



# TEST DATA OF CDS4004802

(48V INPUT)

Regulated DC Power Supply  
Apr. 3, 2002

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Kazuyoshi Shimano Design Manager

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Hitoshi Nakayama Design Engineer

コーワセル株式会社  
COSEL CO.,LTD.

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Model	CDS4004802	Temperature	25°C																																
Item	Line Regulation 静的入力変動	Testing Circuitry	Figure A																																
Object	+2V100A																																		
1. Graph			2. Values																																
<p>Output Voltage [V]</p> <p>Input Voltage [V]</p> <p>Legend:</p> <ul style="list-style-type: none"> <li>Dashed line: Load 50%</li> <li>Solid line: Load 100%</li> </ul>			<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Output Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>33</td><td>2.041</td><td>2.040</td></tr> <tr><td>36</td><td>2.041</td><td>2.039</td></tr> <tr><td>40</td><td>2.041</td><td>2.039</td></tr> <tr><td>48</td><td>2.041</td><td>2.039</td></tr> <tr><td>54</td><td>2.041</td><td>2.039</td></tr> <tr><td>60</td><td>2.041</td><td>2.039</td></tr> <tr><td>68</td><td>2.041</td><td>2.039</td></tr> <tr><td>76</td><td>2.041</td><td>2.039</td></tr> <tr><td>80</td><td>2.041</td><td>2.039</td></tr> </tbody> </table>	Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	33	2.041	2.040	36	2.041	2.039	40	2.041	2.039	48	2.041	2.039	54	2.041	2.039	60	2.041	2.039	68	2.041	2.039	76	2.041	2.039	80	2.041	2.039
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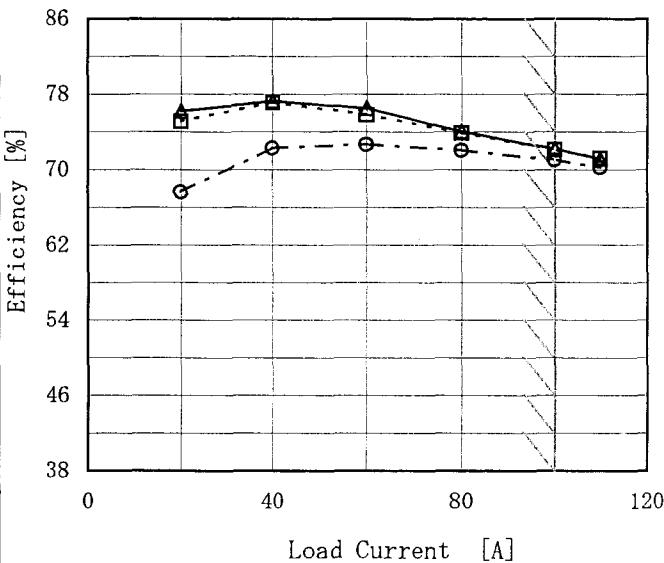
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# COSEL

Model	CDS4004802																																																					
Item	Efficiency (by Load Current) 効率(負荷特性)	Temperature Testing Circuitry	25°C Figure A																																																			
Object	<hr/>																																																					
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Model	CDS4004802																																																	
Item	Load Regulation 静的の負荷変動																																																	
Object	+2V100A																																																	
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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	CDS4004802																																							
Item	Ripple Voltage (by Load Current) リップル電圧（負荷特性）	Temperature Testing Circuitry 25°C Figure A																																						
Object	+2V100A																																							
1. Graph																																								
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**COSEL**

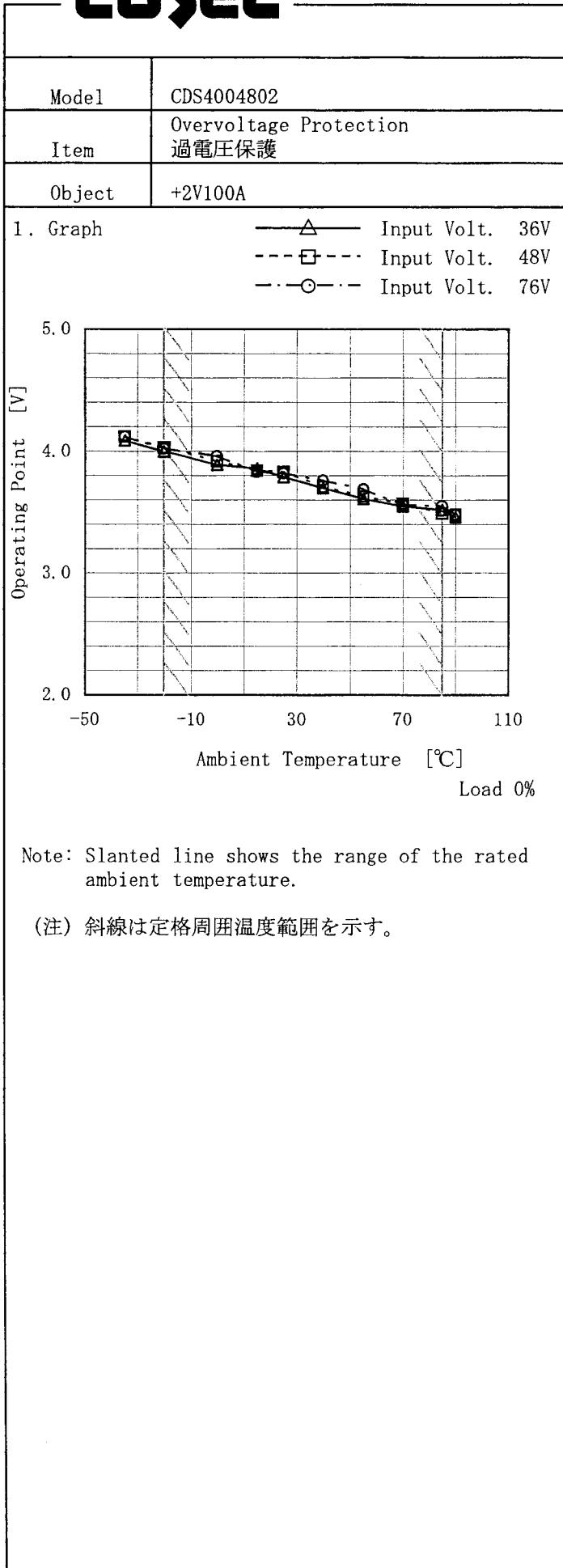
Model	CDS4004802																																							
Item	Ripple-Noise リップルノイズ	Temperature      25°C Testing Circuitry      Figure A																																						
Object	+2V100A																																							
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COSEL

Model	CDS4004802	Temperature	25°C																																																											
Item	Overcurrent Protection 過電流保護	Testing Circuitry	Figure A																																																											
Object	+2V100A																																																													
1. Graph																																																														
<p>The graph plots Output Voltage [V] on the Y-axis (0.0 to 3.0) against Load Current [A] on the X-axis (0 to 160). Three curves represent different input voltages: 36V (top), 48V (middle), and 76V (bottom). A diagonal hatched band indicates the range of the rated load current.</p>																																																														
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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。

Intermittent operation occurs when the output voltage is from 1.4V to 0V.  
1.4V～0V間は、間欠モードとなる。

**COSSEL**

Testing Circuitry Figure A

## 2. Values

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-35	4.09	4.12	4.12
-20	4.00	4.03	4.02
0	3.89	3.92	3.96
15	3.86	3.84	3.83
25	3.79	3.83	3.82
40	3.70	3.71	3.76
55	3.61	3.63	3.69
70	3.55	3.57	3.56
85	3.52	3.49	3.55
90	3.46	3.48	3.48
--	—	—	—

**COSEL**

Model CDS4004802

Item Dynamic Load Response  
動的負荷変動

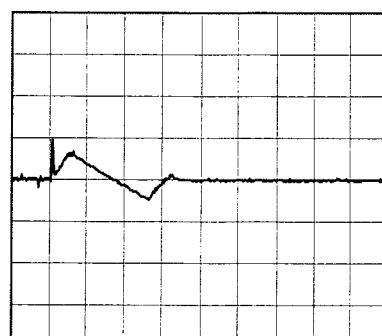
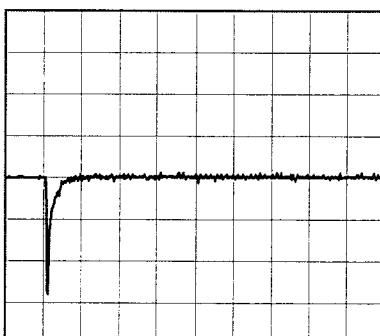
Object +2V100A

Temperature 25°C  
Testing Circuitry Figure AInput Volt. 48 V  
Cycle 1000 ms

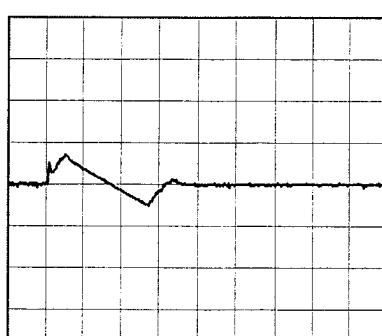
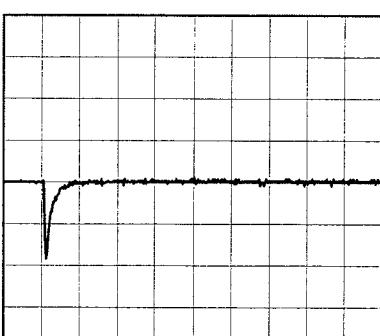
Load Current

Min. Load (0A) ↔  
Load 100% (100A)

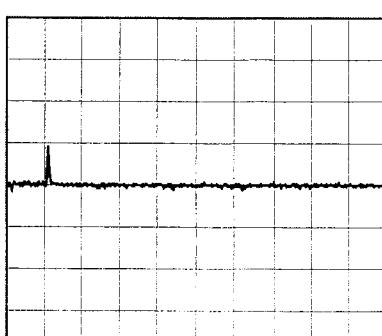
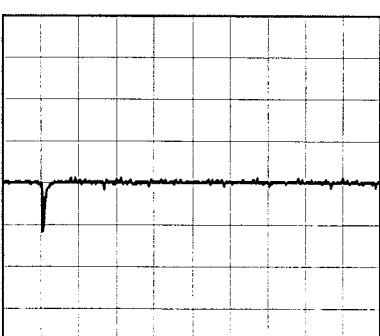
200 mV/div

Min. Load (0A) ↔  
Load 50% (50A)

200 mV/div

Load 10% (10A) ↔  
Load 100% (100A)

200 mV/div

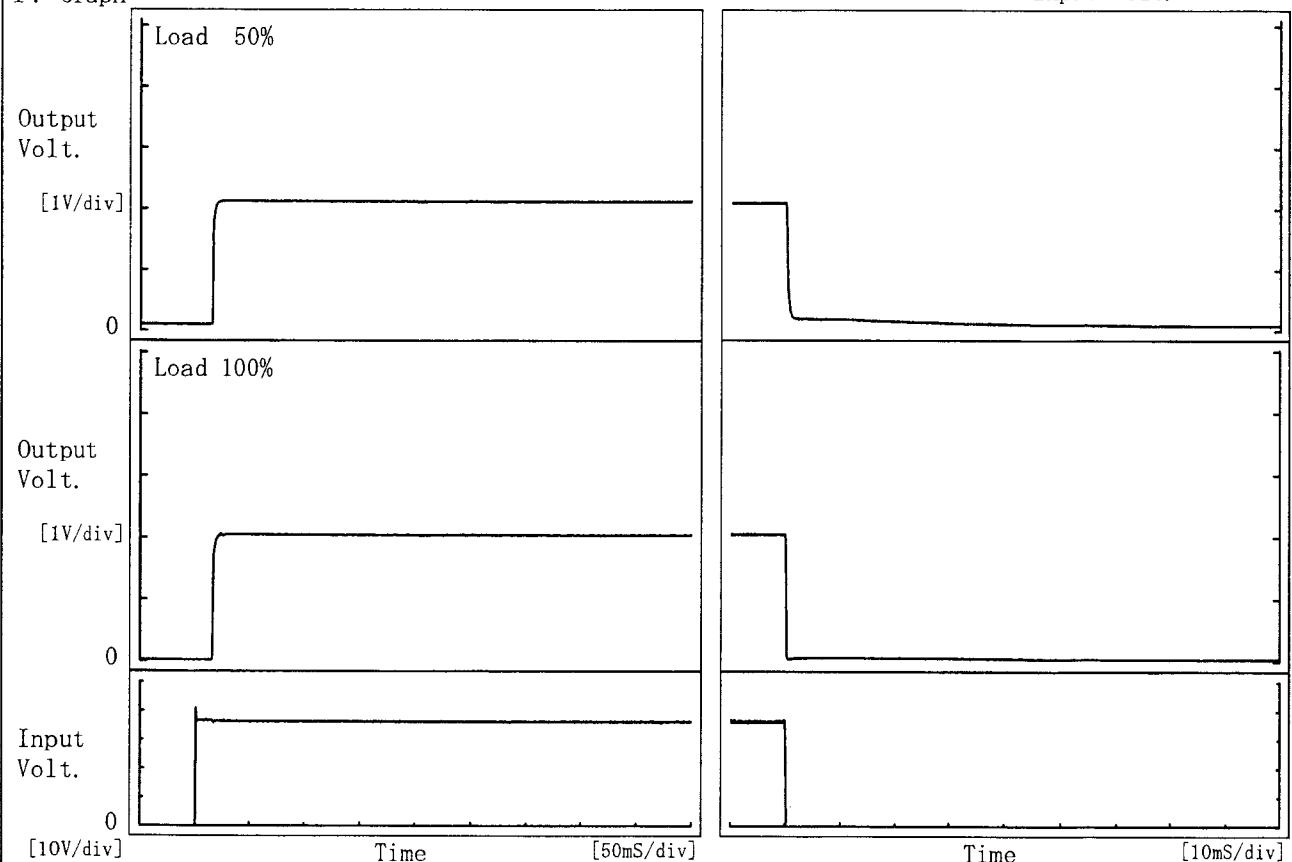


**COSSEL**

Model	CDS4004802
Item	Rise and Fall Time 立上り、立下り時間
Object	+2V100A

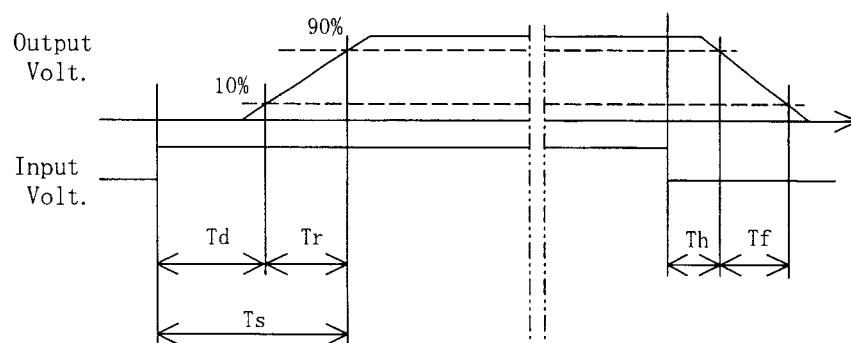
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph

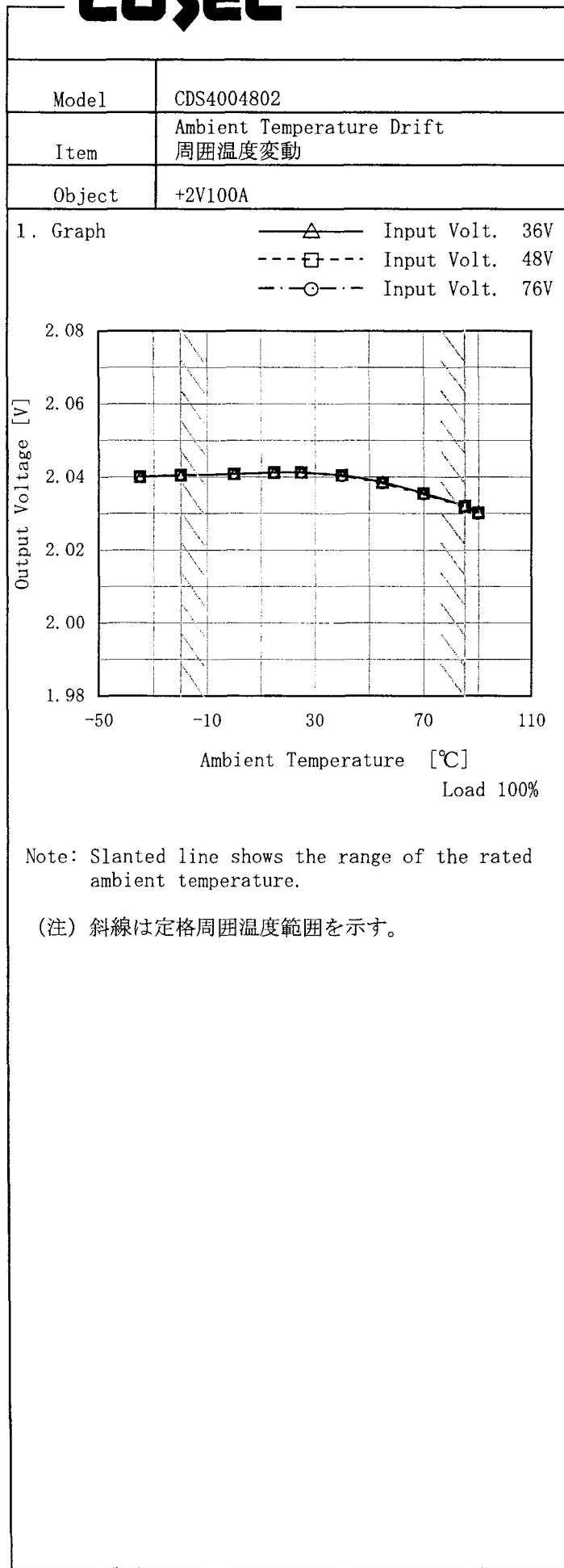


## 2. Values

Load	Time [mS]	T d	T r	T s	T h	T f
50 %		15.3	2.0	17.3	0.2	0.8
100 %		15.3	2.0	17.3	0.1	0.2



**COSEL**



Testing Circuitry Figure A

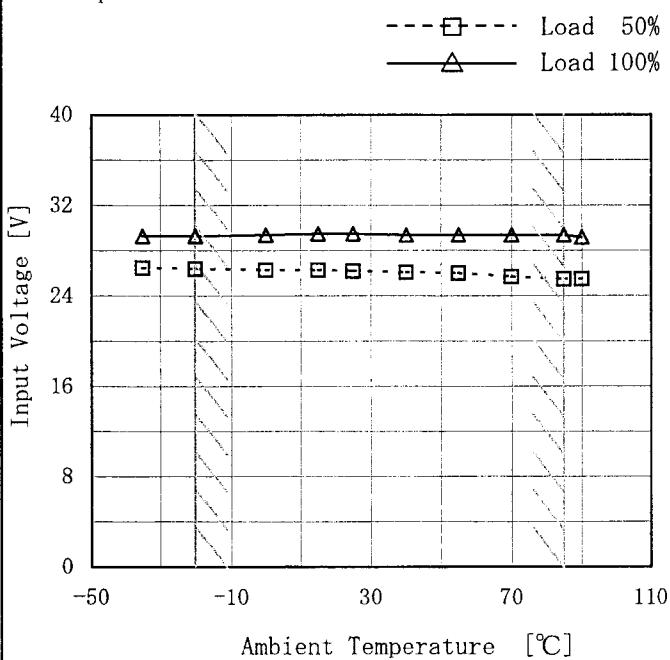
## 2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-35	2.040	2.040	2.040
-20	2.041	2.041	2.041
0	2.041	2.041	2.041
15	2.041	2.041	2.041
25	2.041	2.041	2.041
40	2.041	2.041	2.040
55	2.039	2.039	2.038
70	2.036	2.036	2.035
85	2.032	2.032	2.032
90	2.031	2.030	2.030
--	--	--	--

**COSEL**

Model	CDS4004802
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+2V100A

## 1. Graph



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

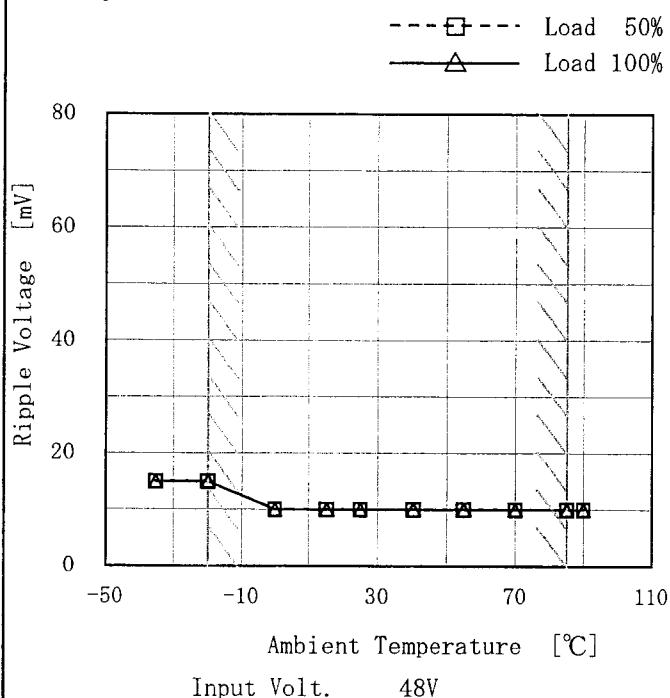
## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-35	26.5	29.3
-20	26.4	29.3
0	26.3	29.4
15	26.3	29.5
25	26.2	29.5
40	26.1	29.4
55	26.0	29.4
70	25.7	29.4
85	25.5	29.4
90	25.5	29.2
--	—	—

Model	CDS4004802
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	+2V100A

Testing Circuitry Figure A

## 1. Graph



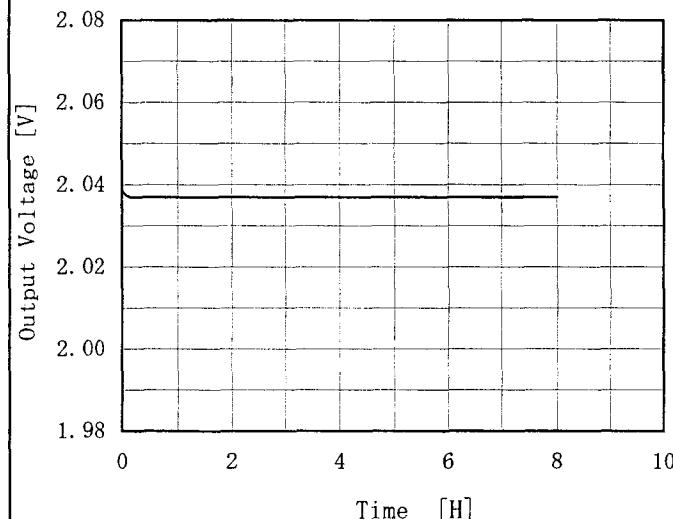
## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-35	15	15
-20	15	15
0	10	10
15	10	10
25	10	10
40	10	10
55	10	10
70	10	10
85	10	10
90	10	10
—	—	—

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。

**COSEL**

Model	CDS4004802	Temperature	25°C																						
Item	Time Lapse Drift 経時ドリフト	Testing Circuitry	Figure A																						
Object	+2V100A																								
1. Graph			2. Values																						
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 48V</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>2.039</td></tr> <tr><td>0.5</td><td>2.037</td></tr> <tr><td>1.0</td><td>2.037</td></tr> <tr><td>2.0</td><td>2.037</td></tr> <tr><td>3.0</td><td>2.037</td></tr> <tr><td>4.0</td><td>2.037</td></tr> <tr><td>5.0</td><td>2.037</td></tr> <tr><td>6.0</td><td>2.037</td></tr> <tr><td>7.0</td><td>2.037</td></tr> <tr><td>8.0</td><td>2.037</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	2.039	0.5	2.037	1.0	2.037	2.0	2.037	3.0	2.037	4.0	2.037	5.0	2.037	6.0	2.037	7.0	2.037	8.0	2.037
Time since start [H]	Output Voltage [V]																								
0.0	2.039																								
0.5	2.037																								
1.0	2.037																								
2.0	2.037																								
3.0	2.037																								
4.0	2.037																								
5.0	2.037																								
6.0	2.037																								
7.0	2.037																								
8.0	2.037																								



Model	CDS4004802	Testing Circuitry Figure A
Item	Output Voltage Accuracy 定電圧精度	
Object	+2V100A	

### 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 : -20 ~ 85°C

Input Voltage : 36 ~ 76V

Load Current : 0 ~ 100A

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

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

### 1. 定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、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 ~ 85°C

入力電圧 : 36 ~ 76V

負荷電流 : 0 ~ 100A

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

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

### 2. Values

Item	Temperature [°C]	Input Voltage [V]	Output		Output Voltage Accuracy	
			Current [A]	Voltage [V]	Value [mV]	Ration [%]
Maximum Voltage	-20	36	0	2.042	$\pm 5$	$\pm 0.2$
Minimum Voltage	85	76	100	2.032		



Model	CDS4004802	Testing Circuitry Figure A
Item	Condense 結露特性	
Object	+2V100A	

### 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 25°C and the humidity is 40%RH.
- ③ Testing electrical characteristics of the unit to confirm there be no fault.

### 1. 結露特性試験

入力を切った状態で、恒温槽で-10℃に冷却しておき、約1時間後に恒温槽から取り出し、室温25℃、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行い異常のないことを確認する。

### 2. Values

Item	Data	Testing Conditions
Output Voltage [V]	2.039	Input Volt.:48V, Load Current.:100A
Line Regulation [mV]	1	Input Volt.:36~76V, Load Current.:100A
Load Regulation [mV]	2	Input Volt.:48V, Load Current.:0~100A



Model	CDS4004802					
Item	Line Noise Tolerance 入力雑音耐量	Temperature Testing Circuitry	25°C Figure B			
Object	+2V100A					
1. Conditions						
<ul style="list-style-type: none"> <li>• Input Voltage : 48 V</li> <li>• Pulse Input Duration : 1 min. or more</li> <li>• Pulse Voltage : 2000 V</li> <li>• Load : 100 %</li> <li>• Pulse Cycle : 10 mS</li> </ul>						
2. Results						
Pulse Width [nS]	MODE	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動			
50	COMMON	+	OK			
		-	OK			
	NORMAL	+	OK			
		-	OK			
1000	COMMON	+	no fluctuation			
		-	no fluctuation			
	NORMAL	+	no fluctuation			
		-	no fluctuation			

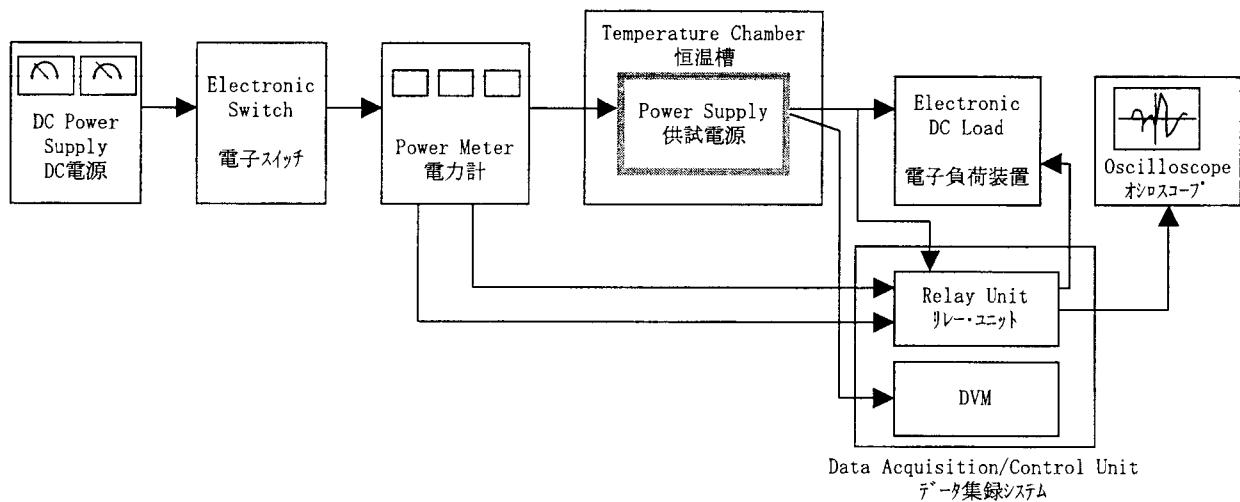


Figure A

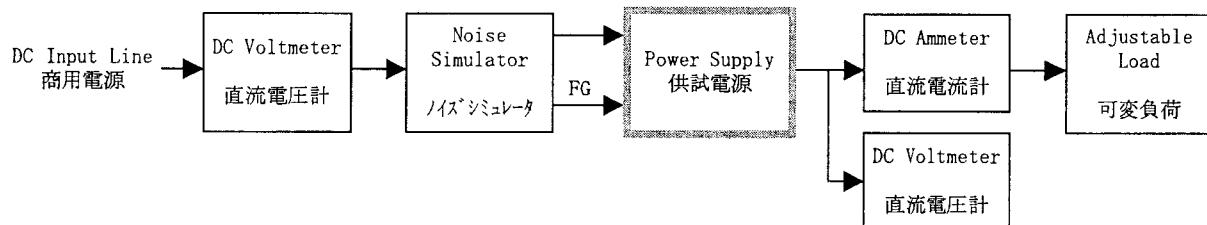
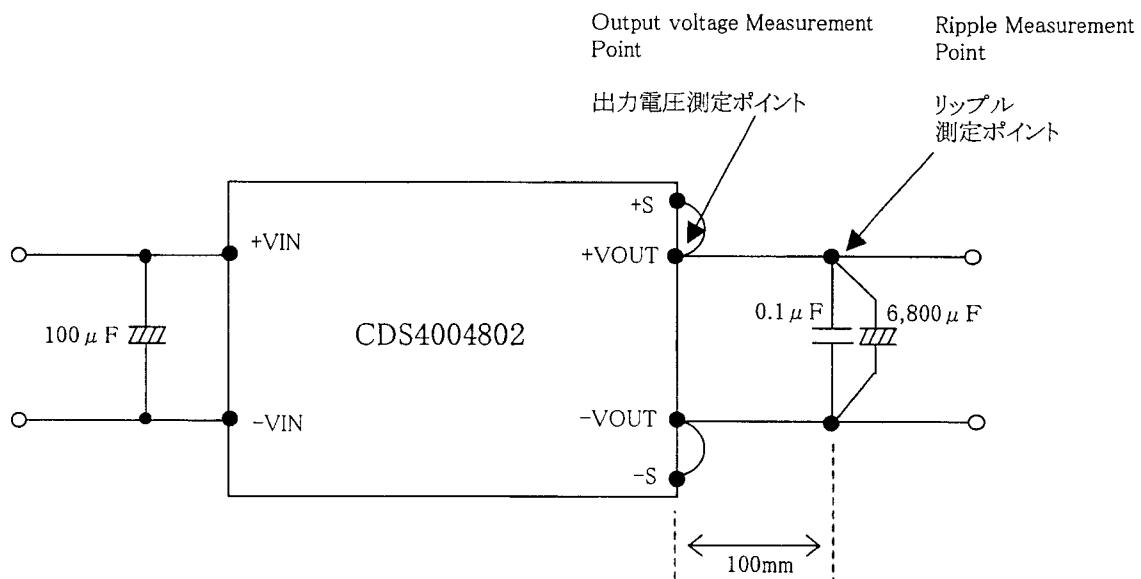


Figure B

Figure C (General Electric Characteristic)  
一般電気特性