



TEST DATA OF DHS250B07

Regulated DC Power Supply
November 19, 2009

Approved by : Tatsuya Mano
Tatsuya Mano

Design Manager

Prepared by : Noriaki Nakase
Noriaki Nakase

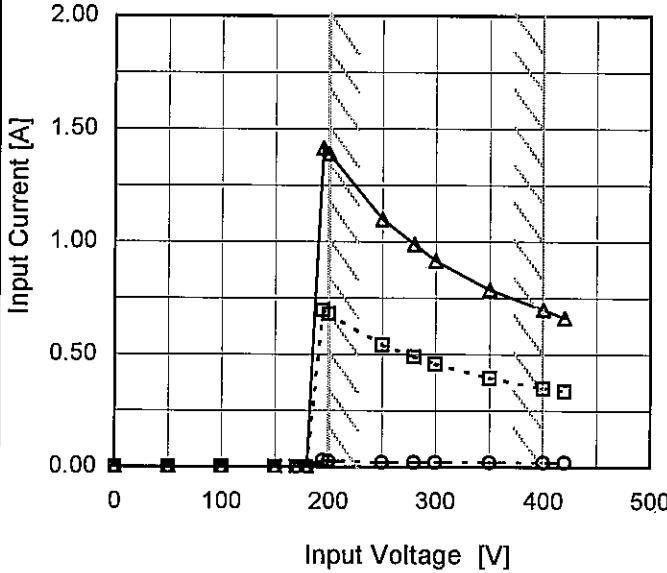
Design Engineer

COSEL CO.,LTD.

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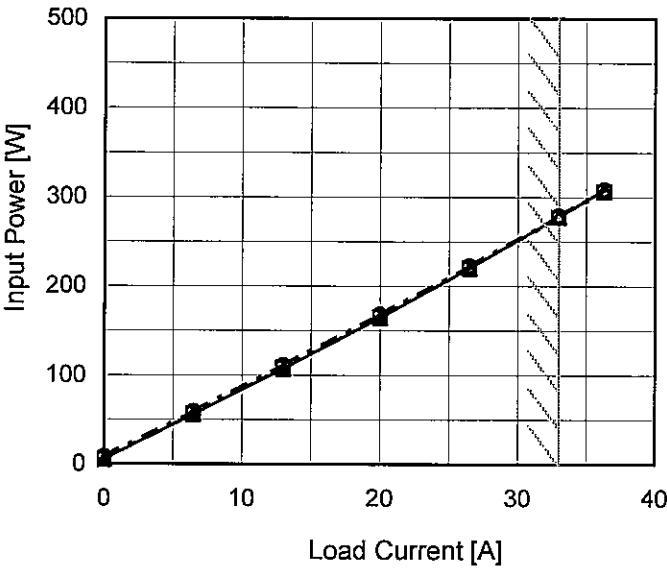
(Final Page 19)

Model	DHS250B07	Temperature 25°C Testing Circuitry Figure A																																																																																
Item	Input Current (by Input Voltage)																																																																																	
Object	_____	2.Values																																																																																
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Note: Slanted line shows the range of the rated load current.

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Model	DHS250B07		
Item	Input Power (by Load Current)		
Object	_____		
1.Graph	<p>—▲— Input Volt. 200V -·+--- Input Volt. 280V -·○--- Input Volt. 400V</p>  <p>The graph plots Input Power [W] on the Y-axis (0 to 500) against Load Current [A] on the X-axis (0 to 40). Three curves are shown for input voltages of 200V, 280V, and 400V. A vertical dashed line at approximately 33A marks the rated load current range.</p>		
Temperature	25°C		
Testing Circuitry	Figure A		
2.Values			
Load Current [A]	Input Power [W]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	5.2	5.5	8.4
6.5	55.6	56.3	59.2
13.0	107.2	108.1	111.2
20.0	164.6	165.2	168.4
26.5	220.2	220.1	222.8
33.0	278.0	277.2	279.2
36.3	308.2	306.3	308.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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

Model	DHS250B07	Temperature	25°C																																
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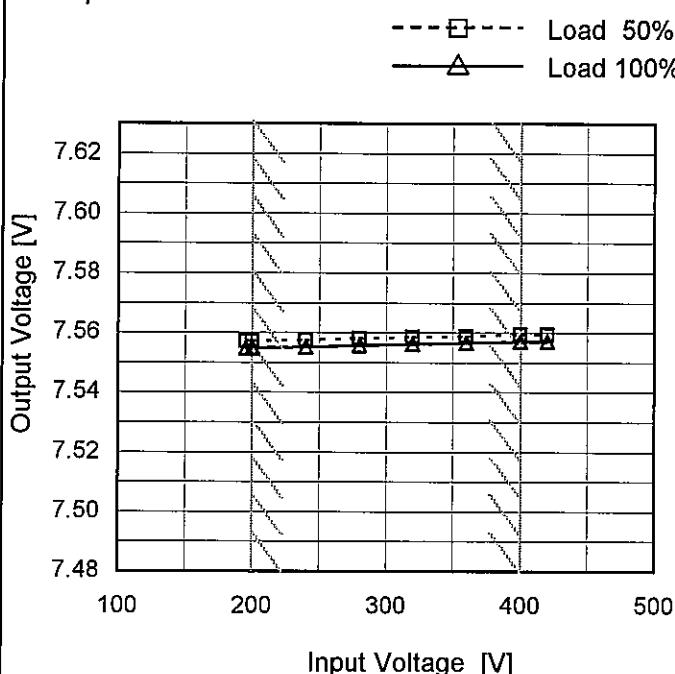
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Note: Slanted line shows the range of the rated load current.

Model	DHS250B07
Item	Line Regulation
Object	+7.5V33A

Temperature 25°C
Testing Circuitry Figure A

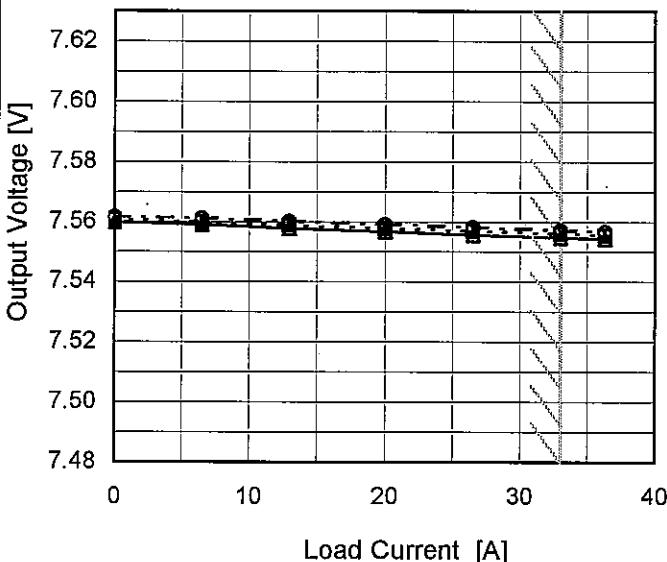
1.Graph

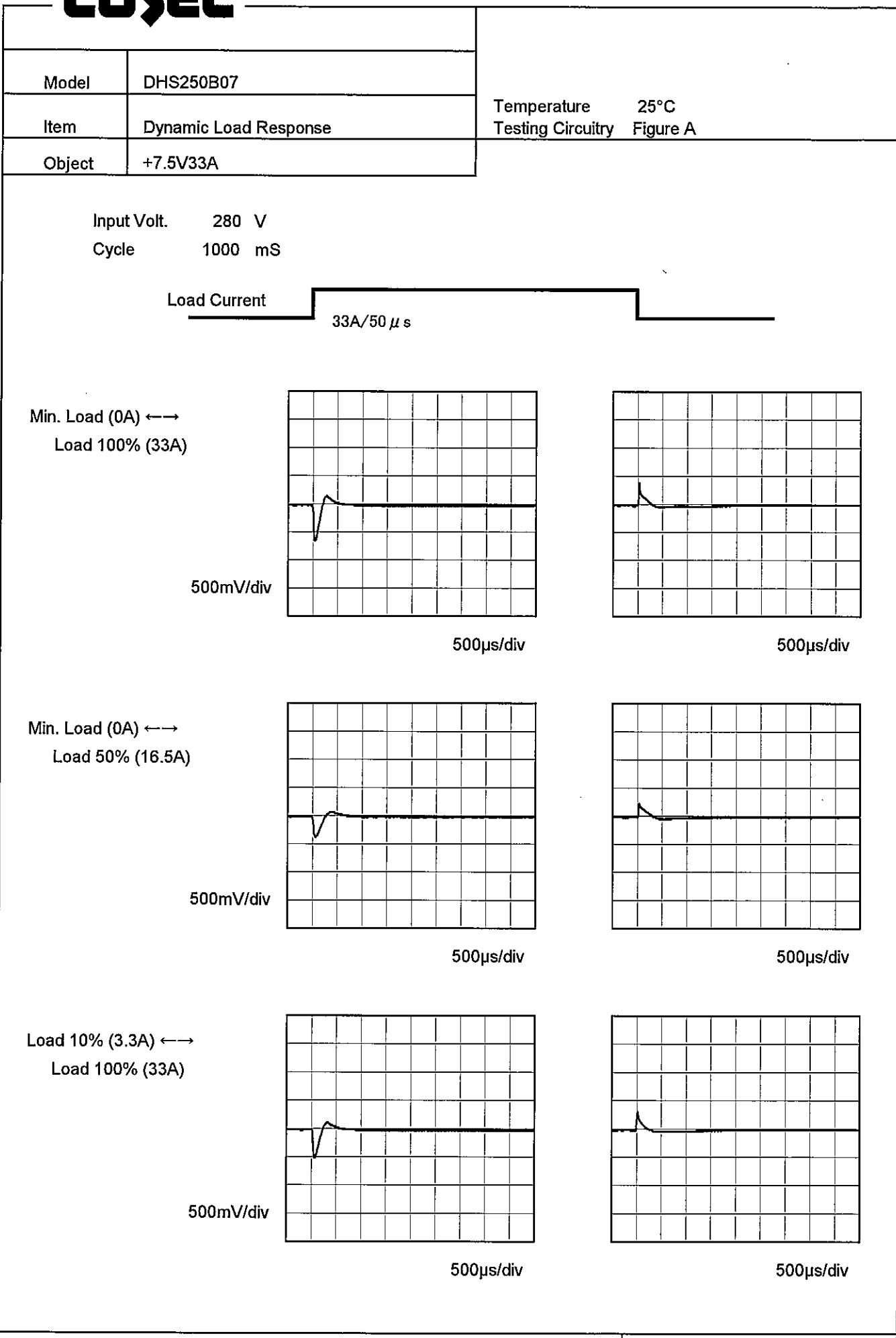


Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
195	7.557	7.555
200	7.557	7.555
240	7.558	7.555
280	7.558	7.556
320	7.559	7.556
360	7.559	7.557
400	7.559	7.557
420	7.560	7.557
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Model	DHS250B07	Temperature	25°C																																				
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure B																																				
Object	+7.5V33A																																						
1.Graph		2.Values																																					
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The graph plots Ripple Voltage [mV] on the Y-axis (0.0 to 400.0) against Load Current [A] on the X-axis (0 to 40). Two sets of data points are shown: Input Volt. 200V (solid line with open triangles) and Input Volt. 400V (dashed line with open circles). A slanted line indicates the range of the rated load current.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (Input Volt. 200V)</th> <th>Ripple Voltage [mV] (Input Volt. 400V)</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>35</td><td>50</td></tr> <tr><td>6.5</td><td>35</td><td>50</td></tr> <tr><td>13.0</td><td>35</td><td>50</td></tr> <tr><td>20.0</td><td>35</td><td>50</td></tr> <tr><td>26.5</td><td>30</td><td>50</td></tr> <tr><td>33.0</td><td>30</td><td>50</td></tr> <tr><td>36.3</td><td>30</td><td>50</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>				Load Current [A]	Ripple Voltage [mV] (Input Volt. 200V)	Ripple Voltage [mV] (Input Volt. 400V)	0.0	35	50	6.5	35	50	13.0	35	50	20.0	35	50	26.5	30	50	33.0	30	50	36.3	30	50	--	-	-	--	-	-	--	-	-	--	-	-
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<p>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.</p>																																							
<p>Ripple [mVp-p]</p> <p>Diagram illustrating a Complex Ripple Wave Form. The waveform consists of a series of sharp, triangular pulses superimposed on a DC level.</p>																																							
Fig.Complex Ripple Wave Form																																							

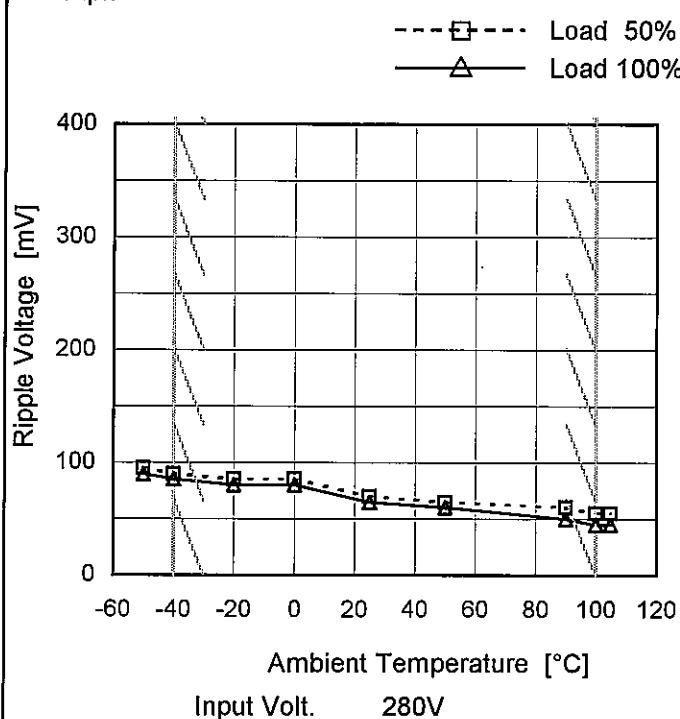
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<p>Measured by 100 MHz Oscilloscope. Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p> <p>Ripple Noise[mVp-p]</p>																																								

Fig.Complex Ripple Noise Wave Form

Model	DHS250B07
Item	Ripple Voltage (by Ambient Temp.)
Object	+7.5V16.5A

Testing Circuitry Figure B

1. Graph

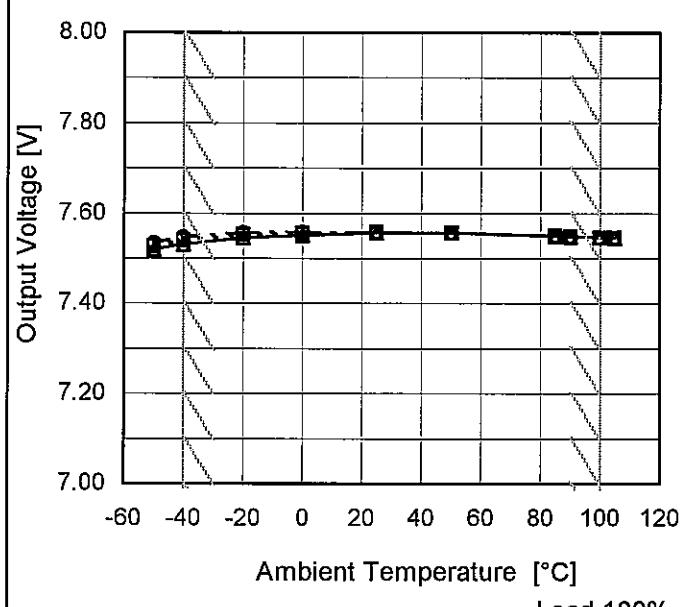


Measured by 100 MHz Oscilloscope.

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

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	95	90
-40	90	85
-20	85	80
0	85	80
25	70	65
50	65	60
90	60	50
100	55	45
105	55	45
--	-	-
--	-	-

<p>Model DHS250B07</p> <p>Item Ambient Temperature Drift</p> <p>Object +7.5V33A</p>	Testing Circuitry Figure A																																																			
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Note: Slanted line shows the range of the rated ambient temperature.



Model	DHS250B07	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+7.5V33A	

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 - 100°C

Input Voltage : 200 - 400V

Load Current : 0 - 33A

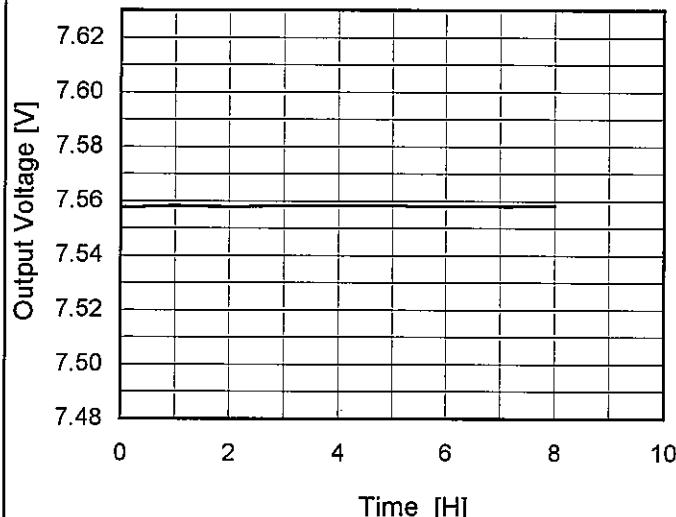
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	400	0	7.566	± 18	± 0.2
Minimum Voltage	-40	200	33	7.531		

COSEL

Model	DHS250B07	Temperature Testing Circuitry	25°C Figure A																						
Item	Time Lapse Drift																								
Object	+7.5V33A																								
1.Graph			2.Values																						
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 280V 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>7.556</td></tr> <tr><td>0.5</td><td>7.558</td></tr> <tr><td>1.0</td><td>7.558</td></tr> <tr><td>2.0</td><td>7.558</td></tr> <tr><td>3.0</td><td>7.558</td></tr> <tr><td>4.0</td><td>7.558</td></tr> <tr><td>5.0</td><td>7.558</td></tr> <tr><td>6.0</td><td>7.558</td></tr> <tr><td>7.0</td><td>7.558</td></tr> <tr><td>8.0</td><td>7.558</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	7.556	0.5	7.558	1.0	7.558	2.0	7.558	3.0	7.558	4.0	7.558	5.0	7.558	6.0	7.558	7.0	7.558	8.0	7.558
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COSEL

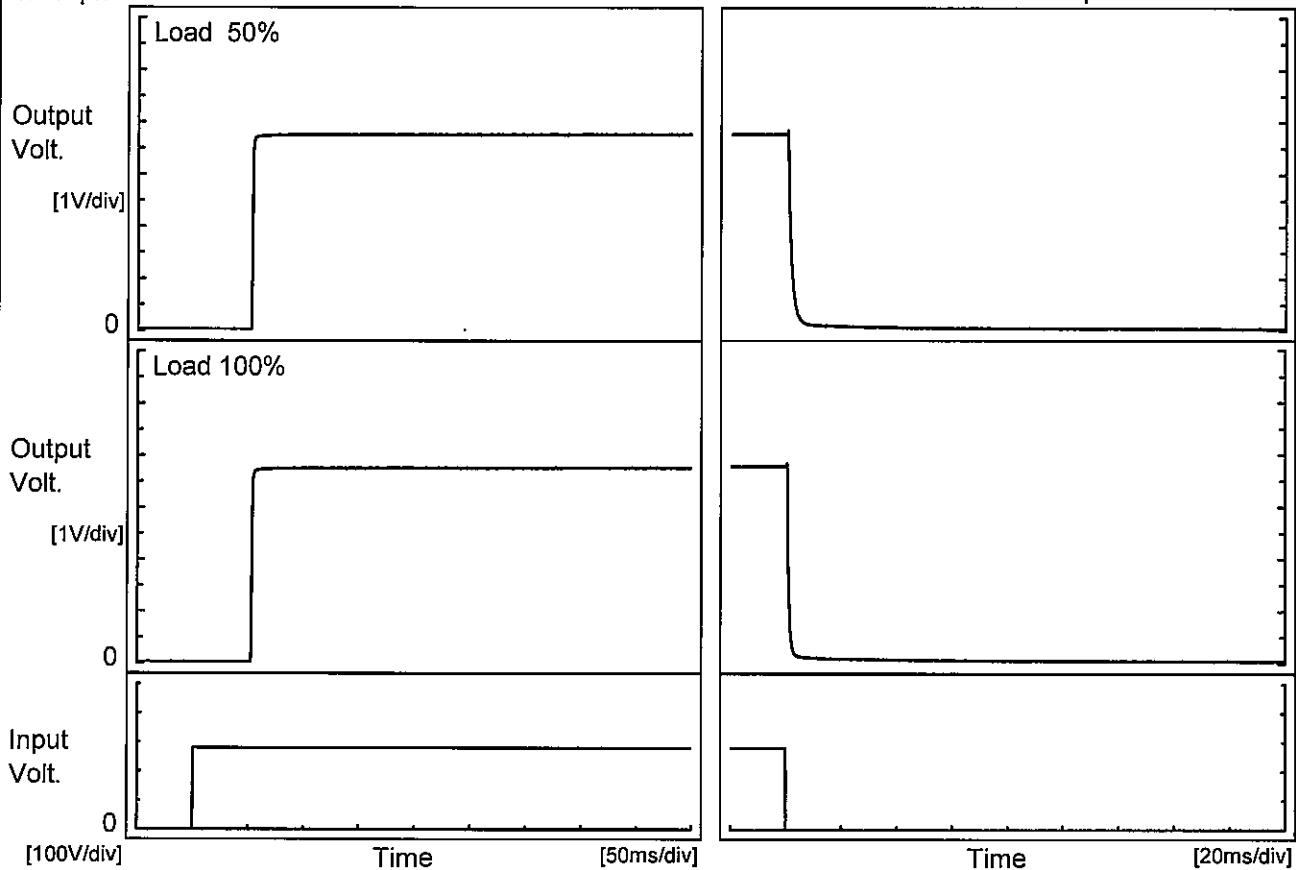
Model DHS250B07

Item Rise and Fall Time

Object +7.5V33A

Temperature 25°C
Testing Circuitry Figure A

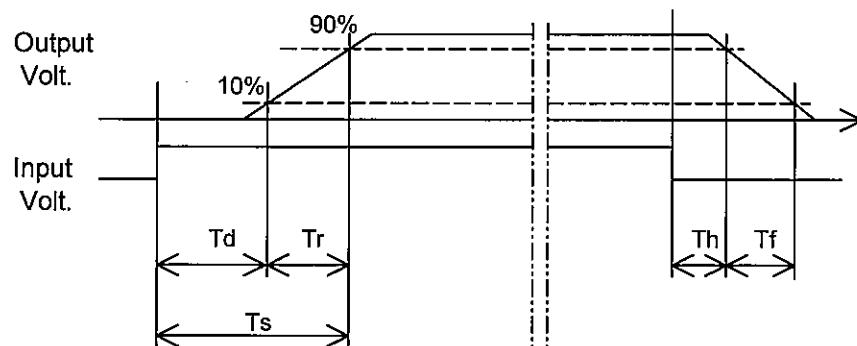
1. Graph



2. Values

[ms]

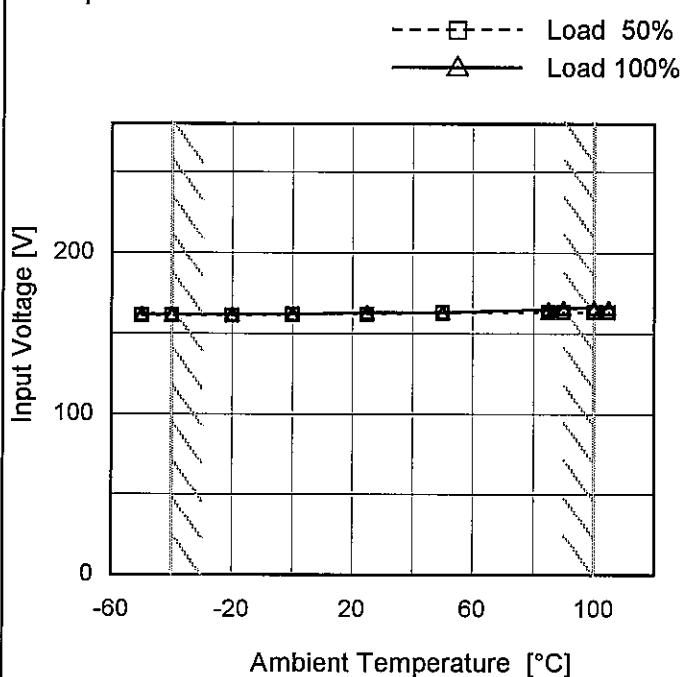
Load	Time	Td	Tr	Ts	Th	Tf
50 %		53.0	1.3	54.3	0.5	3.0
100 %		53.0	1.3	54.3	0.4	1.5



Model	DHS250B07
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+7.5V33A

Testing Circuitry Figure A

1.Graph

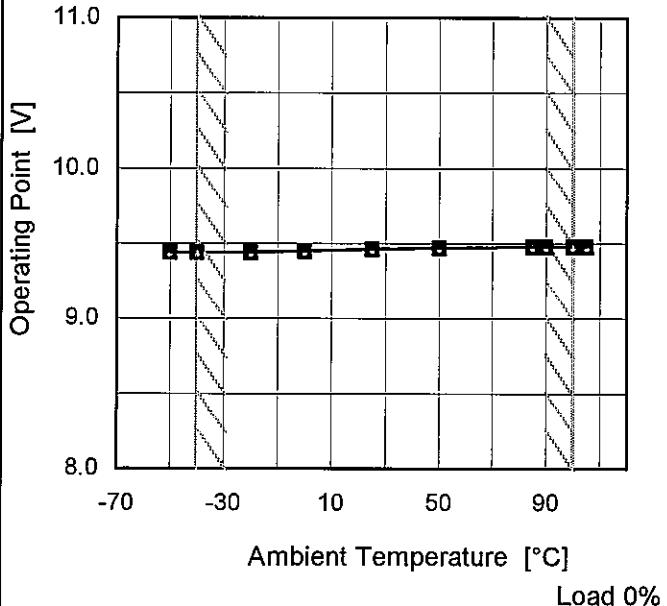


Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	161	162
-40	161	162
-20	161	162
0	162	162
25	162	163
50	163	163
85	163	165
90	163	166
100	163	166
105	163	166
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Model	DHS250B07	Temperature 25°C Testing Circuitry Figure A																																																									
Item	Overcurrent Protection																																																										
Object	+7.5V33A																																																										
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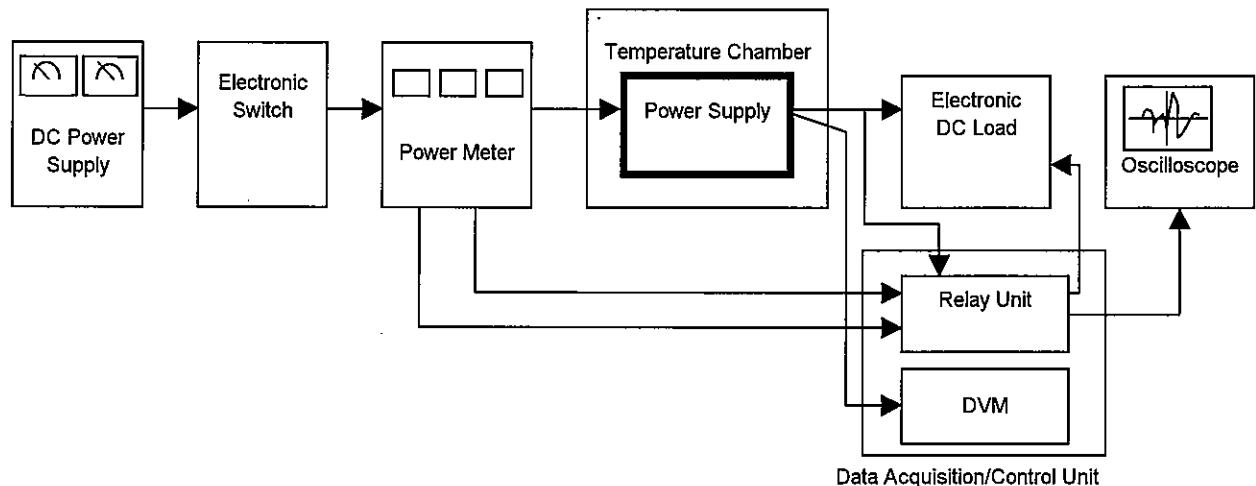
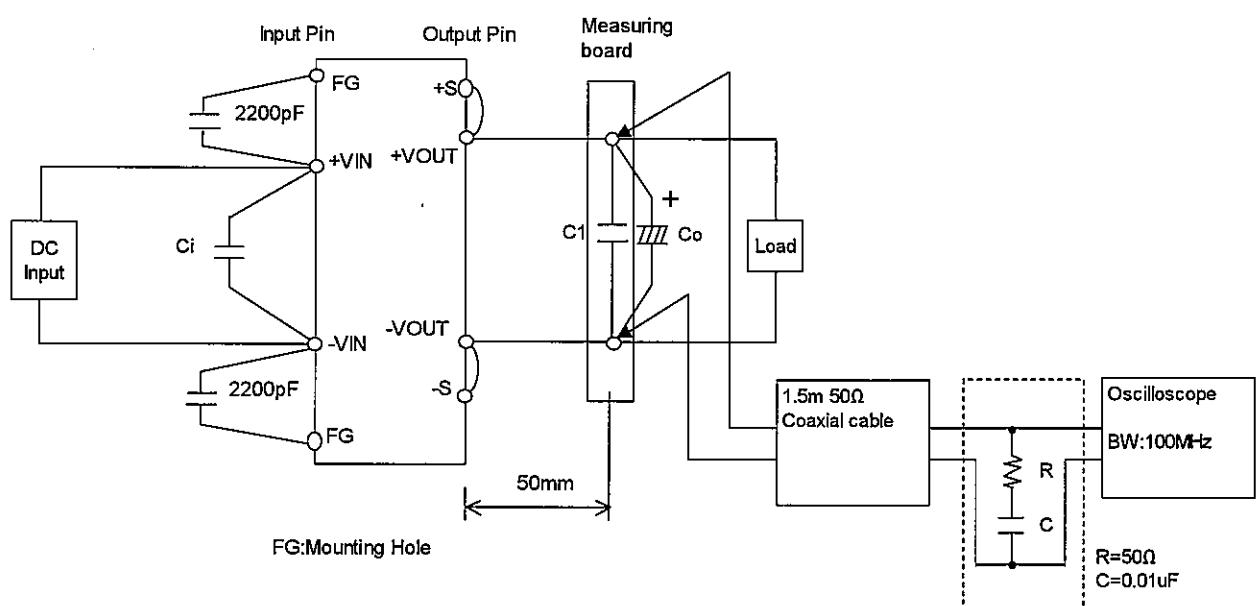


Figure A



C1	
DHS250B24	4.7μF
DHS250B28	4.7μF
DHS250B48	2.2μF
Others	10μF

Co	
DHS250B03	2200μF
DHS250B05	2200μF
DHS250B07	2200μF
DHS250B12	1000μF
DHS250B15	1000μF
DHS250B24	470μF
DHS250B28	470μF
DHS250B48	330μF

Figure B