

# TEST DATA OF MHFS64815

Regulated DC Power Supply  
October 26, 2021

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Design Manager

Prepared by : \_\_\_\_\_ Yoshihiko Saeki  
\_\_\_\_\_  
Design Engineer

**COSEL CO.,LTD.**



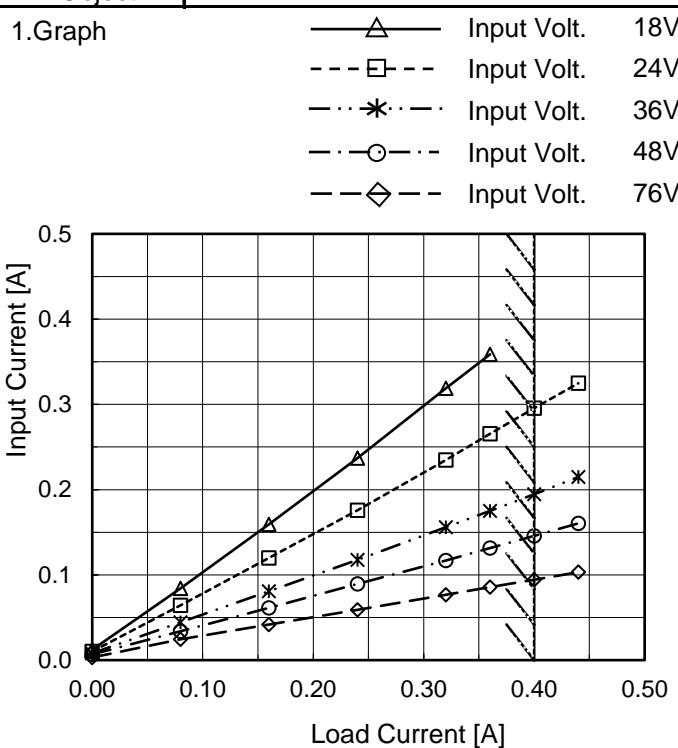
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(Final Page 10)

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Model	MHFS64815
Item	Input Current (by Load Current)
Object	_____



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

Temperature 25°C  
Testing Circuitry Figure A

## 2.Values

Load Current [A]	Input Current [A]				
	18[V]	24[V]	36[V]	48[V]	76[V]
0.00	0.012	0.010	0.008	0.007	0.003
0.08	0.084	0.064	0.044	0.034	0.024
0.16	0.159	0.120	0.081	0.061	0.042
0.24	0.237	0.176	0.118	0.089	0.059
0.32	0.319	0.235	0.156	0.117	0.077
0.36	0.359	0.265	0.175	0.131	0.086
0.40	*1	0.295	0.195	0.146	0.094
0.44	*1	0.325	0.215	0.160	0.103
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

\*1 Maximum output current at 18V input Voltage is 80% of rated load current.  
Refer to instruction manuals for details of input derating.

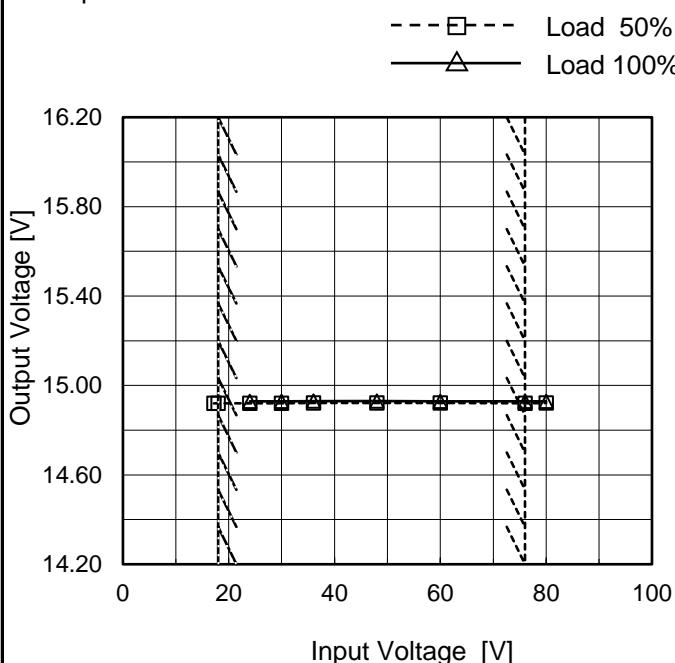
COSEL

Model	MHFS64815	Temperature Testing Circuitry	25°C Figure A																																																																													
Item	Efficiency (by Load Current)																																																																															
Object	_____																																																																															
1.Graph	<p>—△— Input Volt. 18V        - - -□--- Input Volt. 24V        - - *--- Input Volt. 36V        - - ○--- Input Volt. 48V        - - ◇--- Input Volt. 76V</p> <table border="1"> <caption>Data points estimated from Figure A</caption> <thead> <tr> <th>Load Current [A]</th> <th>18[V]</th> <th>24[V]</th> <th>36[V]</th> <th>48[V]</th> <th>76[V]</th> </tr> </thead> <tbody> <tr><td>0.10</td><td>75.0</td><td>78.0</td><td>78.0</td><td>78.0</td><td>78.0</td></tr> <tr><td>0.15</td><td>80.0</td><td>82.0</td><td>82.0</td><td>82.0</td><td>82.0</td></tr> <tr><td>0.20</td><td>82.0</td><td>84.0</td><td>84.0</td><td>84.0</td><td>84.0</td></tr> <tr><td>0.25</td><td>83.0</td><td>85.0</td><td>85.0</td><td>85.0</td><td>85.0</td></tr> <tr><td>0.30</td><td>83.5</td><td>85.5</td><td>85.5</td><td>85.5</td><td>85.5</td></tr> <tr><td>0.35</td><td>83.5</td><td>84.5</td><td>84.5</td><td>84.5</td><td>84.5</td></tr> <tr><td>0.40</td><td>83.5</td><td>84.5</td><td>84.5</td><td>84.5</td><td>84.5</td></tr> </tbody> </table>	Load Current [A]	18[V]	24[V]	36[V]	48[V]	76[V]	0.10	75.0	78.0	78.0	78.0	78.0	0.15	80.0	82.0	82.0	82.0	82.0	0.20	82.0	84.0	84.0	84.0	84.0	0.25	83.0	85.0	85.0	85.0	85.0	0.30	83.5	85.5	85.5	85.5	85.5	0.35	83.5	84.5	84.5	84.5	84.5	0.40	83.5	84.5	84.5	84.5	84.5																															
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Model	MHFS64815	Temperature	25°C
Item	Line Regulation	Testing Circuitry	Figure A
Object	+15V0.4A		

## 1. Graph



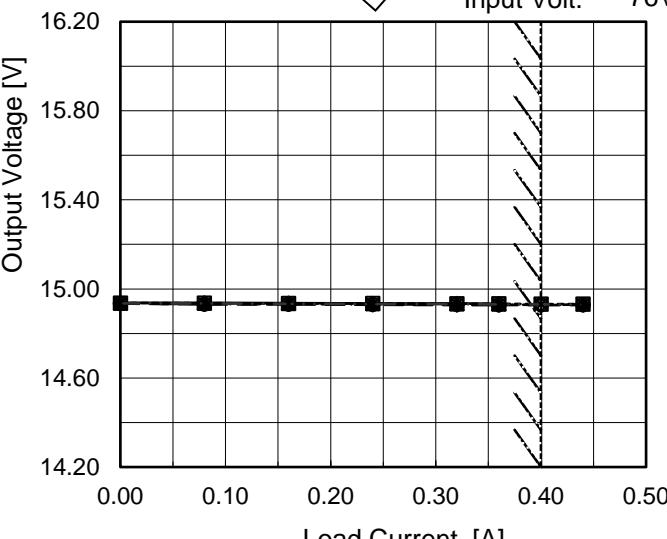
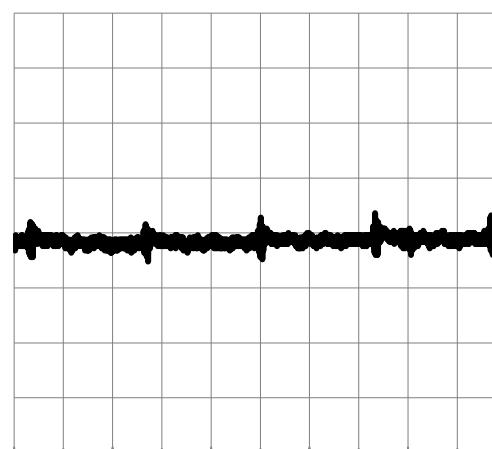
Note: Slanted line shows the range of the rated input voltage.

## 2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17.2	14.920	*1
18.0	14.921	*1
24.0	14.921	14.929
30.0	14.921	14.929
36.0	14.921	14.930
48.0	14.921	14.930
60.0	14.921	14.929
76.0	14.921	14.929
80.0	14.921	14.929

\*1 Maximum output current at 18V input  
Voltage is 80% of rated load current.  
Refer to instruction manuals for details of  
input derating.

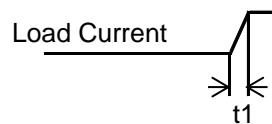
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Item	Ripple-Noise	Temperature	25°C																																																																													
Object	+15V0.4A	Testing Circuitry	Figure B																																																																													
1.Graph	<p>Input Voltage 48V        Load 100%</p>  <p>10[mV/div]</p> <p>1[μs/div]</p>																																																																															

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Model	MHFS64815	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+15V0.4A		

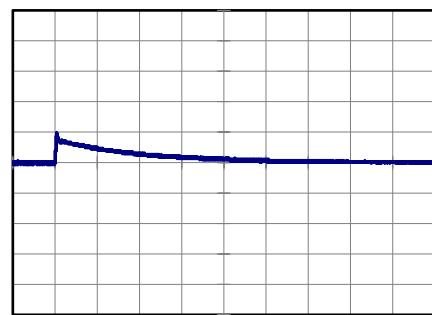
Input Volt. 48 V  
 Cycle 100 ms

Response.  $t_1=t_2=50\mu s$ . Typ

Min.Load (0A)↔  
 Load 100% (0.4A)

500 mV/div

1 ms/div

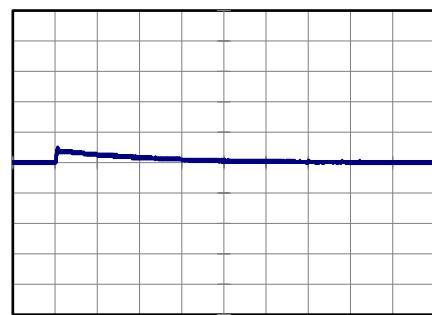


1 ms/div

Min.Load (0A)↔  
 Load 50% (0.2A)

500 mV/div

1 ms/div



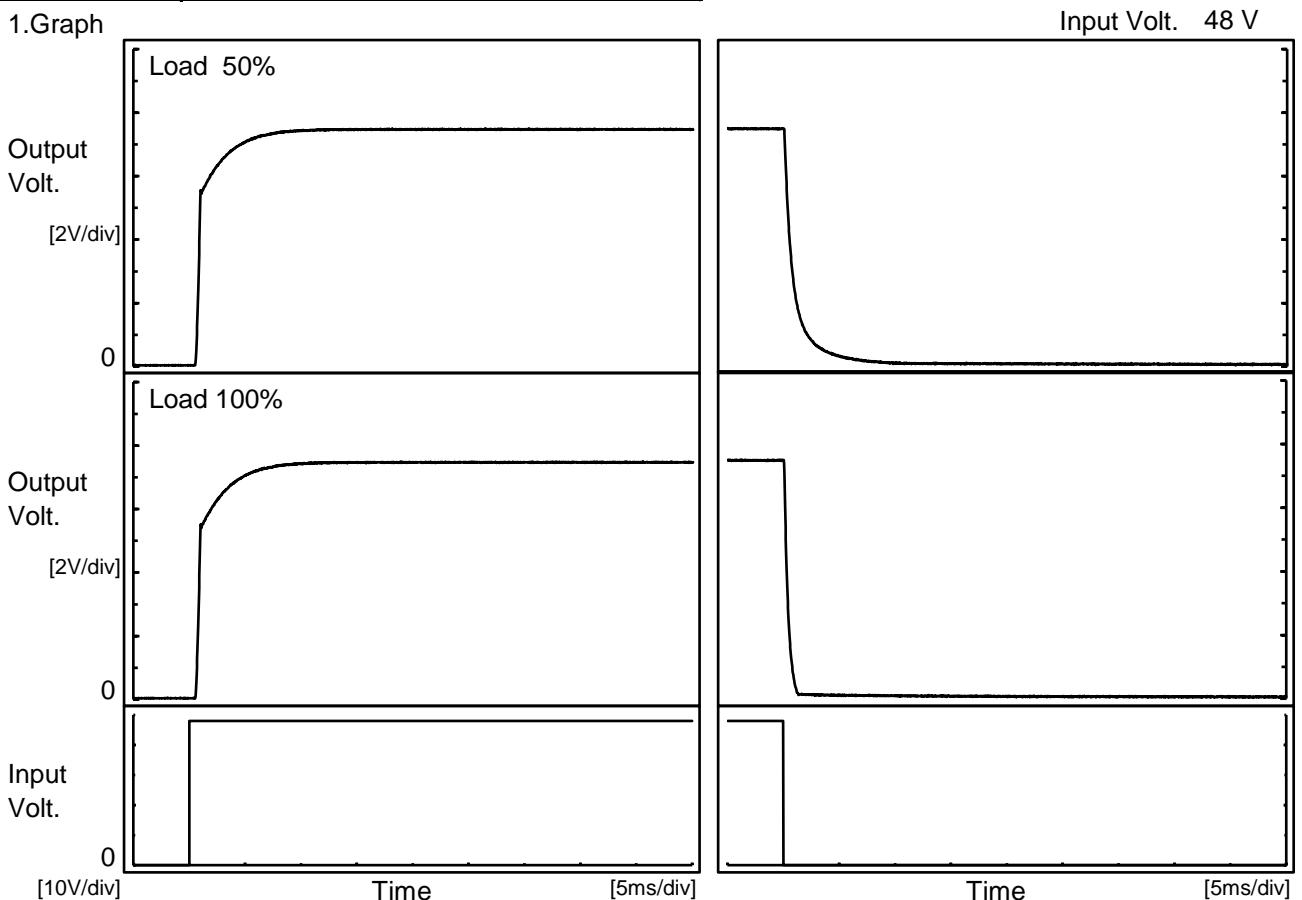
1 ms/div

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Model	MHFS64815
Item	Rise and Fall Time
Object	+15V0.4A

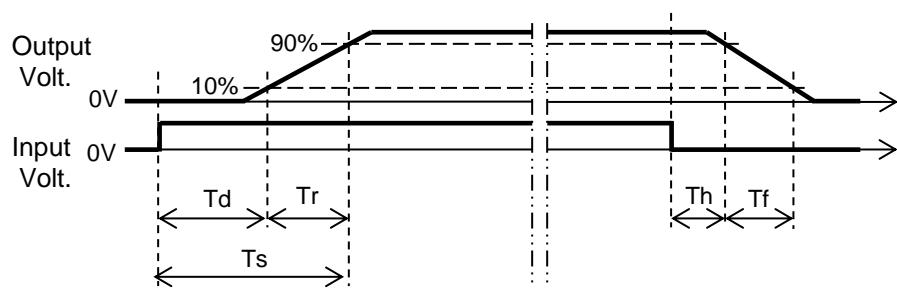
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		0.7	3.0	3.7	0.2	2.5	
100 %		0.7	3.2	3.9	0.1	0.8	



**COSEL**

Model	MHFS64815	Temperature	25°C																																																																																			
Item	Overcurrent Protection	Testing Circuitry	Figure A																																																																																			
Object	+15V0.4A																																																																																					
1.Graph	<p>The graph plots Output Voltage [V] on the Y-axis (0 to 20) against Load Current [A] on the X-axis (0.0 to 1.2). Five curves are shown for different input voltages: 18V (black), 24V (blue), 36V (green), 48V (red), and 76V (magenta). All curves start at a constant output voltage until a certain load current is reached, after which they drop linearly. A slanted line is drawn from approximately (0.4, 17) down to (0.8, 0), representing the range of the rated load current at 18V.</p>																																																																																					
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3.0	0.855	0.920	0.872	0.824	0.778																																																																																	
1.5	1.001	1.043	0.946	0.882	0.818																																																																																	
0.0	0.941	0.942	0.815	0.741	0.668																																																																																	
--	-	-	-	-	-																																																																																	
Note:	<p>Slanted line shows the range of the rated load current.</p> <p>Maximum output current at 18V input Voltage is 80% of rated load current.</p> <p>Refer to instruction manuals for details of input derating.</p>																																																																																					



Model	MHFS64815	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+15V0.4A	

## 1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]				
	Input Volt. 18V*1	Input Volt. 24V	Input Volt. 36V	Input Volt. 48V	Input Volt. 76V
-40	14.802	14.806	14.809	14.812	14.813
25	14.920	14.921	14.922	14.922	14.922
60	14.948	14.948	14.948	14.948	14.948

\*1 Load 80%

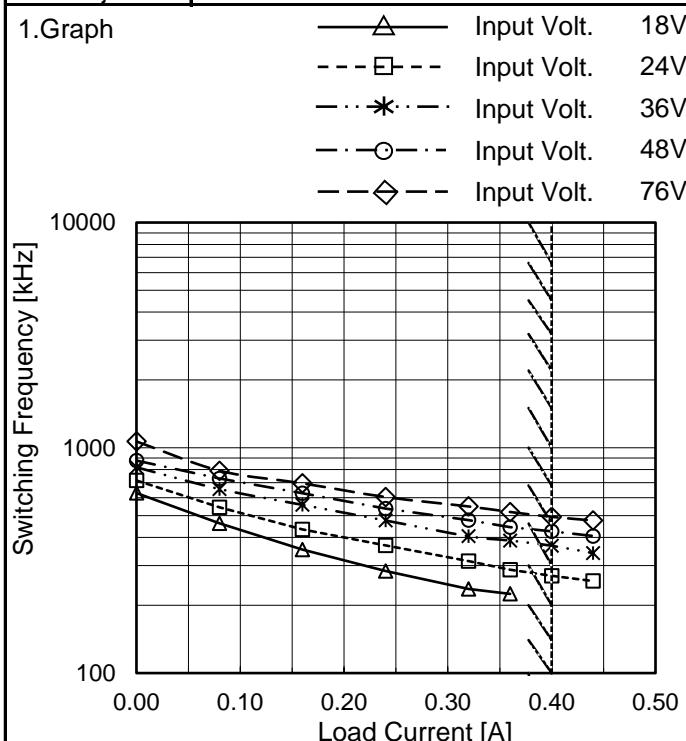
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+15V0.4A	

## 1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 80%
-40	14.3	14.3
25	14.3	14.2
60	14.0	14.0

**COSEL**

Model	MHFS64815
Item	Switching frequency (by Load Current)
Object	+15V0.4A



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

When load current is low, MH operates intermittently, so switching frequency would not become constant.

Temperature 25°C  
Testing Circuitry Figure A

## 2.Values

Load Current [A]	Switching Frequency [kHz]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	630	716	819	878	1067
0.08	462	544	656	730	791
0.16	353	434	558	629	695
0.24	284	368	476	537	605
0.32	237	314	405	477	549
0.36	225	288	387	444	519
0.40	*1	270	367	427	494
0.44	*1	256	341	406	476
--	-	-	-	-	-
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\*1 Maximum output current at 18V input Voltage is 80% of rated load current.  
Refer to instruction manuals for details of input derating.

COSEL

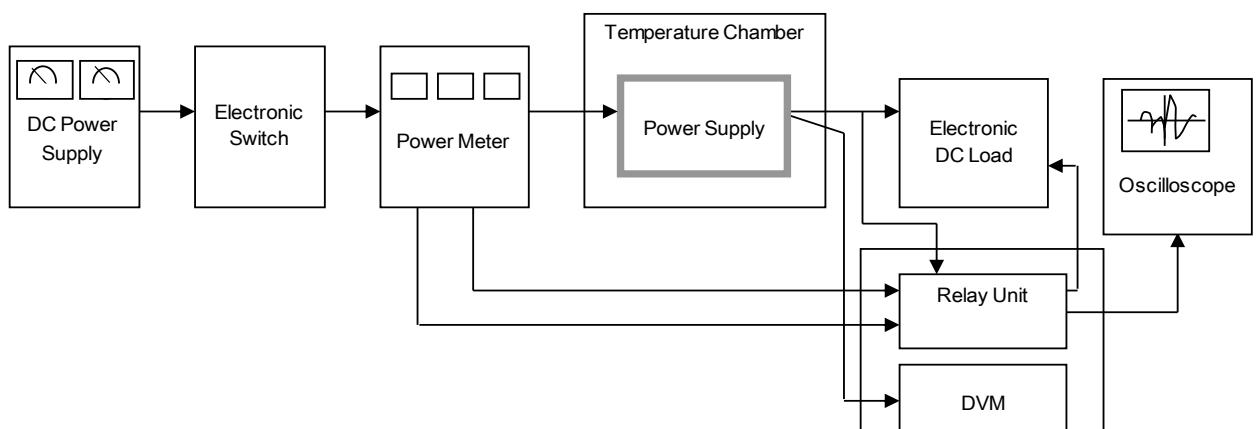


Figure A

Data Acquisition/Control Unit

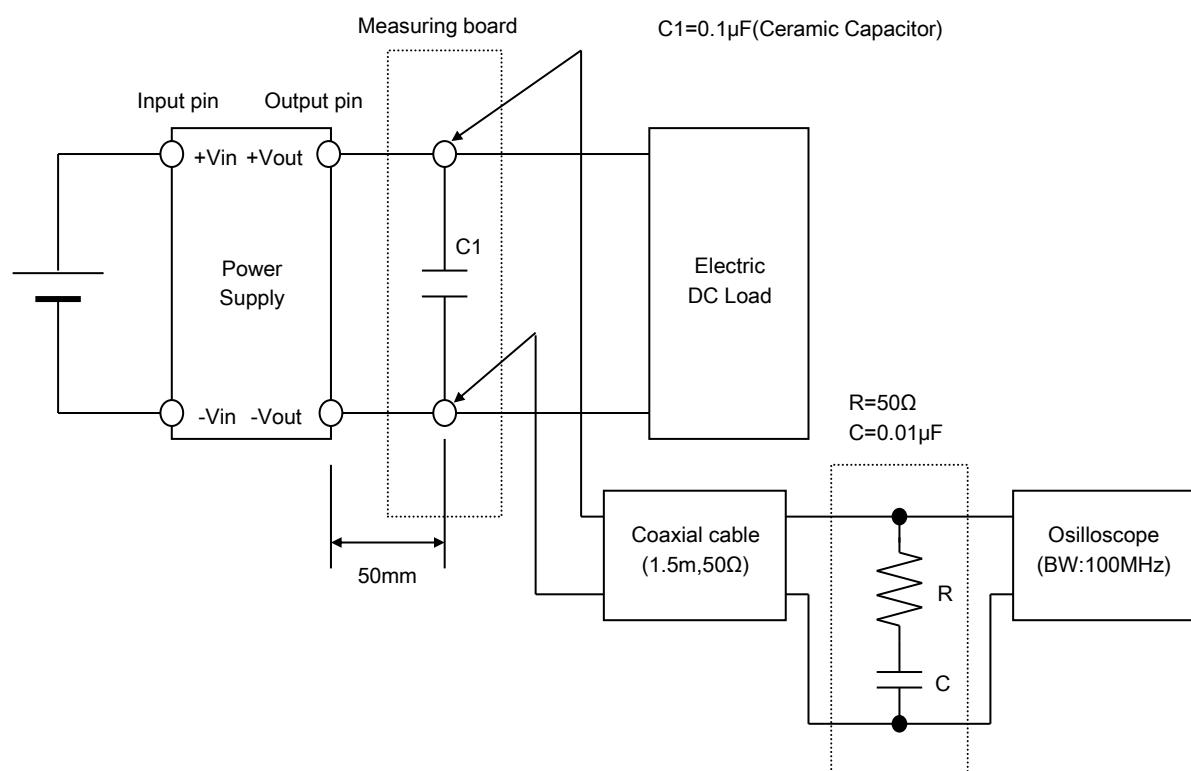


Figure B