



TEST DATA OF SUW34815

Regulated DC Power Supply
Mar 11, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Hayato Nakatsubo
Hayato Nakatsubo Design Engineer

COSEL CO.,LTD.

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Model		SUW34815																																																																																
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Model

SUW34815

Item

Input Current (by Load Current)

Object

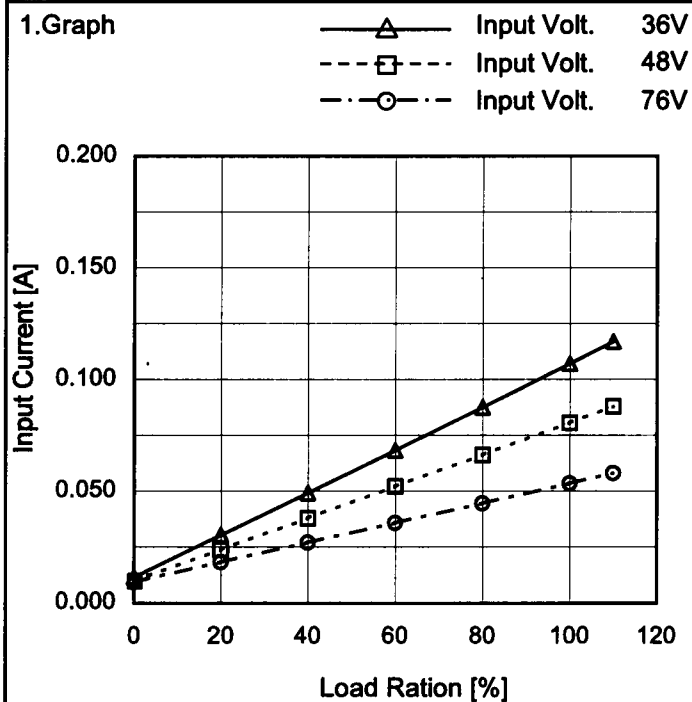
Temperature

25°C

Testing Circuitry

Figure A

1. Graph



2. Values

Load Ration [%]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	0.012	0.010	0.009
20	0.030	0.024	0.018
40	0.049	0.038	0.027
60	0.068	0.052	0.036
80	0.088	0.066	0.045
100	0.107	0.081	0.054
110	0.117	0.088	0.058
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Model		SUW34815		Temperature 25°C Testing Circuitry Figure A																																																			
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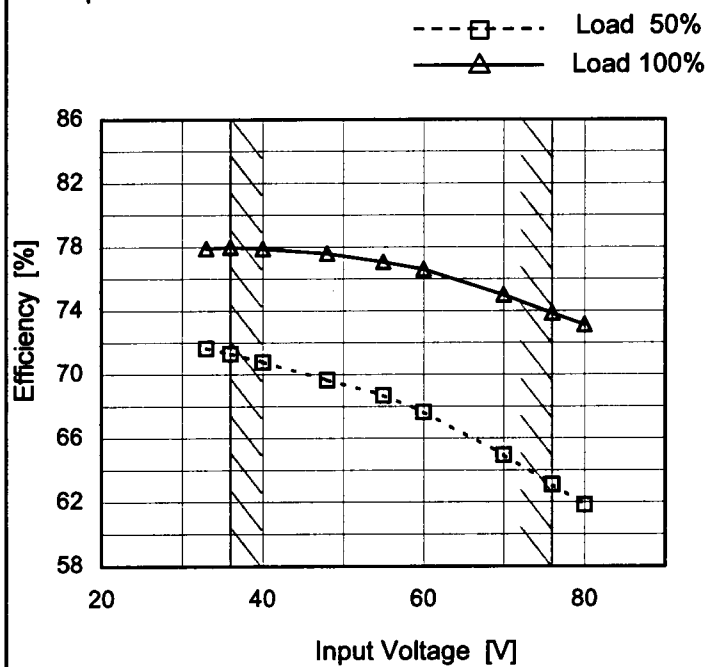
Model SUW34815

Item Efficiency (by Input Voltage)

Object

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph



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

2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
33	71.7	77.9
36	71.3	78.0
40	70.8	77.9
48	69.7	77.6
55	68.7	77.1
60	67.7	76.6
70	65.0	75.0
76	63.1	73.9
80	61.8	73.1

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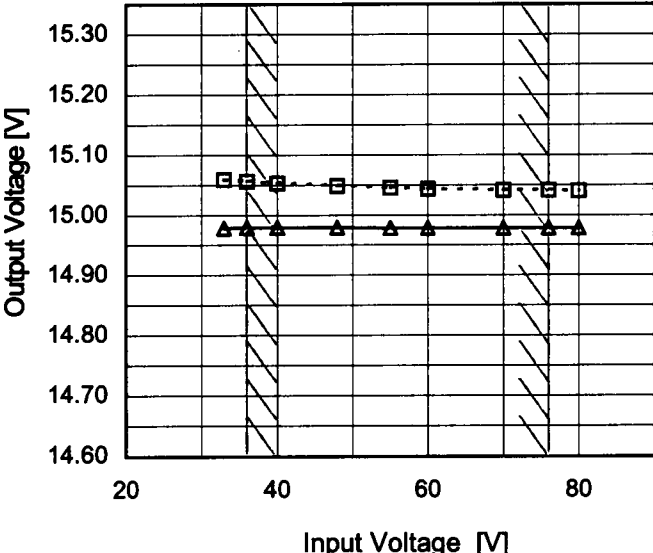
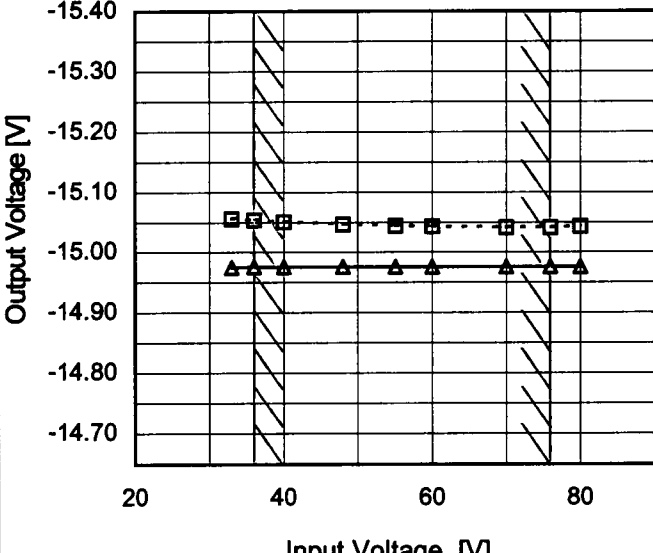
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Note: Slanted line shows the range of the rated input voltage.																																			

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BC-3764

Temperature 25°C
Testing Circuitry Figure A

	Input Volt.	36V
	Input Volt.	48V
	Input Volt.	76V



Object	-15V0.1A
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	Input Volt.	36V
	Input Volt.	48V
	Input Volt.	76V

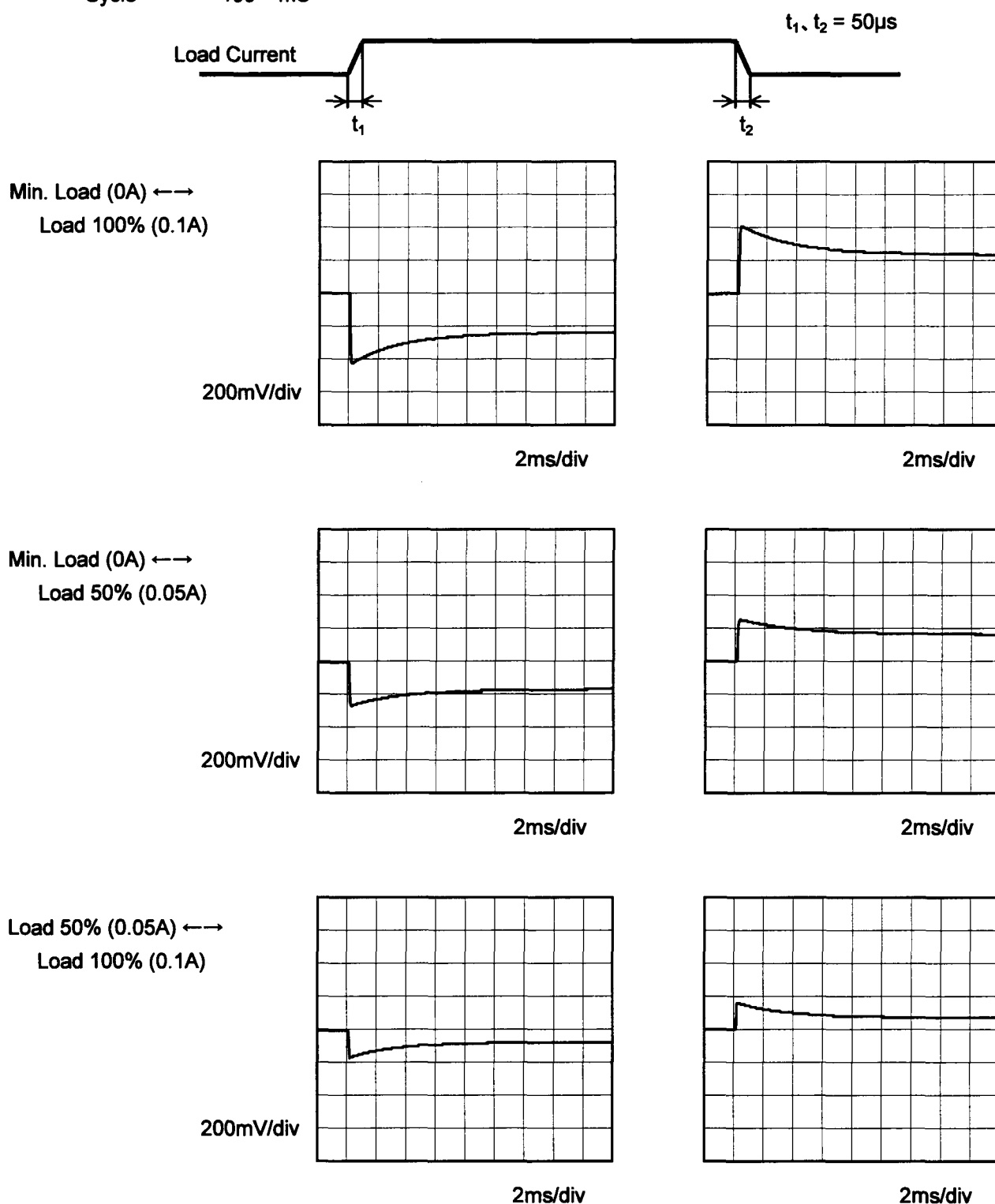


Note: Slanted line shows the range of the rated load current.

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Model	SUW34815	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+15V0.1A		

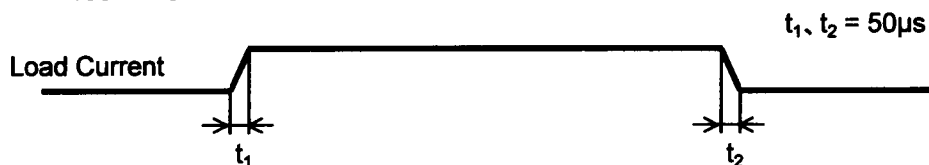
Input Volt. 48 V
Cycle 100 mS



COSEL

Model	SUW34815	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	-15V0.1A		

Input Volt. 48 V
Cycle 100 mS

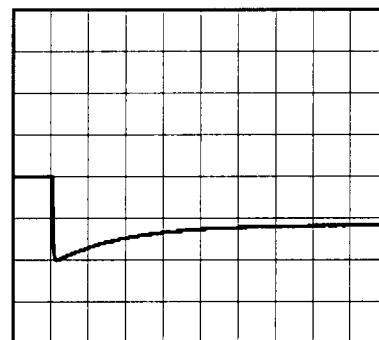


Min. Load (0A) \longleftrightarrow
Load 100% (0.1A)

200mV/div



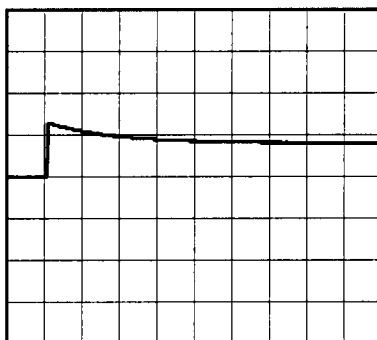
2ms/div



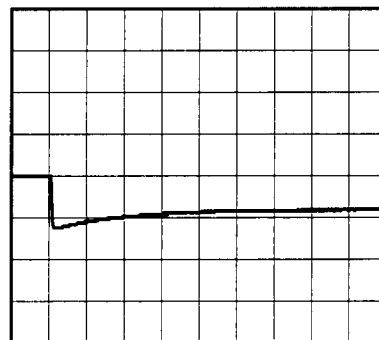
2ms/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.05A)

200mV/div



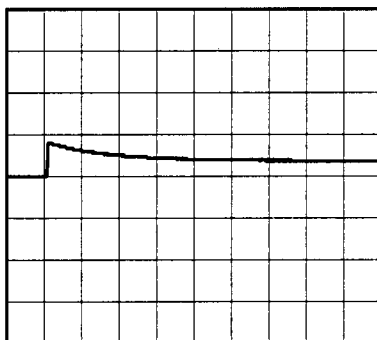
2ms/div



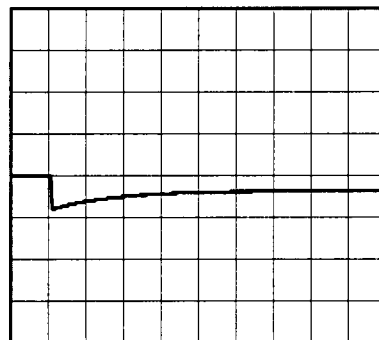
2ms/div

Load 50% (0.05A) \longleftrightarrow
Load 100% (0.1A)

200mV/div



2ms/div



2ms/div

COSEL

Model	SUW34815																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
Object	+15V0.1A	Testing Circuitry	Figure B																																						
1.Graph		2.Values																																							
<div><div><div><div><div></div><div>—△—</div><div>Input Volt. 36V</div></div><div><div></div><div>-·-○-·-</div><div>Input Volt. 76V</div></div></div><div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.00</td><td>1</td><td>1</td></tr><tr><td>0.02</td><td>1</td><td>1</td></tr><tr><td>0.04</td><td>1</td><td>1</td></tr><tr><td>0.06</td><td>2</td><td>1</td></tr><tr><td>0.08</td><td>4</td><td>1</td></tr><tr><td>0.10</td><td>7</td><td>1</td></tr><tr><td>0.11</td><td>10</td><td>1</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. 36 [V]	Input Volt. 76 [V]	0.00	1	1	0.02	1	1	0.04	1	1	0.06	2	1	0.08	4	1	0.10	7	1	0.11	10	1	--	-	-	--	-	-	--	-	-	--	-	-
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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><div><div></div><div>Ripple [mVp-p]</div></div><div></div></div><div><p>Fig.Complex Ripple Wave Form</p></div></div>																																									

COSEL

Model		SUW34815	
Item		Ripple Voltage (by Load Current)	
Object		-15V0.1A	
1.Graph		2.Values	

</

COSEL

Model	SUW34815	Temperature 25°C Testing Circuitry Figure B		
Item	Ripple-Noise			
Object	+15V0.1A			
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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Ambient Temperature [°C]	Load 50% [mV]	Load 100% [mV]																																							
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<div>COSEL</div>		<div>Testing Circuitry Figure A</div>
Model	SUW34815	
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 : 36 - 76V

Load Current (AVR 1) : 0 - 0.1A (AVR 2): 0 - 0.1A

* Other Output : Rated Load

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

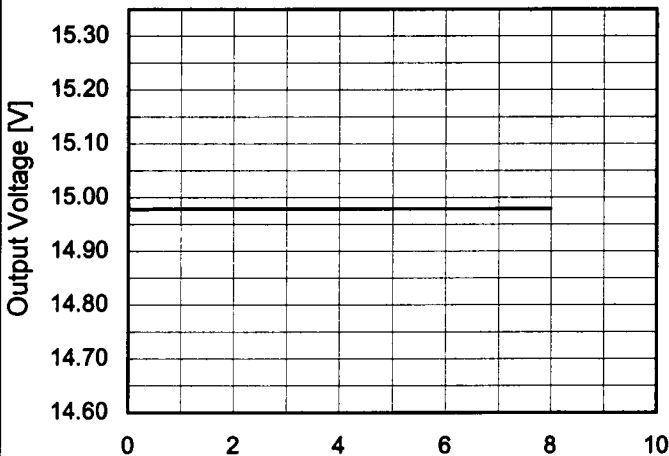
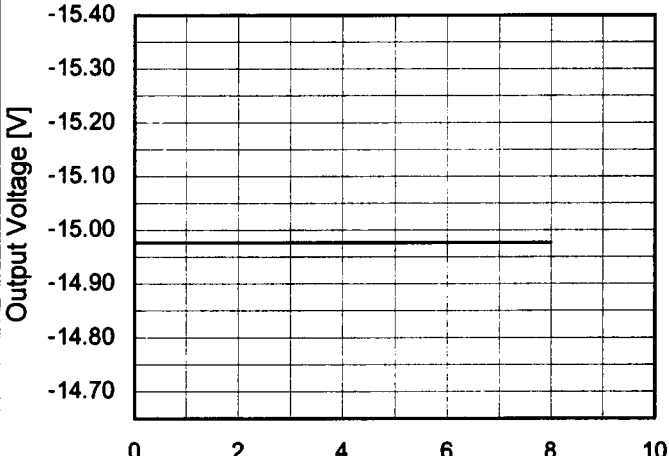
* Output Voltage Accuracy (Ratio) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Object	+15V0.1A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	36	0	15.227	±138	±0.9
Minimum Voltage	-40	36	0.1	14.952		

Object	-15V0.1A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	36	0	-15.234	±143	±1.0
Minimum Voltage	-40	36	0.1	-14.948		

COSEL

Model	SUW34815																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+15V0.1A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Input Volt. 48V Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>14.980</td></tr><tr><td>0.5</td><td>14.979</td></tr><tr><td>1.0</td><td>14.979</td></tr><tr><td>2.0</td><td>14.979</td></tr><tr><td>3.0</td><td>14.979</td></tr><tr><td>4.0</td><td>14.979</td></tr><tr><td>5.0</td><td>14.979</td></tr><tr><td>6.0</td><td>14.979</td></tr><tr><td>7.0</td><td>14.979</td></tr><tr><td>8.0</td><td>14.979</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	14.980	0.5	14.979	1.0	14.979	2.0	14.979	3.0	14.979	4.0	14.979	5.0	14.979	6.0	14.979	7.0	14.979	8.0	14.979
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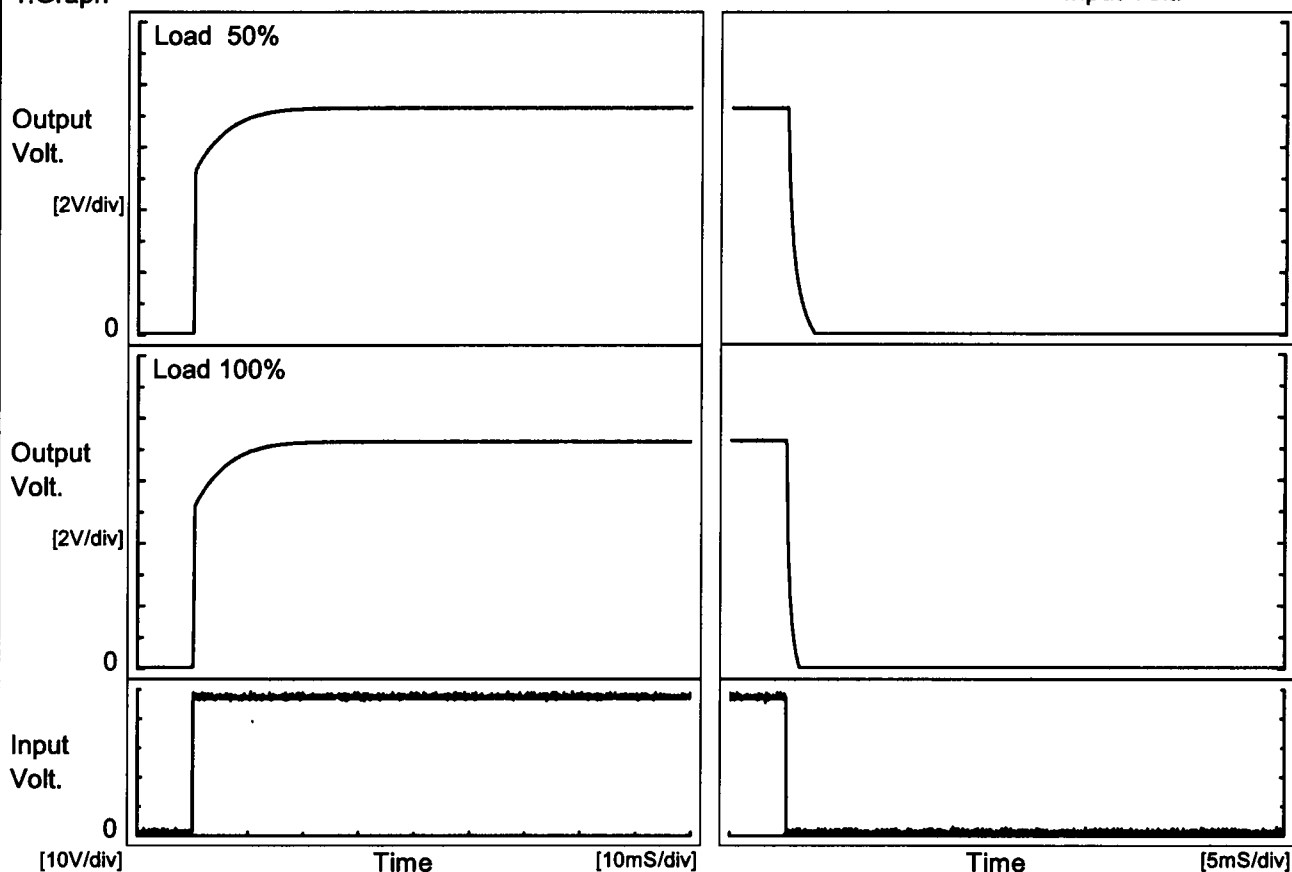
COSEL

Model SUW34815

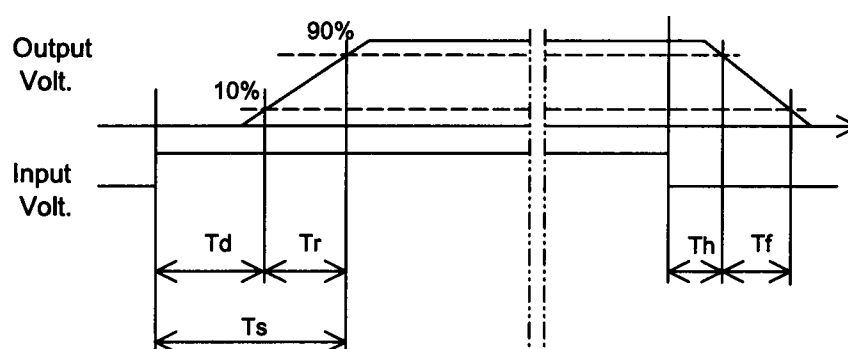
Item Rise and Fall Time

Object +15V0.1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph
Input Volt. 48 V

2.Values
[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	8.3	8.4	0.1	1.5
100 %	0.1	8.5	8.6	0.1	0.8

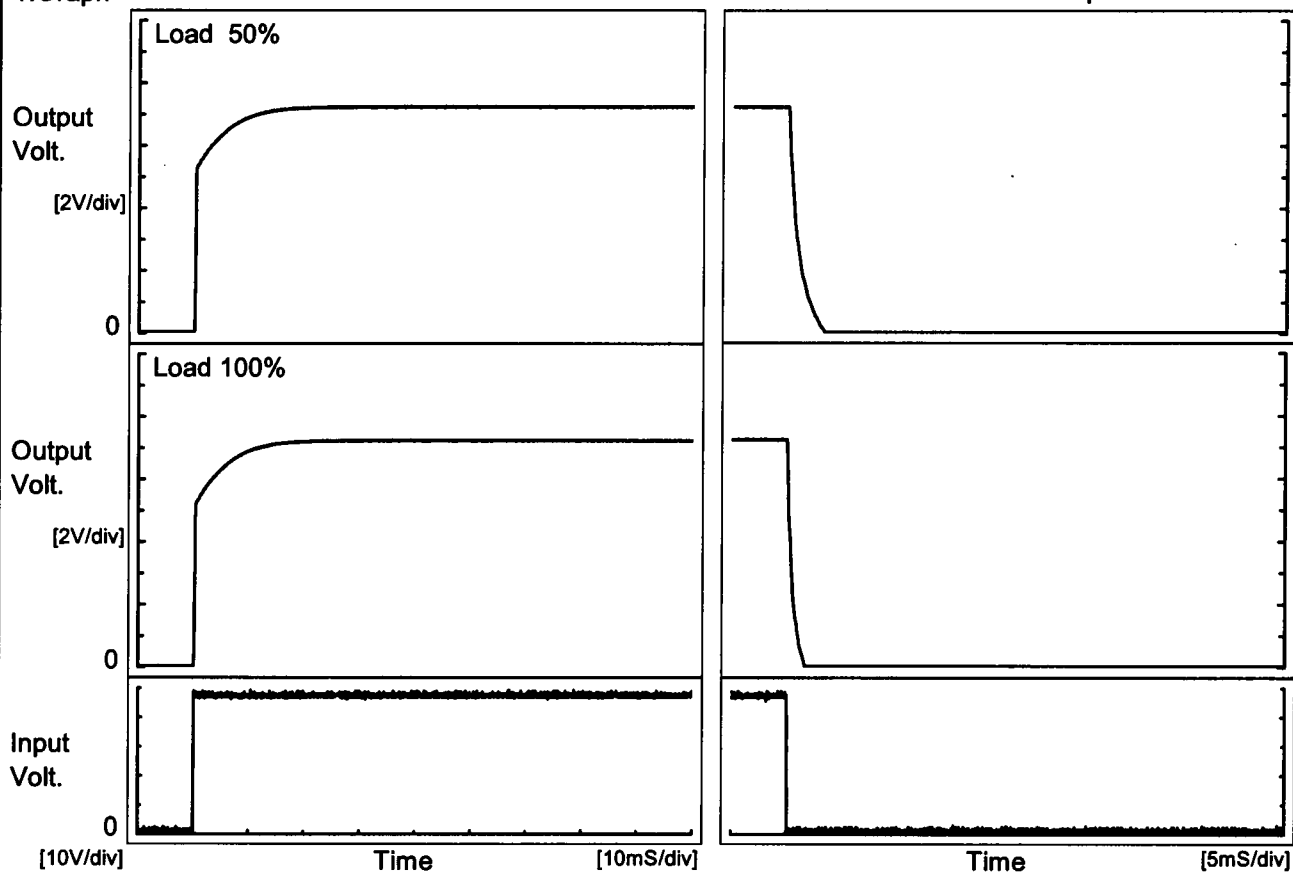


COSEL

Model	SUW34815	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	-15V0.1A		

1.Graph

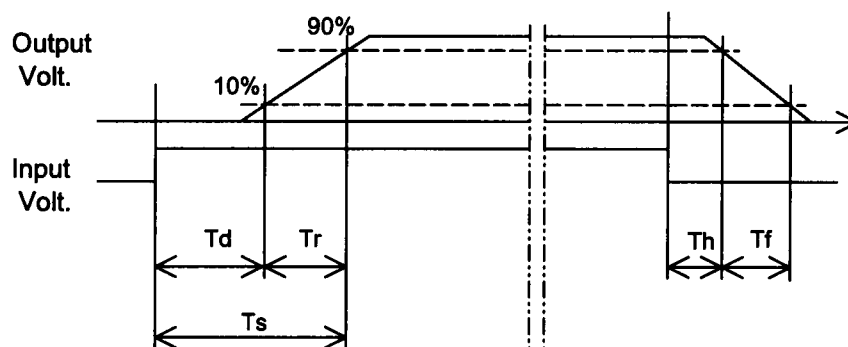
Input Volt. 48 V



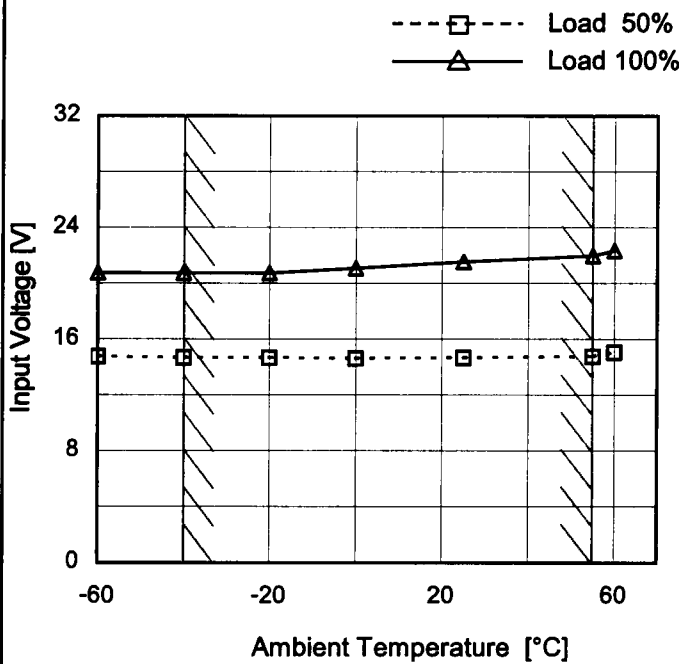
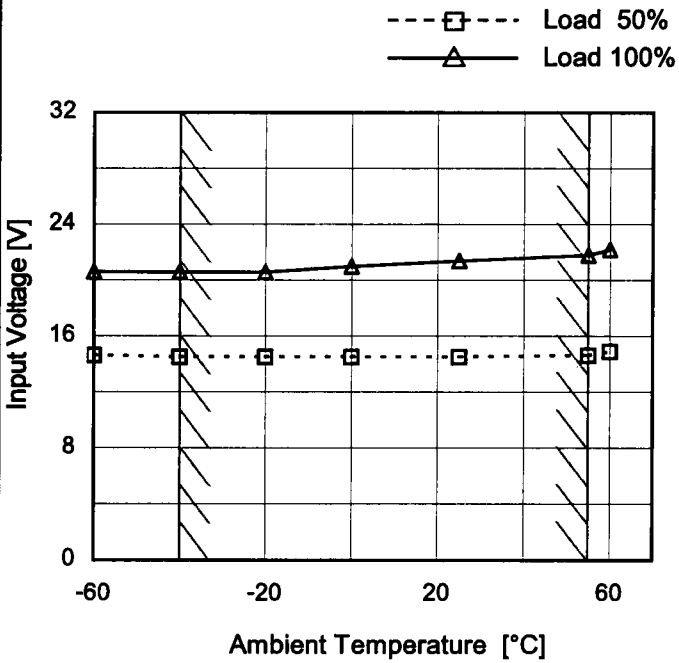
2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	8.4	8.5	0.1	2.1
100 %	0.1	8.6	8.7	0.1	1.1



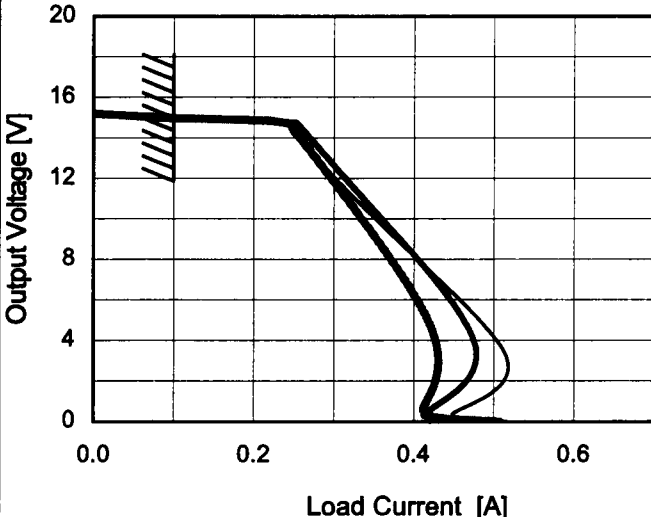
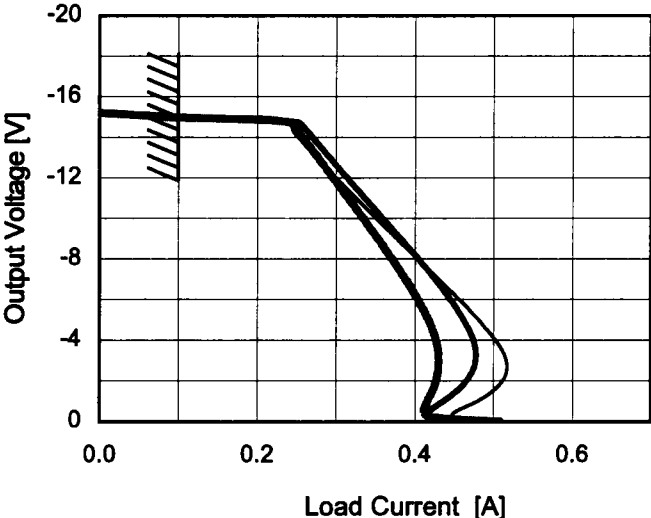
COSEL

Model	SUW34815	Testing Circuitry Figure A																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																								
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COSEL

Model		SUW34815																																																								
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2.Values		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>-15.0</td><td>0.10</td><td>0.10</td><td>0.10</td></tr><tr><td>-14.3</td><td>0.25</td><td>0.26</td><td>0.25</td></tr><tr><td>-13.5</td><td>0.26</td><td>0.28</td><td>0.27</td></tr><tr><td>-12.0</td><td>0.30</td><td>0.31</td><td>0.30</td></tr><tr><td>-10.5</td><td>0.34</td><td>0.35</td><td>0.32</td></tr><tr><td>-9.0</td><td>0.38</td><td>0.38</td><td>0.35</td></tr><tr><td>-7.5</td><td>0.42</td><td>0.41</td><td>0.38</td></tr><tr><td>-6.0</td><td>0.46</td><td>0.45</td><td>0.40</td></tr><tr><td>-4.5</td><td>0.49</td><td>0.47</td><td>0.42</td></tr><tr><td>-3.0</td><td>0.52</td><td>0.48</td><td>0.43</td></tr><tr><td>-1.5</td><td>0.50</td><td>0.45</td><td>0.42</td></tr><tr><td>0.0</td><td>0.51</td><td>0.47</td><td>0.51</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	-15.0	0.10	0.10	0.10	-14.3	0.25	0.26	0.25	-13.5	0.26	0.28	0.27	-12.0	0.30	0.31	0.30	-10.5	0.34	0.35	0.32	-9.0	0.38	0.38	0.35	-7.5	0.42	0.41	0.38	-6.0	0.46	0.45	0.40	-4.5	0.49	0.47	0.42	-3.0	0.52	0.48	0.43	-1.5	0.50	0.45	0.42	0.0	0.51	0.47	0.51
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Note: Slanted line shows the range of the rated load current.																																																										

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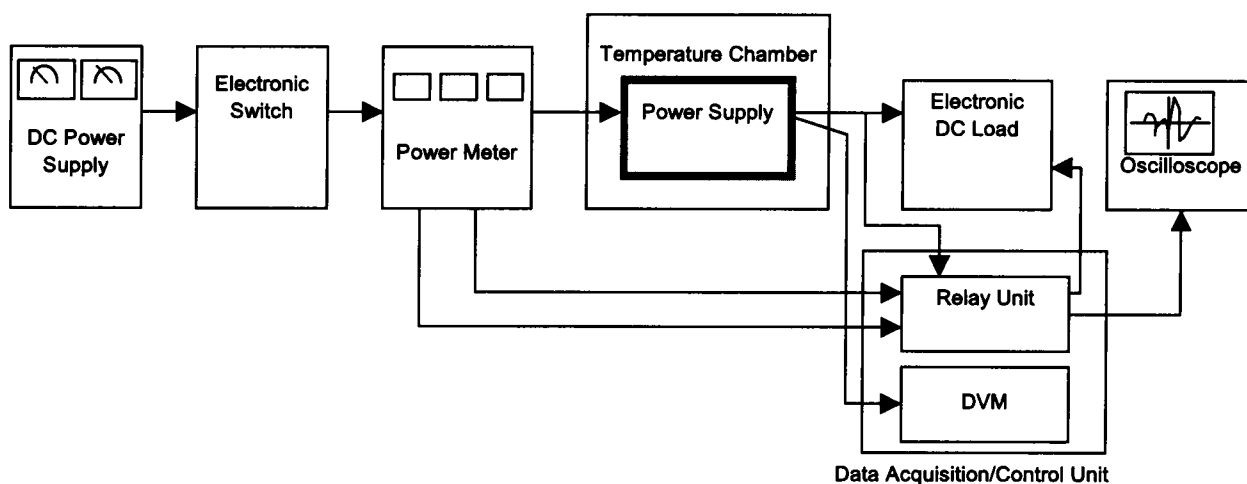


Figure A

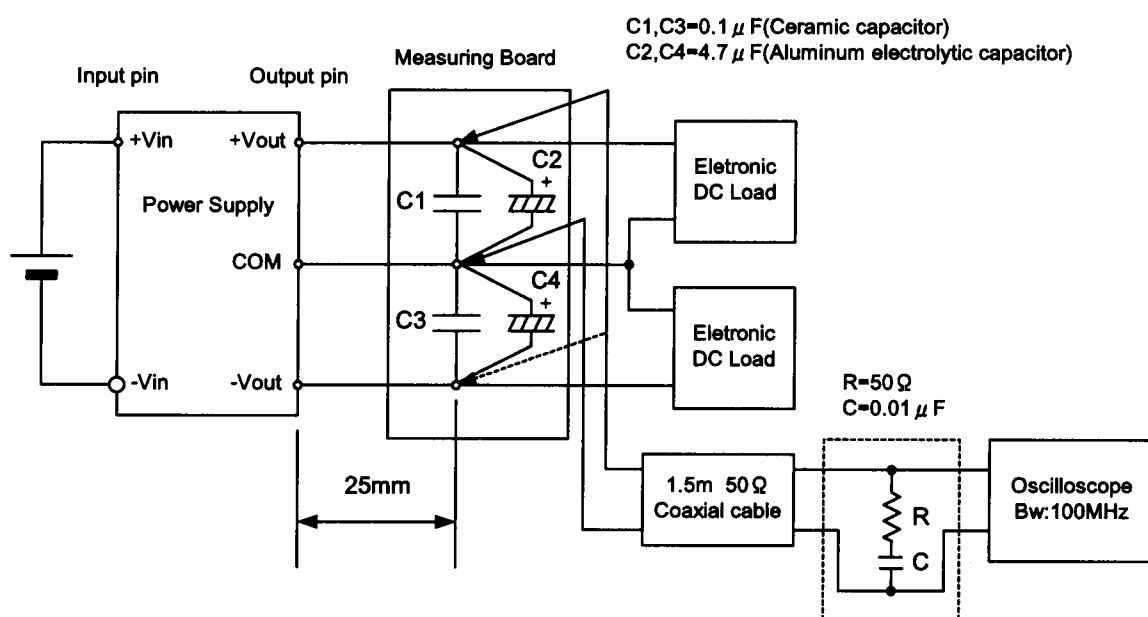


Figure B (Ripple and Ripple noise Characteristic)