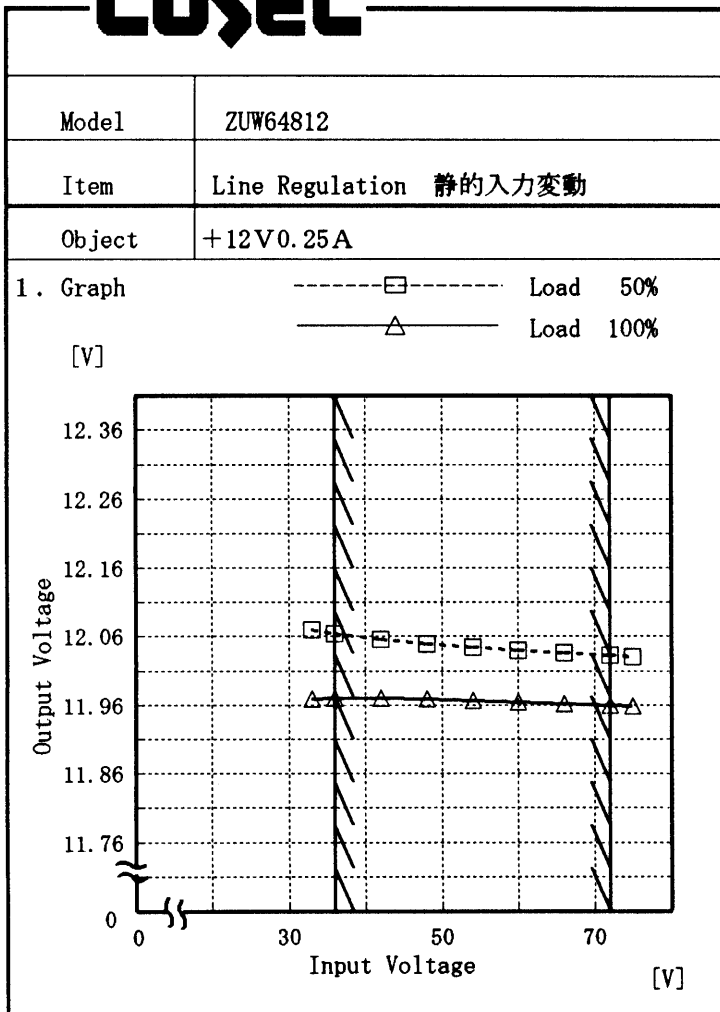




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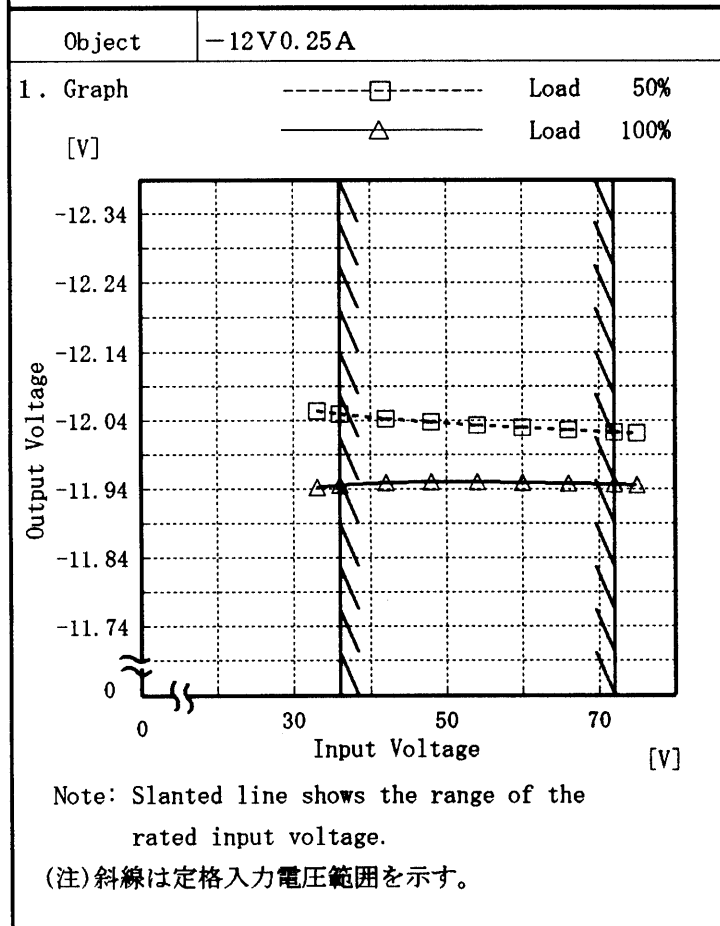
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Temperature 25°C  
 Testing Circuitry Figure A

2. Values

Input Voltage [V]	Load 50%	Load 100%
	Output Volt. [V]	Output Volt. [V]
33.0	12.070	11.969
36.0	12.064	11.970
42.0	12.055	11.970
48.0	12.049	11.969
54.0	12.044	11.967
60.0	12.040	11.965
66.0	12.036	11.962
72.0	12.033	11.960
75.0	12.031	11.959
—	—	—
—	—	—
—	—	—



2. Values

Input Voltage [V]	Load 50%	Load 100%
	Output Volt. [V]	Output Volt. [V]
33.0	-12.053	-11.942
36.0	-12.049	-11.946
42.0	-12.042	-11.949
48.0	-12.037	-11.951
54.0	-12.033	-11.950
60.0	-12.029	-11.950
66.0	-12.026	-11.948
72.0	-12.023	-11.946
75.0	-12.021	-11.945
—	—	—
—	—	—
—	—	—



Model		ZUW64812	Temperature 25°C Testing Circuitry Figure A																																							
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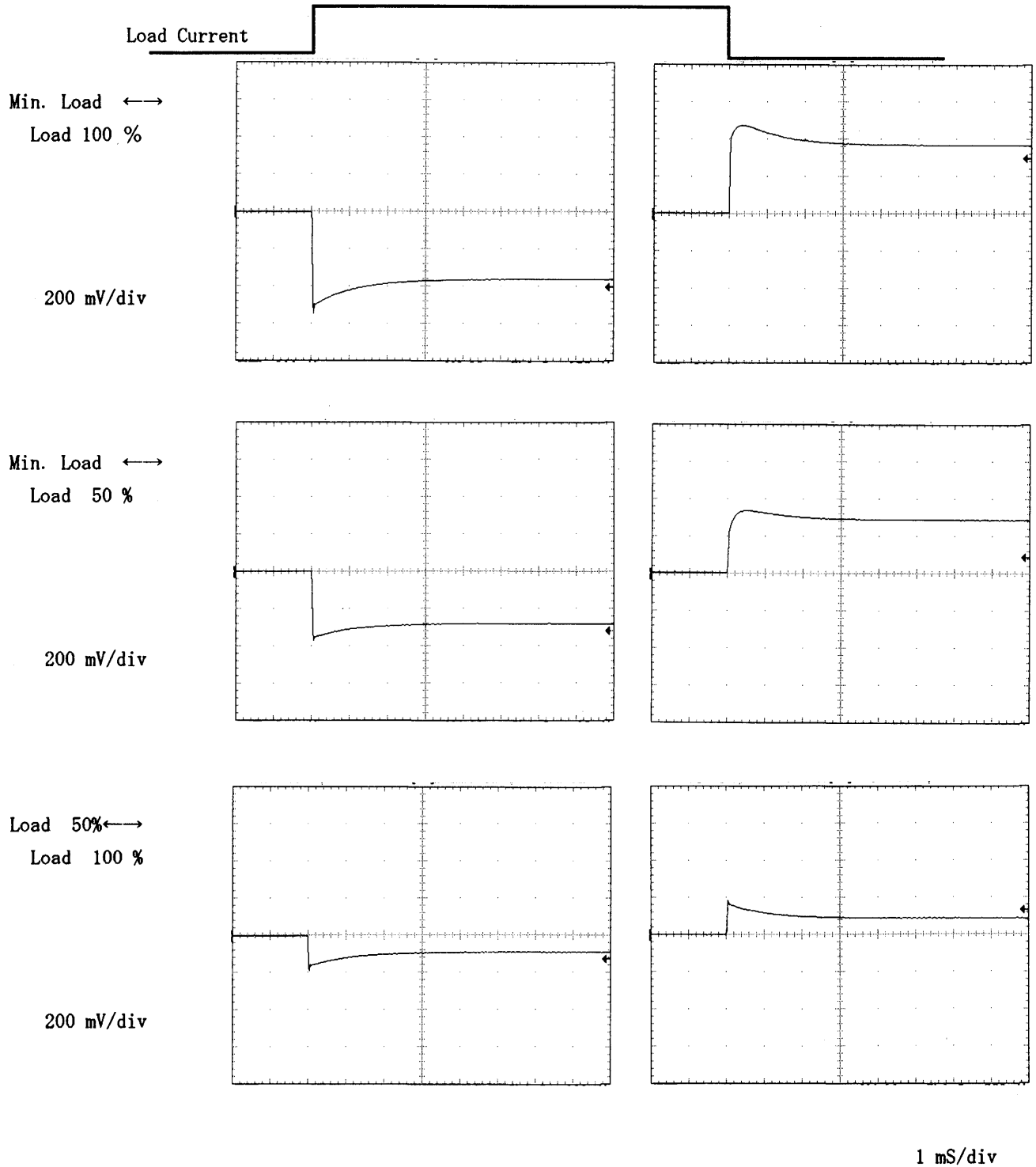


Model		ZUW64812	Temperature 25°C Testing Circuitry Figure A																																																									
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# COSEL

Model	ZUW64812	Temperature	25°C
Item	Dynamic Load Responce 動的負荷変動	Testing Circuitry	Figure A
Object	+12V0.25A		

Input Volt. 48.0 V  
Cycle 100 mS



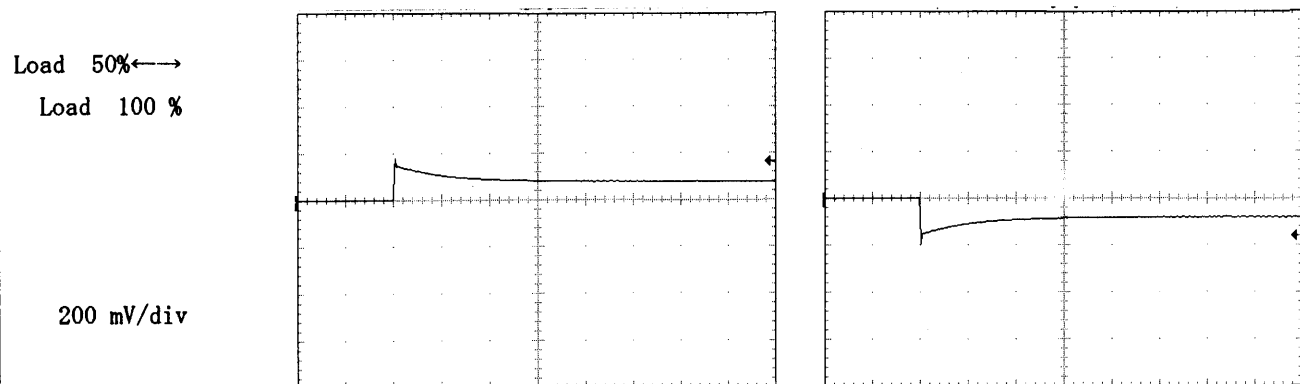
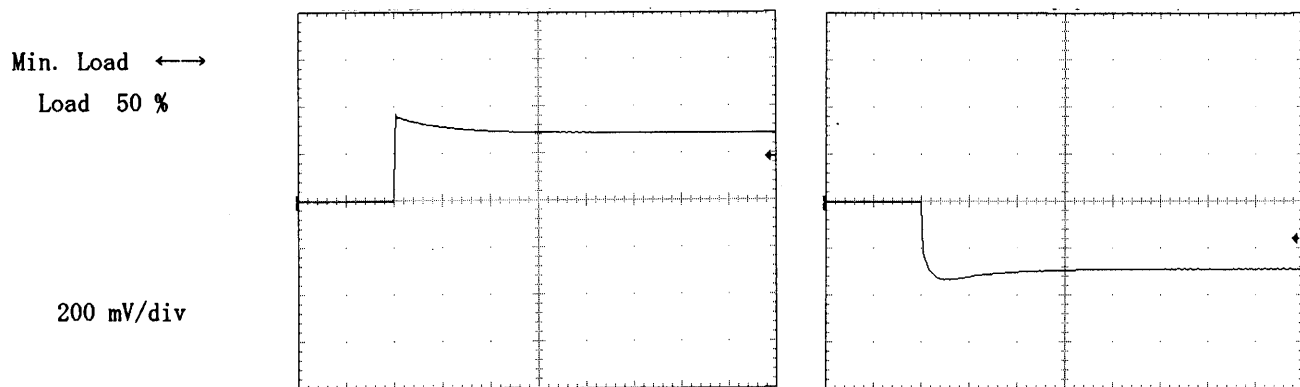
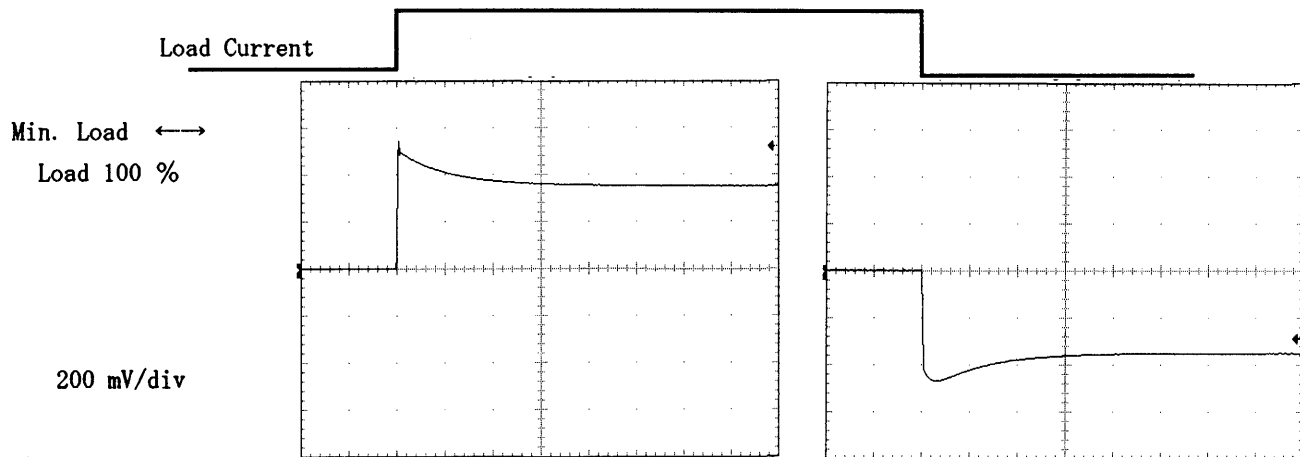
# COSEL

Model	ZUW64812	Temperature	25°C
Item	Dynamic Load Responce 動的負荷変動	Testing Circuitry	Figure A
Object	-12V0.25A		

Input Volt. 48.0 V

Cycle 100 mS

Load Current



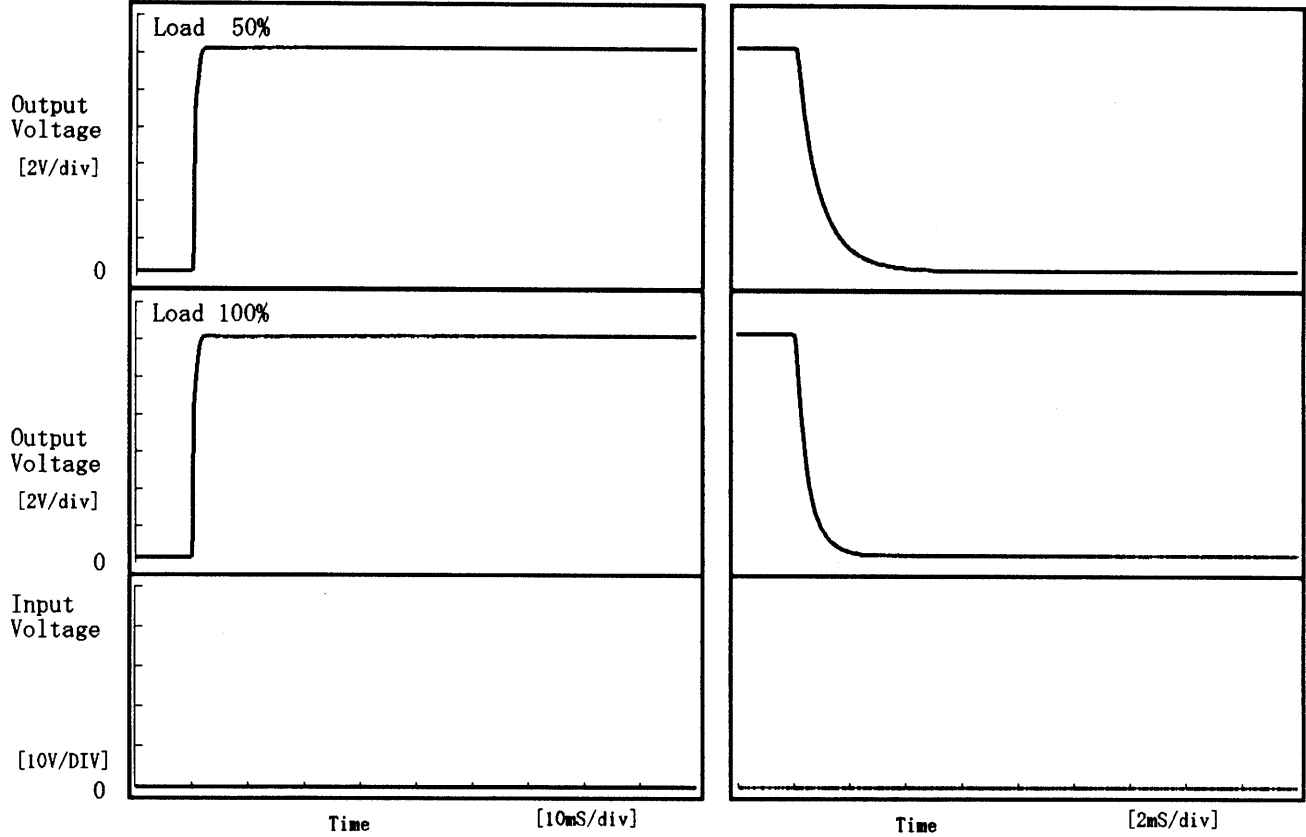
1 mS/div



Model	ZUW64812	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+12V0.25A		

1. Graph

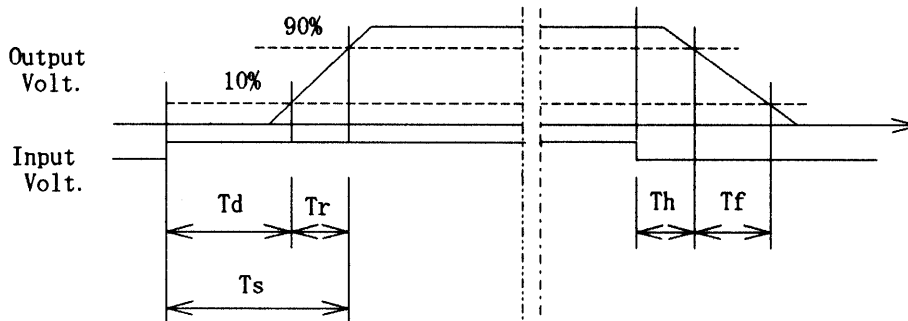
Input Volt. 36.0 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	0.05	0.95	1.00	0.20	1.95
100 %	0.05	1.05	1.10	0.14	1.10

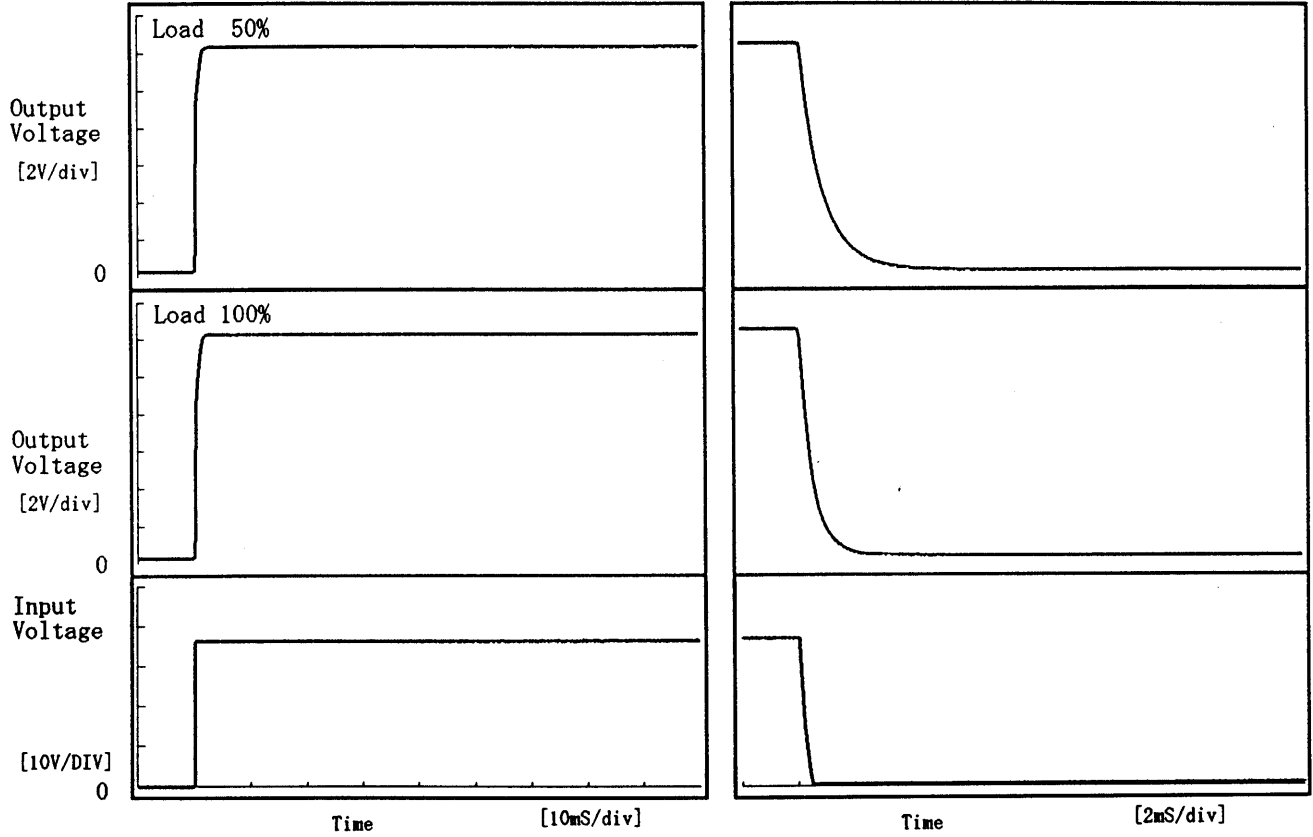




Model	ZUW64812	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	-12V0.25A		

1. Graph

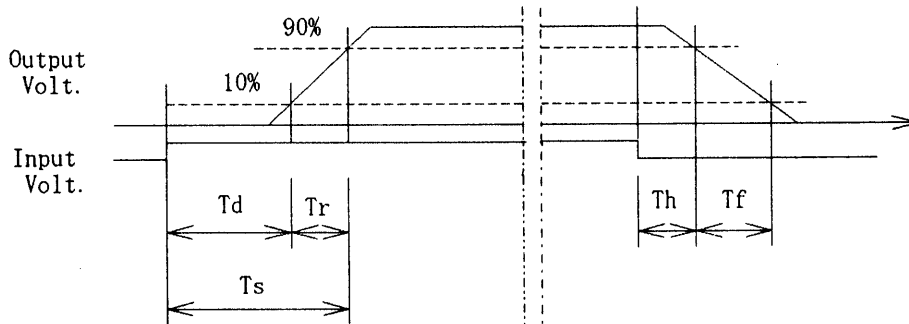
Input Volt. 36.0 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	0.05	0.90	0.95	0.21	1.89
100 %	0.05	1.00	1.05	0.15	1.06





Model		ZUW64812		Testing Circuitry Figure A																																																				
Item		Ambient Temperature Drift 周囲温度変動																																																						
Object		+12V0.25A																																																						
1. Graph		<p>                 —△— Input Volt. 36.0V                  - - -□- - - Input Volt. 48.0V                  - - -○- - - Input Volt. 72.0V             </p>		2. Values																																																				
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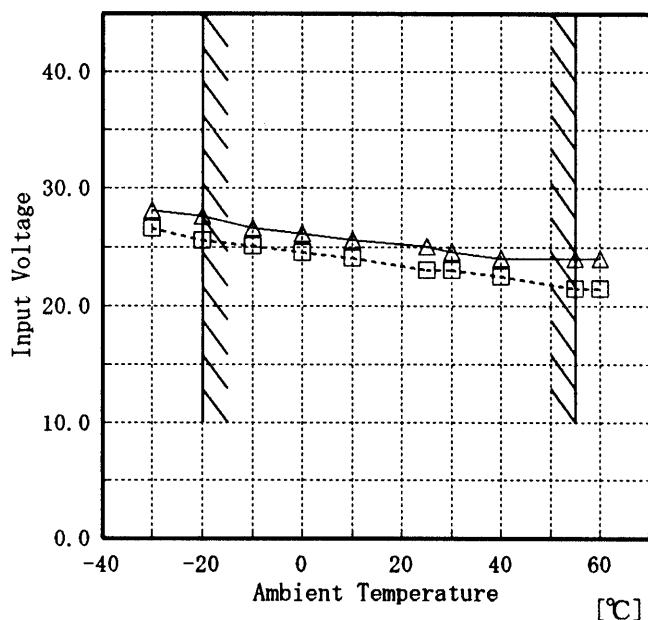


Model	ZUW64812
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+12V0.25A

Testing Circuitry Figure A

1. Graph  
[V]

-----□----- Load 50%  
-----△----- Load 100%



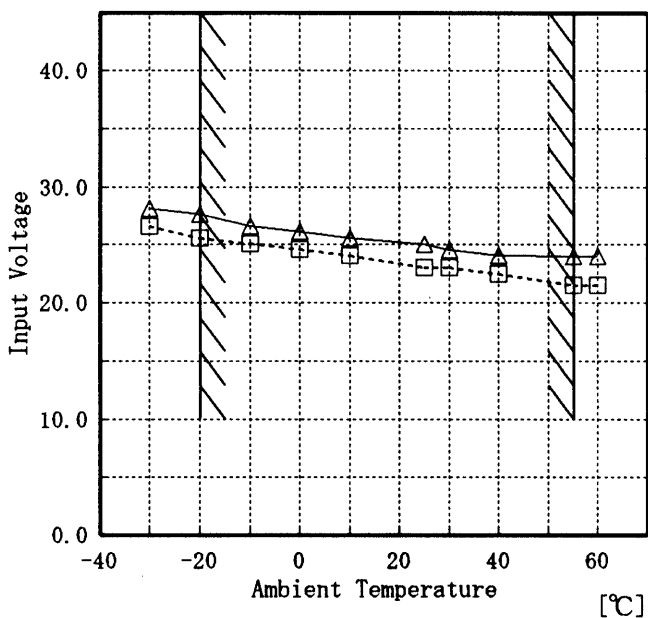
2. Values

Ambient Temp. [°C]	Load 50% Input Volt. [V]	Load 100% Input Volt. [V]
-30	26.6	28.1
-20	25.6	27.6
-10	25.1	26.6
0	24.6	26.1
10	24.1	25.6
25	23.1	25.1
30	23.1	24.6
40	22.5	24.1
55	21.5	24.0
60	21.5	24.0
—	—	—

Object	-12V0.25A
--------	-----------

[V]

-----□----- Load 50%  
-----△----- Load 100%



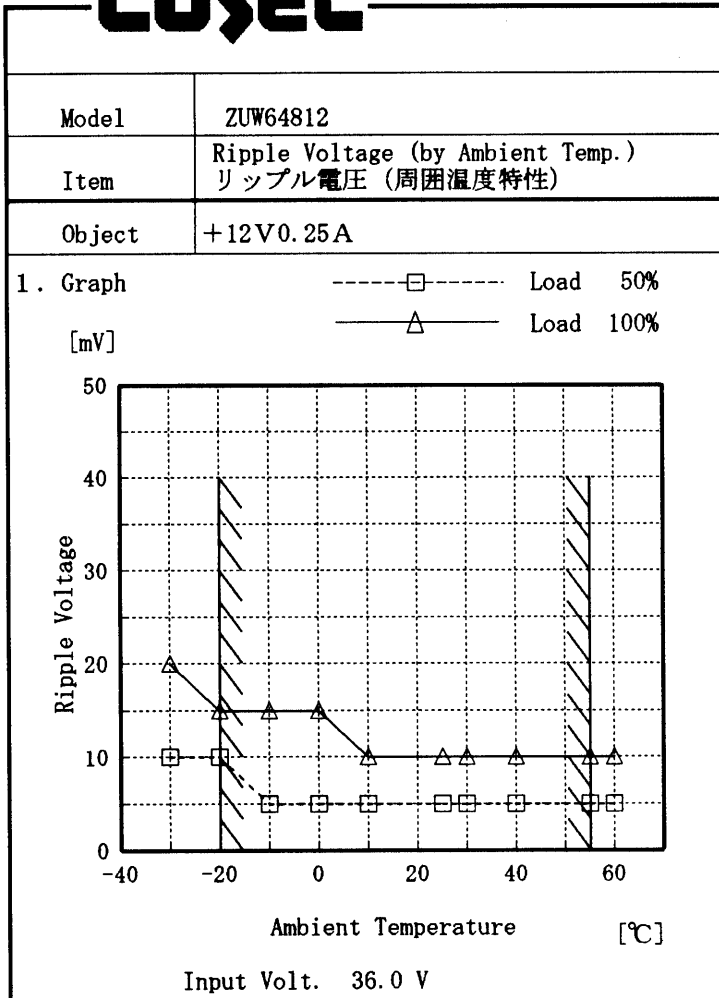
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30	23.1	24.6
40	22.5	24.1
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Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

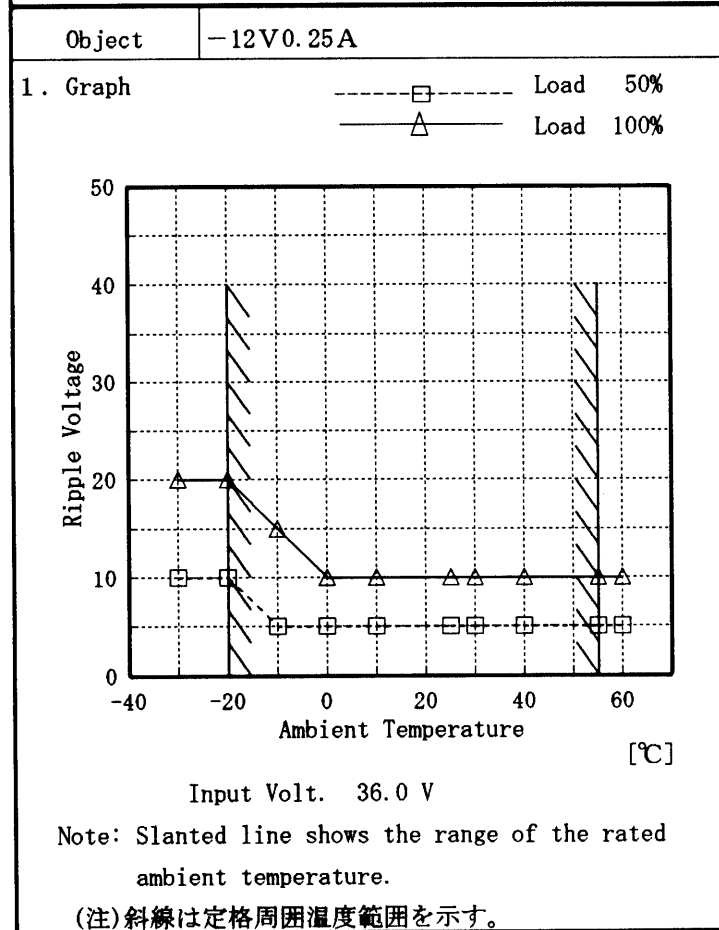




Testing Circuitry Figure A

2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-30	10	20
-20	10	15
-10	5	15
0	5	15
10	5	10
25	5	10
30	5	10
40	5	10
55	5	10
60	5	10
—	—	—



2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-30	10	20
-20	10	20
-10	5	15
0	5	10
10	5	10
25	5	10
30	5	10
40	5	10
55	5	10
60	5	10
—	—	—



<b>COSEL</b>																									
Model	ZUW64812	Temperature	25 °C																						
Item	Time Lapse Drift 経時ドリフト	Testing Circuitry	Figure A																						
Object	+12V0.25A																								
<p>1. Graph</p> <p>Input Volt. 48.0V 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>11.972</td></tr> <tr><td>0.5</td><td>11.971</td></tr> <tr><td>1.0</td><td>11.971</td></tr> <tr><td>2.0</td><td>11.971</td></tr> <tr><td>3.0</td><td>11.971</td></tr> <tr><td>4.0</td><td>11.971</td></tr> <tr><td>5.0</td><td>11.971</td></tr> <tr><td>6.0</td><td>11.971</td></tr> <tr><td>7.0</td><td>11.971</td></tr> <tr><td>8.0</td><td>11.971</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	11.972	0.5	11.971	1.0	11.971	2.0	11.971	3.0	11.971	4.0	11.971	5.0	11.971	6.0	11.971	7.0	11.971	8.0	11.971
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8.0	-11.951																								



Model		ZUW64812	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	

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 : -20~55 °C

Input Voltage : 36.0~72.0 V

Load Current ( AVR 1 ) : 0.00~0.25 A

( AVR 2 ) : 0.00~0.25 A

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

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

定電圧精度

周囲温度、入力電圧、負荷を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 -20~55 °C

入力電圧 36.0~72.0 V

負荷電流 (AVR 1) 0.00~0.25 A

(AVR 2) 0.00~0.25 A

\* 定電圧精度(変動値) =  $\pm(\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

\* 定電圧精度(変動率) =  $\frac{\text{変動値}}{\text{定格出力電圧}} \times 100$

Object +12V0.25A

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	-20	36.0	0.25	11.976	±179	±1.5
Minimum Voltage	55	72.0	0.00	11.618		

Object -12V0.25A

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	55	48.0	0.25	-11.951	±166	±1.4
Minimum Voltage	55	72.0	0.00	-11.619		

**COSEL**

Model		ZUW64812		
Item		Condensation 結露特性		
Object		+12V 0.25A		
		Testing Circuitry Figure A		
<p>1. Condensation test</p> <p>Testing procedure is as follows.</p> <p>① Keeping and cooling the unit in a tank at <math>-10^{\circ}\text{C}</math> for an hour with the input off.</p> <p>② Taking it out of the tank and dewing itself in a room where the temperature is <math>26^{\circ}\text{C}</math> and the humidity is 40%RH.</p> <p>③ Testing electrical characteristics of the unit to confirm there be no fault.</p> <p>④ Repeating ①, ② and ③ three times.</p> <p>1. 結露特性試験</p> <p>入力を切った状態で、恒温槽で<math>-10^{\circ}\text{C}</math>に冷却しておき、約1時間後に恒温槽から取り出し、室温<math>26^{\circ}\text{C}</math>、湿度40%RHの状態におき結露させ、その電気的特性の測定を3度行い、異常のないことを確認する。</p>				
2. Values				
	Times	Output Voltage [V]	Ripple Voltage [mV]	Ripple Noise [mV]
Load 50%	1	12.098	5	30
	2	12.095	5	30
	3	12.098	5	30
Load 100%	1	12.005	10	35
	2	12.003	10	35
	3	12.008	10	35
Input Volt. 48.0 V				

# COSEL

Model	ZUW64812	Testing Circuitry	Figure A
Item	Condensation 結露特性		
Object	-12V 0.25A		

## 1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at  $-10^{\circ}\text{C}$  for an hour with the input off.
- ② Taking it out of the tank and dewing itself in a room where the temperature is  $26^{\circ}\text{C}$  and the humidity is 40%RH.
- ③ Testing electrical characteristics of the unit to confirm there be no fault.
- ④ Repeating ①, ② and ③ three times.

## 1. 結露特性試験

入力を切った状態で、恒温槽で $-10^{\circ}\text{C}$ に冷却しておき、約1時間後に恒温槽から取り出し、室温 $26^{\circ}\text{C}$ 、湿度40%RHの状態におき結露させ、その電気的特性の測定を3度行い、異常のないことを確認する。

## 2. Values

	Times	Output Voltage [V]	Ripple Voltage [mV]	Ripple Noise [mV]
Load 50 %	1	-12.097	5	30
	2	-12.104	5	30
	3	-12.101	5	30
Load 100 %	1	-12.005	10	35
	2	-12.007	10	35
	3	-12.001	10	35

Input Volt. 48.0 V

