

TEST DATA OF SUW60515 SUCW60515

Regulated DC Power Supply
Feb 24, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Yoshikazu Mizuno
Yoshikazu Mizuno Design Engineer

COSEL CO.,LTD.



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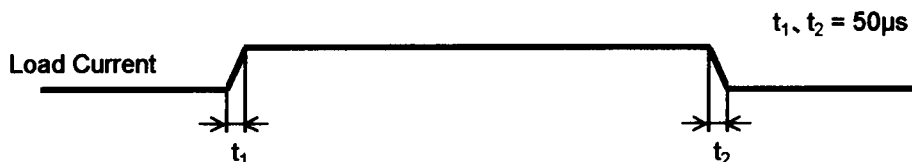


<p>Model SUW60515/SUCW60515</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																				
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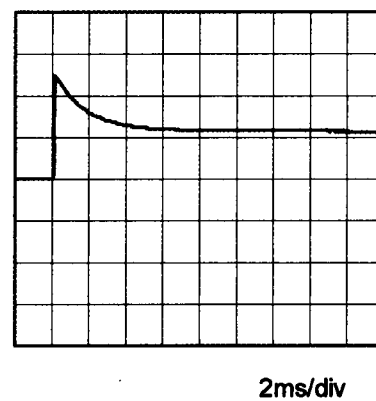
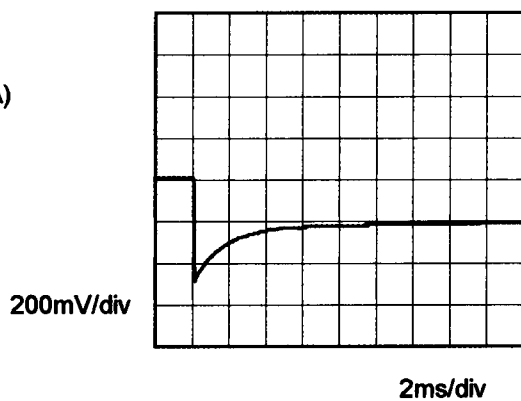


Model		SUW60515/SUCW60515	
Item		Dynamic Load Response	
Object		+15V0.2A	
		Temperature	25°C
		Testing Circuitry	Figure A

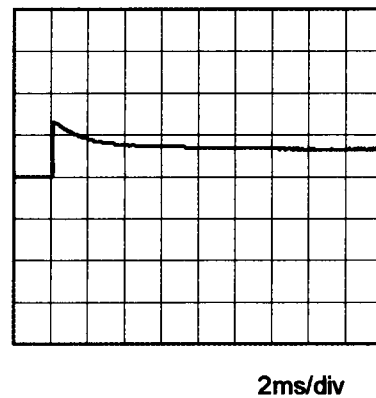
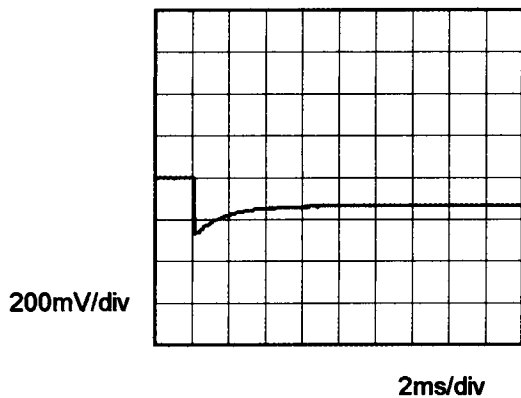
Input Volt. 5 V
Cycle 100 mS



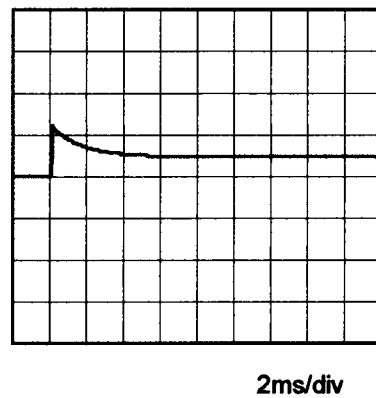
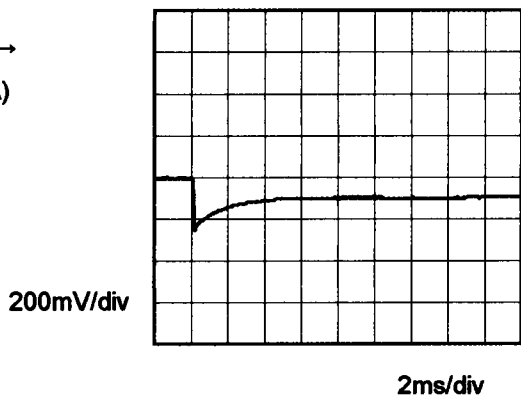
Min. Load (0A) ←→
Load 100% (0.2A)



Min. Load (0A) ←→
Load 50% (0.1A)



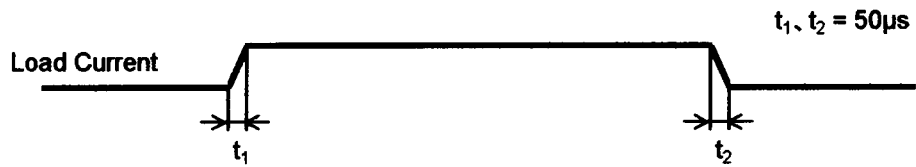
Load 50% (0.1A) ←→
Load 100% (0.2A)





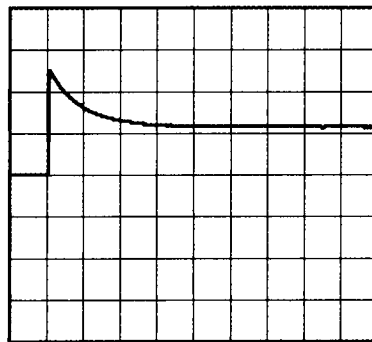
Model	SUW60515/SUCW60515	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	-15V0.2A		

Input Volt. 5 V
Cycle 100 mS

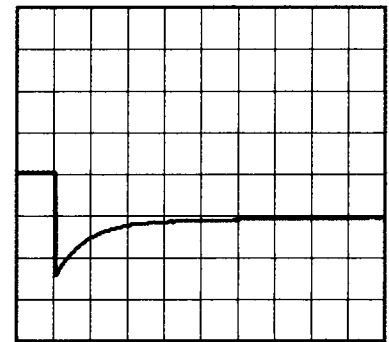


Min. Load (0A) ←→
Load 100% (0.2A)

200mV/div



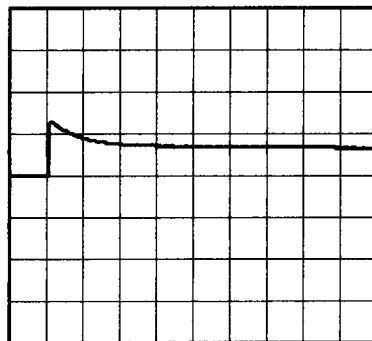
2ms/div



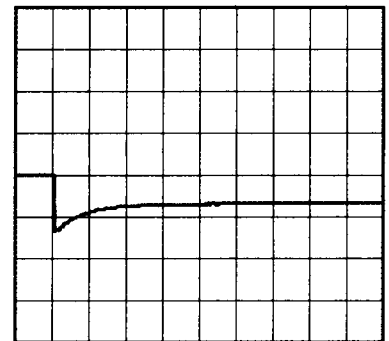
2ms/div

Min. Load (0A) ←→
Load 50% (0.1A)

200mV/div



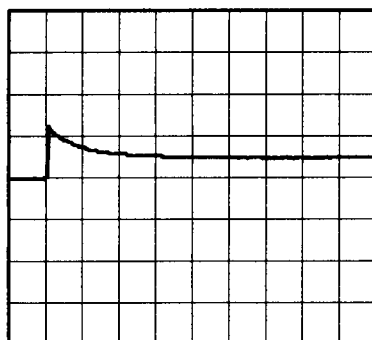
2ms/div



2ms/div

Load 50% (0.1A) ←→
Load 100% (0.2A)

200mV/div



2ms/div



2ms/div



Model		SUW60515/SUCW60515		Temperature 25°C Testing Circuitry Figure B																																						
Item		Ripple Voltage (by Load Current)																																								
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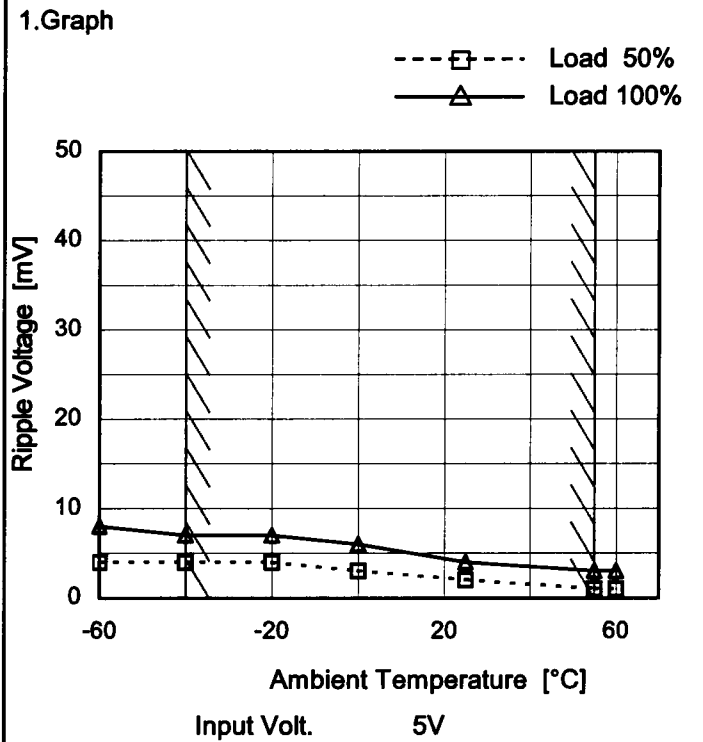


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0.20	5	3																																						
0.22	7	3																																						
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Model	SUW60515/SUCW60515
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.2A

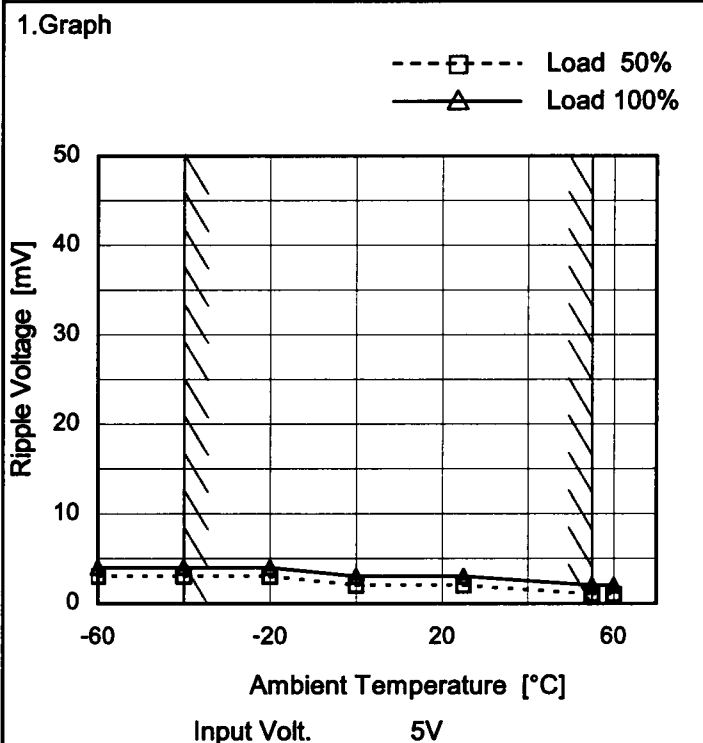
Testing Circuitry Figure B



2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	4	8
-40	4	7
-20	4	7
0	3	6
25	2	4
55	1	3
60	1	3
--	-	-
--	-	-
--	-	-

Object	-15V0.2A
--------	----------



2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	3	4
-40	3	4
-20	3	4
0	2	3
25	2	3
55	1	2
60	1	2
--	-	-
--	-	-
--	-	-

Measured by 100 MHz Oscilloscope.

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



<p>Model SUW60515/SUCW60515</p>																																																						
<p>Item Ambient Temperature Drift</p>		<p>Testing Circuitry Figure A</p>																																																				
<p>Object +15V0.2A</p>																																																						
<p>1.Graph</p> <p> —△— Input Volt. 4.5V ---□--- Input Volt. 5V -·-○-·- Input Volt. 9V </p> <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="3">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 4.5[V]</th> <th>Input Volt. 5[V]</th> <th>Input Volt. 9[V]</th> </tr> </thead> <tbody> <tr><td>-60</td><td>14.985</td><td>14.986</td><td>14.987</td></tr> <tr><td>-40</td><td>15.013</td><td>15.014</td><td>15.014</td></tr> <tr><td>-20</td><td>15.034</td><td>15.034</td><td>15.034</td></tr> <tr><td>0</td><td>15.047</td><td>15.048</td><td>15.048</td></tr> <tr><td>25</td><td>15.053</td><td>15.054</td><td>15.054</td></tr> <tr><td>55</td><td>15.048</td><td>15.049</td><td>15.049</td></tr> <tr><td>60</td><td>15.046</td><td>15.047</td><td>15.047</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> </tbody> </table>		Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	-60	14.985	14.986	14.987	-40	15.013	15.014	15.014	-20	15.034	15.034	15.034	0	15.047	15.048	15.048	25	15.053	15.054	15.054	55	15.048	15.049	15.049	60	15.046	15.047	15.047	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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COSEL		Testing Circuitry Figure A
Model	SUW60515/SUCW60515	
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 - 0.2A (AVR 2): 0 - 0.2A

* 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		+15V0.2A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy		
			Current[A]	Voltage[V]	Value [mV]	Ration [%]	
Maximum Voltage	55	4.5	0	15.280	±134	±0.9	
Minimum Voltage	-40	4.5	0.2	15.013			

Object		-15V0.2A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy		
			Current[A]	Voltage[V]	Value [mV]	Ration [%]	
Maximum Voltage	55	4.5	0	-15.296	±145	±1.0	
Minimum Voltage	-40	5	0.2	-15.006			

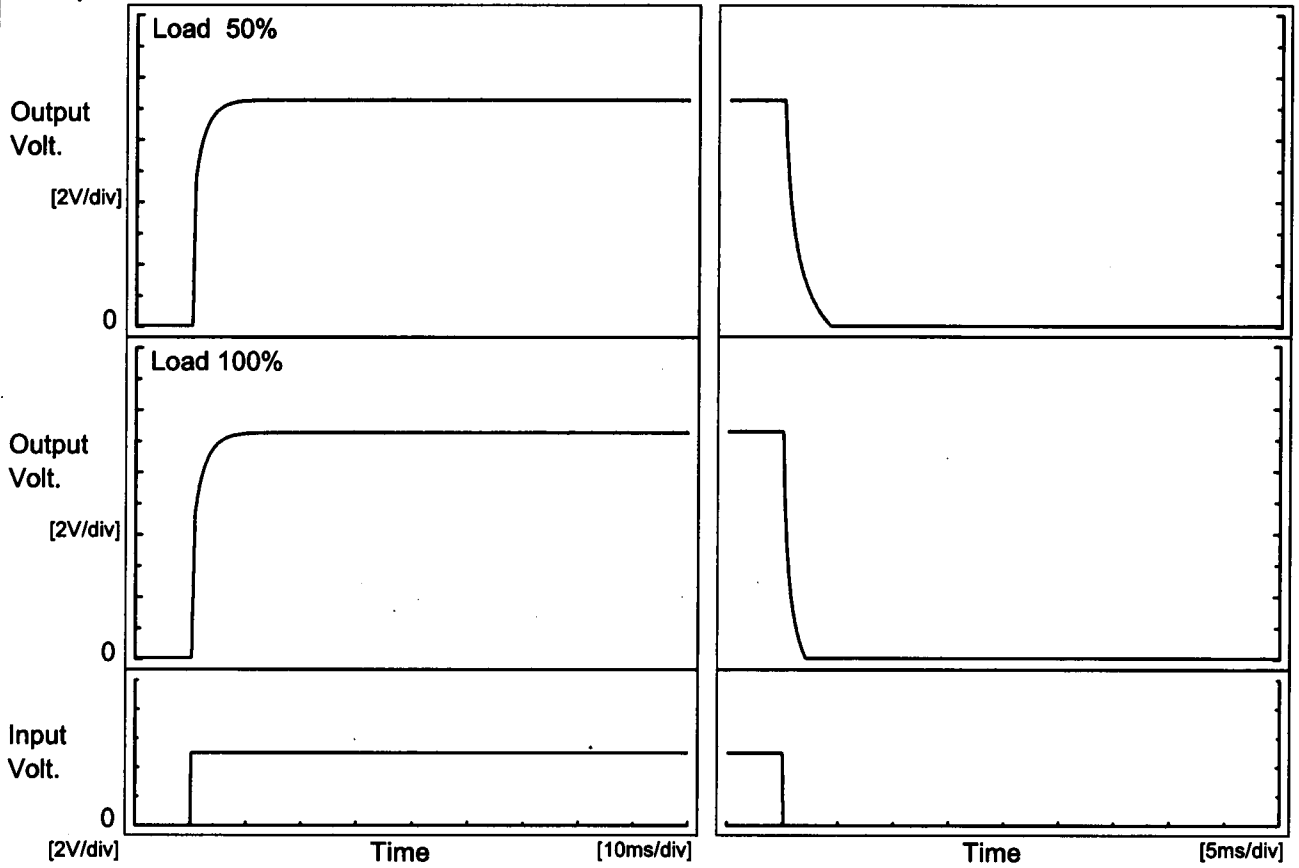


COSEL																									
Model	SUW60515/SUCW60515	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+15V0.2A																								
<p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p style="text-align: center;">Input Volt. 5V Load 100%</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>15.056</td></tr> <tr><td>0.5</td><td>15.054</td></tr> <tr><td>1.0</td><td>15.053</td></tr> <tr><td>2.0</td><td>15.053</td></tr> <tr><td>3.0</td><td>15.053</td></tr> <tr><td>4.0</td><td>15.053</td></tr> <tr><td>5.0</td><td>15.053</td></tr> <tr><td>6.0</td><td>15.053</td></tr> <tr><td>7.0</td><td>15.053</td></tr> <tr><td>8.0</td><td>15.053</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	15.056	0.5	15.054	1.0	15.053	2.0	15.053	3.0	15.053	4.0	15.053	5.0	15.053	6.0	15.053	7.0	15.053	8.0	15.053
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Model	SUW60515/SUCW60515	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+15V0.2A		

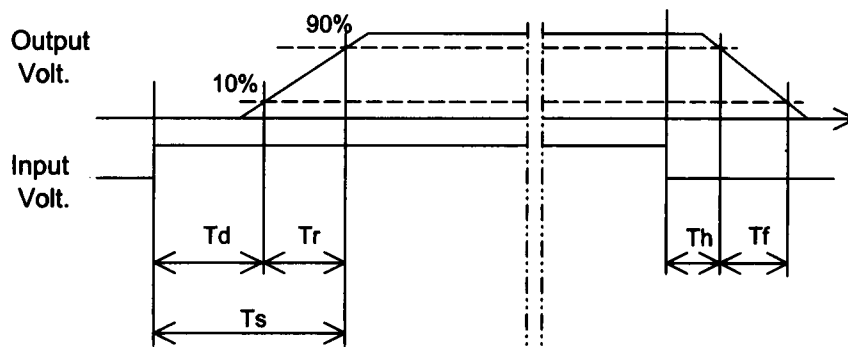
1. Graph



2. Values

Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.2	3.8	4.0	0.1	2.6
100 %		0.2	4.0	4.2	0.1	1.3

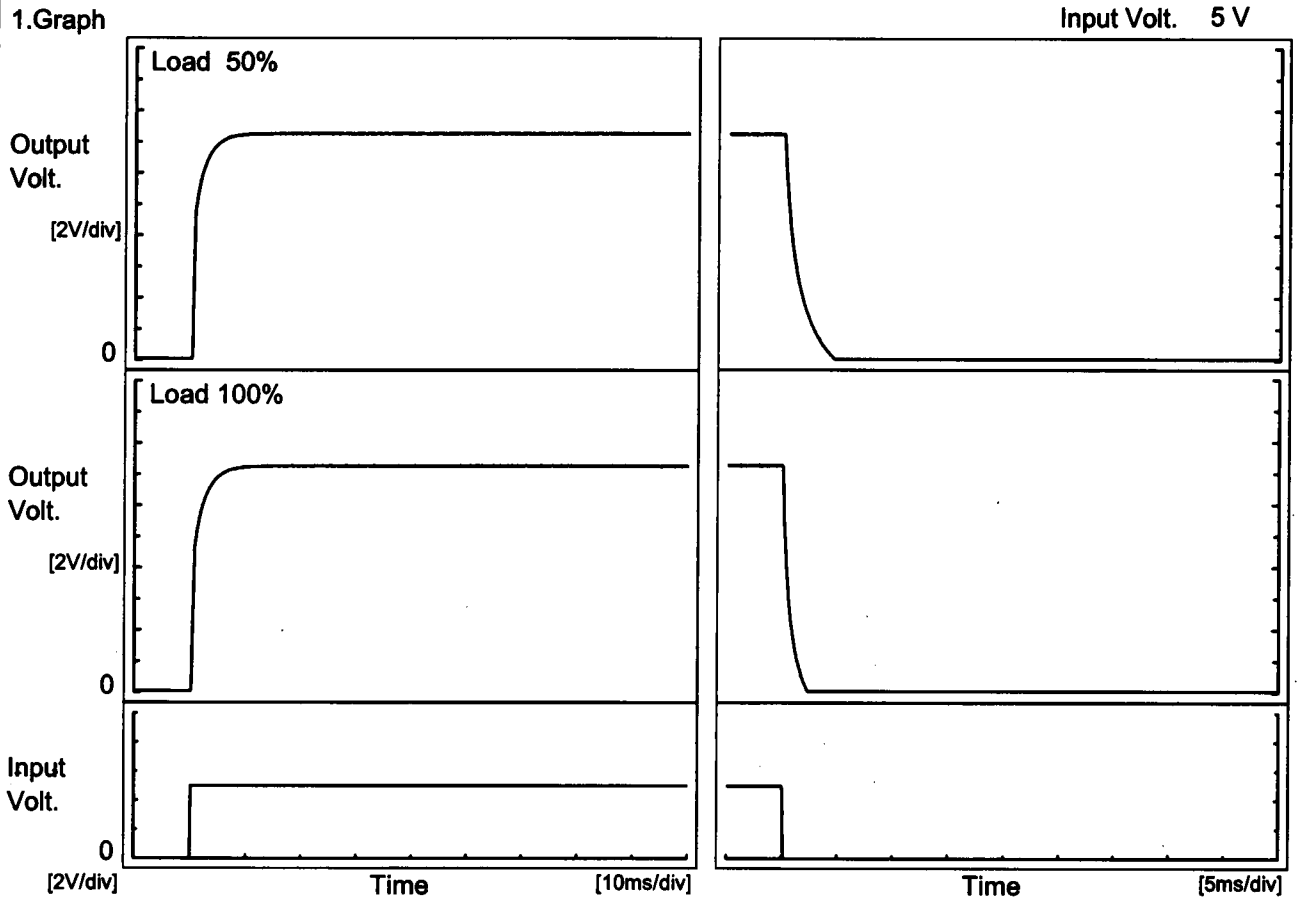
[ms]





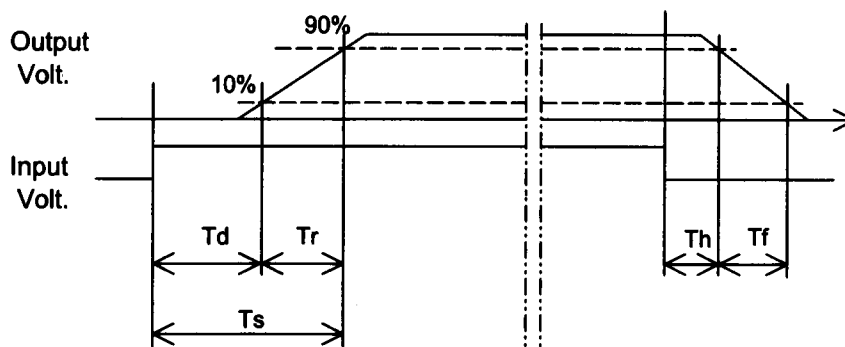
Model	SUW60515/SUCW60515	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	-15V0.2A		

1. Graph



2. Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
	50 %	0.2	3.9	4.1	0.1	2.9
	100 %	0.2	4.0	4.2	0.1	1.5

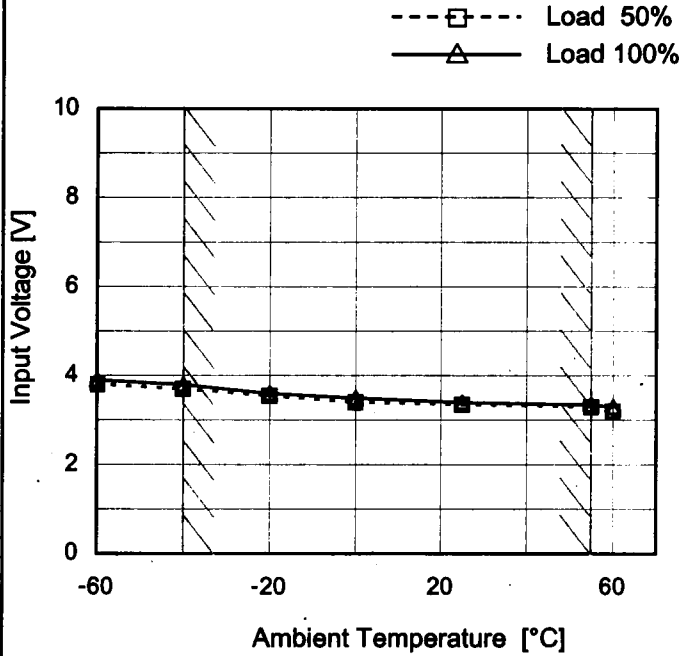




Model	SUW60515/SUCW60515
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V0.2A

Testing Circuitry Figure A

1.Graph

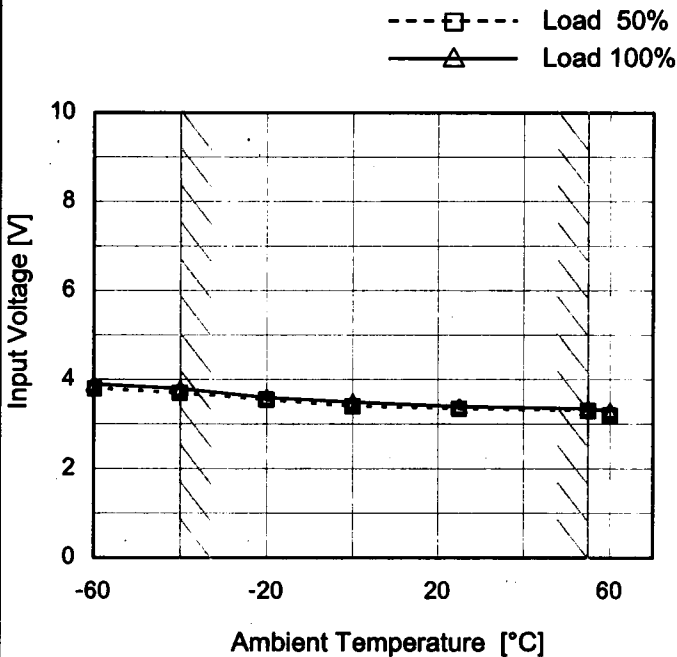


2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	3.8	3.9
-40	3.7	3.8
-20	3.6	3.6
0	3.4	3.5
25	3.4	3.4
55	3.3	3.4
60	3.2	3.3
--	-	-
--	-	-
--	-	-
--	-	-

Object	-15V0.2A
--------	----------

1.Graph



2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	3.8	3.9
-40	3.7	3.8
-20	3.6	3.6
0	3.4	3.5
25	3.4	3.4
55	3.3	3.4
60	3.2	3.3
--	-	-
--	-	-
--	-	-
--	-	-

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



COSEL																																																										
Model	SUW60515/SUCW60515	Temperature	25°C																																																							
Item	Overcurrent Protection	Testing Circuitry	Figure A																																																							
Object	+15V0.2A																																																									
1.Graph	<p> Input Volt. 4.5V Input Volt. 5V Input Volt. 9V </p> <p style="text-align: center;">Load Current [A]</p>	2.Values																																																								
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0.00	0.59	0.62	0.63																																																							
<p>Note: Slanted line shows the range of the rated load current.</p>																																																										

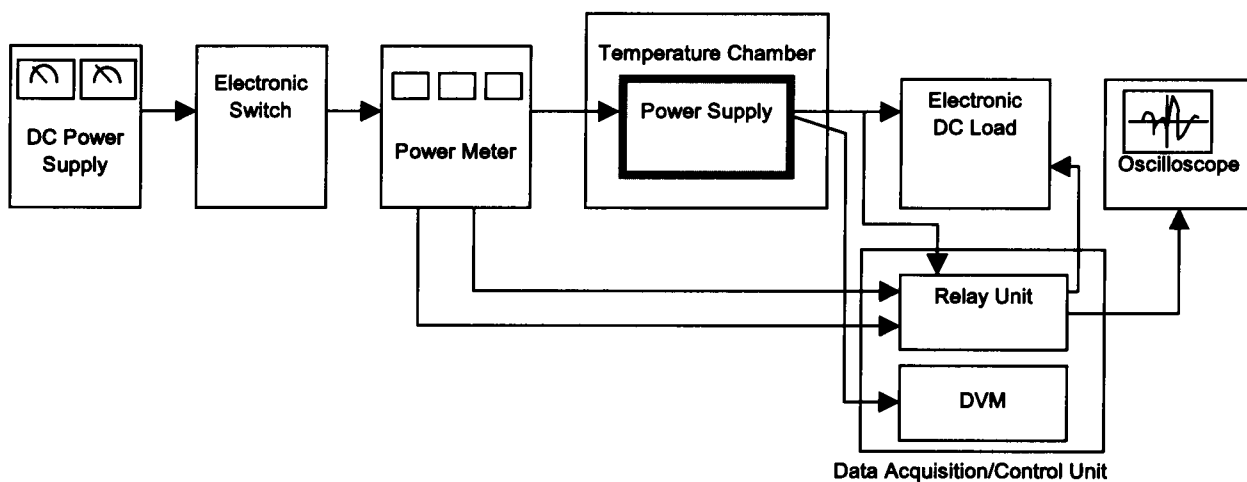


Figure A

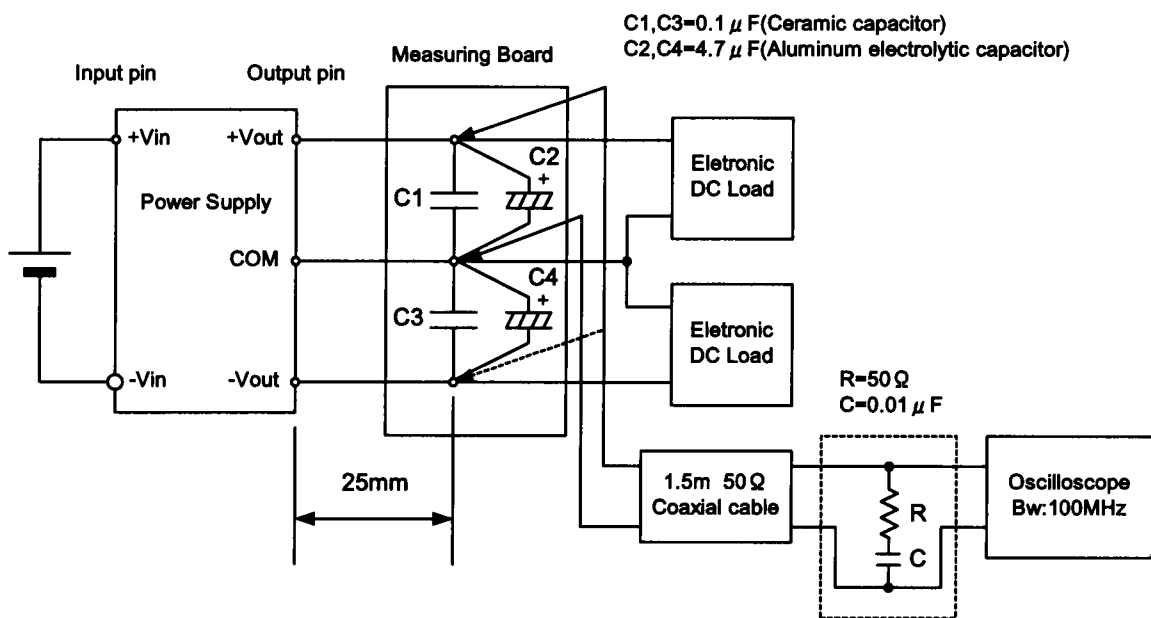


Figure B (Ripple and Ripple noise Characteristic)