



TEST DATA OF DHS250B24

Regulated DC Power Supply
November 17, 2009

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Tatsuya Mano Design Manager

Prepared by : Noriaki Nakase
Noriaki Nakase Design Engineer

COSEL CO.,LTD.

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Model	DHS250B24	Temperature 25°C Testing Circuitry Figure A																																			
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<p>The graph plots Efficiency [%] on the y-axis (50 to 90) against Input Voltage [V] on the x-axis (100 to 500). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a slight decrease in efficiency as input voltage increases from 200V to 400V. A vertical slanted line is drawn through the data points at approximately 240V, indicating the rated input voltage range.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Efficiency [%]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr> <td>195</td> <td>90.4</td> <td>89.7</td> </tr> <tr> <td>200</td> <td>90.6</td> <td>89.9</td> </tr> <tr> <td>240</td> <td>90.1</td> <td>89.7</td> </tr> <tr> <td>280</td> <td>89.3</td> <td>89.5</td> </tr> <tr> <td>320</td> <td>88.7</td> <td>89.1</td> </tr> <tr> <td>360</td> <td>87.7</td> <td>88.5</td> </tr> <tr> <td>400</td> <td>86.7</td> <td>88.0</td> </tr> <tr> <td>420</td> <td>86.3</td> <td>87.7</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> </tbody> </table>		Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	195	90.4	89.7	200	90.6	89.9	240	90.1	89.7	280	89.3	89.5	320	88.7	89.1	360	87.7	88.5	400	86.7	88.0	420	86.3	87.7	--	-	-
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<p>The graph shows efficiency increasing from approximately 85% at 2A to 90% at 6A, then slightly decreasing to about 88% at 11A. The 200V curve is the highest, followed by 280V, and then 400V. A slanted line from the top left to the bottom right indicates the rated load current range.</p>		2. Values																																																				
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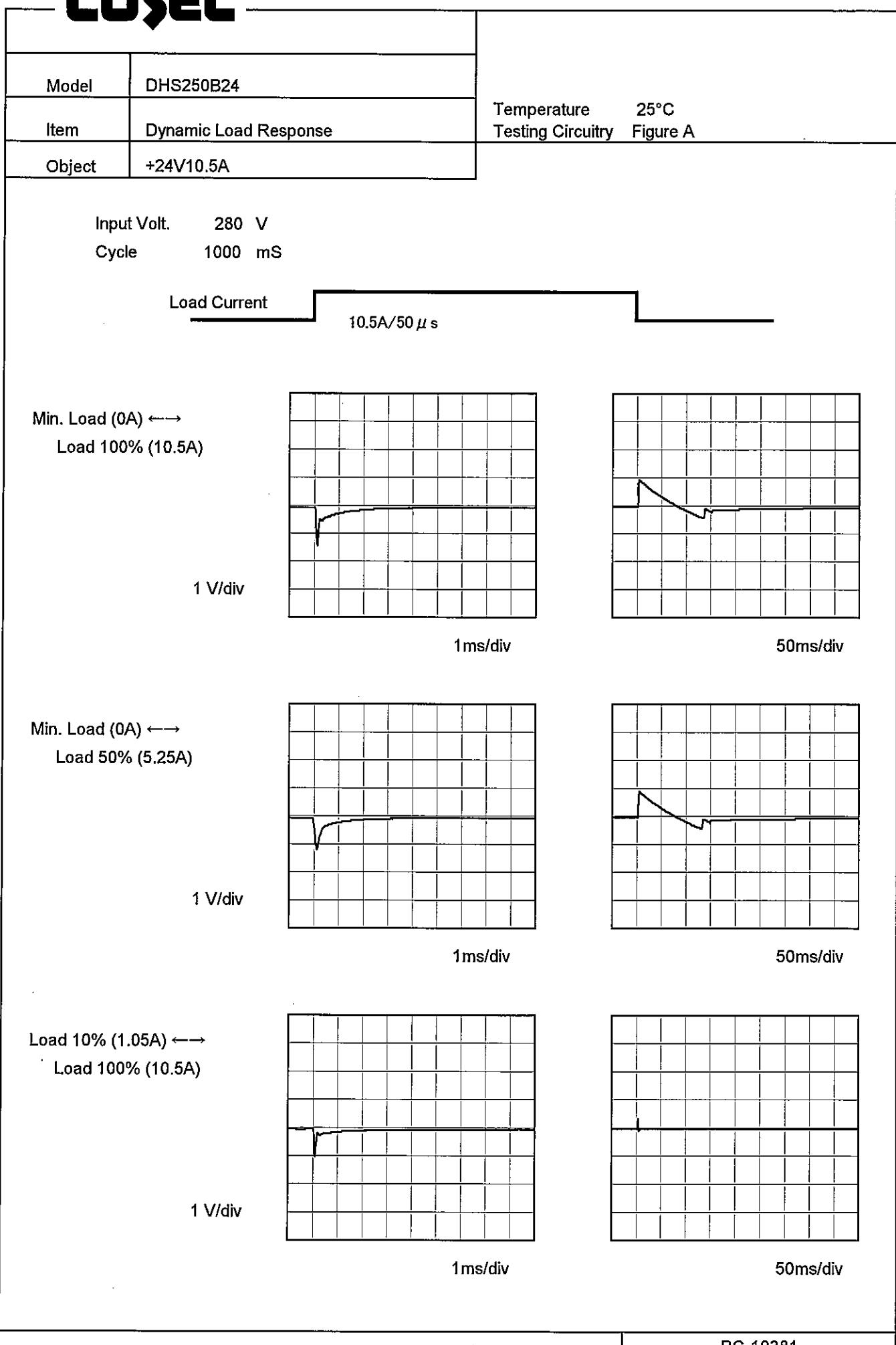
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Note: Slanted line shows the range of the rated load current.

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Model	DHS250B24	Temperature	25°C																																						
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure B																																						
Object	+24V10.5A																																								
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Model	DHS250B24	Temperature Testing Circuitry 25°C Figure B																							
Item	Ripple-Noise																								
Object	+24V10.5A																								
1.Graph		2.Values																							
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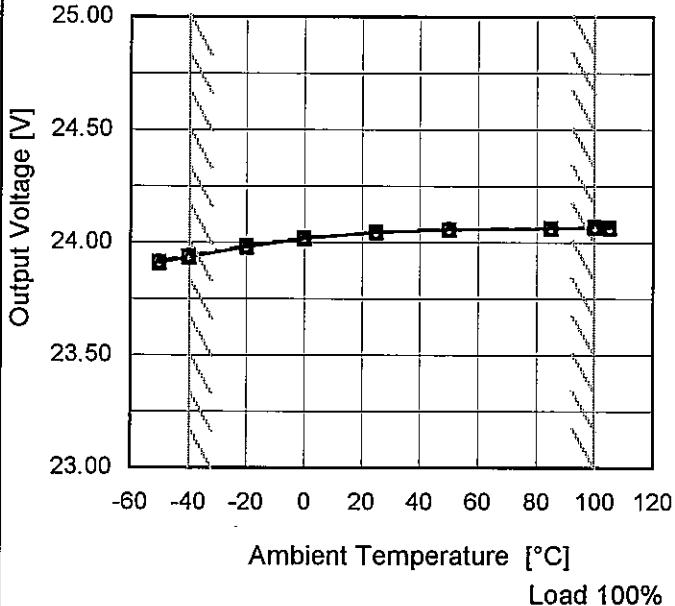
COSEL

Model	DHS250B24																																								
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry Figure B																																							
Object	+24V10.5A																																								
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Measured by 100 MHz Oscilloscope.

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

COSEL

Model	DHS250B24	Testing Circuitry Figure A																																																					
Item	Ambient Temperature Drift																																																						
Object	+24V10.5A																																																						
1.Graph	<p>—△— Input Volt. 200V - - -□- Input Volt. 280V - - -○- Input Volt. 400V</p>  <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p>																																																						
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Model	DHS250B24	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+24V10.5A	

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 - 10.5A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - 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	100	200	0	24.069	±67	±0.3
Minimum Voltage	-40	200	10.5	23.936		

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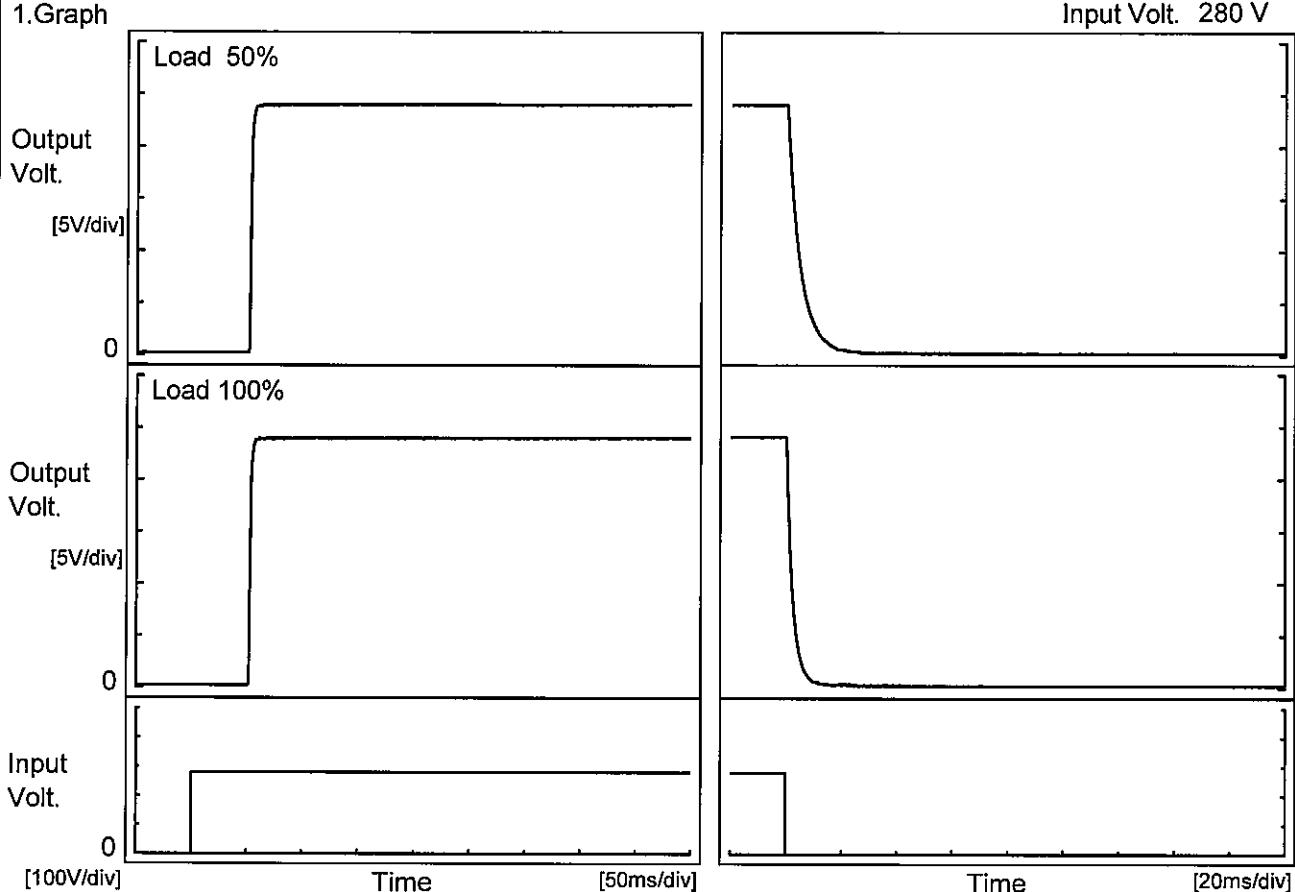
Model	DHS250B24	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+24V10.5A																								
1.Graph			2.Values																						
<p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 280V Load 100%</p>			<table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>24.041</td></tr> <tr><td>0.5</td><td>24.049</td></tr> <tr><td>1.0</td><td>24.049</td></tr> <tr><td>2.0</td><td>24.049</td></tr> <tr><td>3.0</td><td>24.049</td></tr> <tr><td>4.0</td><td>24.049</td></tr> <tr><td>5.0</td><td>24.049</td></tr> <tr><td>6.0</td><td>24.049</td></tr> <tr><td>7.0</td><td>24.049</td></tr> <tr><td>8.0</td><td>24.049</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	24.041	0.5	24.049	1.0	24.049	2.0	24.049	3.0	24.049	4.0	24.049	5.0	24.049	6.0	24.049	7.0	24.049	8.0	24.049
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COSEL

Model	DHS250B24
Item	Rise and Fall Time
Object	+24V10.5A

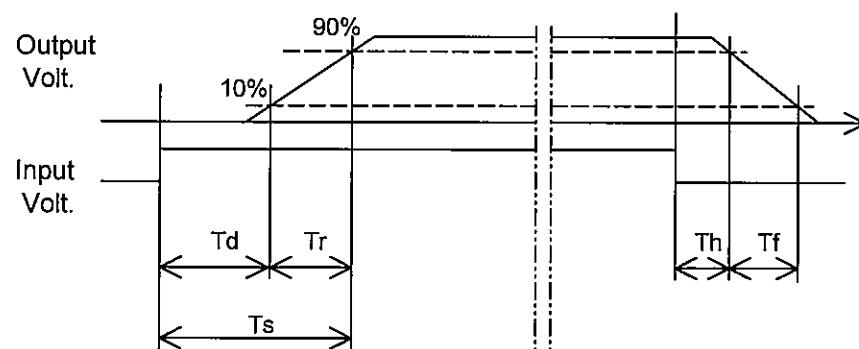
Temperature 25°C
Testing Circuitry Figure A

1. Graph



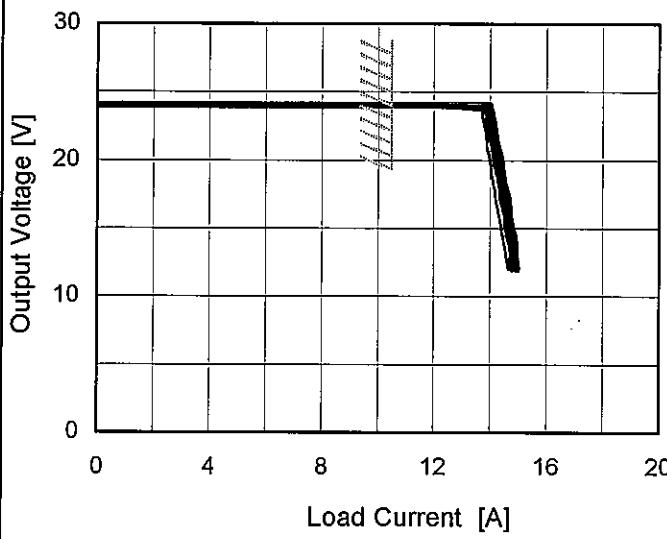
2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		52.3	2.8	55.1	0.6	9.9	
100 %		52.3	2.8	55.1	0.4	5.0	



Model DHS250B24 Item Minimum Input Voltage for Regulated Output Voltage Object +24V10.5A	Testing Circuitry Figure A																																						
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Model	DHS250B24	Temperature	25°C																																																						
Item	Overcurrent Protection	Testing Circuitry	Figure A																																																						
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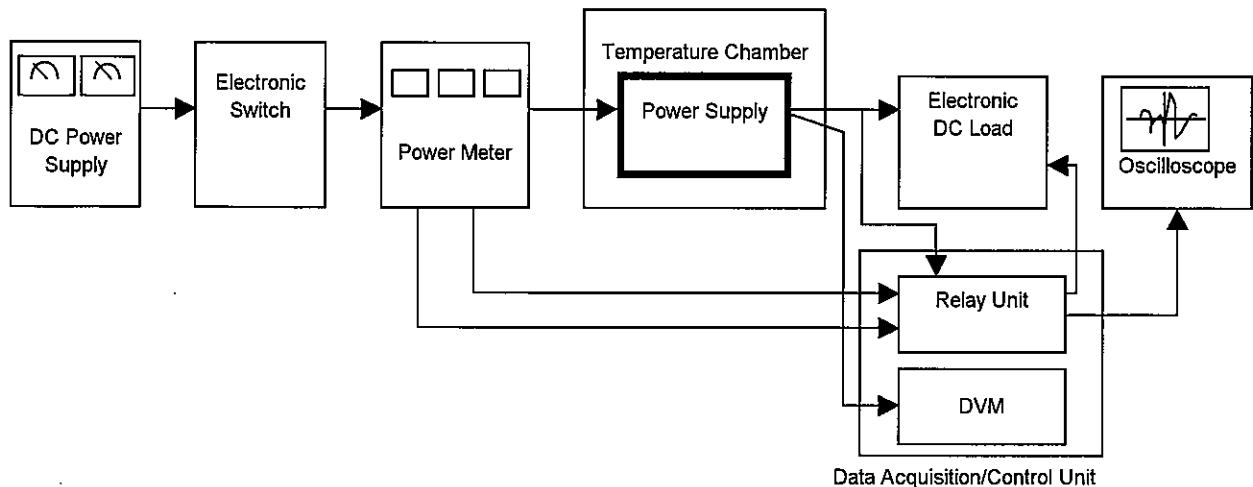
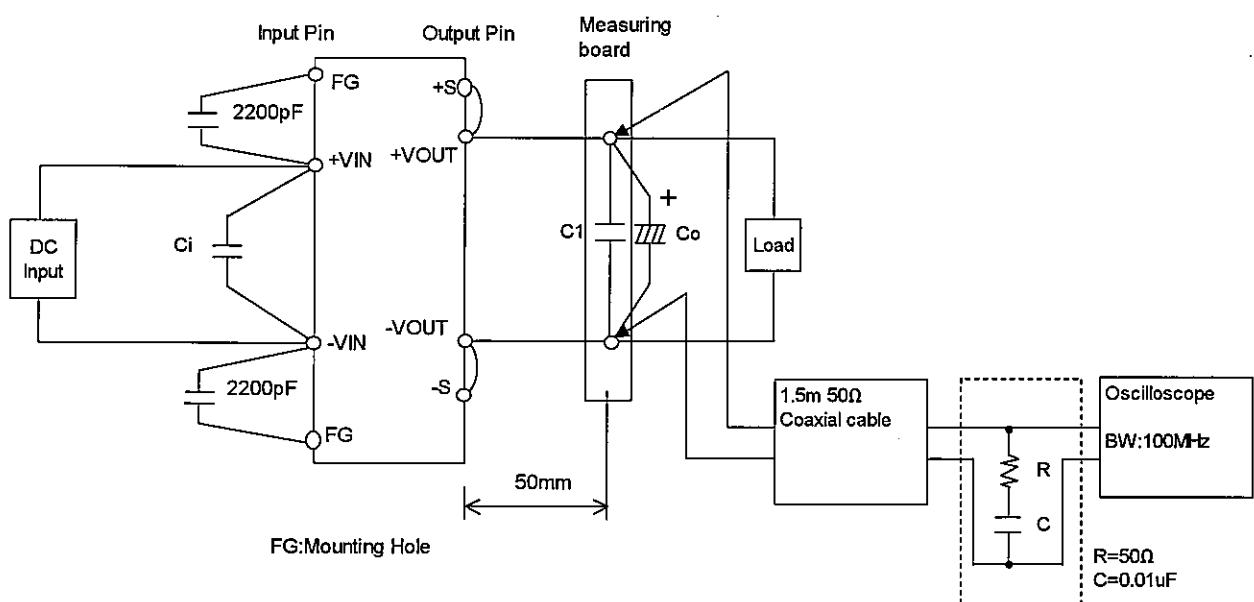


Figure A



C_1	
DHS250B24	$4.7\mu\text{F}$
DHS250B28	$4.7\mu\text{F}$
DHS250B48	$2.2\mu\text{F}$
Others	$10\mu\text{F}$

C_o	
DHS250B03	$2200\mu\text{F}$
DHS250B05	$2200\mu\text{F}$
DHS250B07	$2200\mu\text{F}$
DHS250B12	$1000\mu\text{F}$
DHS250B15	$1000\mu\text{F}$
DHS250B24	$470\mu\text{F}$
DHS250B28	$470\mu\text{F}$
DHS250B48	$330\mu\text{F}$

Figure B