

# TEST DATA OF CHS80483R3

Regulated DC Power Supply  
September 28, 2011

Approved by : Yoshimichi Hirokawa  
Yoshimichi Hirokawa                          Design Manager

Prepared by : Sakae Minamide  
Sakae Minamide                          Design Engineer

**COSEL CO.,LTD.**



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Model	CHS80483R3	Temperature 25°C Testing Circuitry Figure A																																																																																	
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<p>Note: Slanted line shows the range of the rated load current.</p>				
Load Current [A]	Input Power [W]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	1.4	2.0	3.6	
4.0	14.8	15.4	16.9	
8.0	28.3	28.9	30.5	
12.0	42.0	42.6	44.0	
16.0	56.1	56.4	57.8	
20.0	70.6	70.6	71.9	
24.0	85.4	85.2	86.3	
25.0	89.3	89.0	89.9	
27.5	98.9	98.3	99.0	
--	-	-	-	
--	-	-	-	

Model	CHS80483R3	Temperature	25°C																																
Item	Efficiency (by Input Voltage)	Testing Circuitry	Figure A																																
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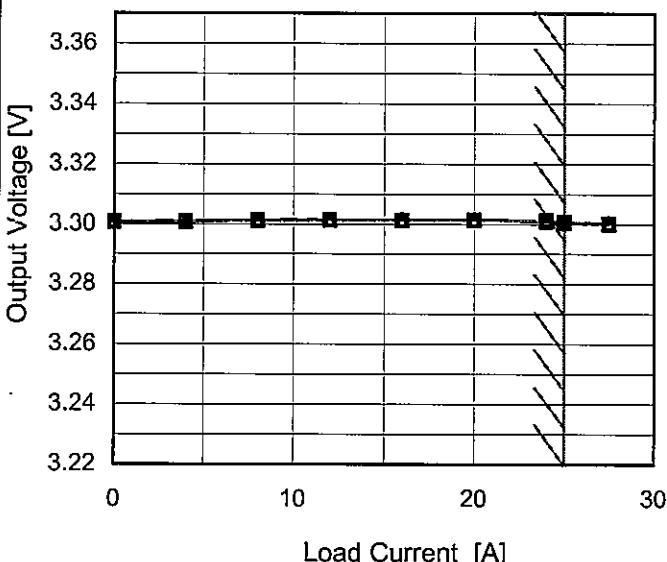
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<p>The graph shows efficiency increasing from approximately 88% at 4A to 93% at 10A, then remaining relatively constant up to 25A. A slanted line is drawn from (0, 88%) to (25, 93%), indicating the rated load current range.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Input Volt. 36V [%]</th> <th>Input Volt. 48V [%]</th> <th>Input Volt. 76V [%]</th> </tr> </thead> <tbody> <tr><td>4</td><td>88.0</td><td>88.0</td><td>87.0</td></tr> <tr><td>8</td><td>90.0</td><td>89.0</td><td>88.0</td></tr> <tr><td>10</td><td>92.5</td><td>91.5</td><td>89.5</td></tr> <tr><td>15</td><td>93.0</td><td>92.0</td><td>90.0</td></tr> <tr><td>20</td><td>93.0</td><td>92.0</td><td>90.0</td></tr> <tr><td>25</td><td>93.0</td><td>92.0</td><td>90.0</td></tr> </tbody> </table>		Load Current [A]	Input Volt. 36V [%]	Input Volt. 48V [%]	Input Volt. 76V [%]	4	88.0	88.0	87.0	8	90.0	89.0	88.0	10	92.5	91.5	89.5	15	93.0	92.0	90.0	20	93.0	92.0	90.0	25	93.0	92.0	90.0																							
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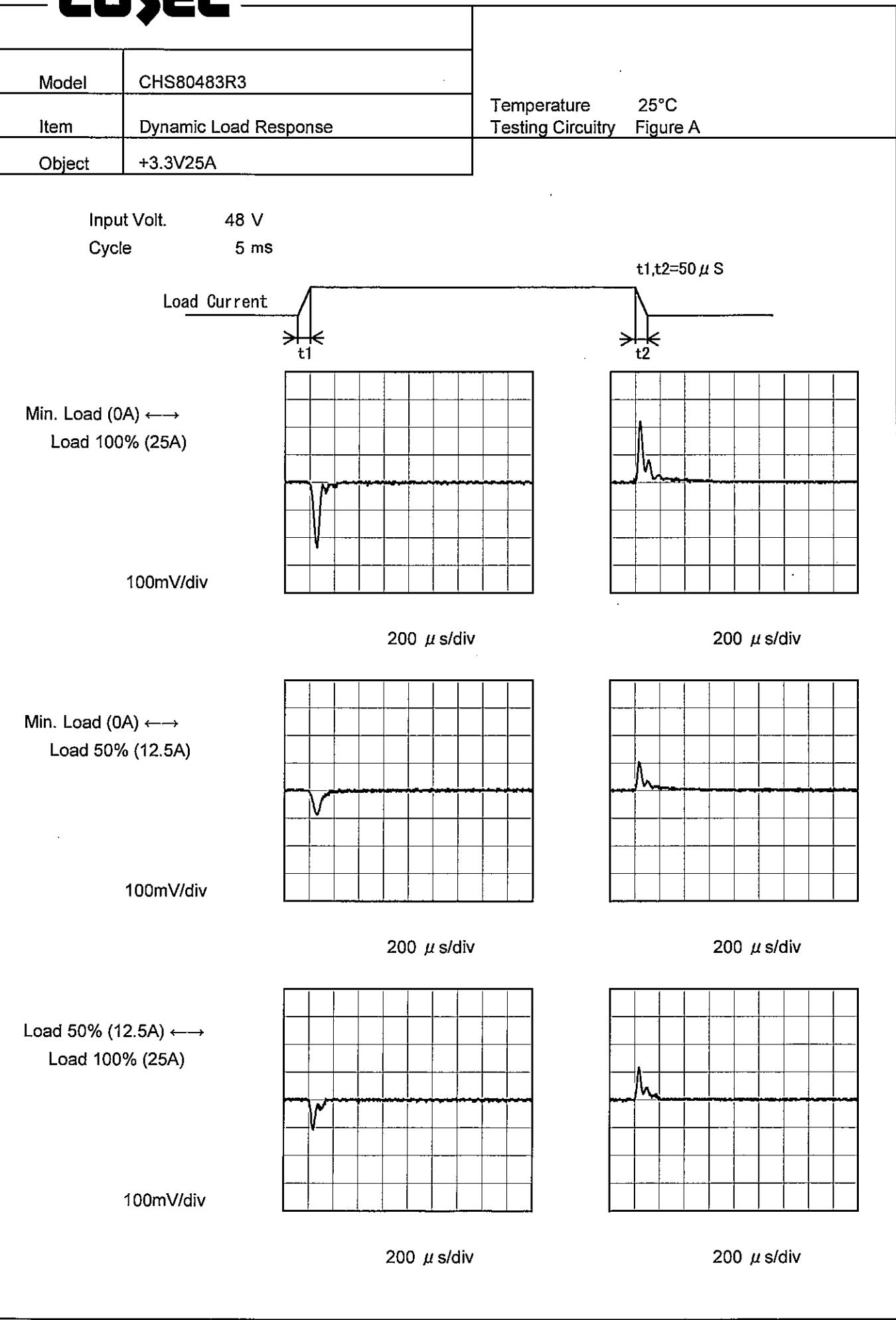
Note: Slanted line shows the range of the rated load current.

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Model	CHS80483R3	Temperature	25°C	
Item	Load Regulation	Testing Circuitry	Figure A	
Object	+3.3V25A	2. Values		
1. Graph	<p>—▲— Input Volt. 36V      - - - □ - - Input Volt. 48V      - - - ○ - - Input Volt. 76V</p>  <p>Note: Slanted line shows the range of the rated load current.</p>			
		Load Current [A]	Output Voltage [V]	
		36[V]	48[V]	
0.0	3.301	3.301	3.301	
4.0	3.301	3.301	3.301	
8.0	3.301	3.301	3.301	
12.0	3.301	3.301	3.301	
16.0	3.301	3.301	3.301	
20.0	3.301	3.301	3.301	
24.0	3.301	3.301	3.301	
25.0	3.301	3.301	3.300	
27.5	3.300	3.300	3.300	
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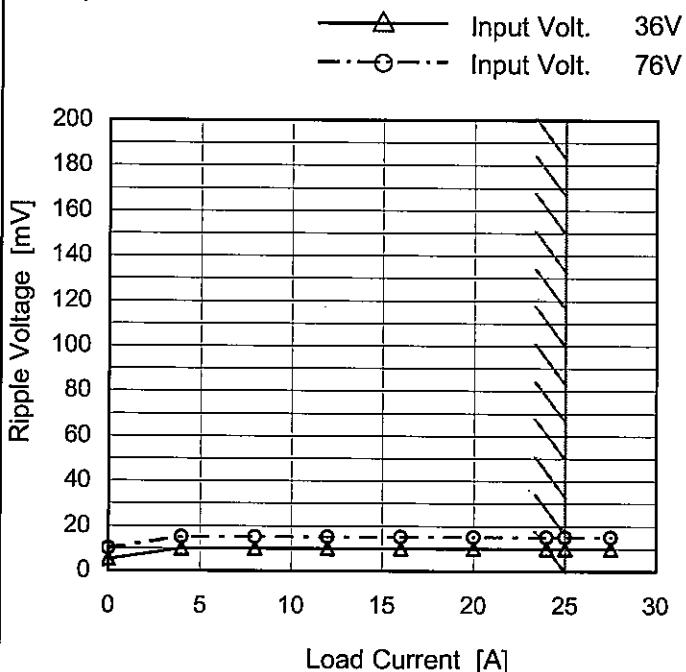
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Model CHS80483R3

Item Ripple Voltage (by Load Current)

Object +3.3V25A

## 1. Graph



Measured by 100 MHz Oscilloscope.

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

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

Temperature 25°C  
Testing Circuitry Figure B

## 2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	5	10
4.0	10	15
8.0	10	15
12.0	10	15
16.0	10	15
20.0	10	15
24.0	10	15
25.0	10	15
27.5	10	15
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--	-	-

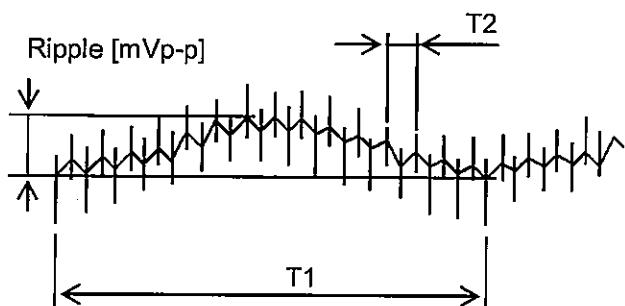
T1: Due to AC Input Line  
T2: Due to Switching

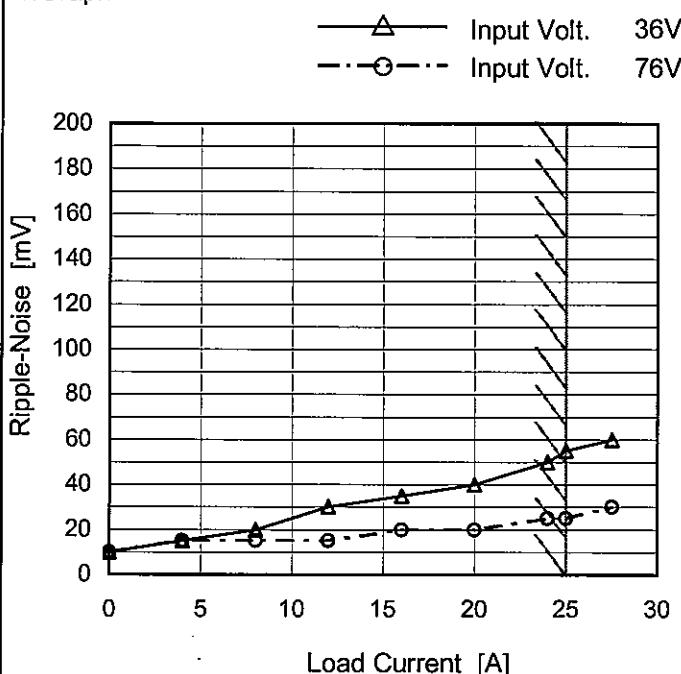
Fig. Complex Ripple Wave Form

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Model	CHS80483R3
Item	Ripple-Noise
Object	+3.3V25A

Temperature 25°C  
 Testing Circuitry Figure B

## 1. Graph



Measured by 100 MHz Oscilloscope.  
 Ripple-Noise is shown as p-p in the figure below.  
 Note: Slanted line shows the range of the rated load current.

## 2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	10	10
4.0	15	15
8.0	20	15
12.0	30	15
16.0	35	20
20.0	40	20
24.0	50	25
25.0	55	25
27.5	60	30
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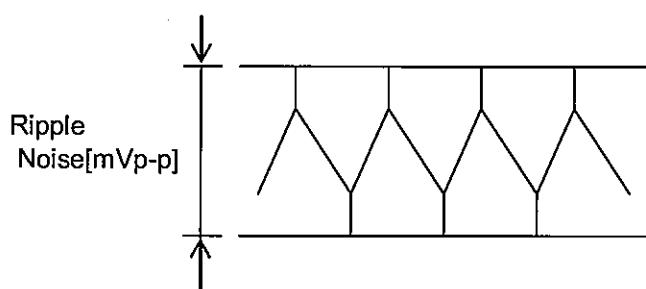


Fig.Complex Ripple Noise Wave Form

**COSEL**

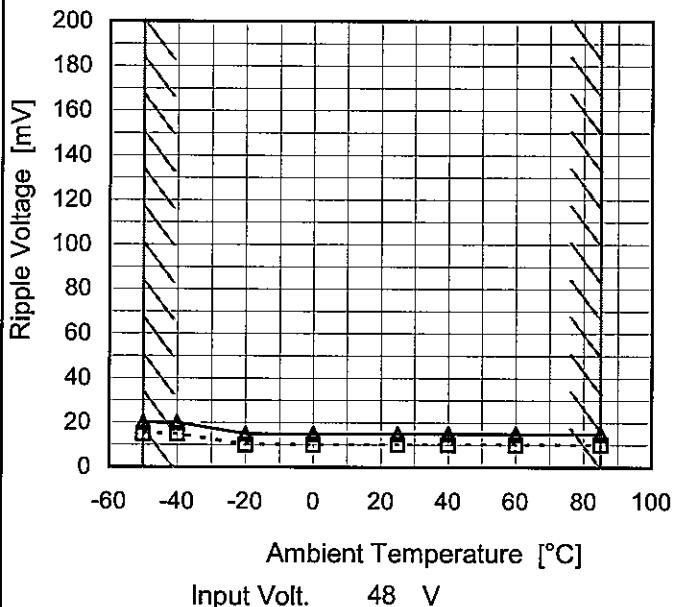
Model CHS80483R3

Item Ripple Voltage (by Ambient Temp.)

Object +3.3V25A

1. Graph

---□--- Load 50%  
—△— Load 100%



Measured by 100 MHz Oscilloscope.

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

Testing Circuitry Figure A

2. Values

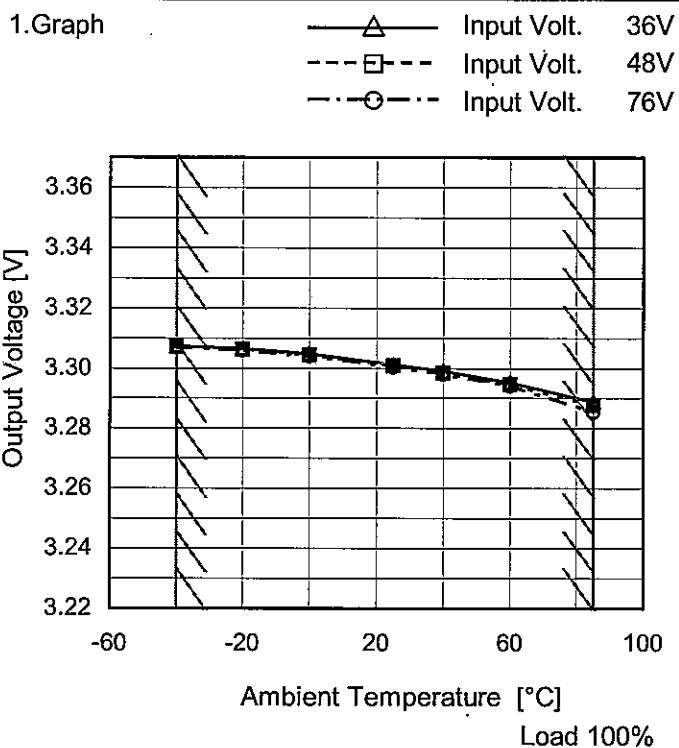
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	15	20
-40	15	20
-20	10	15
0	10	15
25	10	15
40	10	15
60	10	15
85	10	15
--	-	-
--	-	-
--	-	-

**COSEL**

Model CHS80483R3

Item Ambient Temperature Drift

Object +3.3V25A



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

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-40	3.307	3.307	3.307
-20	3.307	3.306	3.306
0	3.305	3.304	3.304
25	3.301	3.301	3.300
40	3.299	3.298	3.298
60	3.295	3.295	3.294
85	3.289	3.288	3.286
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model	CHS80483R3	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+3.3V25A	

### 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 - 85°C

Input Voltage : 36 - 76V

Load Current : 0 - 25A

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

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

### 2. Values

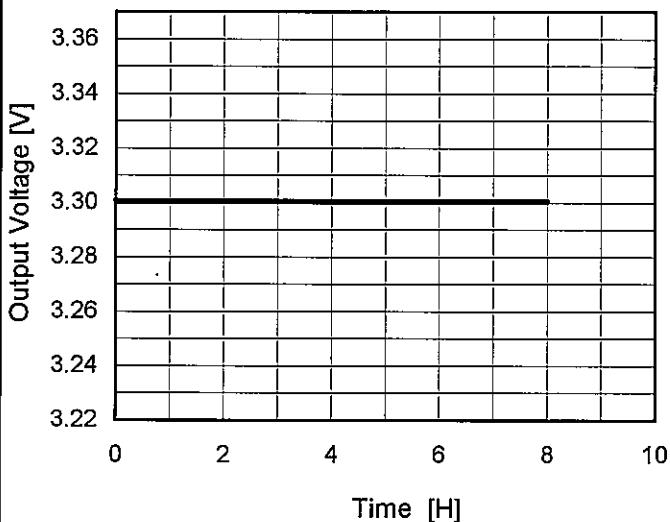
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	36	0	3.308	$\pm 11$	$\pm 0.3$
Minimum Voltage	85	76	25	3.286		

**COSEL**

Model	CHS80483R3
Item	Time Lapse Drift
Object	+3.3V25A

Temperature 25°C  
Testing Circuitry Figure A

### 1. Graph



Input Volt. 48V  
Load 100%

### 2. Values

Time since start [H]	Output Voltage [V]
0.0	3.301
0.5	3.301
1.0	3.301
2.0	3.301
3.0	3.301
4.0	3.301
5.0	3.301
6.0	3.301
7.0	3.301
8.0	3.301

**COSEL**

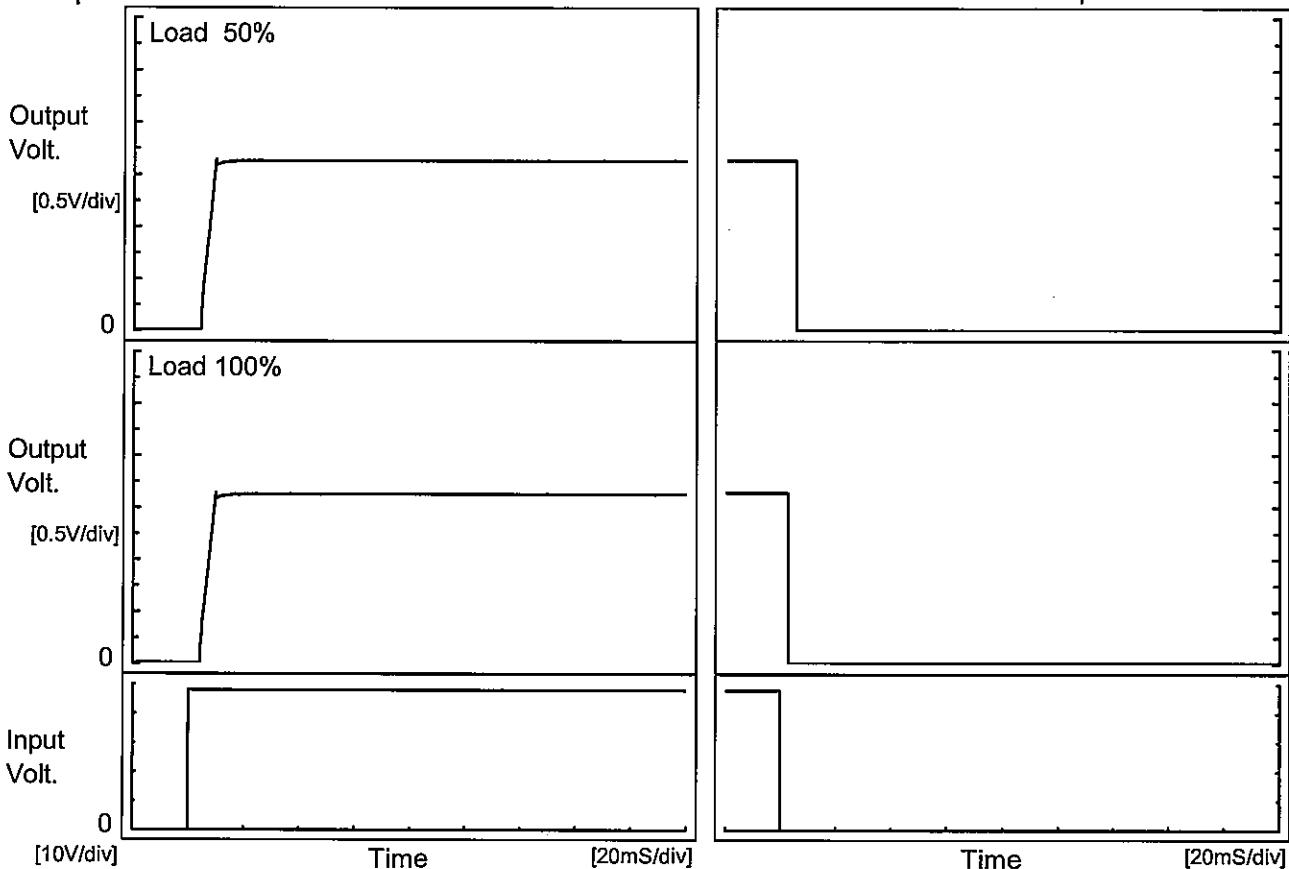
Model CHS80483R3

Item Rise and Fall Time

Object +3.3V25A

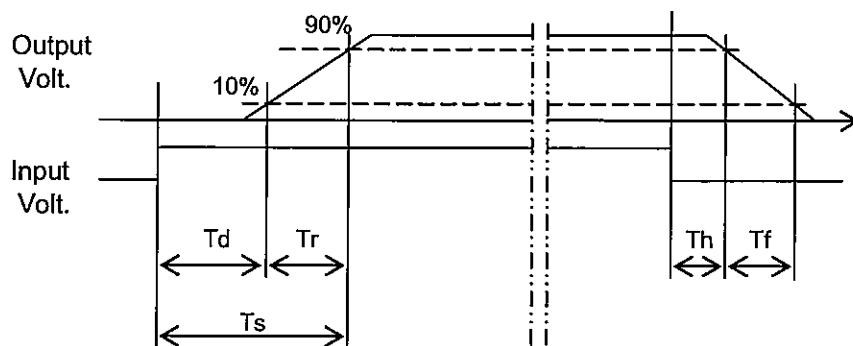
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[mS]
50 %		4.3	4.7	9.0	5.3	0.1	
100 %		4.3	4.9	9.2	2.7	0.1	

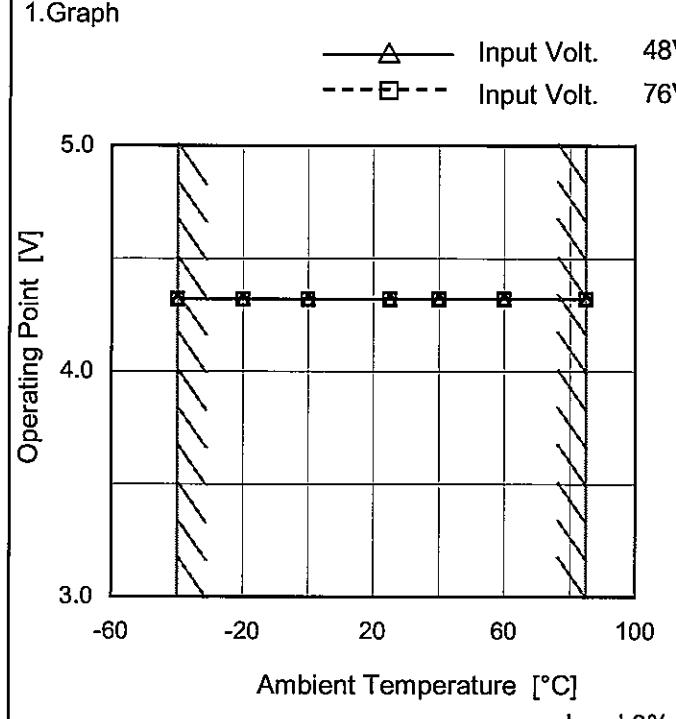


Model	CHS80483R3																																								
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																							
Object	+3.3V25A																																								
1.Graph																																									
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—	-	-																																							
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**COSSEL**

Model	CHS80483R3	Temperature	25°C																																																															
Item	Overcurrent Protection	Testing Circuitry	Figure A																																																															
Object	+3.3V25A	2.Values																																																																
1.Graph	<p>Input Volt. 36V            Input Volt. 48V            Input Volt. 76V</p>																																																																	
<p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output voltage drops down 2.64V or less.</p>			<table border="1"> <thead> <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> </thead> <tbody> <tr><td>3.30</td><td>25.29</td><td>25.31</td><td>25.29</td></tr> <tr><td>3.14</td><td>29.07</td><td>28.77</td><td>29.77</td></tr> <tr><td>2.97</td><td>28.78</td><td>29.05</td><td>29.87</td></tr> <tr><td>2.64</td><td>29.20</td><td>29.49</td><td>30.53</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	3.30	25.29	25.31	25.29	3.14	29.07	28.77	29.77	2.97	28.78	29.05	29.87	2.64	29.20	29.49	30.53	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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**COSEL**

Model	CHS80483R3	Testing Circuitry Figure A																																							
Item	Overvoltage Protection																																								
Object	+3.3V25A																																								
1. Graph																																									
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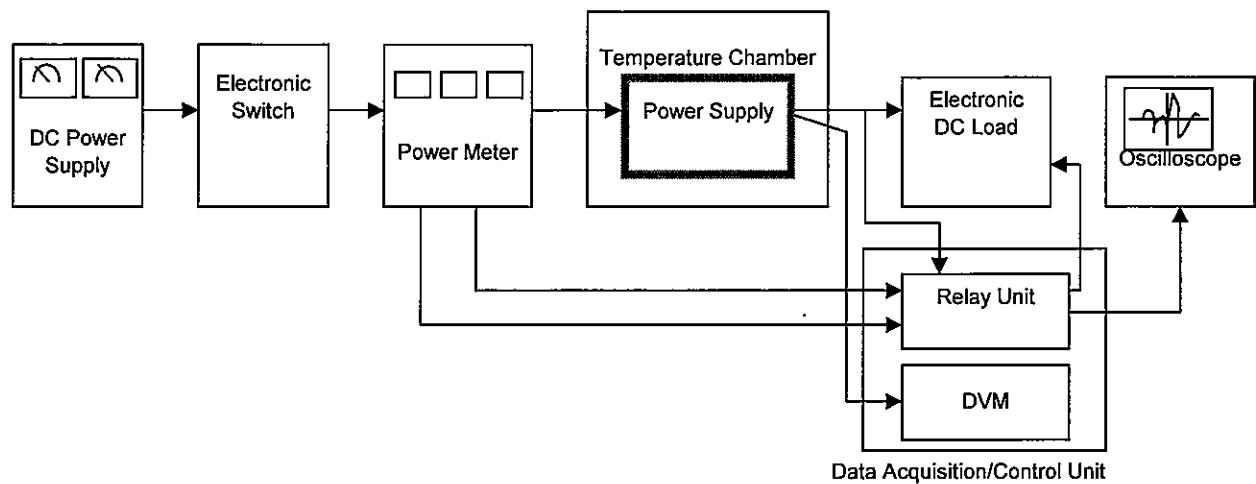


Figure A

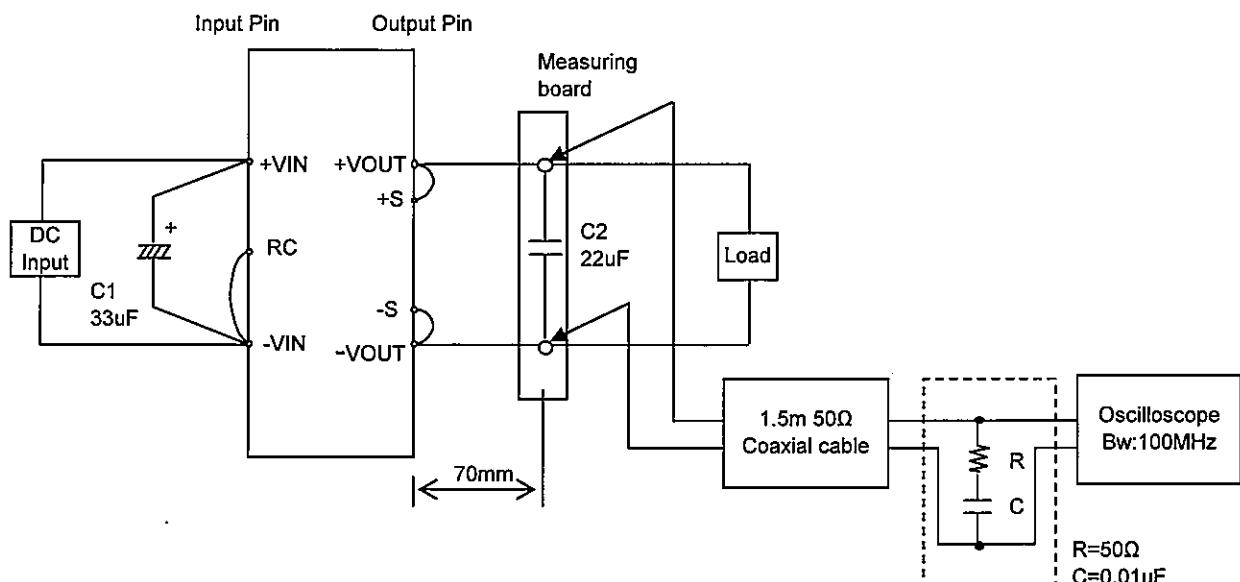


Figure B