

TEST DATA OF SUW61215 SUCW61215

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.



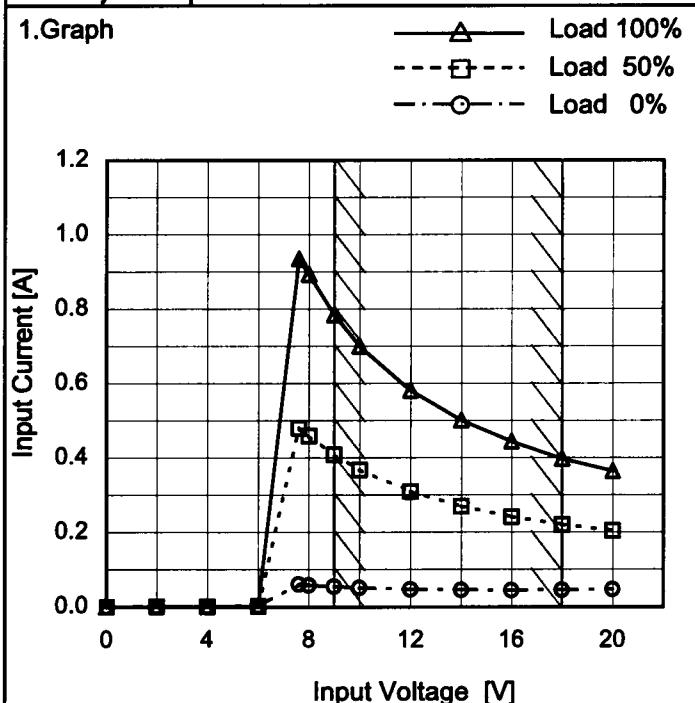
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Model	SUW61215/SUCW61215
Item	Input Current (by Input Voltage)
Object	_____



Note: Slanted line shows the range of the rated input voltage.

Temperature 25°C
Testing Circuitry Figure A

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	0.060	0.480	0.935
8.0	0.058	0.459	0.894
9.0	0.054	0.409	0.784
10.0	0.051	0.368	0.700
12.0	0.047	0.310	0.581
14.0	0.044	0.270	0.501
16.0	0.044	0.241	0.444
18.0	0.045	0.220	0.398
20.0	0.047	0.204	0.364
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	<p>The graph plots Input Power [W] on the Y-axis (0 to 10) against Load Ration [%] on the X-axis (0 to 120). Three data series are shown for different input voltages:</p> <ul style="list-style-type: none"> Input Volt. 9V (solid line with open triangle markers) Input Volt. 12V (dashed line with open square markers) Input Volt. 18V (dash-dot line with open circle markers) <table border="1"> <caption>Data points estimated from the graph</caption> <thead> <tr> <th>Load Ration [%]</th> <th>9V [W]</th> <th>12V [W]</th> <th>18V [W]</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.5</td><td>0.5</td><td>0.5</td></tr> <tr><td>20</td><td>1.75</td><td>2.25</td><td>2.75</td></tr> <tr><td>40</td><td>3.5</td><td>4.5</td><td>5.5</td></tr> <tr><td>60</td><td>5.25</td><td>6.75</td><td>8.25</td></tr> <tr><td>80</td><td>7.0</td><td>8.5</td><td>10.0</td></tr> <tr><td>100</td><td>8.75</td><td>10.25</td><td>11.75</td></tr> <tr><td>110</td><td>9.5</td><td>11.0</td><td>12.5</td></tr> </tbody> </table>	Load Ration [%]	9V [W]	12V [W]	18V [W]	0	0.5	0.5	0.5	20	1.75	2.25	2.75	40	3.5	4.5	5.5	60	5.25	6.75	8.25	80	7.0	8.5	10.0	100	8.75	10.25	11.75	110	9.5	11.0	12.5																				
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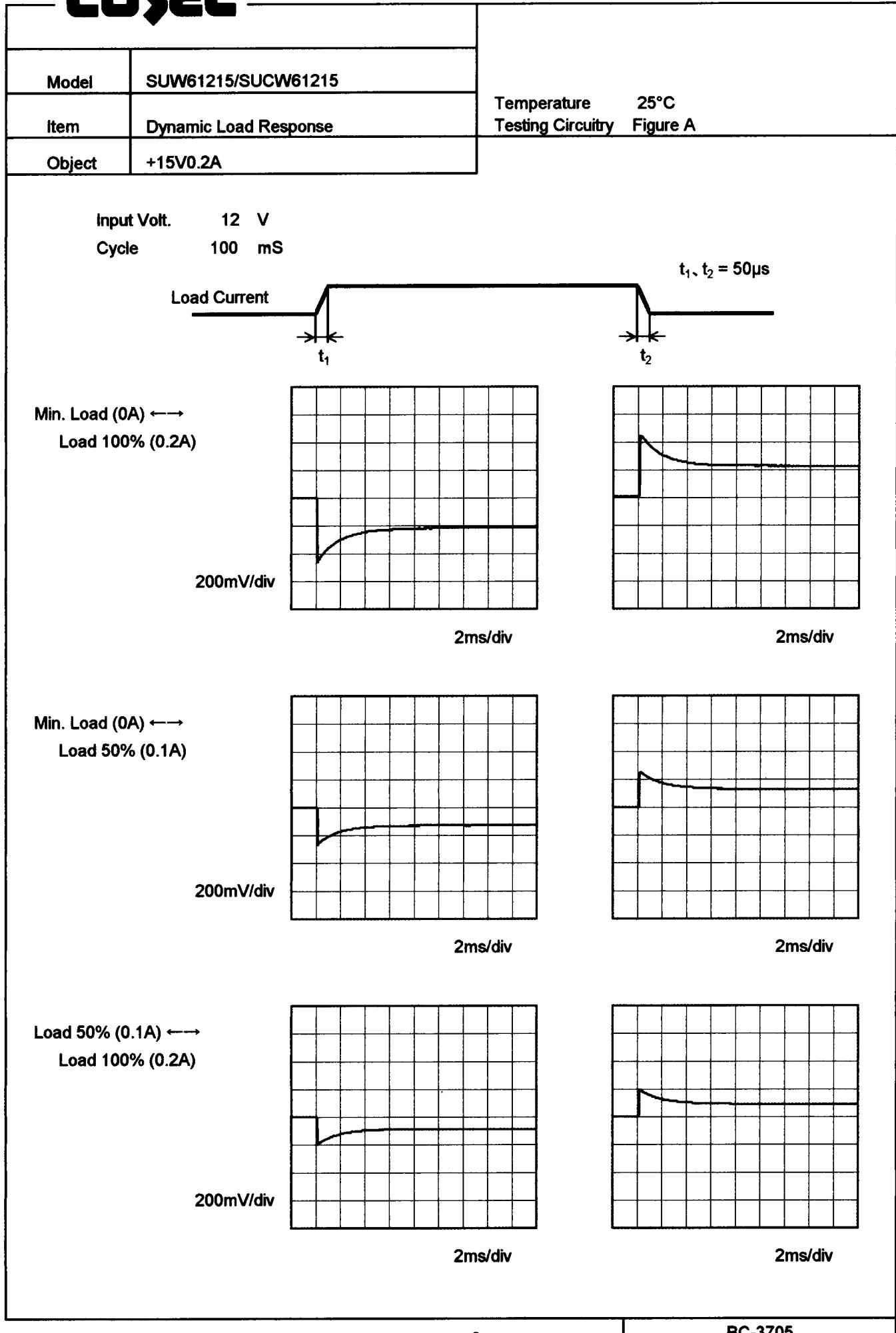
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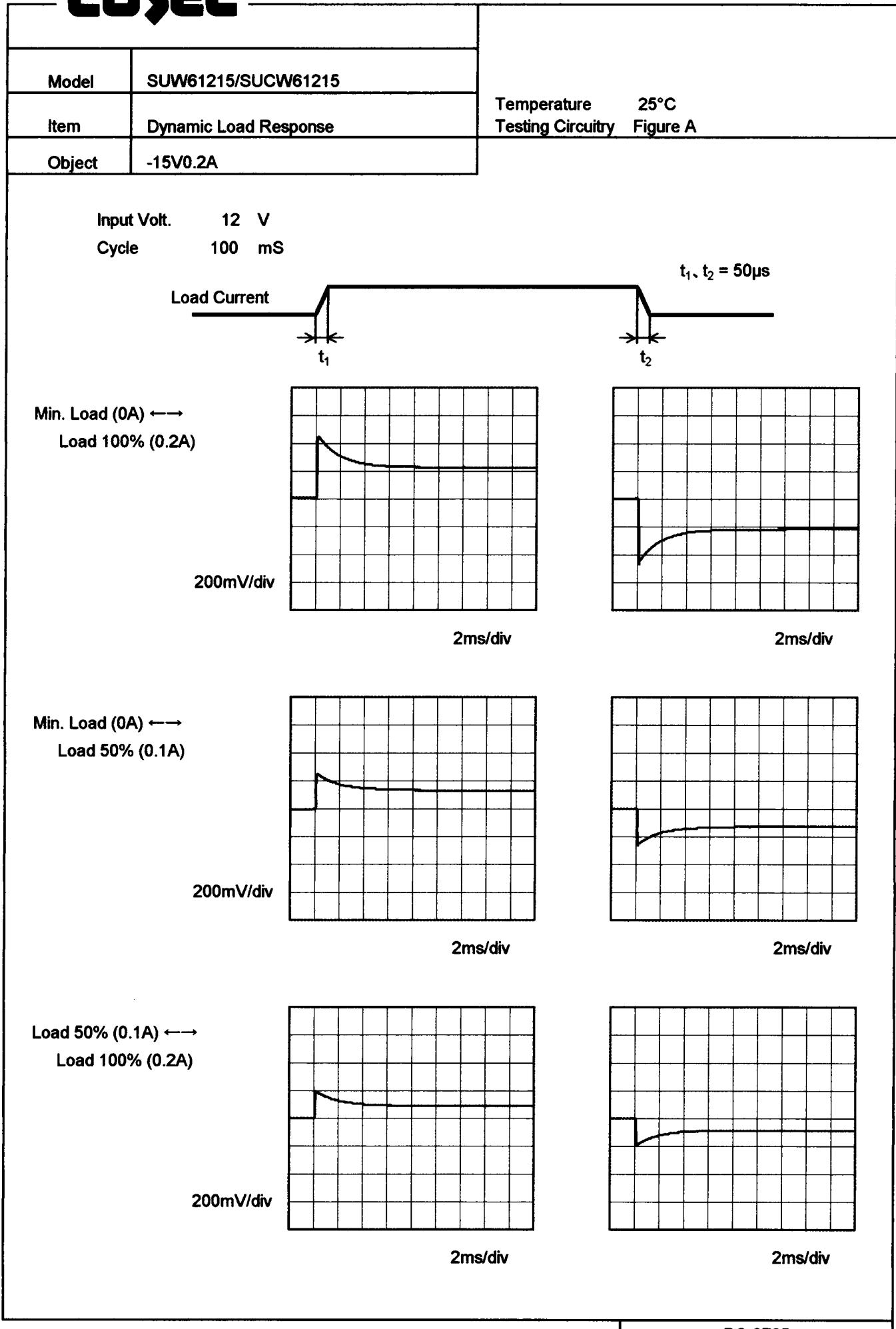
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<p>Note: Slanted line shows the range of the rated load current.</p>																																																						

COSEL

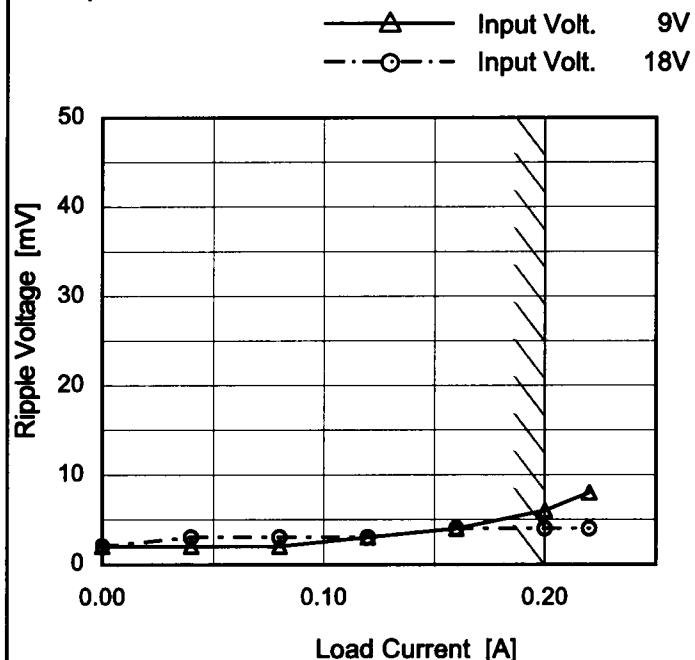
COSEL



COSEL

Model	SUW61215/SUCW61215
Item	Ripple Voltage (by Load Current)
Object	+15V0.2A

1.Graph



Measured by 100 MHz Oscilloscope.
 Ripple Voltage is shown as p-p in the figure below.
 Note: Slanted line shows the range of the rated load current.

Temperature 25°C
 Testing Circuitry Figure B

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	2	2
0.04	2	3
0.08	2	3
0.12	3	3
0.16	4	4
0.20	6	4
0.22	8	4
--	-	-
--	-	-
--	-	-
--	-	-

Ripple [mVp-p]

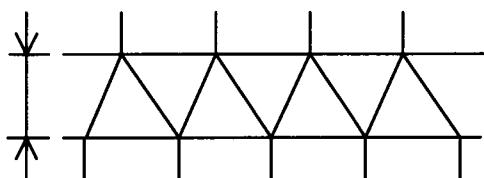


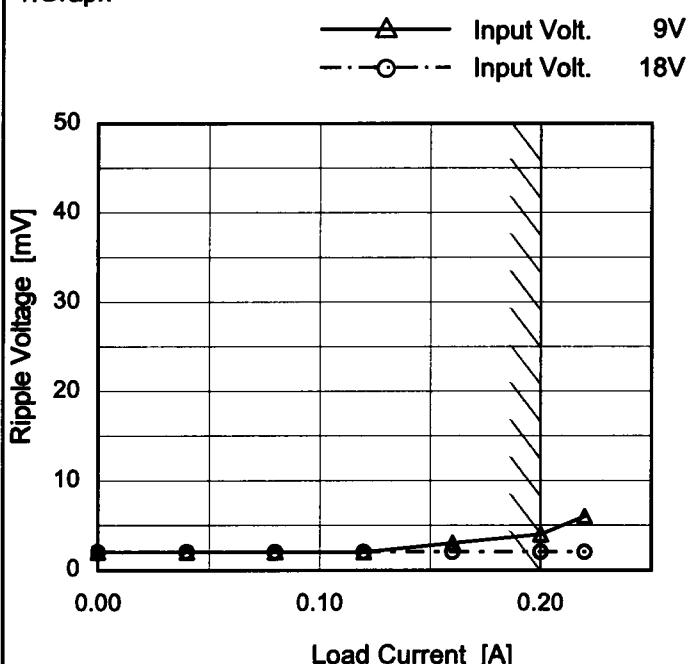
Fig.Complex Ripple Wave Form

COSEL

Model	SUW61215/SUCW61215
Item	Ripple Voltage (by Load Current)
Object	-15V0.2A

Temperature 25°C
 Testing Circuitry Figure B

1.Graph



2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	2	2
0.04	2	2
0.08	2	2
0.12	2	2
0.16	3	2
0.20	4	2
0.22	6	2
--	-	-
--	-	-
--	-	-
--	-	-

Measured by 100 MHz Oscilloscope.

Ripple Voltage is shown as p-p in the figure below.

Note: Slanted line shows the range of the rated load current.

Ripple [mVp-p]

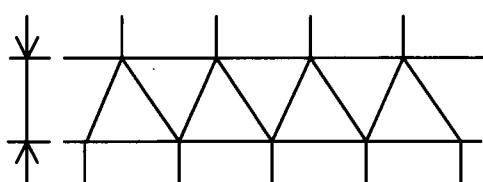
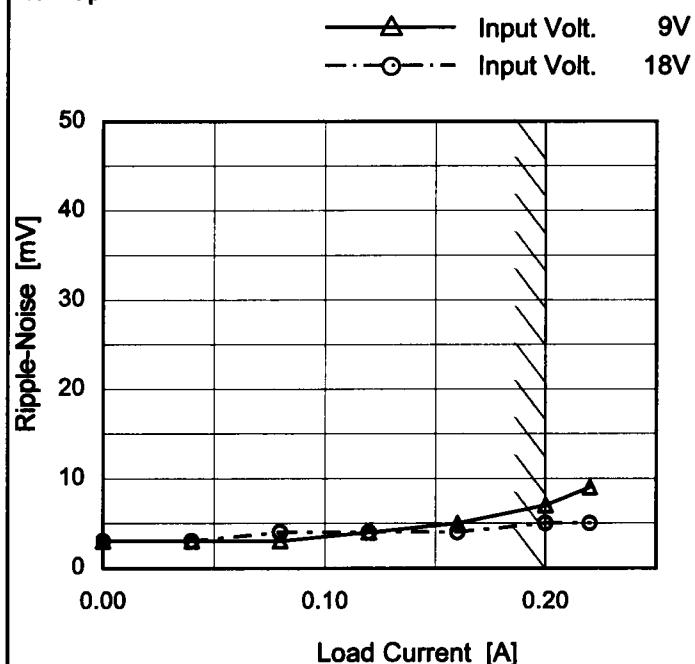


Fig.Complex Ripple Wave Form

COSEL

Model	SUW61215/SUCW61215
Item	Ripple-Noise
Object	+15V0.2A

1. Graph



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.

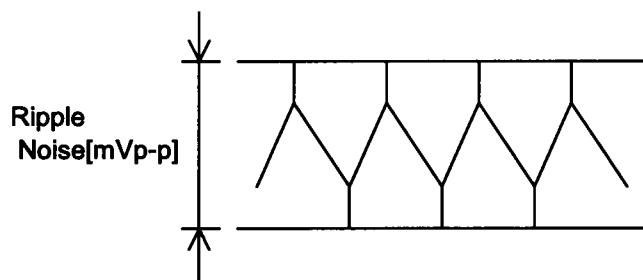


Fig.Complex Ripple Noise Wave Form

 Temperature 25°C
 Testing Circuitry Figure B

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	3	3
0.04	3	3
0.08	3	4
0.12	4	4
0.16	5	4
0.20	7	5
0.22	9	5
--	-	-
--	-	-
--	-	-
--	-	-

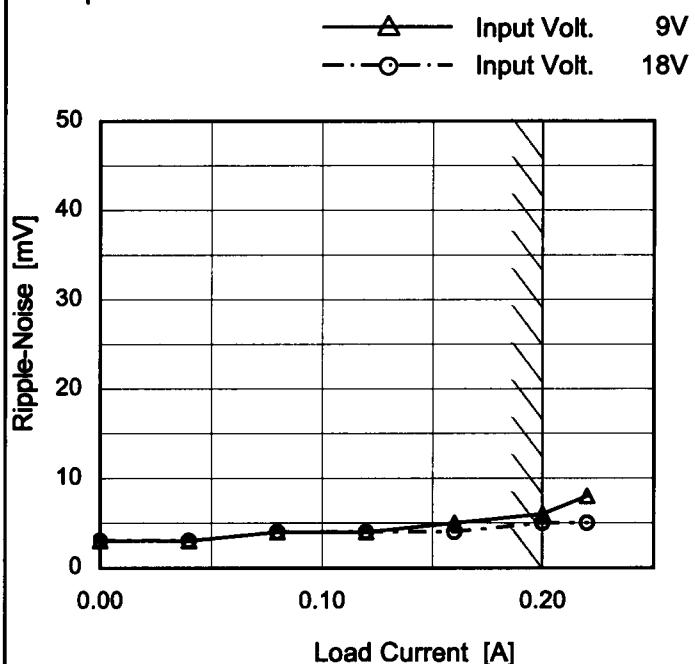
COSEL

Model SUW61215/SUCW61215

Item Ripple-Noise

Object -15V0.2A

1. Graph



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.

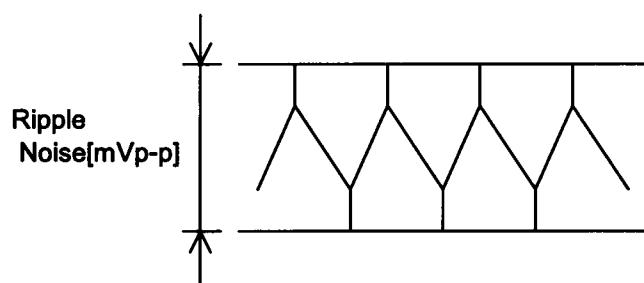


Fig.Complex Ripple Noise Wave Form

Temperature 25°C
Testing Circuitry Figure B

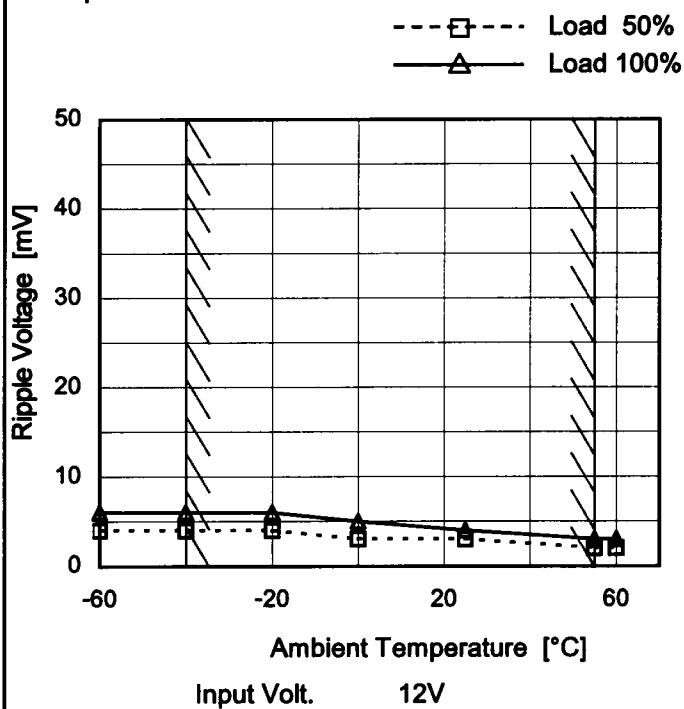
2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	3	3
0.04	3	3
0.08	4	4
0.12	4	4
0.16	5	4
0.20	6	5
0.22	8	5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUW61215/SUCW61215
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.2A

1.Graph

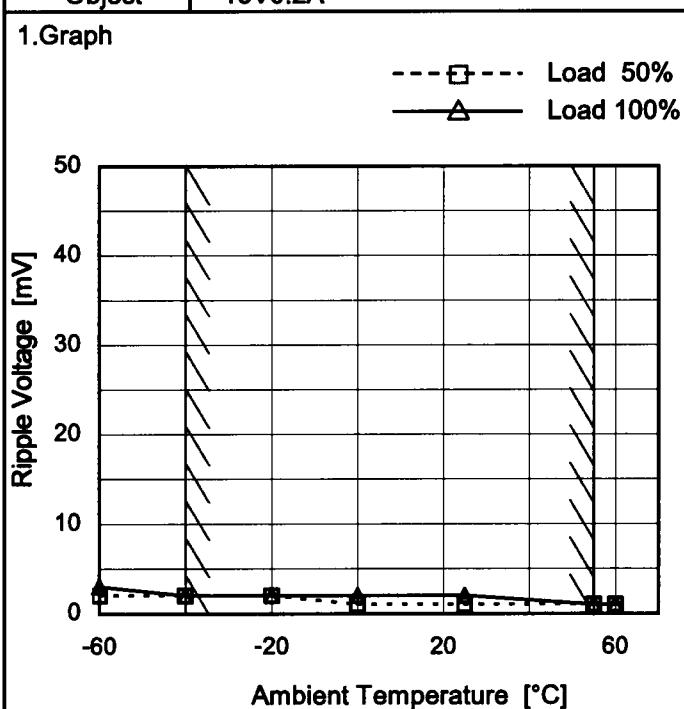


Testing Circuitry Figure B

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	4	6
-40	4	6
-20	4	6
0	3	5
25	3	4
55	2	3
60	2	3
--	-	-
--	-	-
--	-	-
--	-	-

1.Graph



2.Values

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

Measured by 100 MHz Oscilloscope.

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

COSEL

		Testing Circuitry Figure A																																																					
Model	SUW61215/SUCW61215																																																						
Item	Ambient Temperature Drift																																																						
Object	+15V0.2A																																																						
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Note: Slanted line shows the range of the rated ambient temperature.																																																							



Model	SUW61215/SUCW61215	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

* Other Output : Rated Load

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

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

2. Values

Object	+15V0.2A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	15.190	±131	±0.9
Minimum Voltage	-40	9	0.2	14.929		

Object	-15V0.2A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	-15.204	±132	±0.9
Minimum Voltage	-40	18	0.2	-14.940		

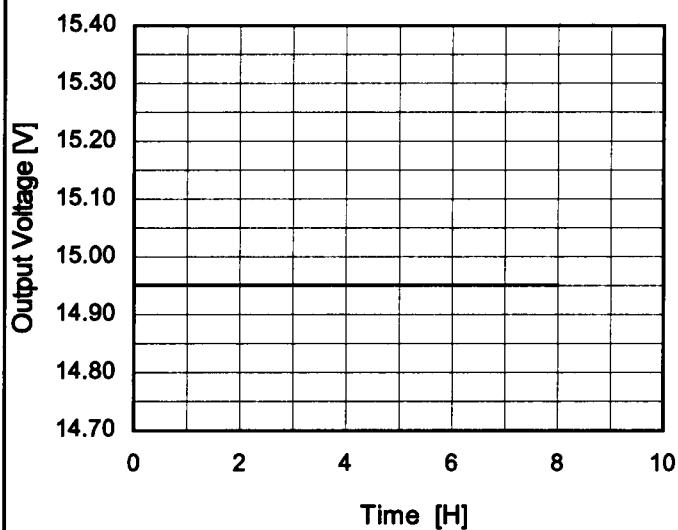
COSEL

Model	SUW61215/SUCW61215
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Item	Time Lapse Drift
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Object	+15V0.2A
--------	----------

1.Graph



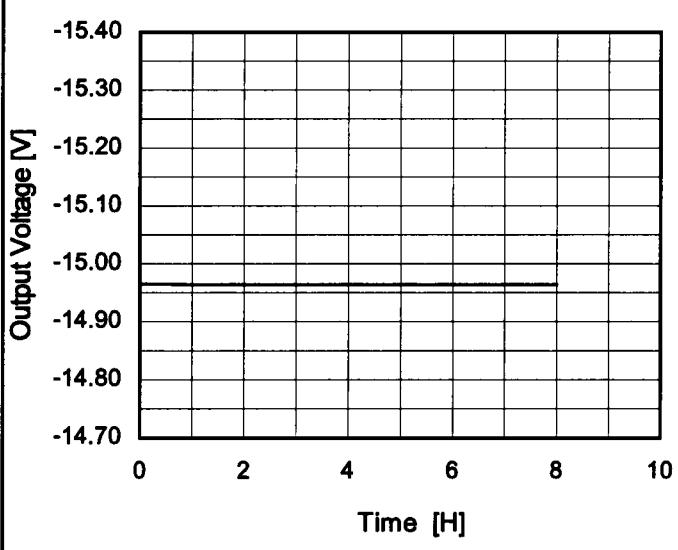
Temperature 25°C
Testing Circuitry Figure A

2.Values

Time since start [H]	Output Voltage [V]
0.0	14.952
0.5	14.951
1.0	14.951
2.0	14.951
3.0	14.951
4.0	14.951
5.0	14.951
6.0	14.951
7.0	14.951
8.0	14.951

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

1.Graph



2.Values

Time since start [H]	Output Voltage [V]
0.0	-14.966
0.5	-14.965
1.0	-14.964
2.0	-14.964
3.0	-14.964
4.0	-14.964
5.0	-14.964
6.0	-14.964
7.0	-14.964
8.0	-14.964

COSEL

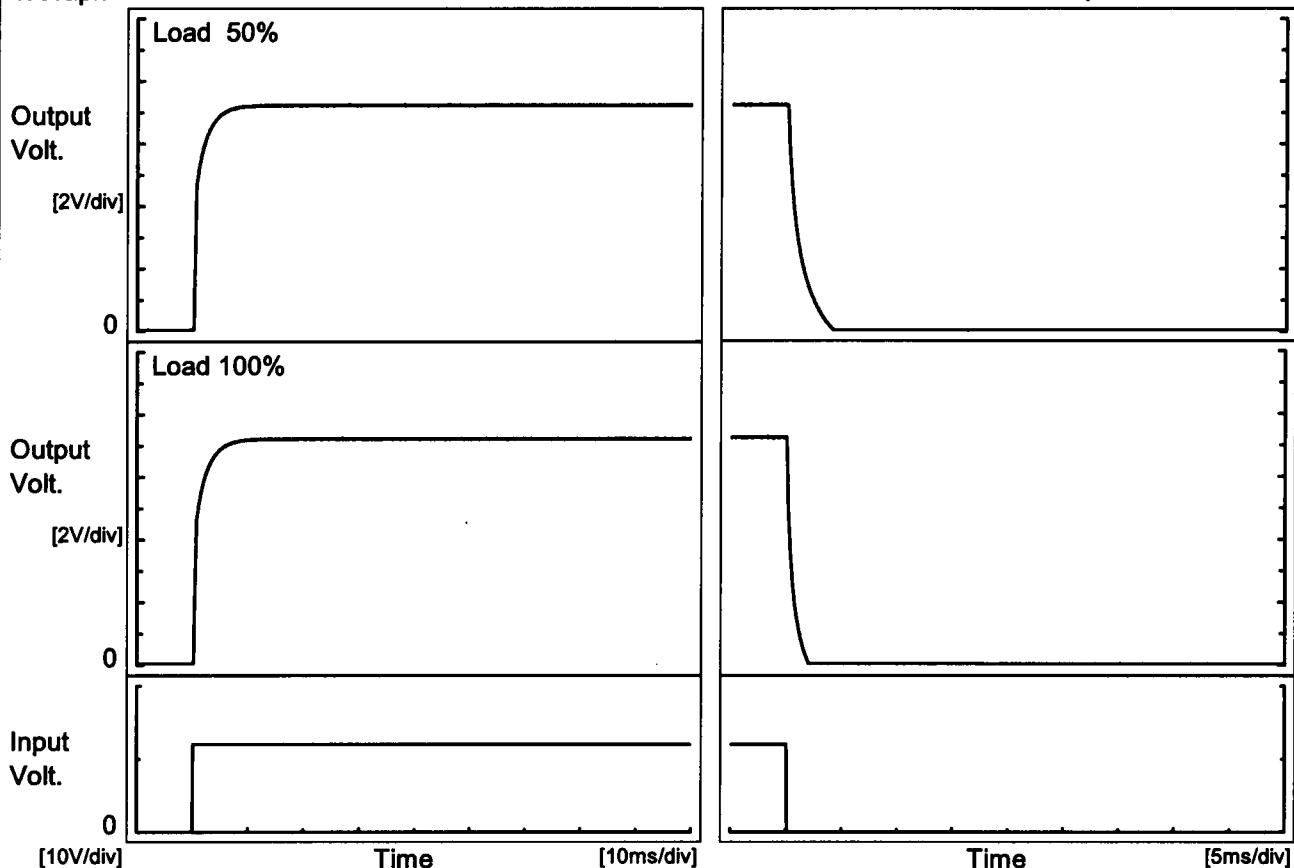
Model SUW61215/SUCW61215

Item Rise and Fall Time

Object +15V0.2A

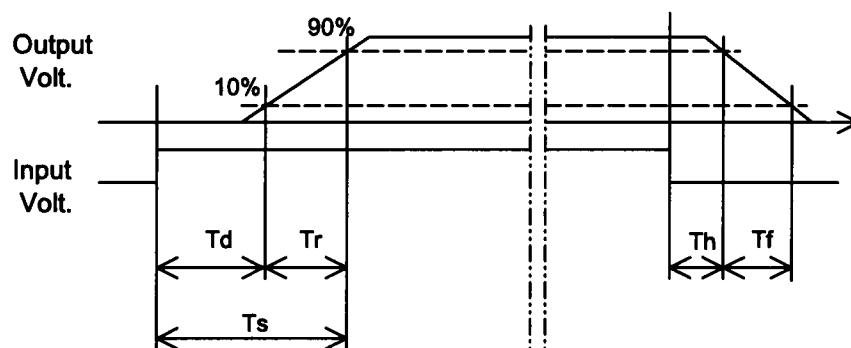
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		0.3	4.1	4.4	0.1	2.6	
100 %		0.3	4.2	4.5	0.1	1.3	



COSEL

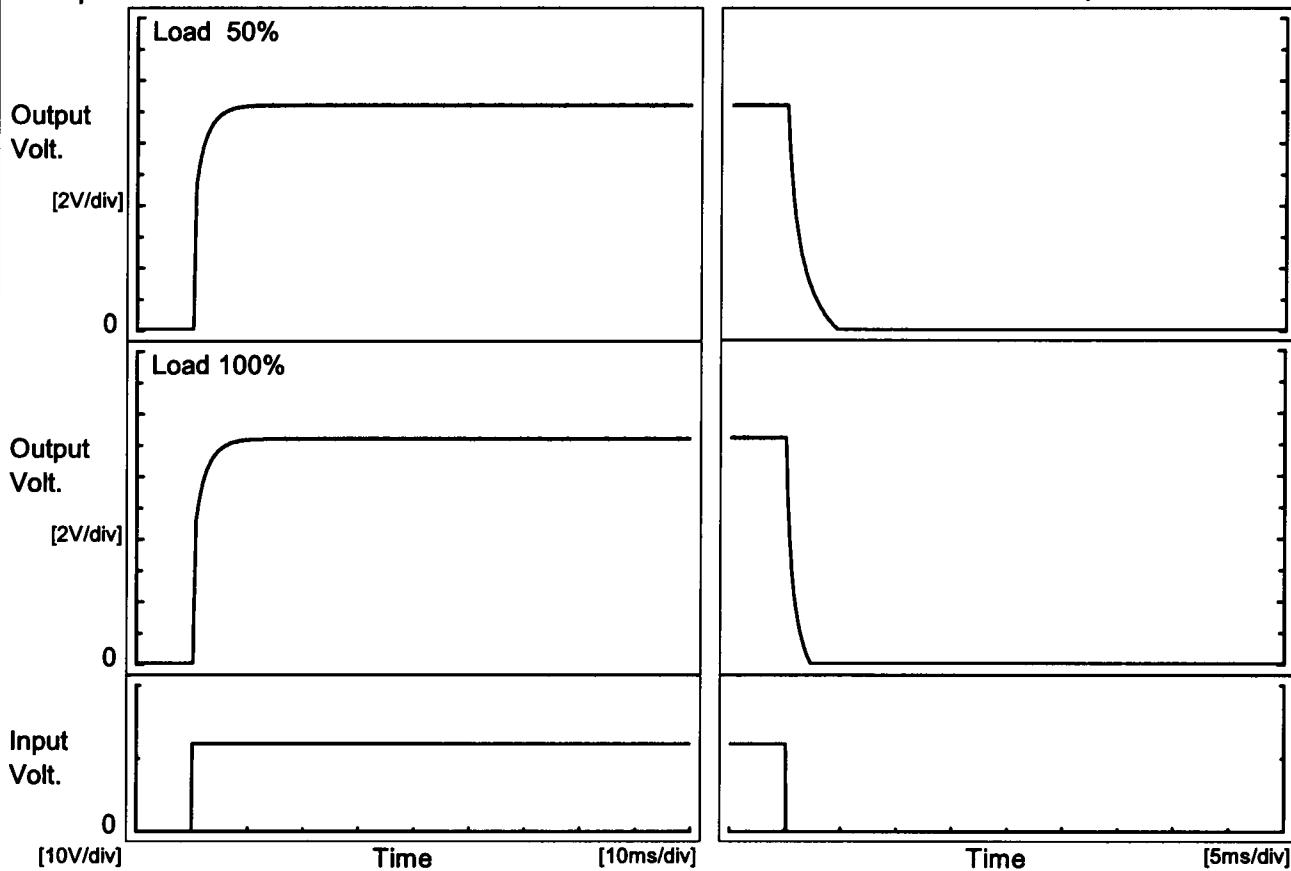
Model SUW61215/SUCW61215

Item Rise and Fall Time

Object -15V0.2A

Temperature 25°C
Testing Circuitry Figure A

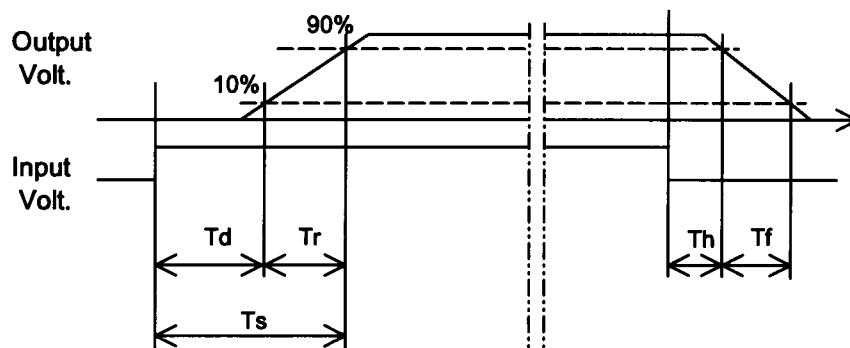
1. Graph



2. Values

[ms]

Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.3	4.2	4.5	0.1	3.0
100 %		0.3	4.3	4.6	0.1	1.5



COSEL

		Testing Circuitry Figure A																																						
Model	SUW61215/SUCW61215																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																							
Object +15V0.2A		2.Values																																						
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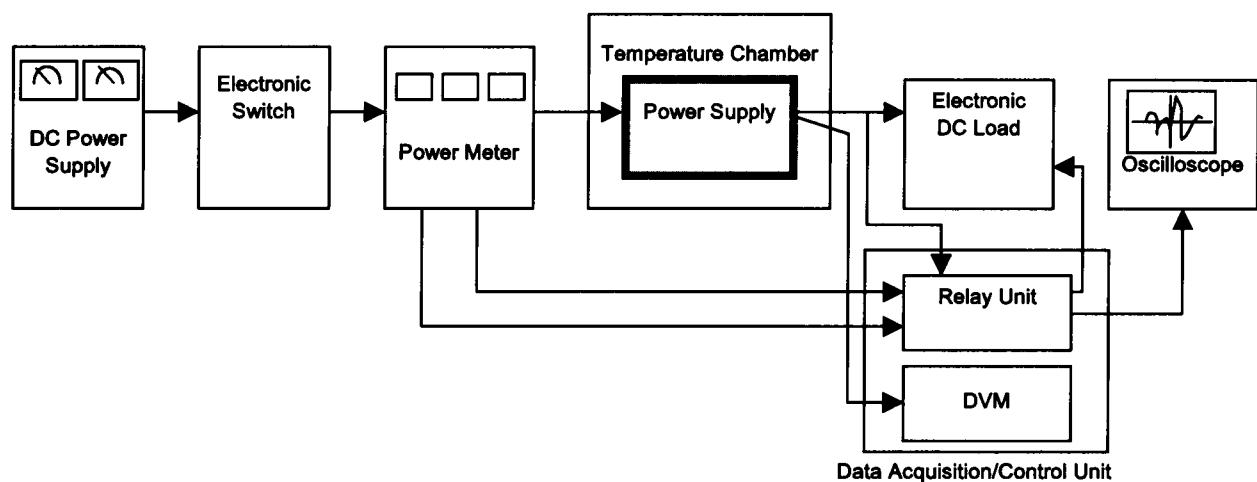


Figure A

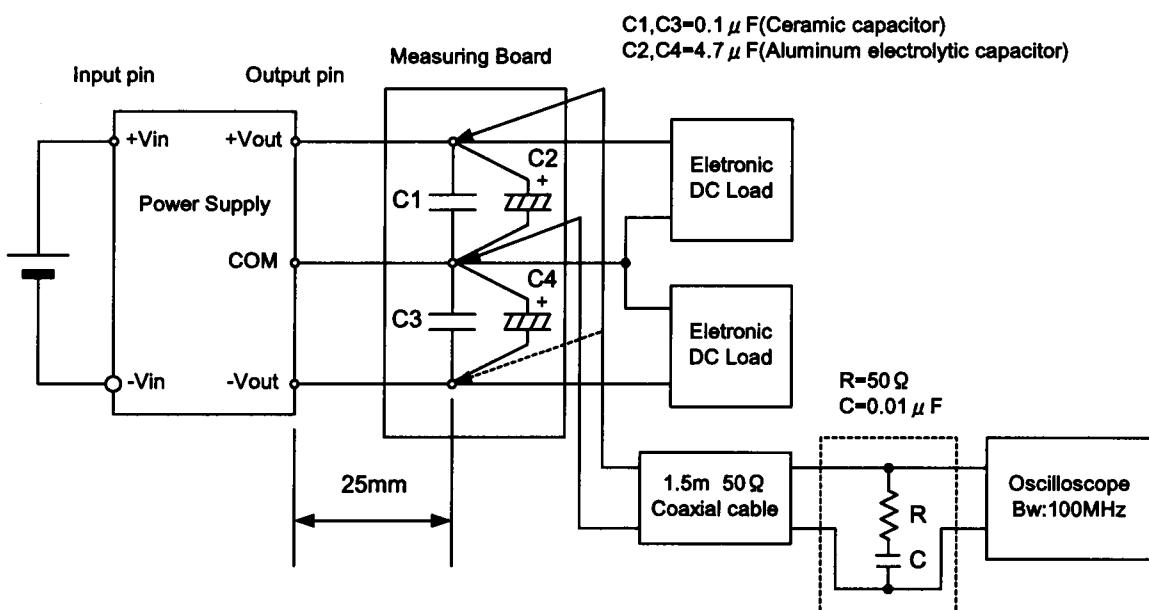


Figure B (Ripple and Ripple noise Characteristic)