



TEST DATA OF CDS4004812

(48V INPUT)

Regulated DC Power Supply
Apr. 2, 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	CDS4004812																																	
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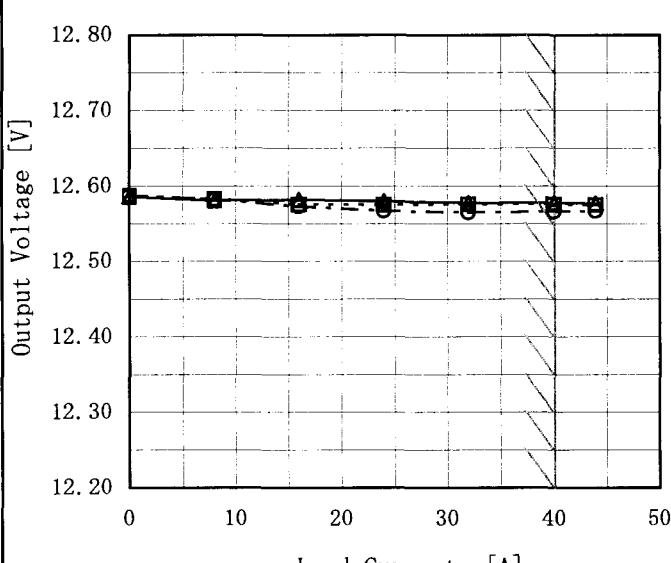
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Model	CDS4004812	Temperature	25°C																																															
Item	Load Regulation 静的負荷変動	Testing Circuitry	Figure A																																															
Object	+12.5V40A																																																	
1. Graph		—△— Input Volt. 36V - - -□- - Input Volt. 48V - - ○- - Input Volt. 76V																																																
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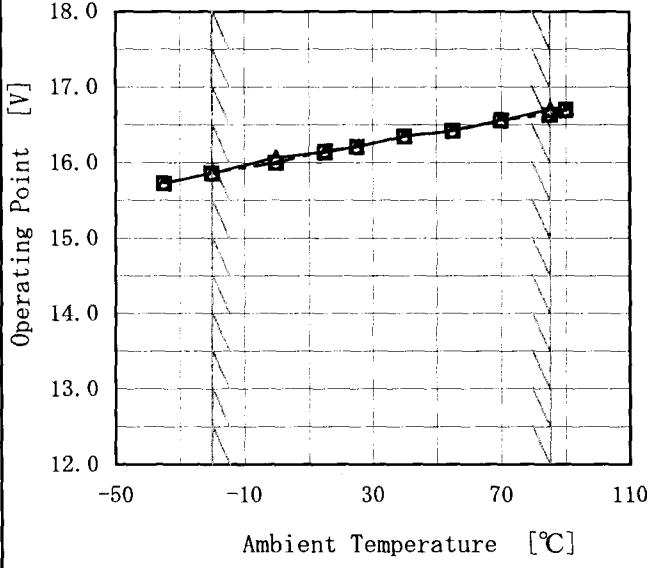
Model	CDS4004812	Temperature	25°C																																				
Item	Ripple Voltage (by Load Current) リップル電圧 (負荷特性)	Testing Circuitry	Figure A																																				
Object	+12.5V40A																																						
1. Graph			2. Values																																				
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The graph shows two sets of data points: Input Volt. 36V (solid line with triangle markers) and Input Volt. 76V (dashed line with circle markers). The x-axis represents Load Current [A] from 0 to 50. The y-axis represents Ripple Voltage [mV] from 0 to 140. A slanted line indicates the rated load current range.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (Input Volt. 36V)</th> <th>Ripple Voltage [mV] (Input Volt. 76V)</th> </tr> </thead> <tbody> <tr><td>0</td><td>20</td><td>35</td></tr> <tr><td>7</td><td>25</td><td>35</td></tr> <tr><td>14</td><td>25</td><td>35</td></tr> <tr><td>20</td><td>25</td><td>35</td></tr> <tr><td>27</td><td>25</td><td>35</td></tr> <tr><td>34</td><td>25</td><td>40</td></tr> <tr><td>40</td><td>25</td><td>40</td></tr> <tr><td>44</td><td>25</td><td>45</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. 36V)	Ripple Voltage [mV] (Input Volt. 76V)	0	20	35	7	25	35	14	25	35	20	25	35	27	25	35	34	25	40	40	25	40	44	25	45	—	—	—	—	—	—	—	—	—
Load Current [A]	Ripple Voltage [mV] (Input Volt. 36V)	Ripple Voltage [mV] (Input Volt. 76V)																																					
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<p>Ripple [mVp-p]</p> <p>Fig. Complex Ripple Wave Form 図 リップル波形詳細図</p> <p>Detailed diagram of a complex ripple wave form, showing a series of triangular pulses.</p>																																							

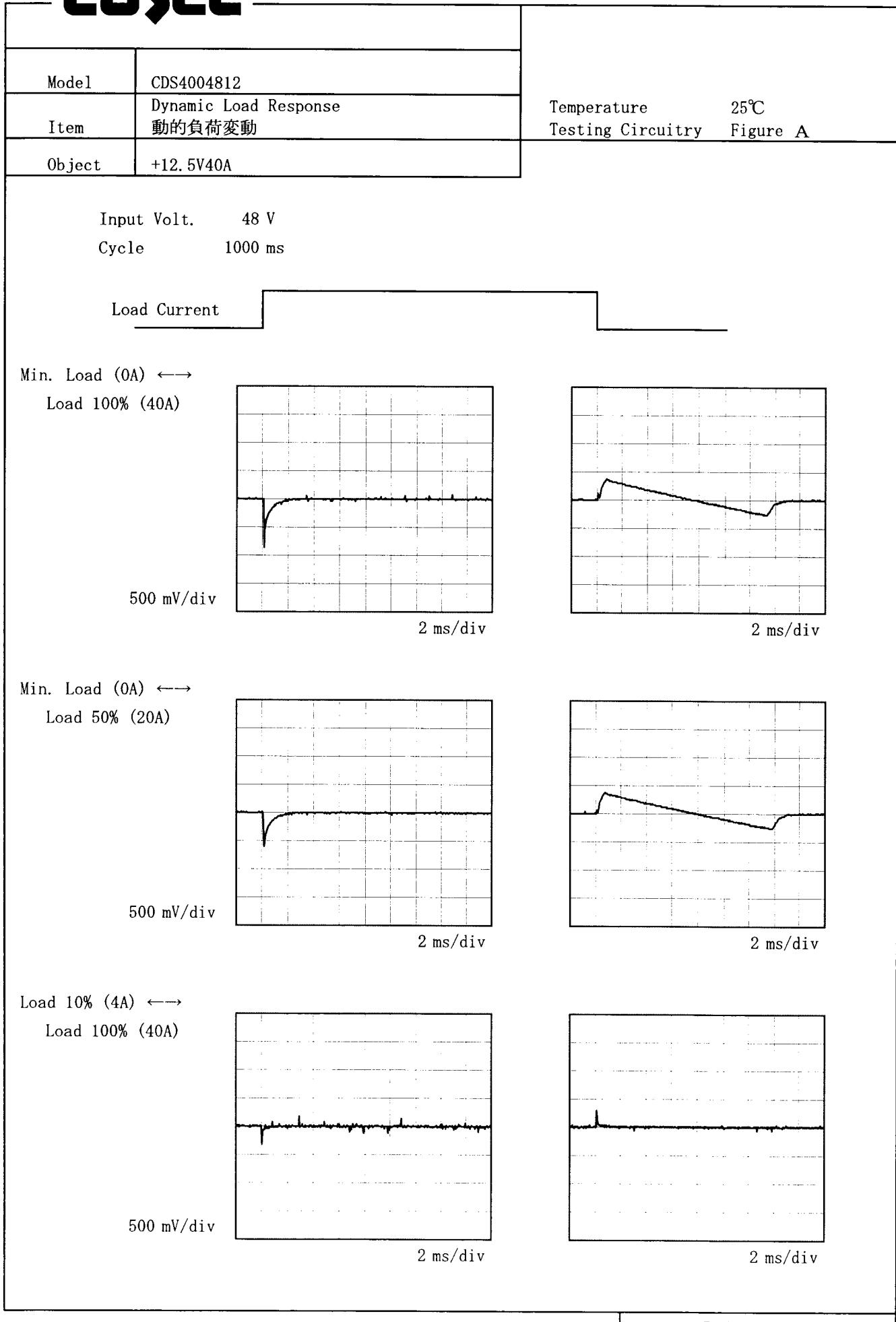
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Item	Ripple-Noise リップルノイズ	Temperature 25°C Testing Circuitry Figure A																																						
Object	+12.5V40A																																							
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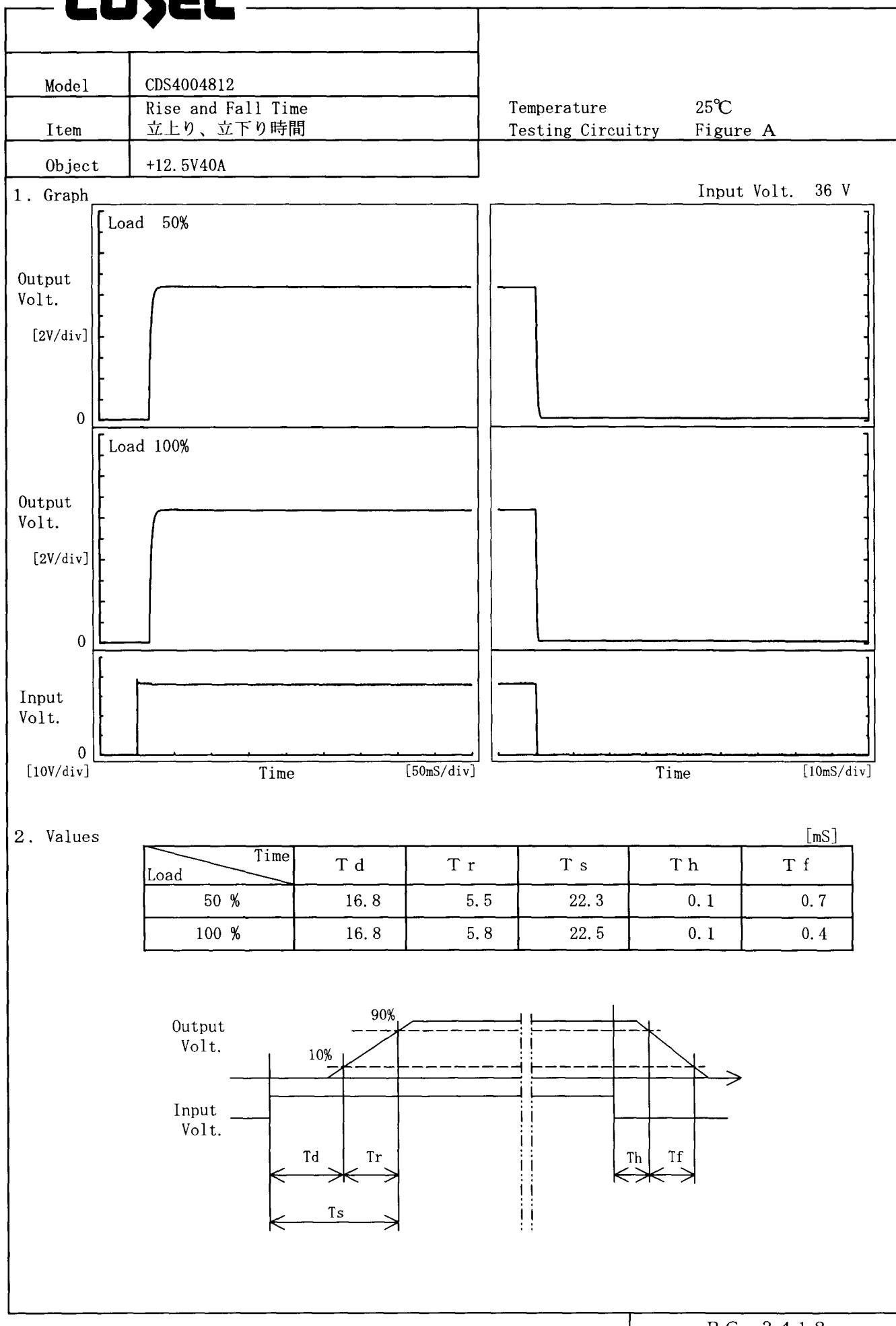
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Model	CDS4004812	Temperature 25°C Testing Circuitry Figure A																																																													
Item	Overcurrent Protection 過電流保護																																																														
Object	+12.5V40A																																																														
1. Graph	<p>— Input Volt. 36V - - - Input Volt. 48V - - - - Input Volt. 76V</p> <p>Output Voltage [V]</p> <p>Load Current [A]</p>	2. Values																																																													
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Item	Otvoltage Protection 過電圧保護																																																						
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Model	CDS4004812	Testing Circuitry Figure A																																																					
Item	Ambient Temperature Drift 周囲温度変動																																																						
Object	+12.5V40A																																																						
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Model	CDS4004812																																							
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧	Testing Circuitry Figure A																																						
Object	+12.5V40A																																							
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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。

COSEL

<p>Model CDS4004812</p> <p>Item Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)</p> <p>Object +12.5V40A</p>	Testing Circuitry Figure A																																						
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COSEL

Model	CDS4004812	Temperature	25°C																						
Item	Time Lapse Drift 経時ドリフト	Testing Circuitry	Figure A																						
Object	+12.5V40A																								
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>12.577</td></tr> <tr><td>0.5</td><td>12.566</td></tr> <tr><td>1.0</td><td>12.567</td></tr> <tr><td>2.0</td><td>12.568</td></tr> <tr><td>3.0</td><td>12.568</td></tr> <tr><td>4.0</td><td>12.568</td></tr> <tr><td>5.0</td><td>12.568</td></tr> <tr><td>6.0</td><td>12.569</td></tr> <tr><td>7.0</td><td>12.569</td></tr> <tr><td>8.0</td><td>12.569</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	12.577	0.5	12.566	1.0	12.567	2.0	12.568	3.0	12.568	4.0	12.568	5.0	12.568	6.0	12.569	7.0	12.569	8.0	12.569
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Model	CDS4004812	Testing Circuitry Figure A
Item	Output Voltage Accuracy 定電圧精度	
Object	+12.5V40A	

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 ~ 40A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - 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 ~ 40A

* 定電圧精度(変動値) = ±(出力電圧の最高値 - 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	12.602	±42	±0.3
Minimum Voltage	85	76	40	12.519		



Model	CDS4004812	Testing Circuitry Figure A
Item	Condense 結露特性	
Object	+12.5V40A	

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°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25°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行い異常のないことを確認する。

2. Values

Item	Data	Testing Conditions
Output Voltage [V]	12.566	Input Volt.: 48V, Load Current.: 40A
Line Regulation [mV]	13	Input Volt.: 36~76V, Load Current.: 40A
Load Regulation [mV]	13	Input Volt.: 48V, Load Current.: 0~40A



Model	CDS4004812					
Item	Line Noise Tolerance 入力雑音耐量	Temperature Testing Circuitry	25°C Figure B			
Object	+12.5V40A					
1. Conditions						
<ul style="list-style-type: none"> • Input Voltage : 48 V • Pulse Input Duration : 1 min. or more • Pulse Voltage : 2000 V • Load : 100 % • Pulse Cycle : 10 mS 						
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			

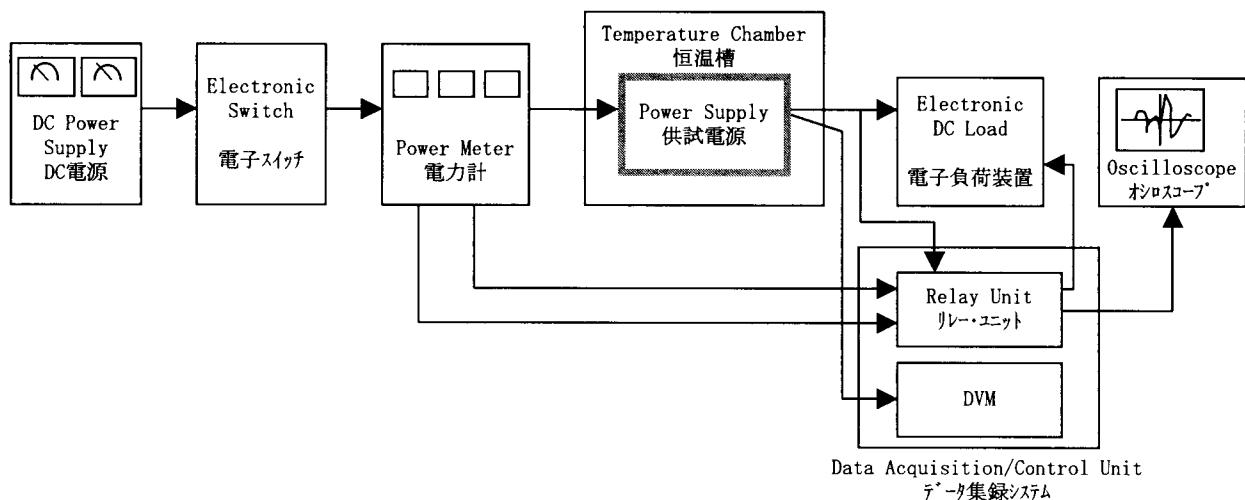


Figure A

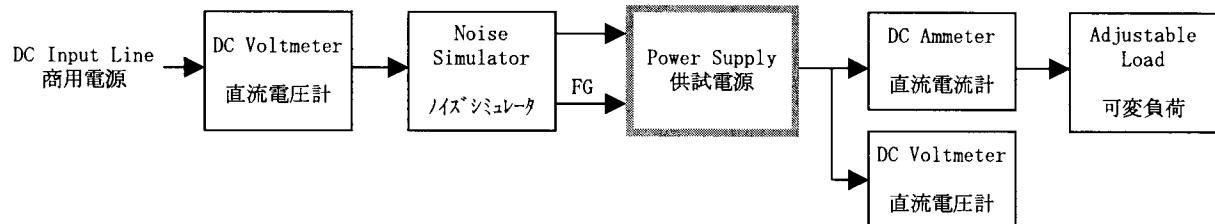
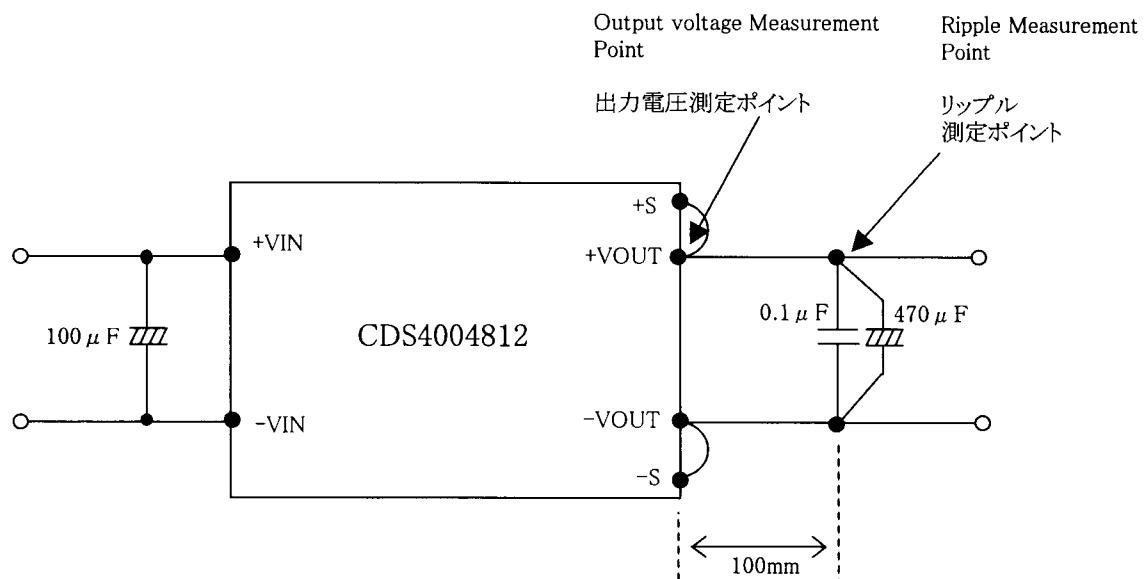


Figure B

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