

# TEST DATA OF SUW62415 SUCW62415

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.**



## CONTENTS

1. Input Current (by Input Voltage) . . . . .	1
2. Input Current (by Load Current) . . . . .	2
3. Input Power (by Load Current) . . . . .	3
4. Efficiency (by Input Voltage) . . . . .	4
5. Efficiency (by Load Current) . . . . .	5
6. Line Regulation . . . . .	6
7. Load Regulation . . . . .	7
8. Dynamic Load Response . . . . .	8
9. Ripple Voltage (by Load Current) . . . . .	10
10. Ripple-Noise . . . . .	12
11. Ripple Voltage (by Ambient Temperature) . . . . .	14
12. Ambient Temperature Drift . . . . .	15
13. Output Voltage Accuracy . . . . .	16
14. Time Lapse Drift . . . . .	17
15. Rise and Fall Time . . . . .	18
16. Minimum Input Voltage for Regulated Output Voltage . . . . .	20
17. Overcurrent Protection . . . . .	21
18. Figure of Testing Circuitry . . . . .	22

(Final Page 22)

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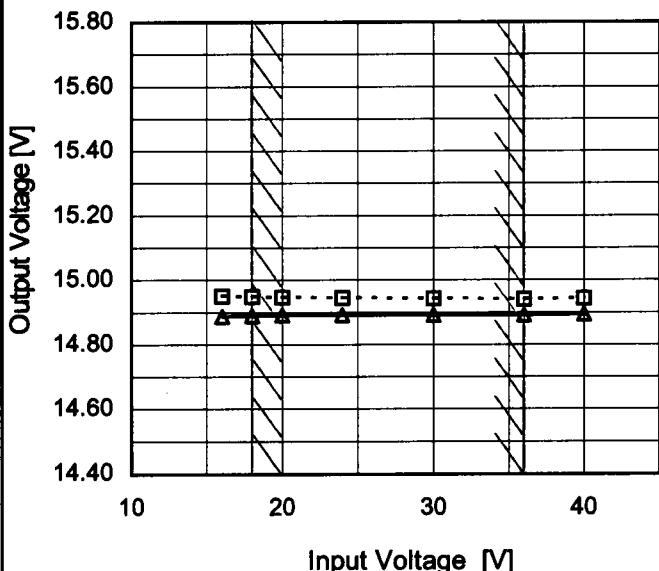
Model SUW62415/SUCW62415

Item Line Regulation

Object +15V0.2A

## 1.Graph

---□--- Load 50%  
 —△— Load 100%

Temperature 25°C  
Testing Circuitry Figure A

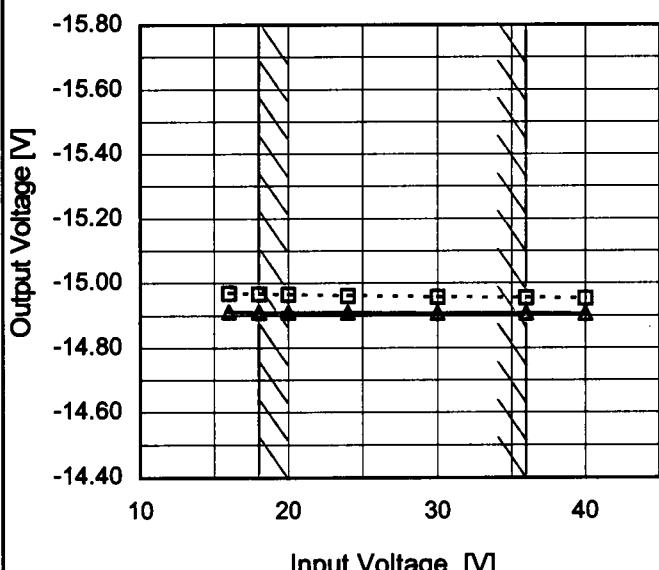
## 2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	14.950	14.888
18	14.949	14.890
20	14.947	14.890
24	14.945	14.891
30	14.943	14.892
36	14.942	14.892
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Object -15V0.2A

## 1.Graph

---□--- Load 50%  
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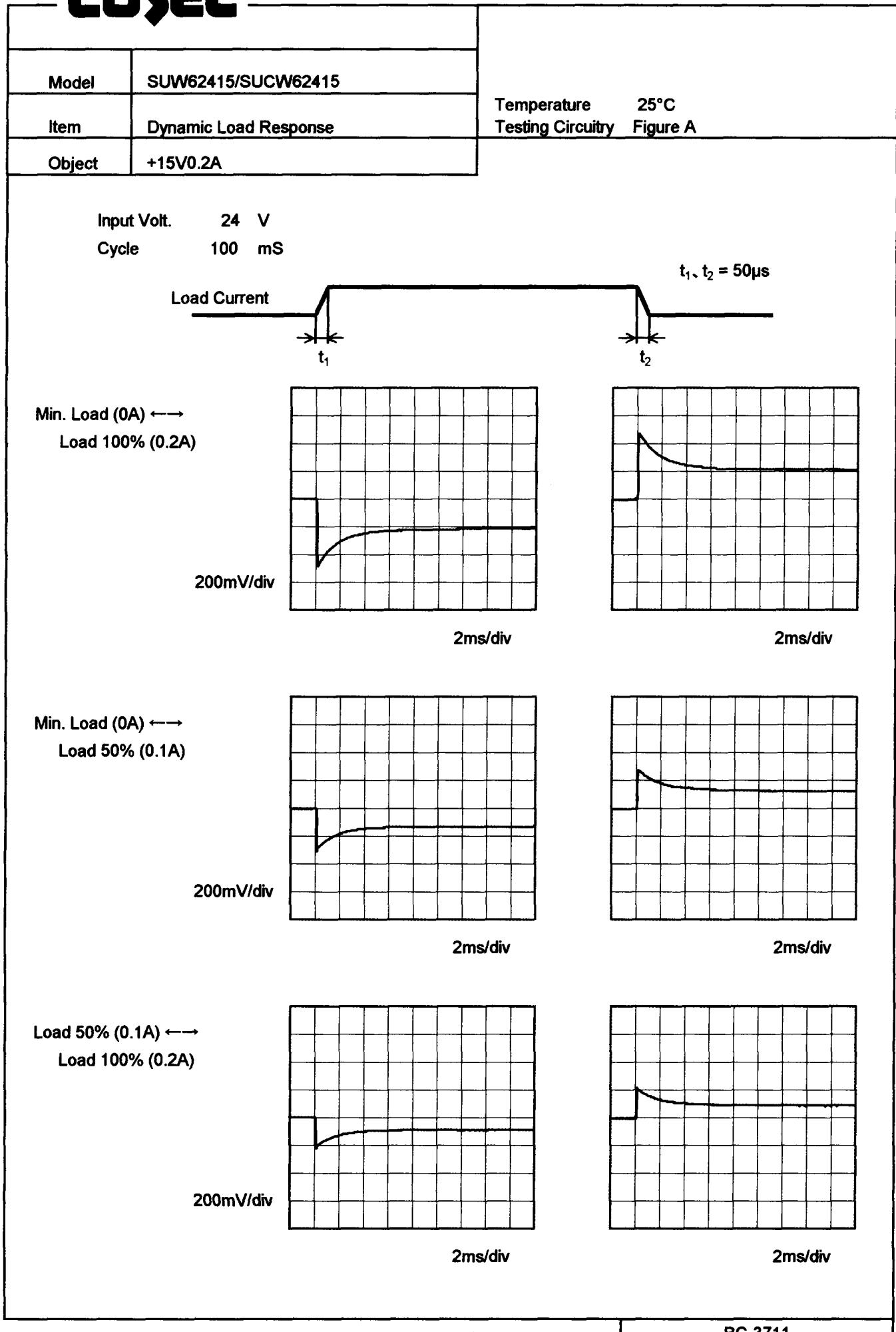


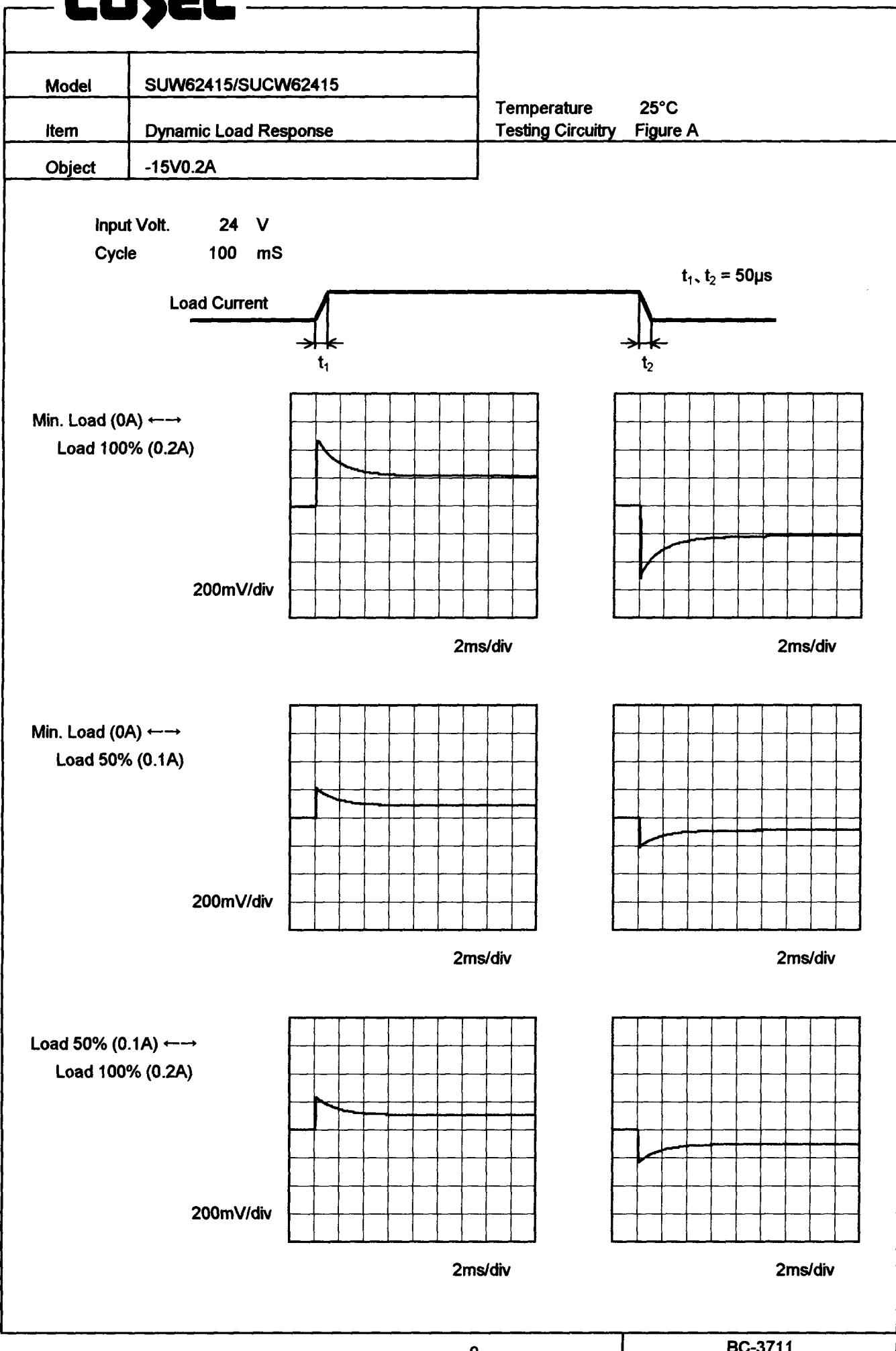
## 2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	-14.969	-14.910
18	-14.966	-14.910
20	-14.964	-14.909
24	-14.960	-14.908
30	-14.957	-14.907
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Note: Slanted line shows the range of the rated input voltage.

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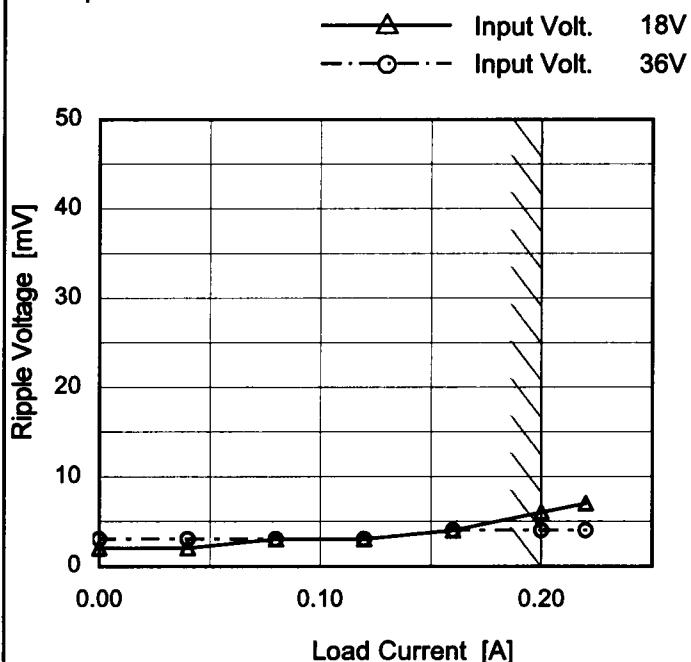
**COSEL**

**COSEL**

**COSEL**

Model	SUW62415/SUCW62415
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.

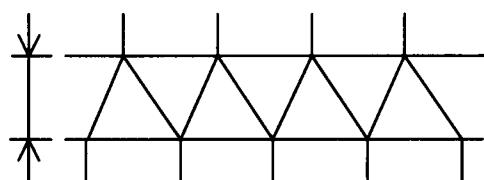
Note: Slanted line shows the range of the rated load current.

Temperature 25°C  
Testing Circuitry Figure B

## 2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	2	3
0.04	2	3
0.08	3	3
0.12	3	3
0.16	4	4
0.20	6	4
0.22	7	4
--	-	-
--	-	-
--	-	-
--	-	-

Ripple [mVp-p]



**COSEL**

Model	SUW62415/SUCW62415																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	-15V0.2A																																							
1.Graph																																								
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<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 18 [V]</th> <th>Input Volt. 36 [V]</th> </tr> </thead> <tbody> <tr> <td>0.00</td><td>2</td><td>3</td></tr> <tr> <td>0.04</td><td>2</td><td>3</td></tr> <tr> <td>0.08</td><td>3</td><td>3</td></tr> <tr> <td>0.12</td><td>3</td><td>3</td></tr> <tr> <td>0.16</td><td>3</td><td>3</td></tr> <tr> <td>0.20</td><td>4</td><td>3</td></tr> <tr> <td>0.22</td><td>6</td><td>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> </tbody> </table>			Load Current [A]	Ripple Voltage [mV]		Input Volt. 18 [V]	Input Volt. 36 [V]	0.00	2	3	0.04	2	3	0.08	3	3	0.12	3	3	0.16	3	3	0.20	4	3	0.22	6	3	--	-	-	--	-	-	--	-	-	--	-	-
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<p>Fig.Complex Ripple Wave Form</p>																																								

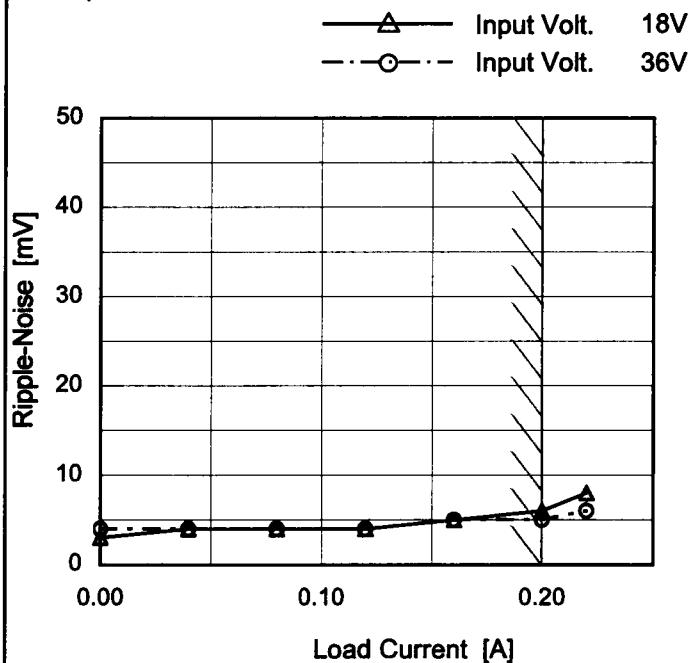
**COSEL**

Model SUW62415/SUCW62415

Item Ripple-Noise

Object +15V0.2A

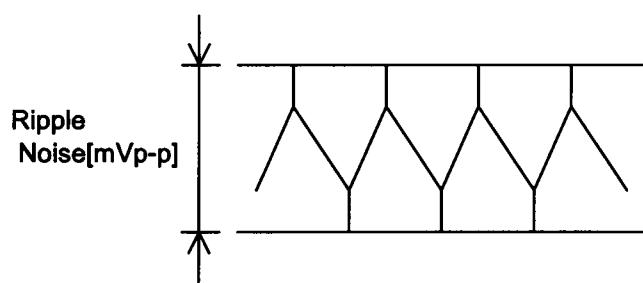
## 1. Graph



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.

Temperature 25°C  
Testing Circuitry Figure B

## 2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	3	4
0.04	4	4
0.08	4	4
0.12	4	4
0.16	5	5
0.20	6	5
0.22	8	6
--	-	-
--	-	-
--	-	-
--	-	-

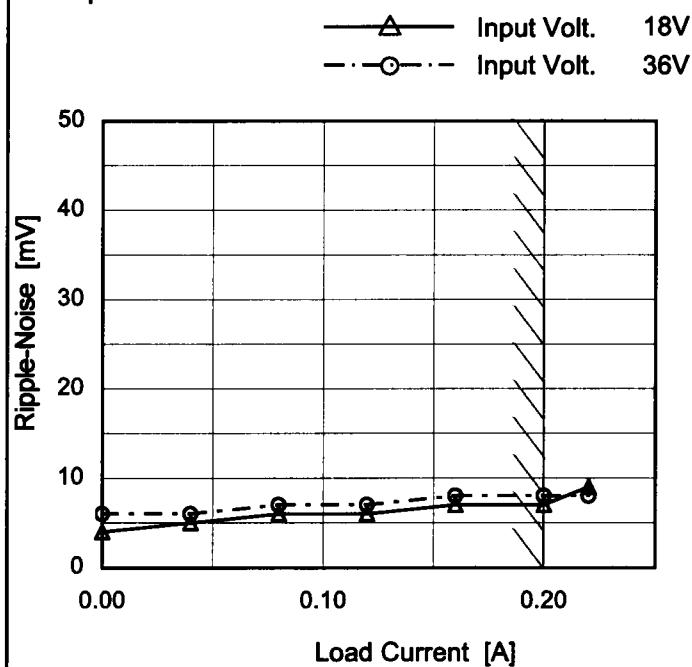
**COSEL**

Model SUW62415/SUCW62415

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.

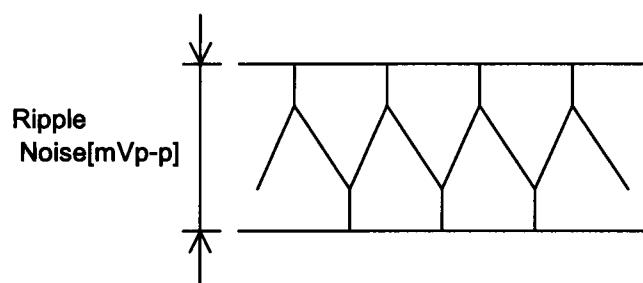


Fig.Complex Ripple Noise Wave Form

Temperature 25°C  
Testing Circuitry Figure B

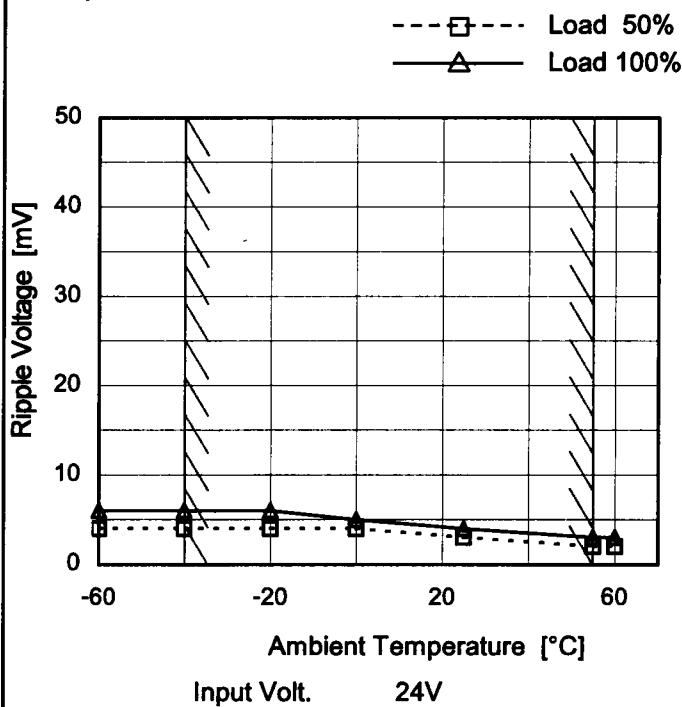
## 2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	4	6
0.04	5	6
0.08	6	7
0.12	6	7
0.16	7	8
0.20	7	8
0.22	9	8
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUW62415/SUCW62415
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.2A

## 1. Graph

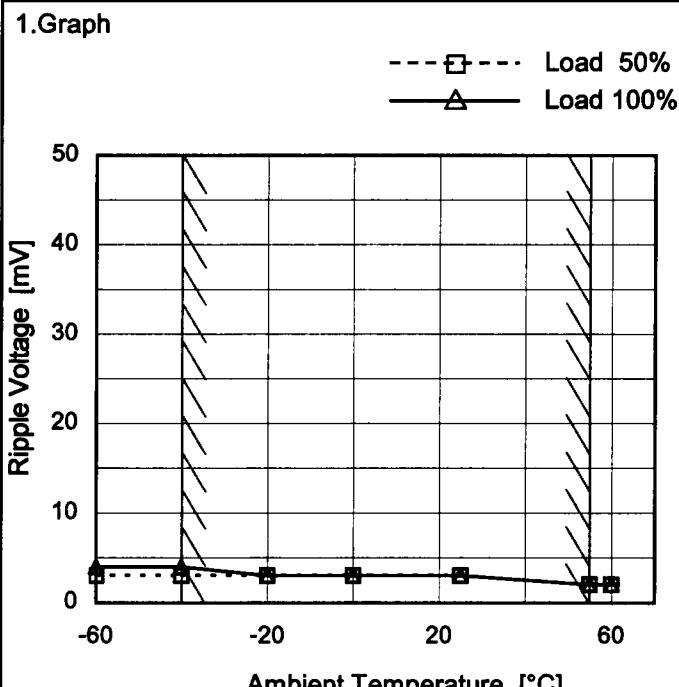


## Testing Circuitry Figure B

## 2. Values

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

## Object -15V0.2A



## 2. Values

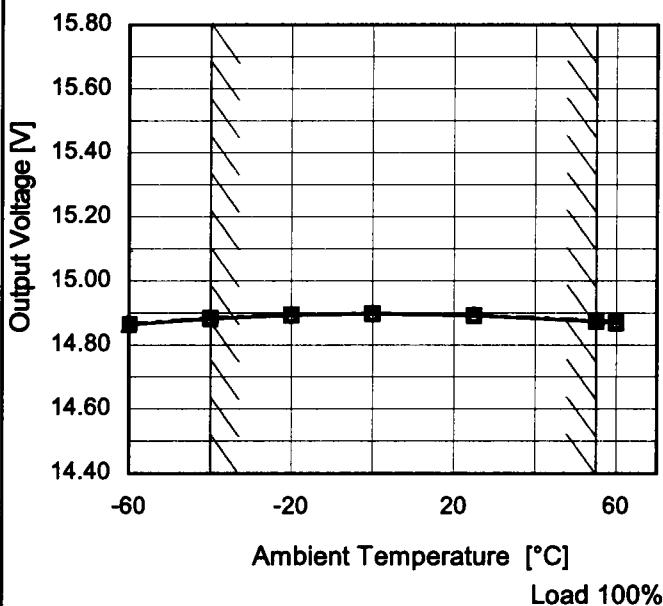
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	3	4
-40	3	4
-20	3	3
0	3	3
25	3	3
55	2	2
60	2	2
--	-	-
--	-	-
--	-	-
--	-	-

Measured by 100 MHz Oscilloscope.

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

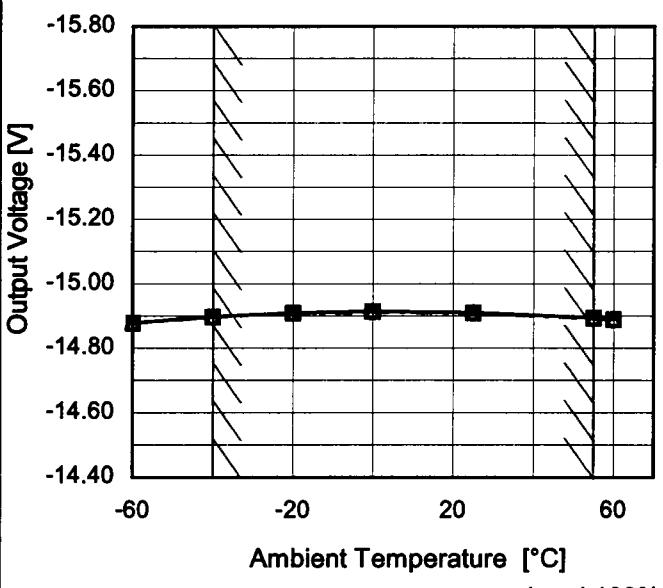
**COSEL**
**Model SUW62415/SUCW62415**
**Item Ambient Temperature Drift**
**Object +15V0.2A**

- 1.Graph
- |                       |     |
|-----------------------|-----|
| —△— Input Volt.       | 18V |
| - - □ - - Input Volt. | 24V |
| - - ○ - - Input Volt. | 36V |


**Testing Circuitry Figure A**
**2.Values**

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-60	14.864	14.865	14.866
-40	14.882	14.884	14.885
-20	14.893	14.895	14.895
0	14.897	14.899	14.899
25	14.892	14.893	14.894
55	14.874	14.875	14.877
60	14.869	14.870	14.872
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

- 1.Graph
- |                       |     |
|-----------------------|-----|
| —△— Input Volt.       | 18V |
| - - □ - - Input Volt. | 24V |
| - - ○ - - Input Volt. | 36V |


**2.Values**

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-60	-14.879	-14.878	-14.877
-40	-14.898	-14.897	-14.896
-20	-14.910	-14.909	-14.908
0	-14.915	-14.914	-14.912
25	-14.911	-14.910	-14.908
55	-14.895	-14.894	-14.892
60	-14.891	-14.889	-14.887
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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



Model	SUW62415/SUCW62415	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 : 18 - 36V

Load Current (AVR 1) : 0 - 0.2A (AVR 2):0 - 0.2A

\* Other Output : Rated Load

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

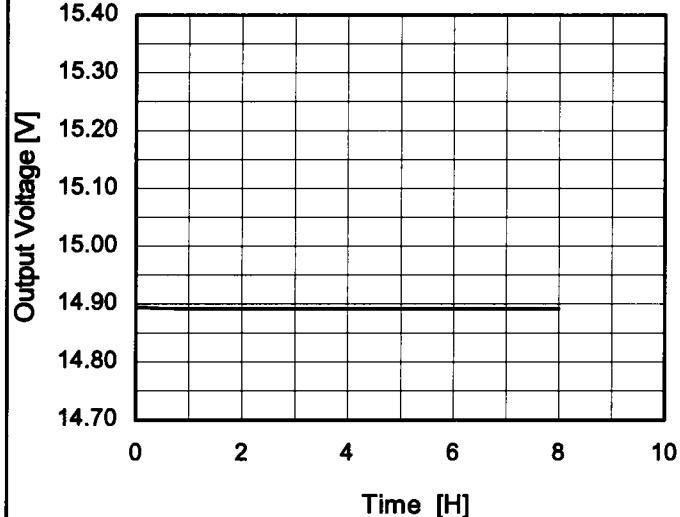
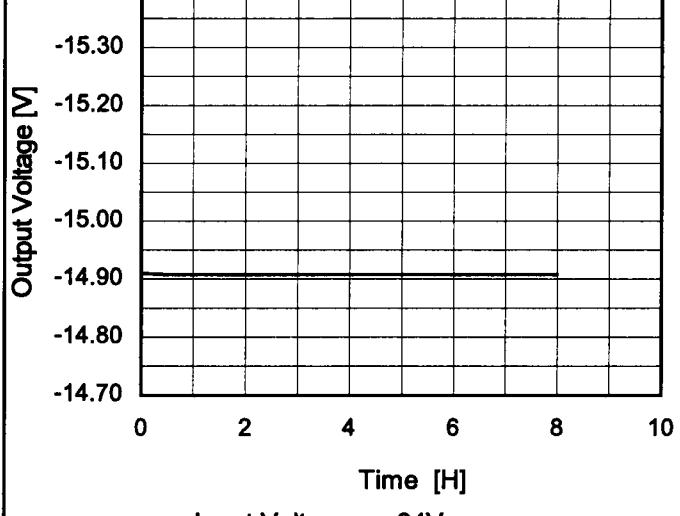
\* Output Voltage Accuracy (Ration) = 
$$\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

### 2. Values

Object	+15V0.2A			Output		Output Voltage Accuracy	
	Item	Temperature [°C]	Input Voltage[V]	Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage		25	18	0	15.117	±122	
Minimum Voltage		55	18	0.2	14.874	±0.8	

Object	-15V0.2A			Output		Output Voltage Accuracy	
	Item	Temperature [°C]	Input Voltage[V]	Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage		25	18	0	-15.140	±124	
Minimum Voltage		55	36	0.2	-14.892	±0.8	

**COSEL**

Model	SUW62415/SUCW62415	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+15V0.2A																								
1.Graph		2.Values																							
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 24V</p> <p>Load 100%</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>14.894</td></tr> <tr><td>0.5</td><td>14.893</td></tr> <tr><td>1.0</td><td>14.892</td></tr> <tr><td>2.0</td><td>14.892</td></tr> <tr><td>3.0</td><td>14.892</td></tr> <tr><td>4.0</td><td>14.892</td></tr> <tr><td>5.0</td><td>14.892</td></tr> <tr><td>6.0</td><td>14.892</td></tr> <tr><td>7.0</td><td>14.892</td></tr> <tr><td>8.0</td><td>14.892</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	14.894	0.5	14.893	1.0	14.892	2.0	14.892	3.0	14.892	4.0	14.892	5.0	14.892	6.0	14.892	7.0	14.892	8.0	14.892
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**COSEL**

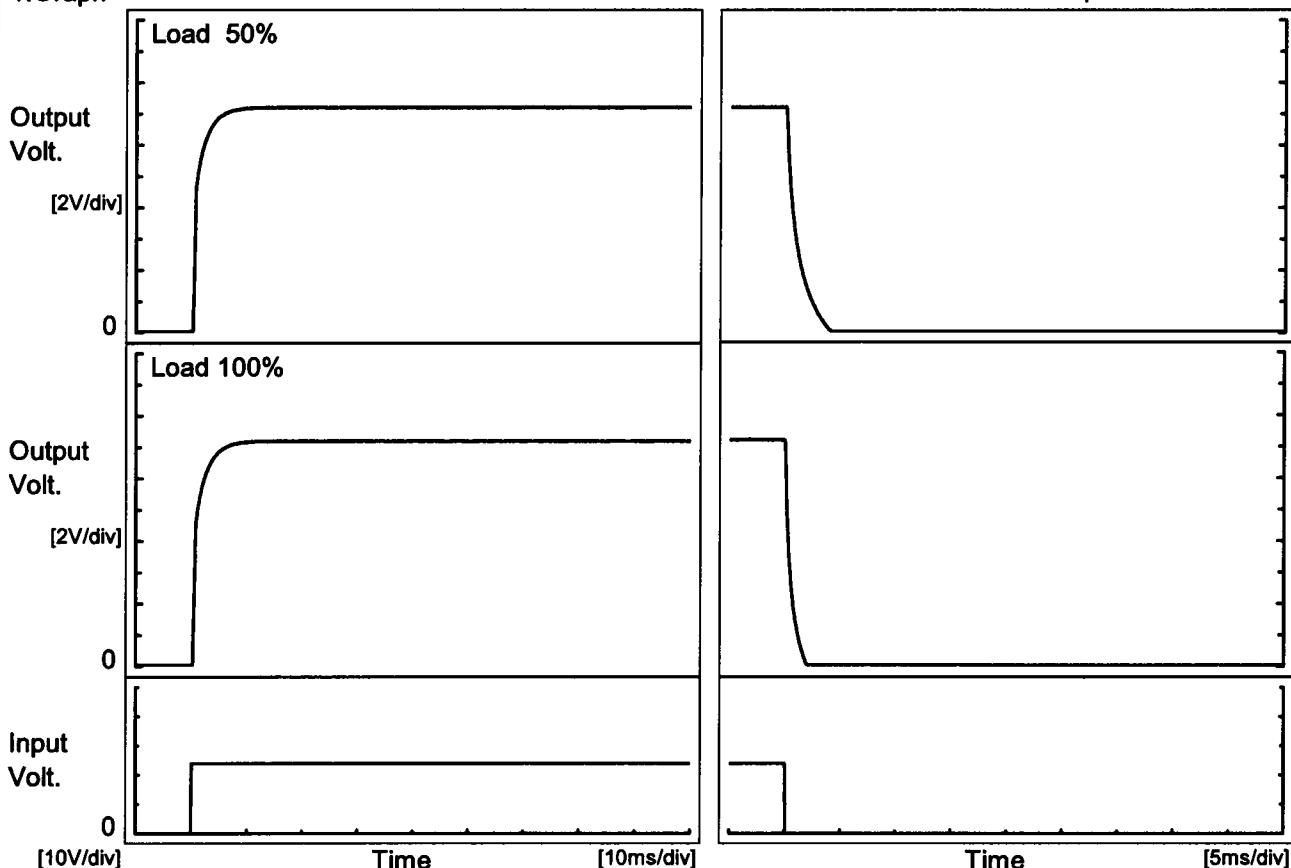
Model SUW62415/SUCW62415

Item Rise and Fall Time

Object +15V0.2A

Temperature 25°C  
Testing Circuitry Figure A

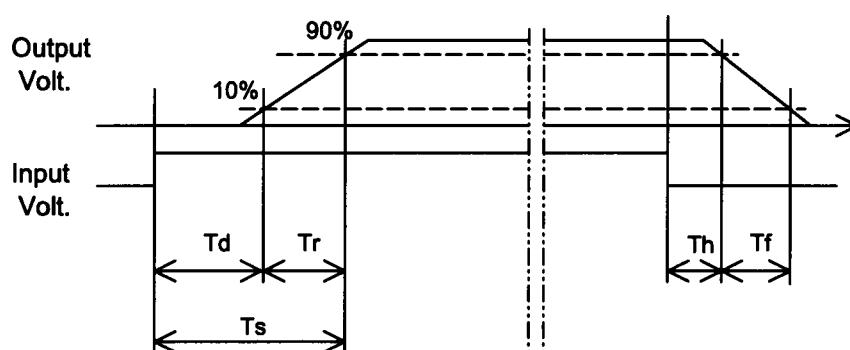
## 1. Graph



## 2. Values

[ms]

Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.3	4.1	4.4	0.1	2.6
100 %		0.3	4.3	4.6	0.1	1.3



**COSEL**

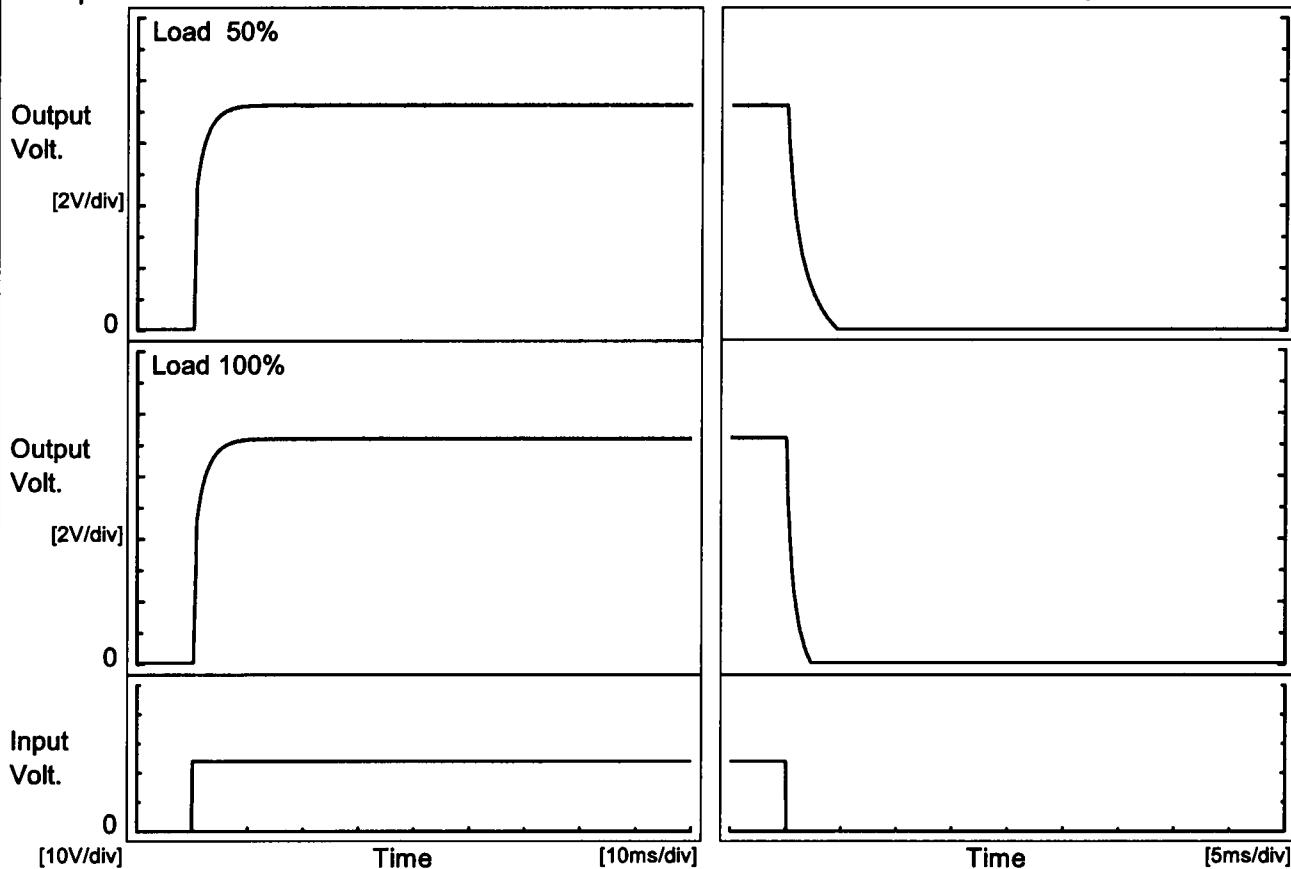
Model SUW62415/SUCW62415

Item Rise and Fall Time

Object -15V0.2A

Temperature 25°C  
Testing Circuitry Figure A

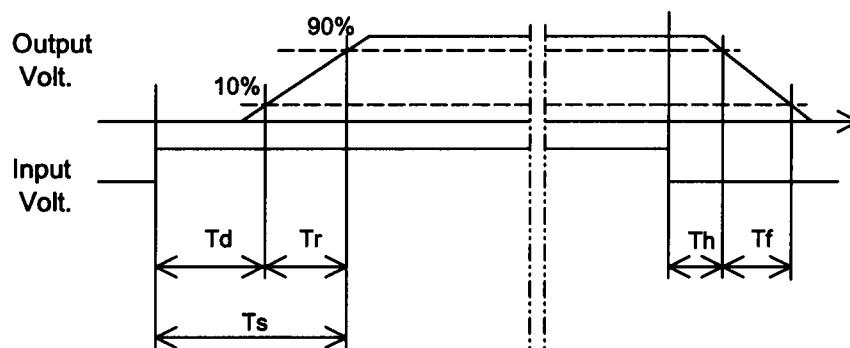
## 1. Graph



## 2. Values

[ms]

Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.3	4.1	4.4	0.1	2.9
100 %		0.3	4.3	4.6	0.1	1.5



**COSEL**

<p><b>Model</b>      SUW62415/SUCW62415</p> <p><b>Item</b>      Minimum Input Voltage for Regulated Output Voltage</p> <p><b>Object</b>      +15V0.2A</p>	Testing Circuitry Figure A																																						
	2.Values																																						
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**COSEL**

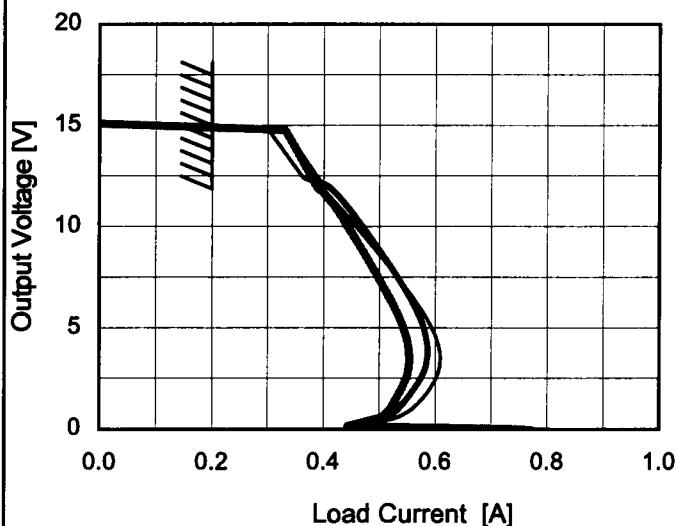
Model SUW62415/SUCW62415

Item Overcurrent Protection

Object +15V0.2A

1.Graph

	Input Volt. 18V Input Volt. 24V Input Volt. 36V
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Temperature 25°C  
Testing Circuitry Figure A

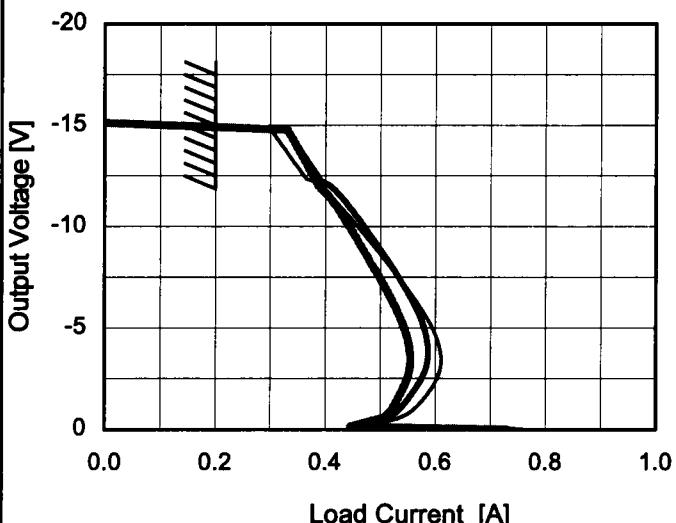
## 2.Values

Output Voltage [V]	Load Current [A]		
	18[V]	24[V]	36[V]
15.0	0.20	0.20	0.20
14.3	0.32	0.34	0.34
13.5	0.33	0.36	0.36
12.0	0.39	0.41	0.39
10.5	0.44	0.46	0.43
9.0	0.49	0.49	0.47
7.5	0.53	0.53	0.50
6.0	0.57	0.56	0.53
4.5	0.60	0.58	0.55
3.0	0.61	0.58	0.55
1.5	0.58	0.55	0.53
0.0	0.80	0.77	0.76

Object -15V0.2A

1.Graph

	Input Volt. 18V Input Volt. 24V Input Volt. 36V
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## 2.Values

Output Voltage [V]	Load Current [A]		
	18[V]	24[V]	36[V]
-15.00	0.20	0.20	0.20
-14.25	0.32	0.34	0.34
-13.50	0.34	0.36	0.36
-12.00	0.39	0.41	0.39
-10.50	0.44	0.46	0.43
-9.00	0.49	0.50	0.47
-7.50	0.53	0.53	0.50
-6.00	0.57	0.57	0.53
-4.50	0.60	0.58	0.55
-3.00	0.61	0.58	0.55
-1.50	0.58	0.55	0.53
0.00	0.78	0.74	0.73

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

COSEL

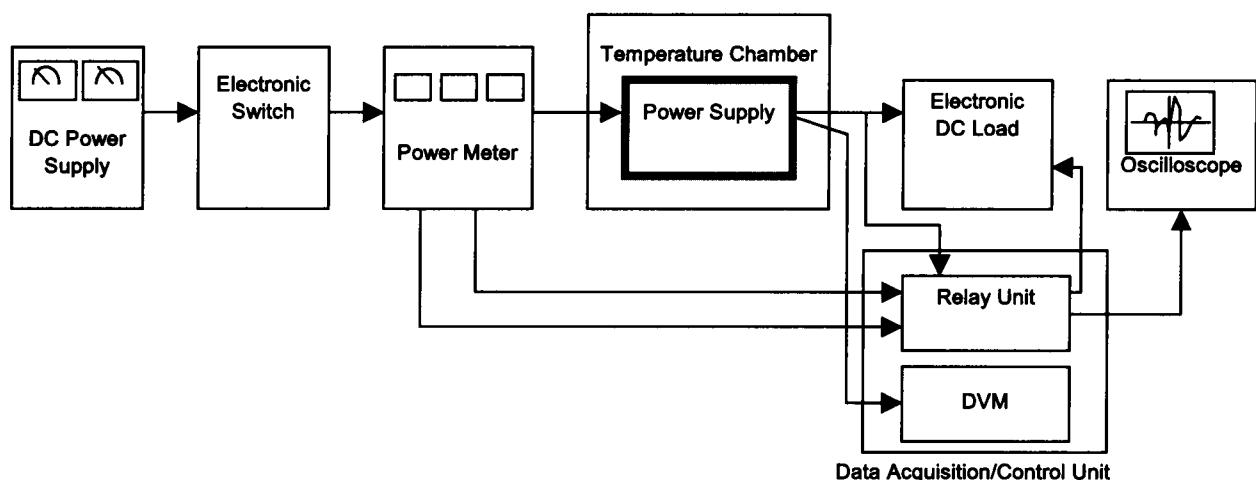


Figure A

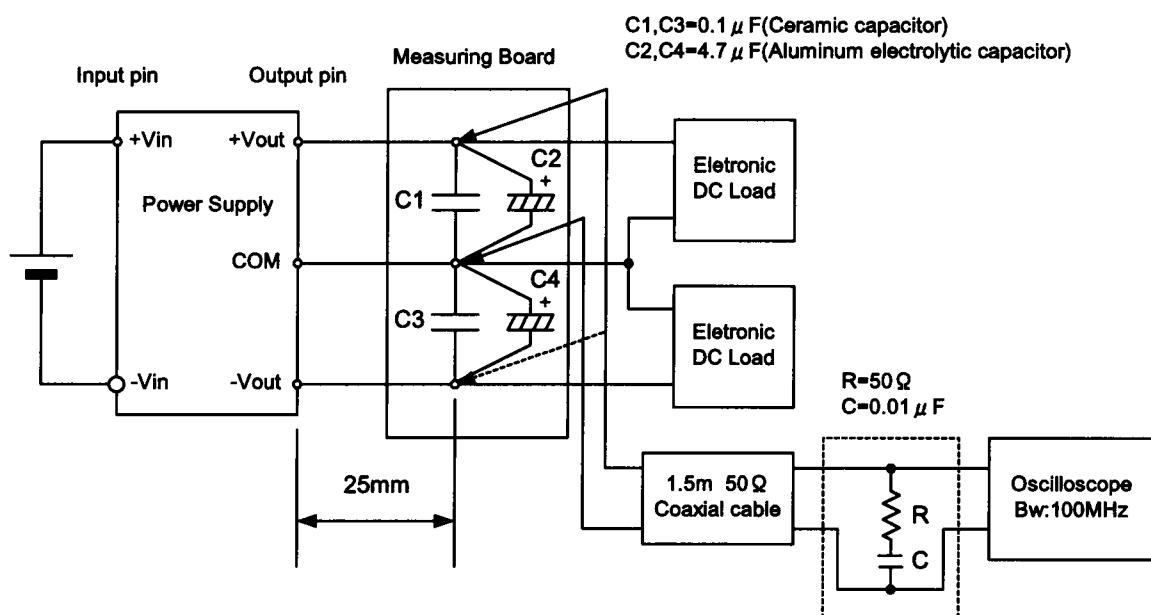


Figure B (Ripple and Ripple noise Characteristic)