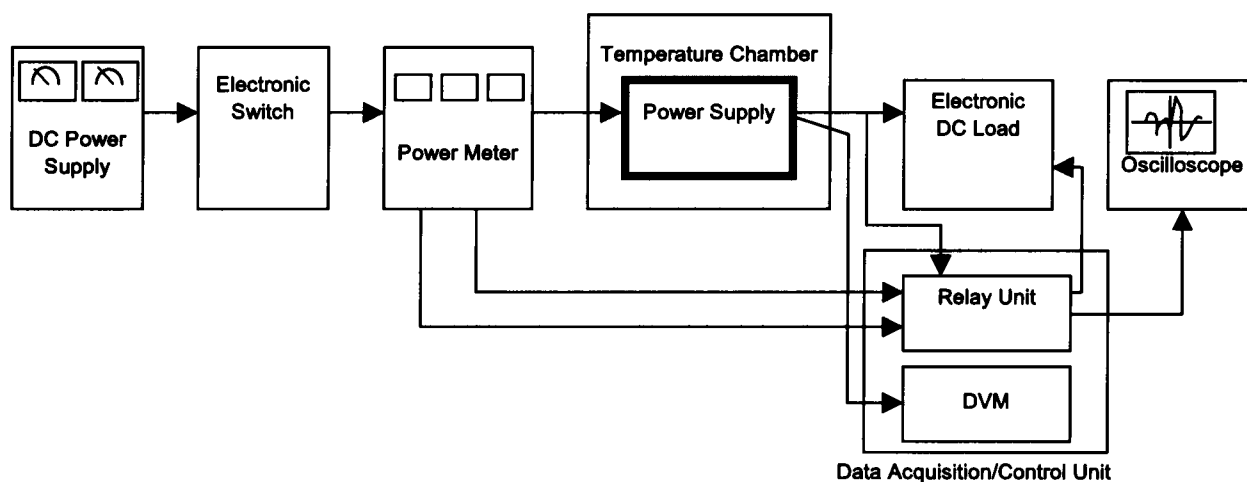


Figure A

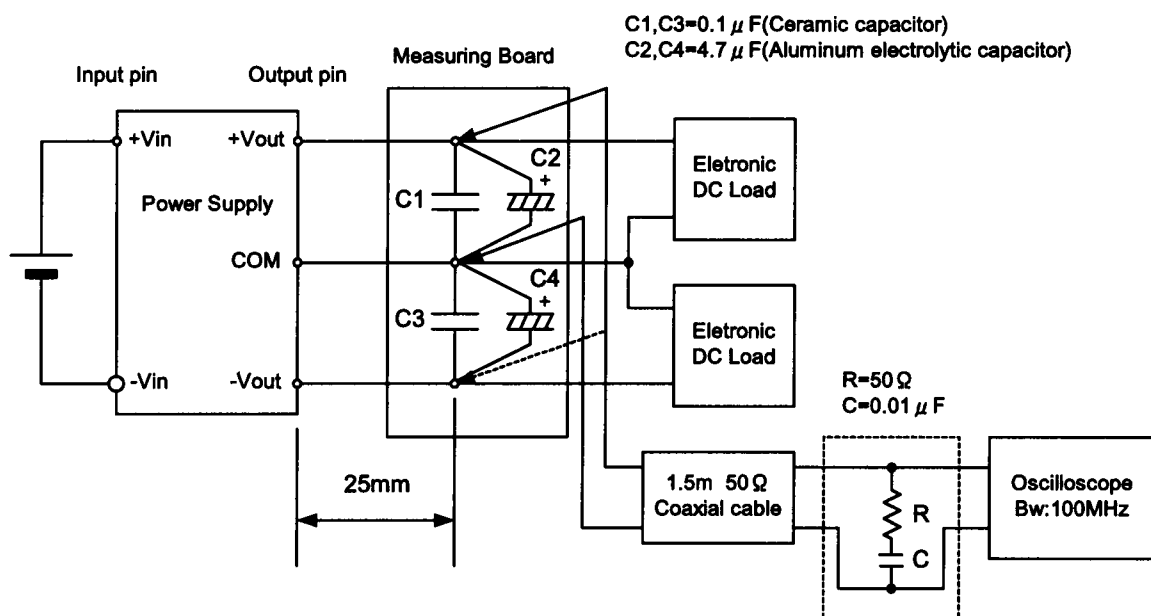


Figure B (Ripple and Ripple noise Characteristic)