



TEST DATA OF ZUW62415
(24.0V INPUT)

Regulated DC Power Supply

Date : Sep. 21. 1996

Approved by : T. Sugimori
Design Manager

Prepared by : H. Aoe
Design Engineer

コーセル株式会社

COSEL CO., LTD.

CONTENTS

1. Line Regulation	1
静的入力変動	
2. Efficiency	2
効率	
3. Load Regulation	3
静的負荷変動	
4. Ripple Voltage (by Load Current)	4
リップル電圧(負荷電流特性)	
5. Ripple-Noise	6
リップルノイズ	
6. Overcurrent Protection	8
過電流保護	
7. Dynamic Load Responce	9
動的負荷変動	
8. Rise and Fall Time	11
立上り、立下がり時間	
9. Ambient Temperature Drift	13
周囲温度変動	
10. Minimum Input Voltage for Regulated Output Voltage . . .	14
最低レギュレーション電圧	
11. Ripple Voltage (by Ambient Temperature)	15
リップル電圧(周囲温度特性)	
12. Time Lapse Drift	16
経時ドリフト	
13. Output Voltage Accuracy	17
定電圧精度	
14. Condensation	18
結露特性	
15. Figure of Testing Circuitry	20
測定回路図	

(Final Page 20)



Model	ZUW62415	Temperature	25°C																																									
Item	Line Regulation 静的入力変動	Testing Circuitry	Figure A																																									
Object	+15V0.2A																																											
1. Graph	<p>-----□----- Load 50%</p> <p>-----△----- Load 100%</p>	2. Values																																										
		<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>Load 50%</th> <th>Load 100%</th> </tr> <tr> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> </tr> </thead> <tbody> <tr><td>16.0</td><td>15.207</td><td>15.099</td></tr> <tr><td>18.0</td><td>15.203</td><td>15.103</td></tr> <tr><td>20.0</td><td>15.200</td><td>15.105</td></tr> <tr><td>24.0</td><td>15.194</td><td>15.107</td></tr> <tr><td>30.0</td><td>15.189</td><td>15.106</td></tr> <tr><td>36.0</td><td>15.187</td><td>15.105</td></tr> <tr><td>40.0</td><td>15.187</td><td>15.106</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> <tr><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Input Voltage [V]	Load 50%	Load 100%	Output Volt. [V]	Output Volt. [V]	16.0	15.207	15.099	18.0	15.203	15.103	20.0	15.200	15.105	24.0	15.194	15.107	30.0	15.189	15.106	36.0	15.187	15.105	40.0	15.187	15.106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Input Voltage [V]	Load 50%	Load 100%																																										
	Output Volt. [V]	Output Volt. [V]																																										
16.0	15.207	15.099																																										
18.0	15.203	15.103																																										
20.0	15.200	15.105																																										
24.0	15.194	15.107																																										
30.0	15.189	15.106																																										
36.0	15.187	15.105																																										
40.0	15.187	15.106																																										
-	-	-																																										
-	-	-																																										
-	-	-																																										
-	-	-																																										
-	-	-																																										

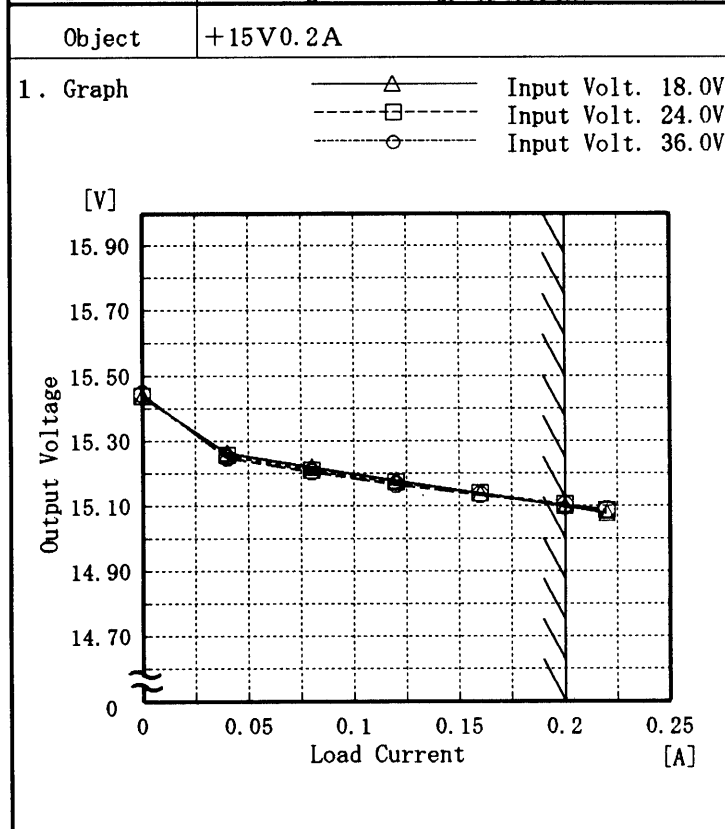
Object	-15V0.2A																																											
1. Graph	<p>-----□----- Load 50%</p> <p>-----△----- Load 100%</p>	2. Values																																										
		<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>Load 50%</th> <th>Load 100%</th> </tr> <tr> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> </tr> </thead> <tbody> <tr><td>16.0</td><td>-15.211</td><td>-15.107</td></tr> <tr><td>18.0</td><td>-15.205</td><td>-15.109</td></tr> <tr><td>20.0</td><td>-15.201</td><td>-15.110</td></tr> <tr><td>24.0</td><td>-15.195</td><td>-15.110</td></tr> <tr><td>30.0</td><td>-15.188</td><td>-15.107</td></tr> <tr><td>36.0</td><td>-15.185</td><td>-15.106</td></tr> <tr><td>40.0</td><td>-15.185</td><td>-15.106</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> <tr><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Input Voltage [V]	Load 50%	Load 100%	Output Volt. [V]	Output Volt. [V]	16.0	-15.211	-15.107	18.0	-15.205	-15.109	20.0	-15.201	-15.110	24.0	-15.195	-15.110	30.0	-15.188	-15.107	36.0	-15.185	-15.106	40.0	-15.185	-15.106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Input Voltage [V]	Load 50%	Load 100%																																										
	Output Volt. [V]	Output Volt. [V]																																										
16.0	-15.211	-15.107																																										
18.0	-15.205	-15.109																																										
20.0	-15.201	-15.110																																										
24.0	-15.195	-15.110																																										
30.0	-15.188	-15.107																																										
36.0	-15.185	-15.106																																										
40.0	-15.185	-15.106																																										
-	-	-																																										
-	-	-																																										
-	-	-																																										
-	-	-																																										
-	-	-																																										
<p>Note: Slanted line shows the range of the rated input voltage.</p> <p>(注)斜線は定格入力電圧範囲を示す。</p>																																												



Model		ZUW62415	Temperature		25°C																																									
Item		Efficiency 効率	Testing Circuitry		Figure A																																									
Object																																														
1. Graph			2. Values																																											
<p>-----□----- Load 50%</p> <p>-----△----- Load 100%</p>			<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>Load 50%</th> <th>Load 100%</th> </tr> <tr> <th>Efficiency [%]</th> <th>Efficiency [%]</th> </tr> </thead> <tbody> <tr><td>16.0</td><td>76.2</td><td>81.2</td></tr> <tr><td>18.0</td><td>75.6</td><td>80.6</td></tr> <tr><td>20.0</td><td>74.8</td><td>80.2</td></tr> <tr><td>24.0</td><td>73.6</td><td>80.1</td></tr> <tr><td>30.0</td><td>69.2</td><td>78.7</td></tr> <tr><td>36.0</td><td>65.3</td><td>77.1</td></tr> <tr><td>40.0</td><td>62.7</td><td>75.5</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> <tr><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>			Input Voltage [V]	Load 50%	Load 100%	Efficiency [%]	Efficiency [%]	16.0	76.2	81.2	18.0	75.6	80.6	20.0	74.8	80.2	24.0	73.6	80.1	30.0	69.2	78.7	36.0	65.3	77.1	40.0	62.7	75.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Input Voltage [V]	Load 50%	Load 100%																																												
	Efficiency [%]	Efficiency [%]																																												
16.0	76.2	81.2																																												
18.0	75.6	80.6																																												
20.0	74.8	80.2																																												
24.0	73.6	80.1																																												
30.0	69.2	78.7																																												
36.0	65.3	77.1																																												
40.0	62.7	75.5																																												
—	—	—																																												
—	—	—																																												
—	—	—																																												
—	—	—																																												
—	—	—																																												
<p>Note: Slanted line shows the range of the rated input voltage.</p> <p>(注)斜線は定格入力電圧範囲を示す。</p>																																														

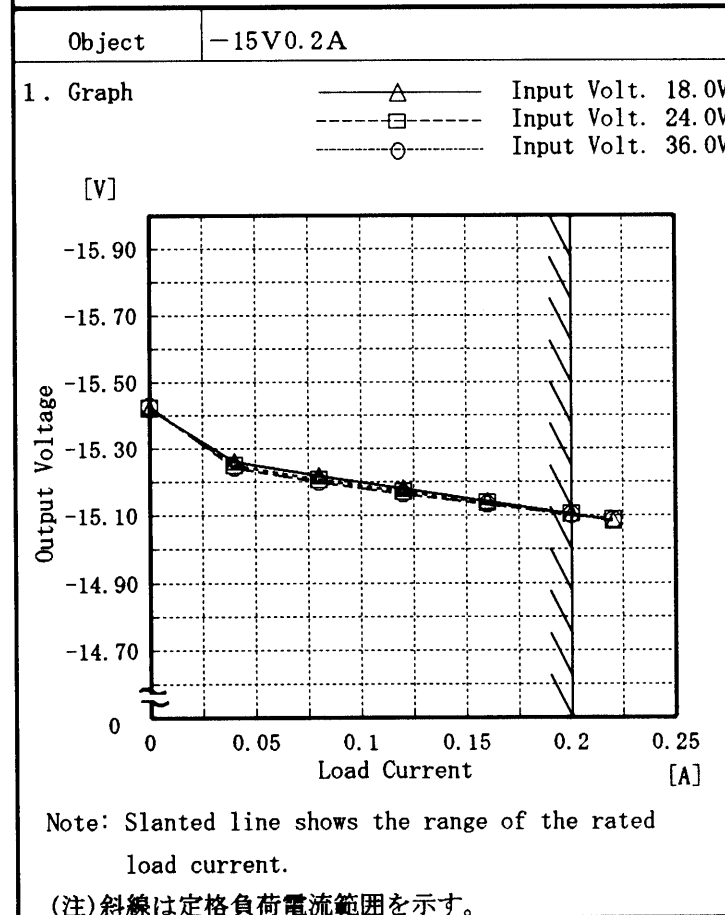


Model	ZUW62415	Temperature	25°C
Item	Load Regulation 静的負荷変動	Testing Circuitry	Figure A



2. Values

Load Current [A]	Input Volt. 18.0[V]	Input Volt. 24.0[V]	Input Volt. 36.0[V]
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
0.000	15.439	15.439	15.446
0.040	15.264	15.255	15.249
0.080	15.218	15.210	15.203
0.120	15.179	15.173	15.167
0.160	15.140	15.138	15.134
0.200	15.100	15.104	15.103
0.220	15.079	15.086	15.087
-	-	-	-
-	-	-	-
-	-	-	-



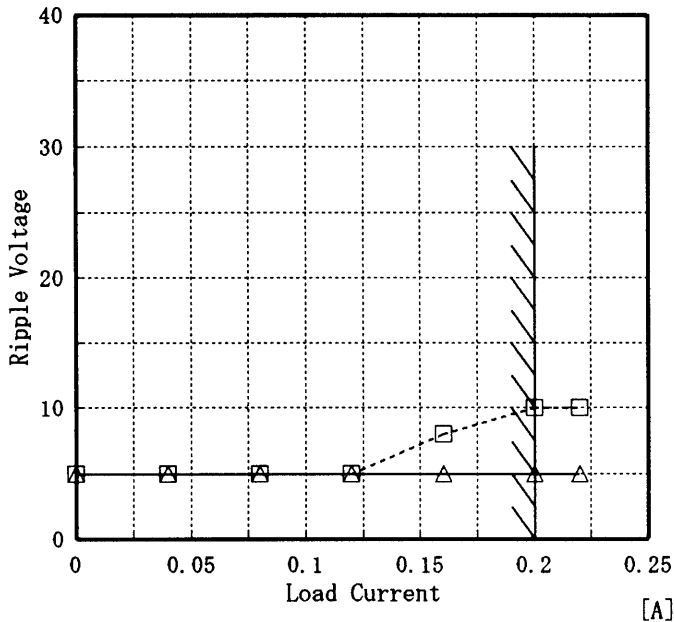
2. Values

Load Current [A]	Input Volt. 18.0[V]	Input Volt. 24.0[V]	Input Volt. 36.0[V]
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
0.000	-15.422	-15.424	-15.431
0.040	-15.262	-15.252	-15.244
0.080	-15.219	-15.209	-15.201
0.120	-15.182	-15.174	-15.165
0.160	-15.144	-15.140	-15.133
0.200	-15.106	-15.107	-15.103
0.220	-15.085	-15.089	-15.087
-	-	-	-
-	-	-	-
-	-	-	-

COSEL

Model	ZUW62415	Temperature	25°C
Item	Ripple Voltage (by Load Current) リップル電圧(負荷電流特性)	Testing Circuitry	Figure A
Object	+15V 0.2A		

1. Graph
 [mV]
 -----□----- Input Volt. 18.0V
 -----△----- Input Volt. 36.0V



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

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

リップル電圧は、下図 p-p 値で示される。
 (注) 斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
 入力商用周期
 T2: Due to Switching
 スイッチング周期

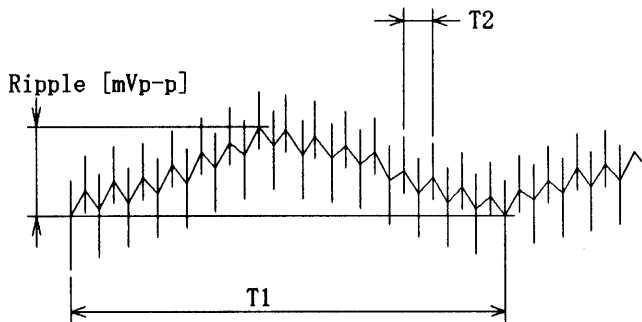


Fig. Complex Ripple Wave Form
 図 リップル波形詳細図

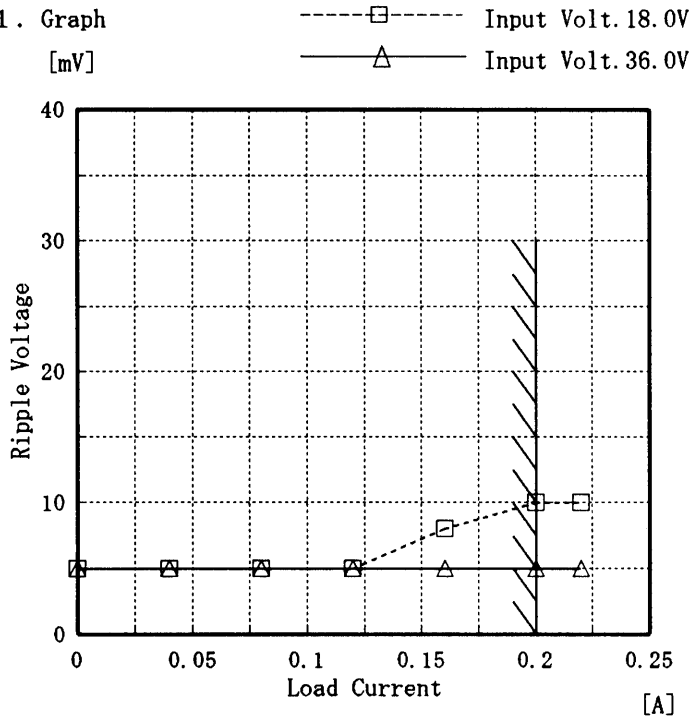
2. Values

Load Current [A]	Input Volt. 18.0 [V]	Input Volt. 36.0 [V]
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
0.000	5	5
0.040	5	5
0.080	5	5
0.120	5	5
0.160	8	5
0.200	10	5
0.220	10	5
—	—	—
—	—	—
—	—	—
—	—	—



Model	ZUW62415	Temperature	25°C
Item	Ripple Voltage (by Load Current) リップル電圧(負荷電流特性)	Testing Circuitry	Figure A
Object	-15V 0.2A		

1. Graph



2. Values

Load Current [A]	Input Volt. 18.0 [V]	Input Volt. 36.0 [V]
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
0.000	5	5
0.040	5	5
0.080	5	5
0.120	5	5
0.160	8	5
0.200	10	5
0.220	10	5
—	—	—
—	—	—
—	—	—
—	—	—

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

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

リップル電圧は、下図 p-p 値で示される。
(注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
スイッチング周期

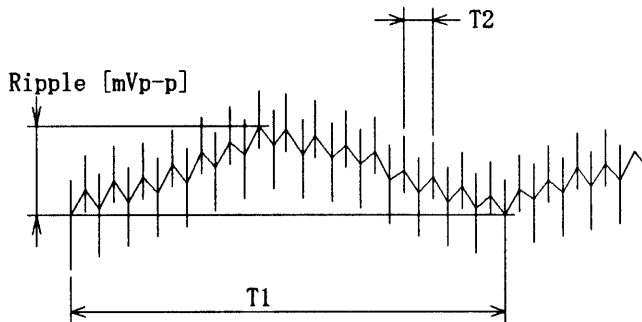


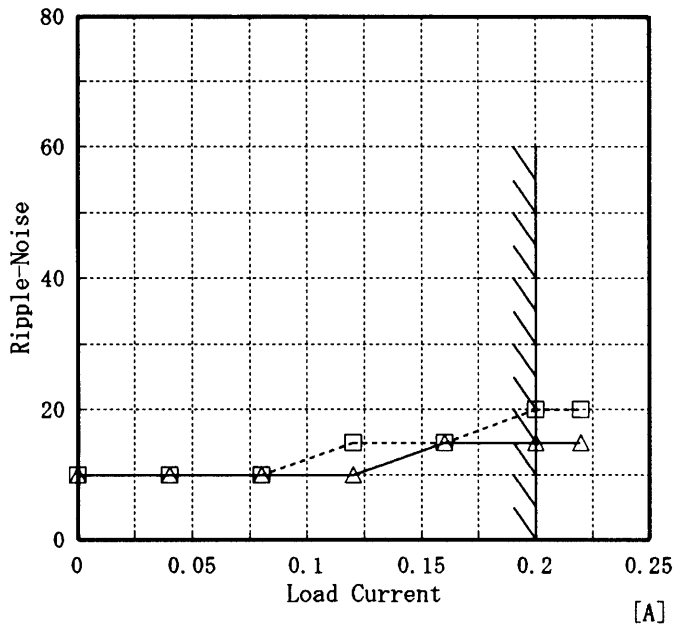
Fig. Complex Ripple Wave Form
図 リップル波形詳細図



Model	ZUW62415	Temperature	25°C
Item	Ripple-Noise リップルノイズ	Testing Circuitry	Figure A

Object +15V0.2A

1. Graph
 [mV]
 -----□----- Input Volt. 18.0V
 -----△----- Input Volt. 36.0V



2. Values

Load current [A]	Input Volt. 18.0 [V]	Input Volt. 36.0 [V]
	Ripple-Noise [mV]	Ripple-Noise [mV]
0.000	10	10
0.040	10	10
0.080	10	10
0.120	15	10
0.160	15	15
0.200	20	15
0.220	20	15
—	—	—
—	—	—
—	—	—
—	—	—

Ripple-Noise is shown as p-p in the figure below.
 Note: Slanted line shows the range of the rated load current.

リップルノイズは、下図 p-p 値で示される。
 (注) 斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
 入力商用周期
 T2: Due to Switching
 スイッチング周期

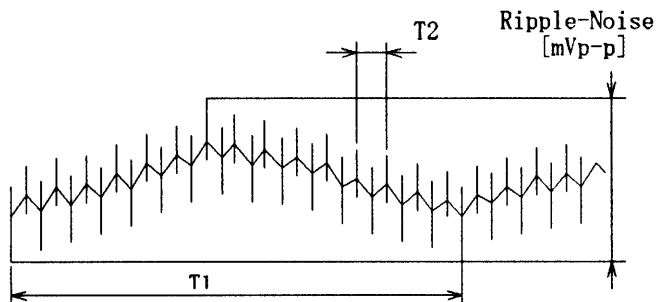
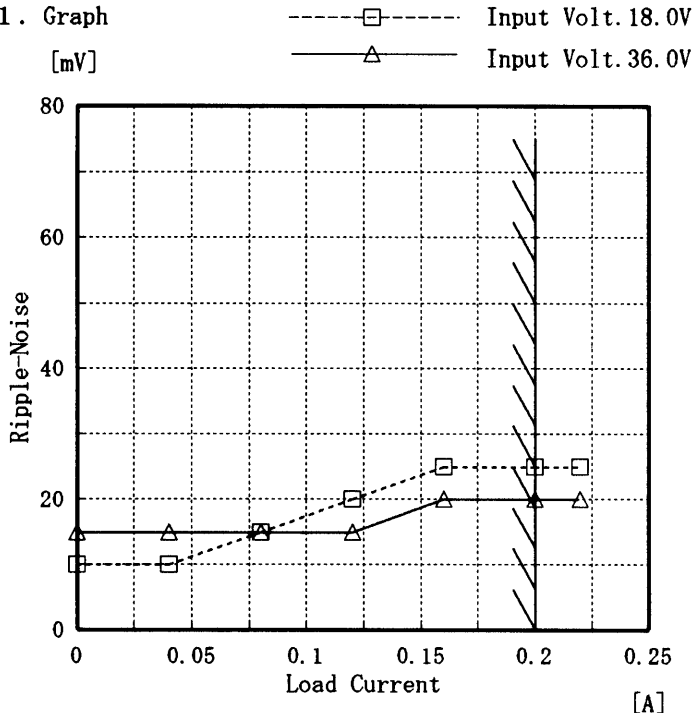


Fig. Complex Ripple Wave Form
 図 リップル波形詳細図



Model	ZUW62415	Temperature	25°C
Item	Ripple-Noise リップルノイズ	Testing Circuitry	Figure A
Object	-15V0.2A		

1. Graph



2. Values

Load current [A]	Input Volt. 18.0 [V]	Input Volt. 36.0 [V]
	Ripple-Noise [mV]	Ripple-Noise [mV]
0.000	10	15
0.040	10	15
0.080	15	15
0.120	20	15
0.160	25	20
0.200	25	20
0.220	25	20
—	—	—
—	—	—
—	—	—
—	—	—

Ripple-Noise is shown as p-p in the figure below.
 Note: Slanted line shows the range of the rated load current.

リップルノイズは、下図 p-p 値で示される。
 (注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
 入力商用周期
 T2: Due to Switching
 スイッチング周期

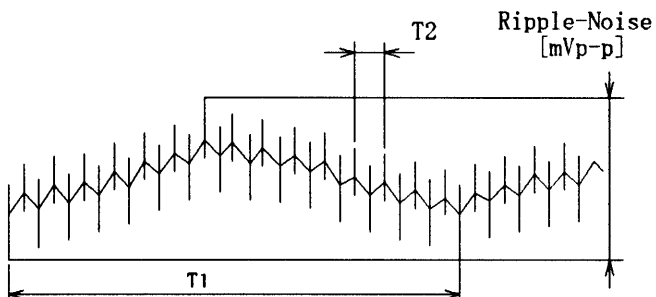


Fig. Complex Ripple Wave Form
 図 リップル波形詳細図

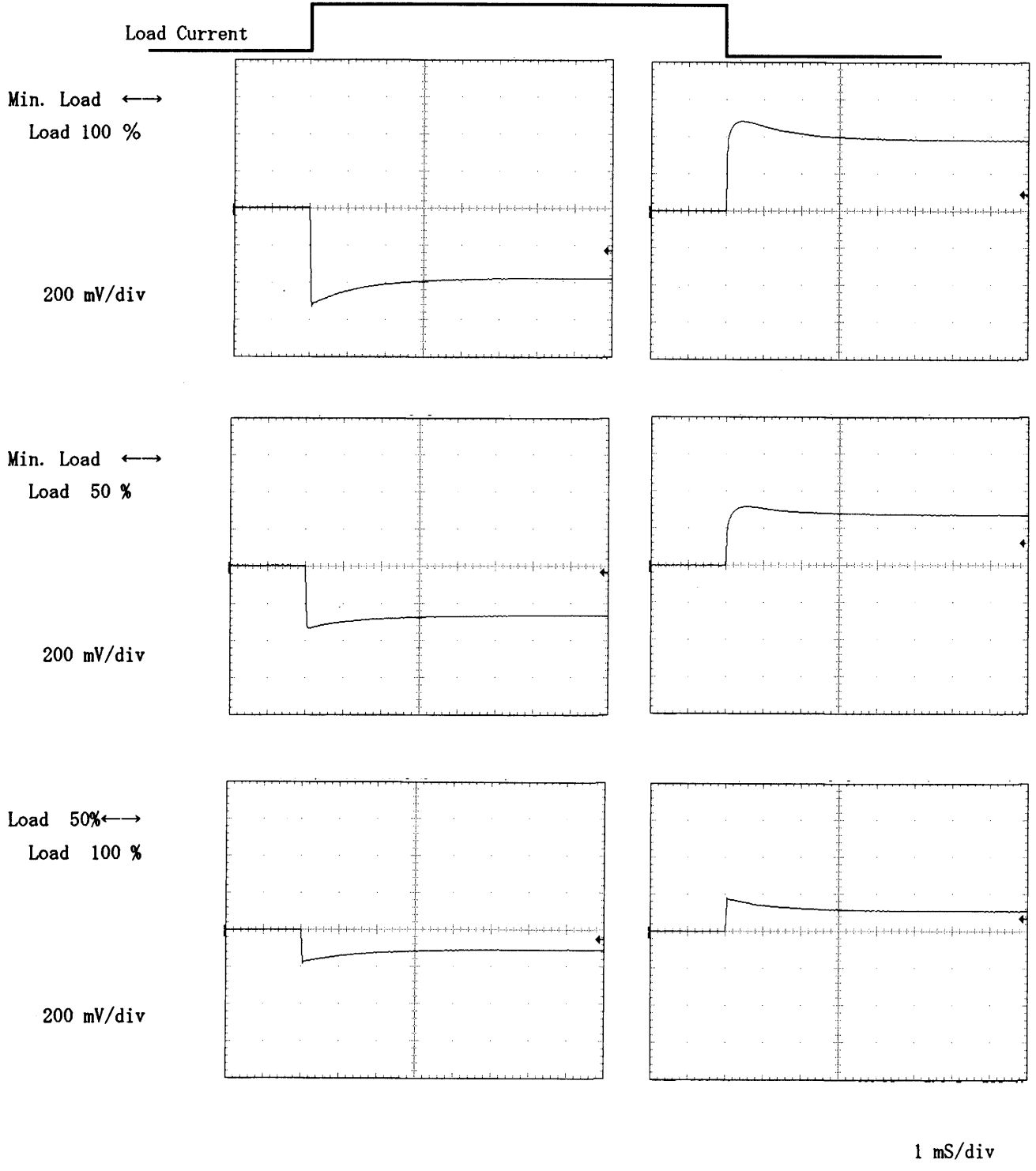


Model		ZUW62415	Temperature 25°C																																																									
Item		Overcurrent Protection 過電流保護	Testing Circuitry Figure A																																																									
Object		+15V0.2A																																																										
1. Graph			2. Values																																																									
	 Input Volt. 18.0 V _____ Input Volt. 24.0 V _____ Input Volt. 36.0 V	<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th>Input Volt. 18.0[V]</th> <th>Input Volt. 24.0[V]</th> <th>Input Volt. 36.0[V]</th> </tr> <tr> <th>Load Current [A]</th> <th>Load Current [A]</th> <th>Load Current [A]</th> </tr> </thead> <tbody> <tr><td>15.00</td><td>0.328</td><td>0.316</td><td>0.330</td></tr> <tr><td>14.25</td><td>0.430</td><td>0.441</td><td>0.389</td></tr> <tr><td>13.50</td><td>0.438</td><td>0.447</td><td>0.394</td></tr> <tr><td>12.00</td><td>0.462</td><td>0.457</td><td>0.395</td></tr> <tr><td>10.50</td><td>0.479</td><td>0.461</td><td>0.392</td></tr> <tr><td>9.00</td><td>0.490</td><td>0.458</td><td>0.386</td></tr> <tr><td>7.50</td><td>0.492</td><td>0.446</td><td>0.373</td></tr> <tr><td>6.00</td><td>0.484</td><td>0.424</td><td>0.358</td></tr> <tr><td>4.50</td><td>0.464</td><td>0.400</td><td>0.342</td></tr> <tr><td>3.00</td><td>0.442</td><td>0.378</td><td>0.334</td></tr> <tr><td>1.50</td><td>0.434</td><td>0.378</td><td>0.347</td></tr> <tr><td>0.00</td><td>0.706</td><td>0.658</td><td>0.646</td></tr> </tbody> </table>			Output Voltage [V]	Input Volt. 18.0[V]	Input Volt. 24.0[V]	Input Volt. 36.0[V]	Load Current [A]	Load Current [A]	Load Current [A]	15.00	0.328	0.316	0.330	14.25	0.430	0.441	0.389	13.50	0.438	0.447	0.394	12.00	0.462	0.457	0.395	10.50	0.479	0.461	0.392	9.00	0.490	0.458	0.386	7.50	0.492	0.446	0.373	6.00	0.484	0.424	0.358	4.50	0.464	0.400	0.342	3.00	0.442	0.378	0.334	1.50	0.434	0.378	0.347	0.00	0.706	0.658	0.646
Output Voltage [V]	Input Volt. 18.0[V]	Input Volt. 24.0[V]	Input Volt. 36.0[V]																																																									
	Load Current [A]	Load Current [A]	Load Current [A]																																																									
15.00	0.328	0.316	0.330																																																									
14.25	0.430	0.441	0.389																																																									
13.50	0.438	0.447	0.394																																																									
12.00	0.462	0.457	0.395																																																									
10.50	0.479	0.461	0.392																																																									
9.00	0.490	0.458	0.386																																																									
7.50	0.492	0.446	0.373																																																									
6.00	0.484	0.424	0.358																																																									
4.50	0.464	0.400	0.342																																																									
3.00	0.442	0.378	0.334																																																									
1.50	0.434	0.378	0.347																																																									
0.00	0.706	0.658	0.646																																																									
Object		-15V0.2A																																																										
1. Graph			2. Values																																																									
	 Input Volt. 18.0 V _____ Input Volt. 24.0 V _____ Input Volt. 36.0 V	<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th>Input Volt. 18.0[V]</th> <th>Input Volt. 24.0[V]</th> <th>Input Volt. 36.0[V]</th> </tr> <tr> <th>Load Current [A]</th> <th>Load Current [A]</th> <th>Load Current [A]</th> </tr> </thead> <tbody> <tr><td>-15.00</td><td>0.313</td><td>0.336</td><td>0.401</td></tr> <tr><td>-14.25</td><td>0.440</td><td>0.450</td><td>0.389</td></tr> <tr><td>-13.50</td><td>0.450</td><td>0.459</td><td>0.404</td></tr> <tr><td>-12.00</td><td>0.474</td><td>0.457</td><td>0.407</td></tr> <tr><td>-10.50</td><td>0.489</td><td>0.472</td><td>0.404</td></tr> <tr><td>-9.00</td><td>0.502</td><td>0.468</td><td>0.396</td></tr> <tr><td>-7.50</td><td>0.502</td><td>0.457</td><td>0.384</td></tr> <tr><td>-6.00</td><td>0.493</td><td>0.434</td><td>0.369</td></tr> <tr><td>-4.50</td><td>0.472</td><td>0.409</td><td>0.353</td></tr> <tr><td>-3.00</td><td>0.449</td><td>0.387</td><td>0.344</td></tr> <tr><td>-1.50</td><td>0.444</td><td>0.388</td><td>0.358</td></tr> <tr><td>0.00</td><td>0.696</td><td>0.651</td><td>0.641</td></tr> </tbody> </table>			Output Voltage [V]	Input Volt. 18.0[V]	Input Volt. 24.0[V]	Input Volt. 36.0[V]	Load Current [A]	Load Current [A]	Load Current [A]	-15.00	0.313	0.336	0.401	-14.25	0.440	0.450	0.389	-13.50	0.450	0.459	0.404	-12.00	0.474	0.457	0.407	-10.50	0.489	0.472	0.404	-9.00	0.502	0.468	0.396	-7.50	0.502	0.457	0.384	-6.00	0.493	0.434	0.369	-4.50	0.472	0.409	0.353	-3.00	0.449	0.387	0.344	-1.50	0.444	0.388	0.358	0.00	0.696	0.651	0.641
Output Voltage [V]	Input Volt. 18.0[V]	Input Volt. 24.0[V]	Input Volt. 36.0[V]																																																									
	Load Current [A]	Load Current [A]	Load Current [A]																																																									
-15.00	0.313	0.336	0.401																																																									
-14.25	0.440	0.450	0.389																																																									
-13.50	0.450	0.459	0.404																																																									
-12.00	0.474	0.457	0.407																																																									
-10.50	0.489	0.472	0.404																																																									
-9.00	0.502	0.468	0.396																																																									
-7.50	0.502	0.457	0.384																																																									
-6.00	0.493	0.434	0.369																																																									
-4.50	0.472	0.409	0.353																																																									
-3.00	0.449	0.387	0.344																																																									
-1.50	0.444	0.388	0.358																																																									
0.00	0.696	0.651	0.641																																																									
Note: Slanted line shows the range of the rated load current.																																																												
(注)斜線は定格負荷電流範囲を示す。																																																												

COSEL

Model	ZUW62415	Temperature	25°C
Item	Dynamic Load Responce 動的負荷変動	Testing Circuitry	Figure A
Object	+15V0.2A		

Input Volt. 24.0 V
Cycle 100 mS

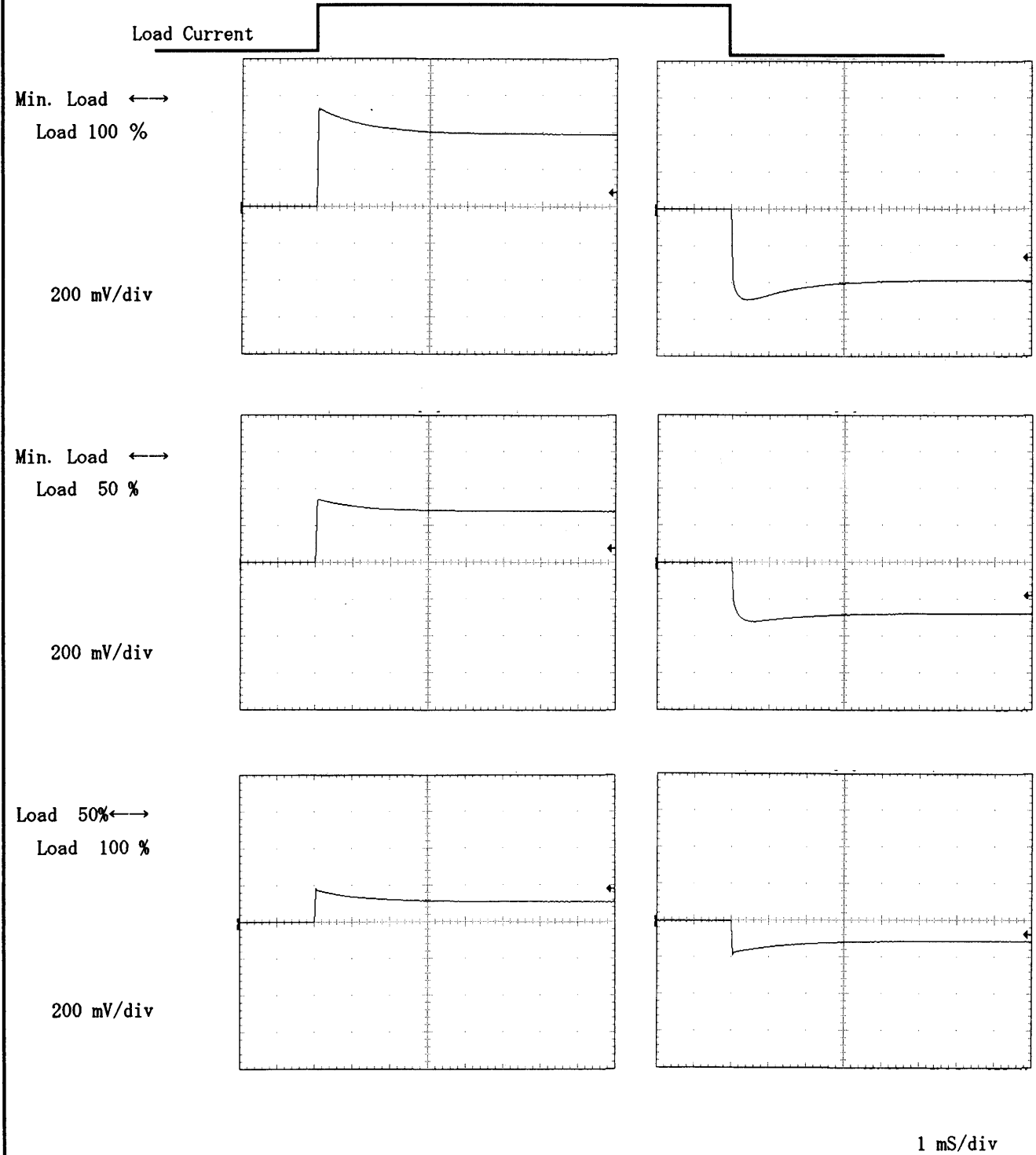


COSEL

Model	ZUW62415	Temperature	25°C
Item	Dynamic Load Responce 動的負荷変動	Testing Circuitry	Figure A
Object	-15V0.2A		

Input Volt. 24.0 V

Cycle 100 mS

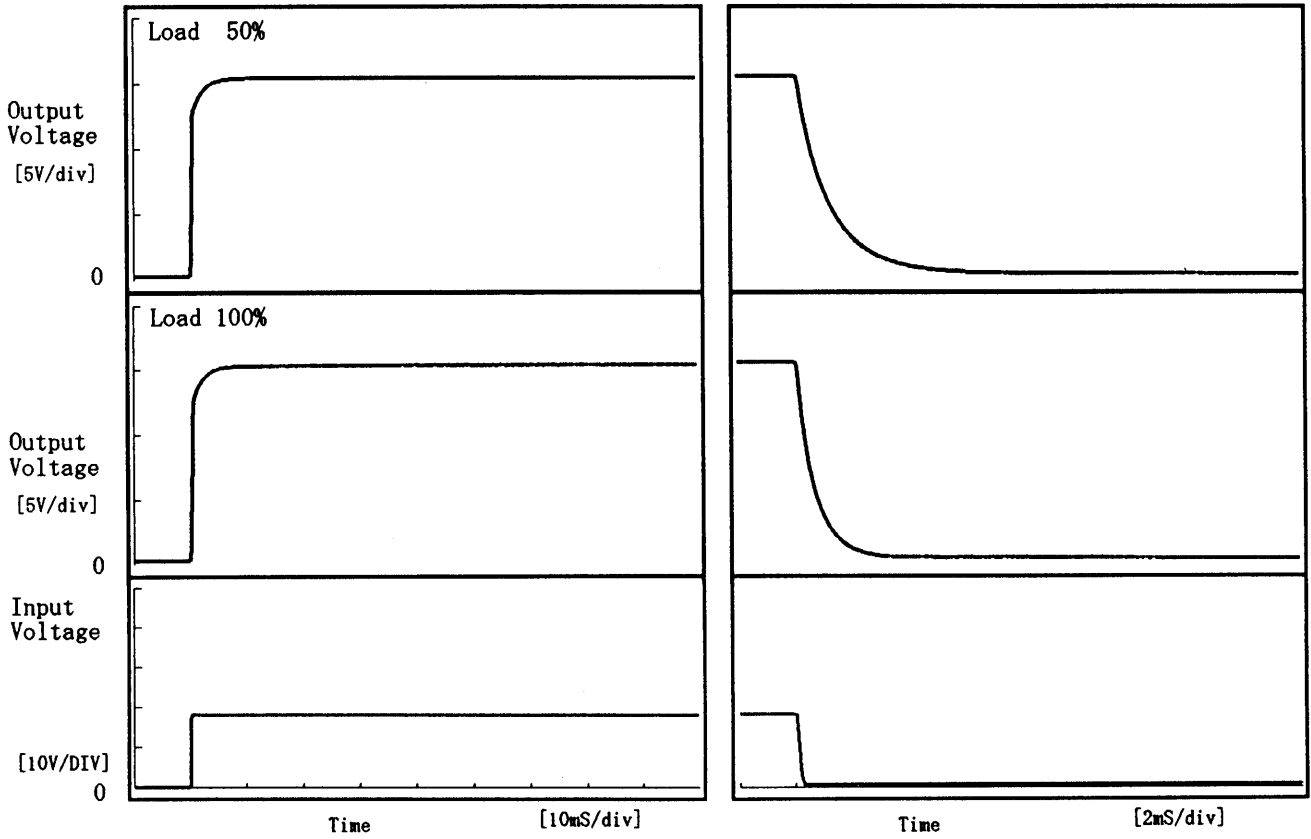


COSEL

Model	ZUW62415	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+15V0.2A		

1. Graph

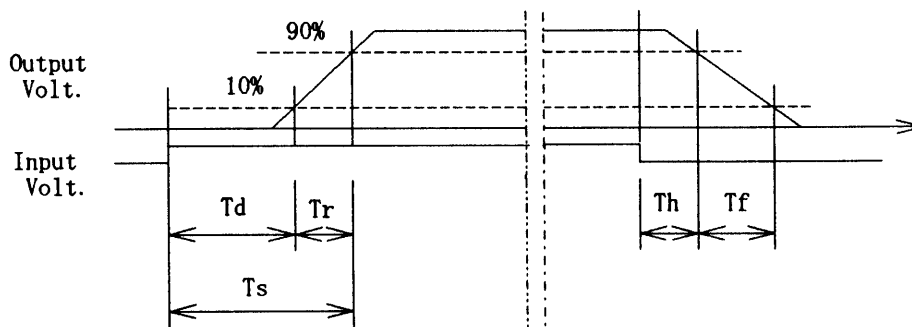
Input Volt. 18.0 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	0.10	1.30	1.40	0.26	2.87
100 %	0.10	1.45	1.55	0.18	1.56

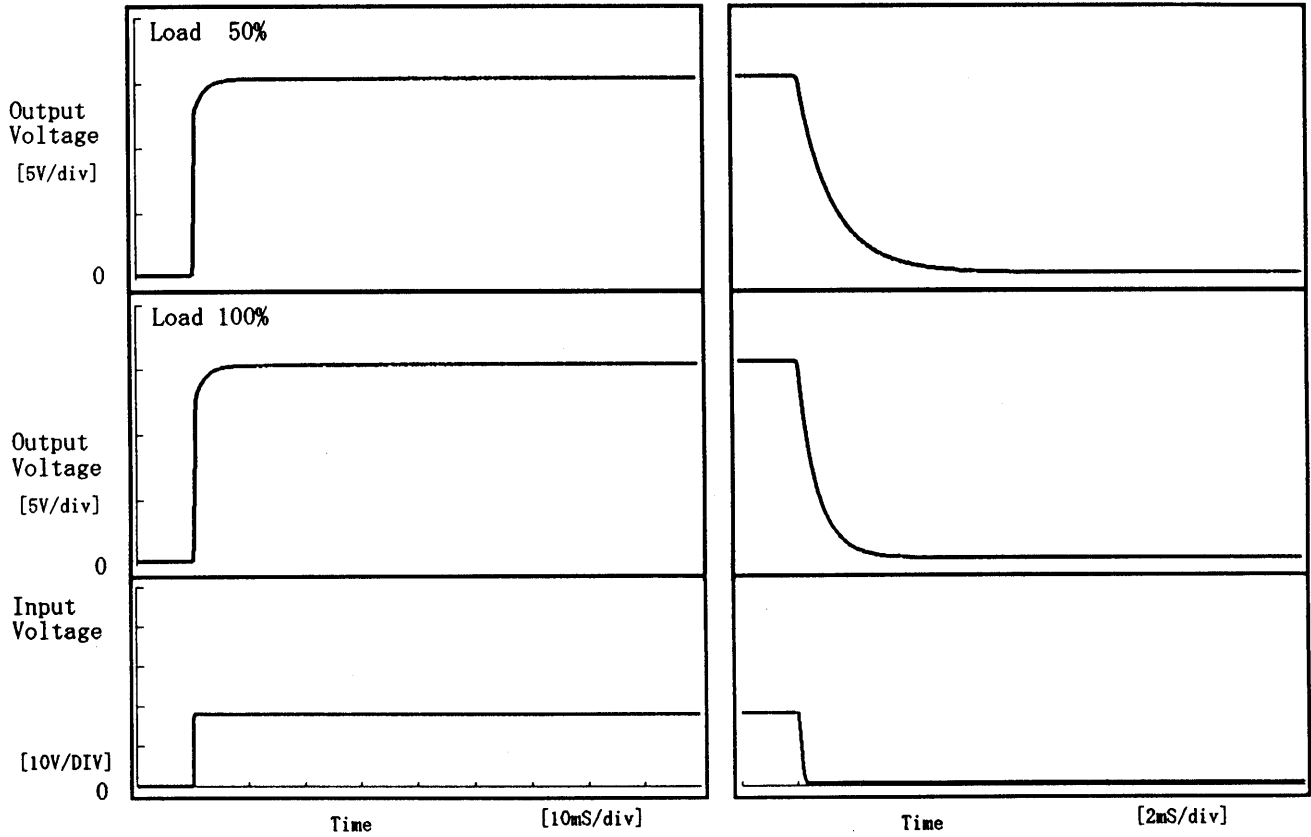


COSEL

Model	ZUW62415	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	-15V0.2A		

1. Graph

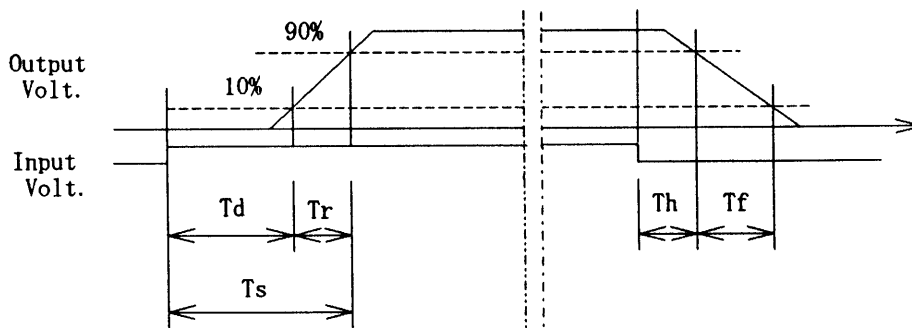
Input Volt. 18.0 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	0.10	1.25	1.35	0.27	2.98
100 %	0.10	1.35	1.45	0.18	1.59



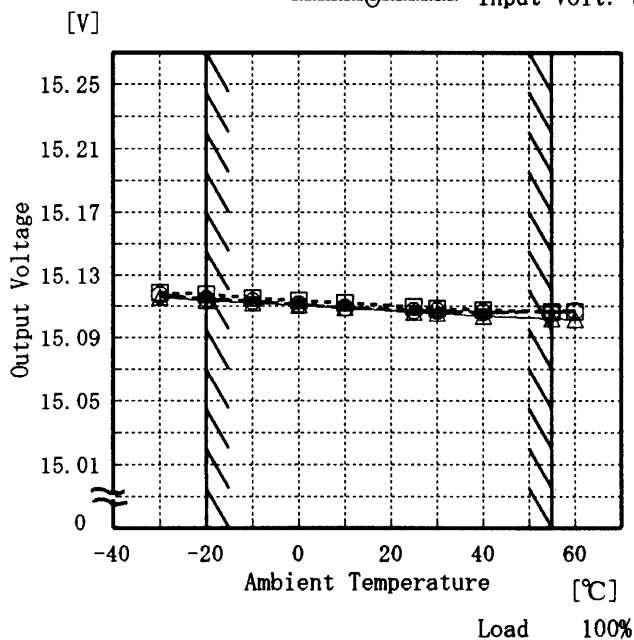


Model	ZUW62415
Item	Ambient Temperature Drift 周囲温度変動
Object	+15V0.2A

Testing Circuitry Figure A

1. Graph

—△— Input Volt. 18.0V
 - - -□- - - Input Volt. 24.0V
 - - -○- - - Input Volt. 36.0V



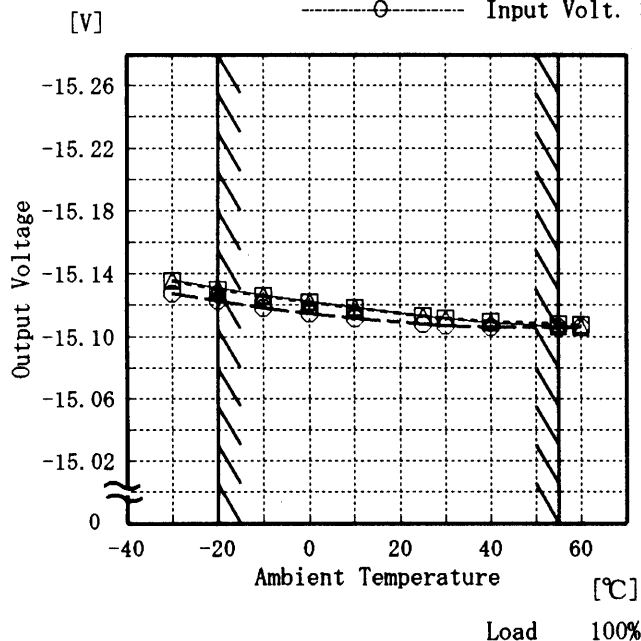
2. Values

Temperature [°C]	Input Volt. 18.0[V]	Input Volt. 24.0[V]	Input Volt. 36.0[V]
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
-30	15.116	15.119	15.117
-20	15.114	15.118	15.115
-10	15.112	15.115	15.113
0	15.111	15.114	15.111
10	15.109	15.112	15.109
25	15.106	15.109	15.107
30	15.105	15.108	15.107
40	15.104	15.107	15.106
55	15.102	15.107	15.107
60	15.102	15.106	15.107
-	-	-	-

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

1. Graph

—△— Input Volt. 18.0V
 - - -□- - - Input Volt. 24.0V
 - - -○- - - Input Volt. 36.0V



2. Values

Temperature [°C]	Input Volt. 18.0[V]	Input Volt. 24.0[V]	Input Volt. 36.0[V]
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
-30	-15.136	-15.136	-15.127
-20	-15.131	-15.130	-15.123
-10	-15.126	-15.126	-15.118
0	-15.122	-15.122	-15.115
10	-15.119	-15.118	-15.111
25	-15.113	-15.113	-15.108
30	-15.111	-15.111	-15.107
40	-15.109	-15.110	-15.106
55	-15.107	-15.108	-15.106
60	-15.106	-15.107	-15.106
-	-	-	-

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。

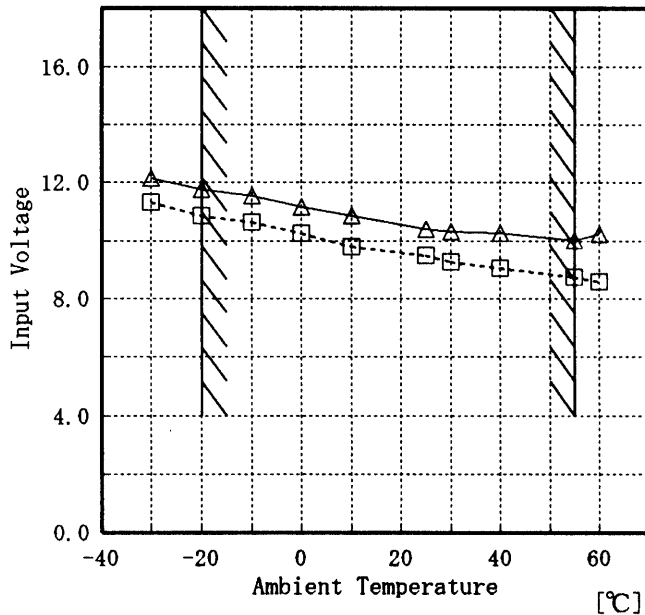


Model	ZUW62415
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+15V0.2A

Testing Circuitry Figure A

1. Graph
[V]

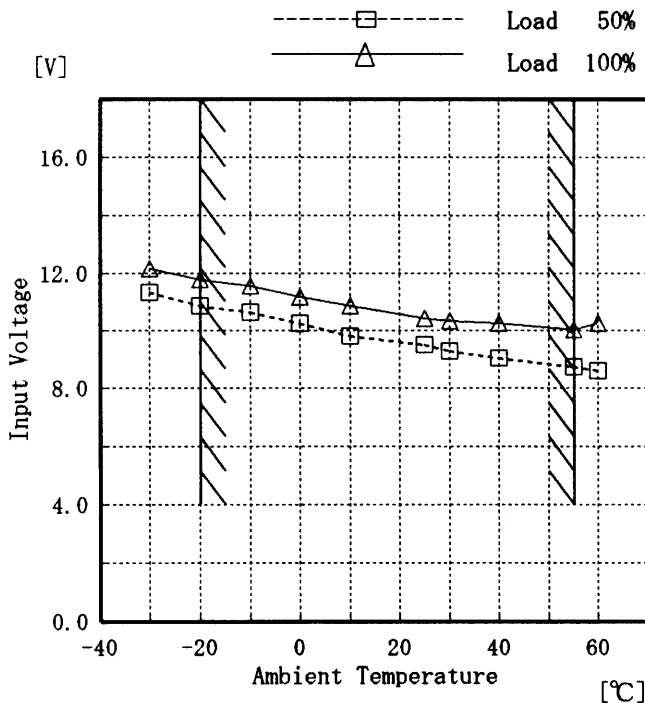
-----□----- Load 50%
-----△----- Load 100%



2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Input Volt. [V]	Input Volt. [V]
-30	11.3	12.1
-20	10.9	11.8
-10	10.6	11.6
0	10.3	11.2
10	9.8	10.9
25	9.5	10.4
30	9.3	10.3
40	9.1	10.3
55	8.8	10.0
60	8.6	10.3
—	—	—

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

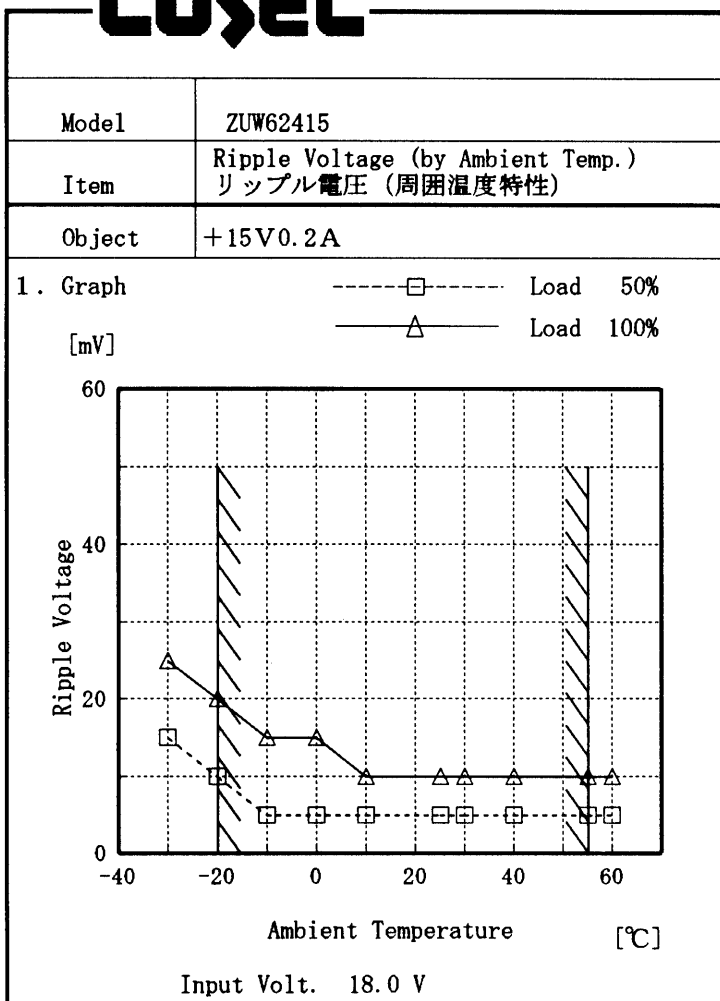


2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Input Volt. [V]	Input Volt. [V]
-30	11.3	12.1
-20	10.9	11.8
-10	10.6	11.6
0	10.3	11.2
10	9.8	10.9
25	9.5	10.4
30	9.3	10.3
40	9.1	10.3
55	8.8	10.0
60	8.6	10.3
—	—	—

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

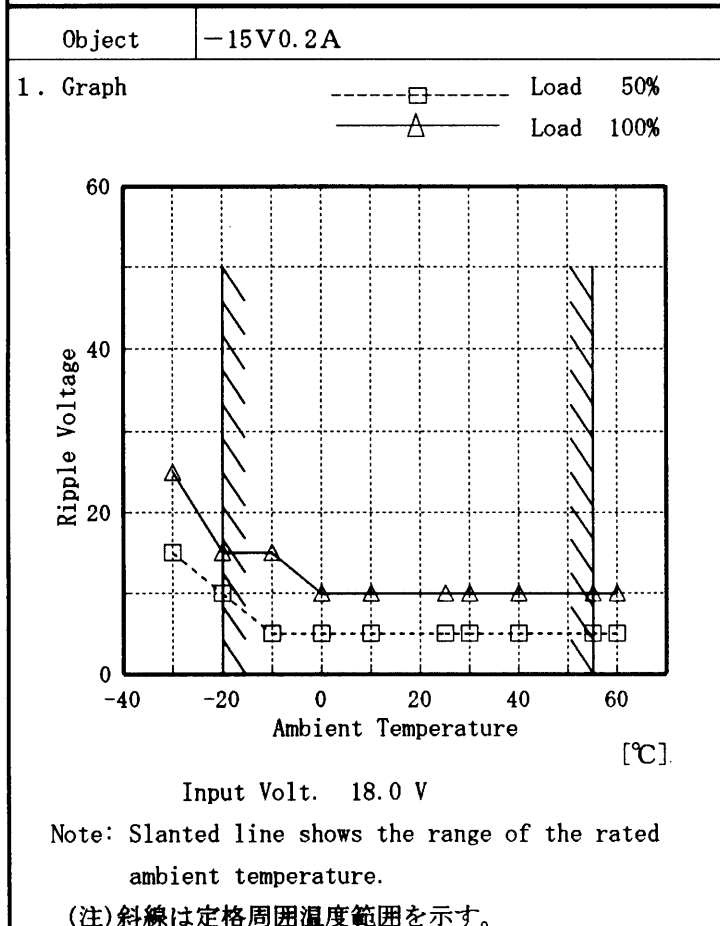
(注)斜線は定格周囲温度範囲を示す。



Testing Circuitry Figure A

2. Values

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



Model	ZUW62415	Temperature	25 °C
Item	Time Lapse Drift 経時ドリフト	Testing Circuitry	Figure A

Object +15V0.2A

1. Graph

Input Volt. 24.0V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	15.117
0.5	15.114
1.0	15.114
2.0	15.114
3.0	15.114
4.0	15.114
5.0	15.114
6.0	15.114
7.0	15.114
8.0	15.114

Object -15V0.2A

1. Graph

Input Volt. 24.0V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	-15.110
0.5	-15.107
1.0	-15.107
2.0	-15.107
3.0	-15.107
4.0	-15.107
5.0	-15.107
6.0	-15.107
7.0	-15.107
8.0	-15.107



Model		ZUW62415	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 : 18.0~36.0 V

Load Current (AVR 1) : 0.0~0.2 A

(AVR 2) : 0.0~0.2 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 18.0~36.0 V

負荷電流 (AVR 1) 0.0~0.2 A

(AVR 2) 0.0~0.2 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 +15V0.2A

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	-20	24.0	0.2	15.115	±144	±1.0
Minimum Voltage	25	18.0	0.0	14.828		

Object -15V0.2A

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	-20	18.0	0.2	-15.129	±160	±1.1
Minimum Voltage	55	18.0	0.0	-14.810		



Model		ZUW62415	Testing Circuitry Figure A
Item		Condensation 結露特性	
Object		+15V 0.2A	

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10°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°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°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°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	15.142	5	10
	2	15.138	5	10
	3	15.140	5	10
Load 100%	1	15.047	5	20
	2	15.042	5	20
	3	15.041	5	25

Input Volt. 24.0 V



Model		ZUW62415	Testing Circuitry	Figure A
Item		Condensation 結露特性		
Object		-15V 0.2A		

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10°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°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°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°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	-15.141	5	10
	2	-15.122	5	10
	3	-15.143	5	15
Load 100 %	1	-15.044	5	20
	2	-15.043	5	20
	3	-15.048	5	25

Input Volt. 24.0 V

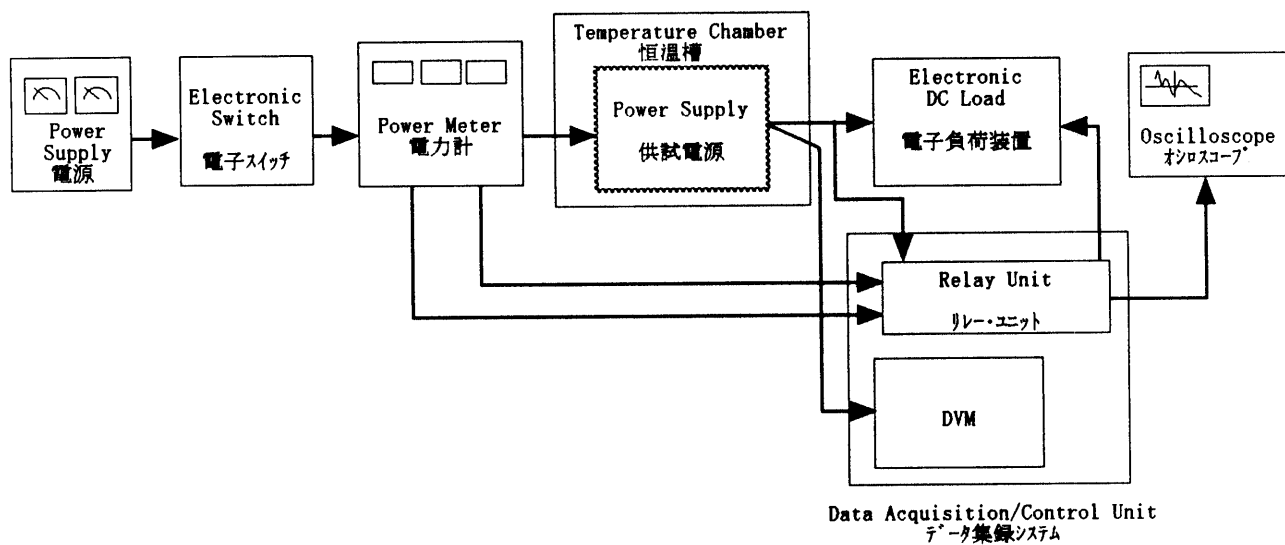


Figure A