

TEST DATA OF MHFS31205

Regulated DC Power Supply

May 21, 2020

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Kenichi Tsukada Design Manager

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COSEL CO.,LTD.



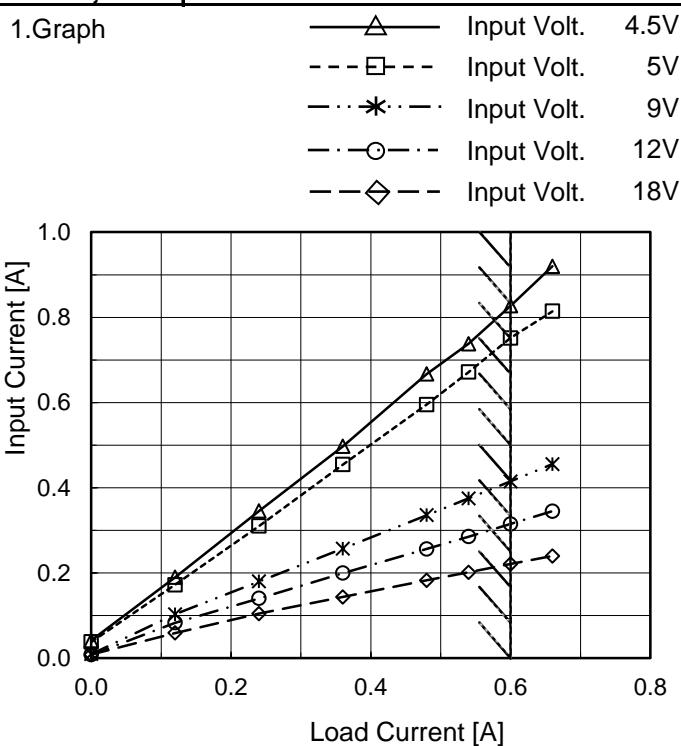
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(Final Page 10)

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Model	MHFS31205
Item	Input Current (by Load Current)
Object	_____


 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Load Current [A]	Input Current [A]				
	4.5[V]	5[V]	9[V]	12[V]	18[V]
0.00	0.041	0.038	0.009	0.008	0.008
0.12	0.190	0.172	0.103	0.083	0.059
0.24	0.345	0.310	0.180	0.140	0.104
0.36	0.497	0.454	0.257	0.199	0.143
0.48	0.667	0.595	0.335	0.256	0.183
0.54	0.738	0.672	0.375	0.285	0.201
0.60	0.827	0.752	0.415	0.315	0.221
0.66	0.920	0.814	0.455	0.345	0.240
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Note: Slanted line shows the range of the rated load current.

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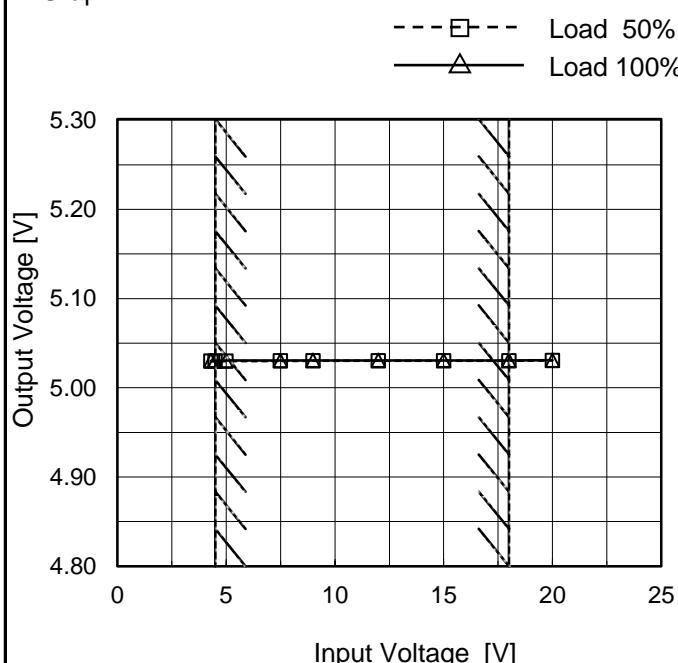
Model	MHFS31205	Temperature Testing Circuitry	25°C Figure A																																																																													
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1.Graph	<p>Legend:</p> <ul style="list-style-type: none"> Input Volt. 4.5V Input Volt. 5V Input Volt. 9V Input Volt. 12V Input Volt. 18V <p>Efficiency [%]</p> <p>Load Current [A]</p>																																																																															
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Efficiency [%]</th> </tr> <tr> <th>4.5[V]</th> <th>5[V]</th> <th>9[V]</th> <th>12[V]</th> <th>18[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.12</td><td>71.2</td><td>70.7</td><td>65.4</td><td>60.9</td><td>57.5</td></tr> <tr><td>0.24</td><td>77.5</td><td>77.4</td><td>74.8</td><td>71.9</td><td>64.4</td></tr> <tr><td>0.36</td><td>79.5</td><td>79.6</td><td>77.9</td><td>75.9</td><td>70.2</td></tr> <tr><td>0.48</td><td>80.2</td><td>80.3</td><td>79.8</td><td>78.2</td><td>73.6</td></tr> <tr><td>0.54</td><td>80.3</td><td>80.6</td><td>80.4</td><td>79.0</td><td>75.1</td></tr> <tr><td>0.60</td><td>80.2</td><td>80.5</td><td>80.7</td><td>79.6</td><td>76.1</td></tr> <tr><td>0.66</td><td>79.9</td><td>80.5</td><td>81.0</td><td>80.1</td><td>76.7</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>			Load Current [A]	Efficiency [%]					4.5[V]	5[V]	9[V]	12[V]	18[V]	0.00	-	-	-	-	-	0.12	71.2	70.7	65.4	60.9	57.5	0.24	77.5	77.4	74.8	71.9	64.4	0.36	79.5	79.6	77.9	75.9	70.2	0.48	80.2	80.3	79.8	78.2	73.6	0.54	80.3	80.6	80.4	79.0	75.1	0.60	80.2	80.5	80.7	79.6	76.1	0.66	79.9	80.5	81.0	80.1	76.7	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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Model	MHFS31205
Item	Line Regulation
Object	+5V0.6A

Temperature 25°C
 Testing Circuitry Figure A

1.Graph



2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
4.3	5.030	5.030
4.5	5.030	5.031
5.0	5.030	5.031
7.5	5.030	5.031
9.0	5.030	5.031
12.0	5.030	5.031
15.0	5.030	5.031
18.0	5.030	5.031
20.0	5.031	5.031

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

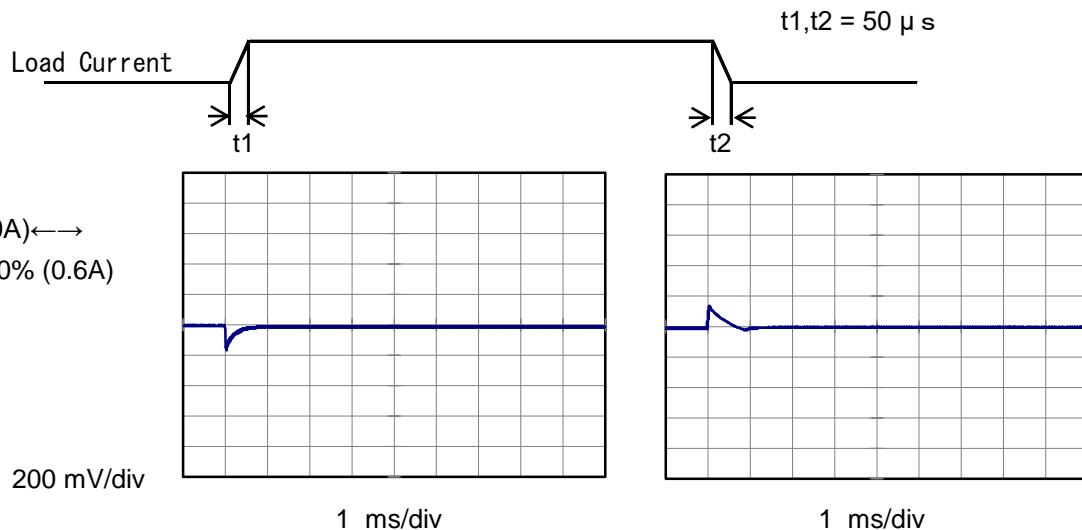
COSEL

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Item	Ripple-Noise	Temperature	25°C																																																																													
Object	+5V0.6A	Testing Circuitry	Figure B																																																																													
1.Graph																																																																																
<p>Input Voltage 12V</p> <p>Load 100%</p> <p>10[mV/div]</p> <p>1[μs/div]</p>																																																																																

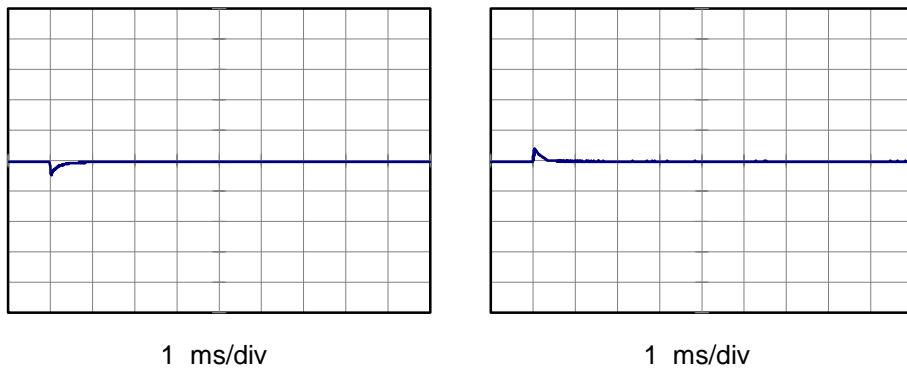
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Model	MHFS31205	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+5V0.6A		

Input Volt. 12 V
 Cycle 100 ms



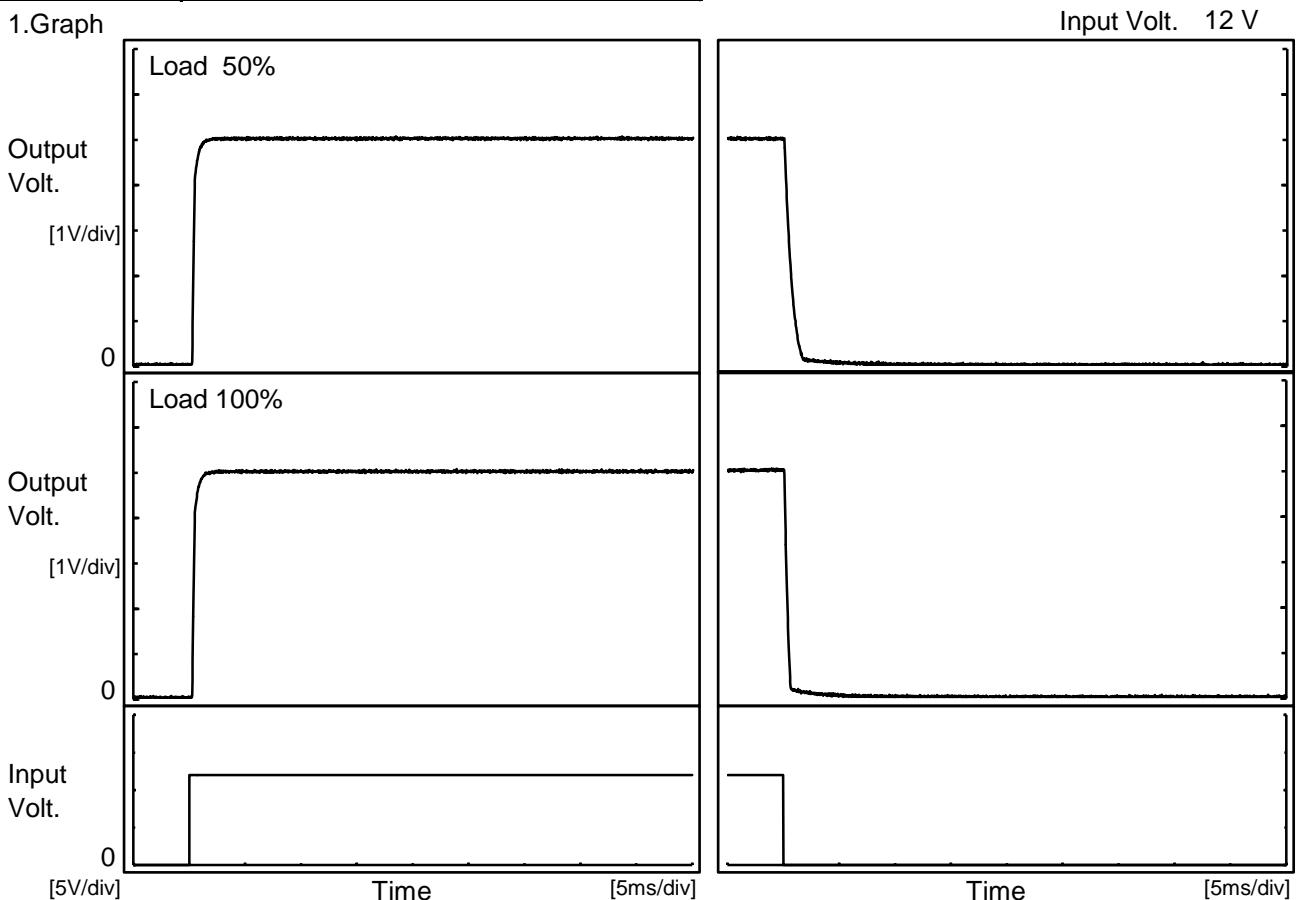
Min.Load (0A) \longleftrightarrow
 Load 50% (0.3A)



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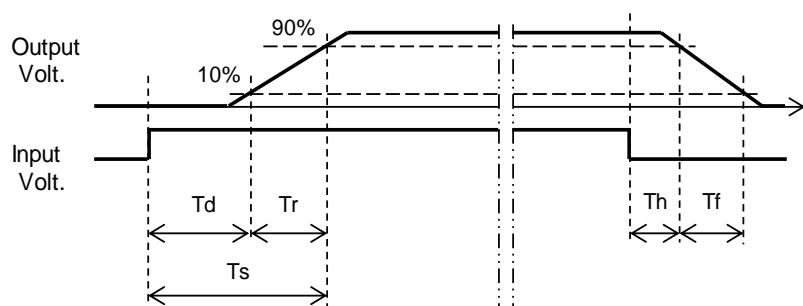
Model	MHFS31205	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+5V0.6A		

1. Graph



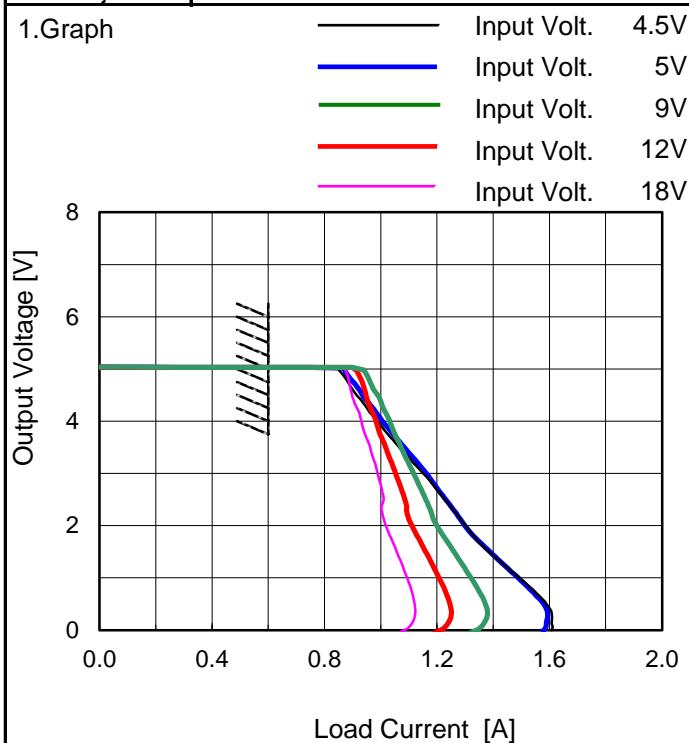
2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		0.3	0.4	0.7	0.2	1.2	
100 %		0.3	0.4	0.7	0.1	0.4	



COSEL

Model	MHFS31205
Item	Overcurrent Protection
Object	+5V0.6A



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

Temperature 25°C
Testing Circuitry Figure A

2.Values

Output Voltage [V]	Load Current [A]				
	4.5[V]	5[V]	9[V]	12[V]	18[V]
4.75	0.881	0.898	0.963	0.936	0.886
4.50	0.909	0.931	0.989	0.945	0.896
4.00	0.988	1.005	1.031	0.979	0.930
3.50	1.061	1.078	1.070	1.017	0.959
3.00	1.151	1.162	1.113	1.051	0.986
2.50	1.224	1.227	1.160	1.084	1.011
2.00	1.294	1.292	1.197	1.106	1.018
1.50	1.378	1.383	1.255	1.159	1.056
1.00	1.491	1.487	1.320	1.205	1.091
0.50	1.583	1.574	1.369	1.244	1.119
0.00	1.608	1.578	1.316	1.192	1.071
--	-	-	-	-	-



Model	MHFS31205	Testing Circuitry Figure A			
Item	Ambient Temperature Drift				
Object	+5V0.6A				

1.Values

Ambient Temperature[°C]	Output Voltage [V]				
	Input Volt. 4.5V	Input Volt. 5V	Input Volt. 9V	Input Volt. 12V	Input Volt. 18V
-40	5.001	5.002	5.003	5.003	5.004
25	5.029	5.029	5.029	5.029	5.030
75	5.035	5.035	5.035	5.035	5.035

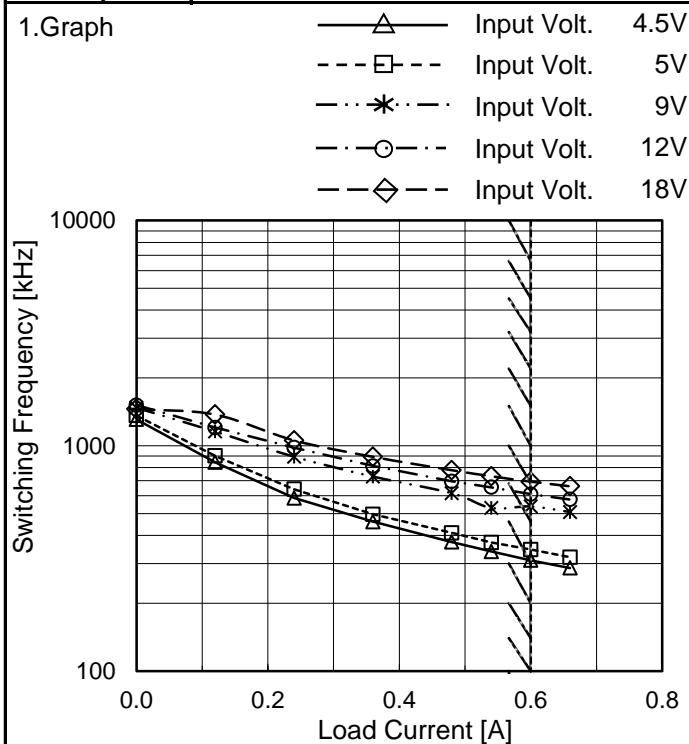
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A			
Object	+5V0.6A				

1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	3.5	3.6
25	3.5	3.5
75	3.5	3.5

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Model	MHFS31205
Item	Switching frequency (by Load Current)
Object	+5V0.6A


 Temperature 25°C
 Testing Circuitry Figure A

2.Values

Load Current [A]	Switching Frequency [kHz]				
	4.5[V]	5[V]	9[V]	12[V]	18[V]
0.00	1310	1361	1475	1515	1457
0.12	845	901	1156	1204	1375
0.24	586	642	894	982	1057
0.36	460	496	730	813	893
0.48	374	411	616	696	779
0.54	340	372	530	654	732
0.60	310	346	538	609	693
0.66	287	320	508	578	661
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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.

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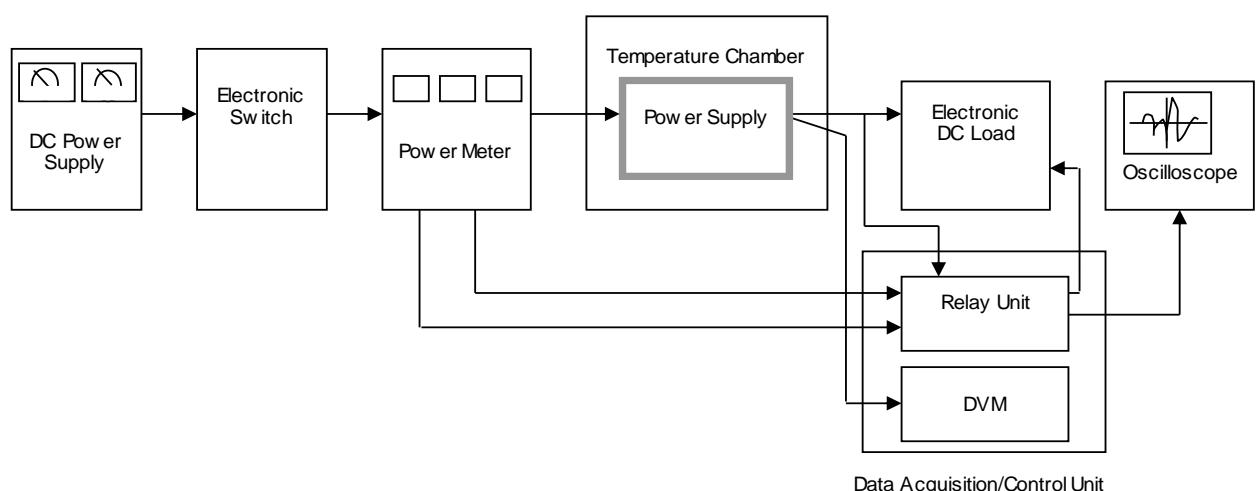


Figure A

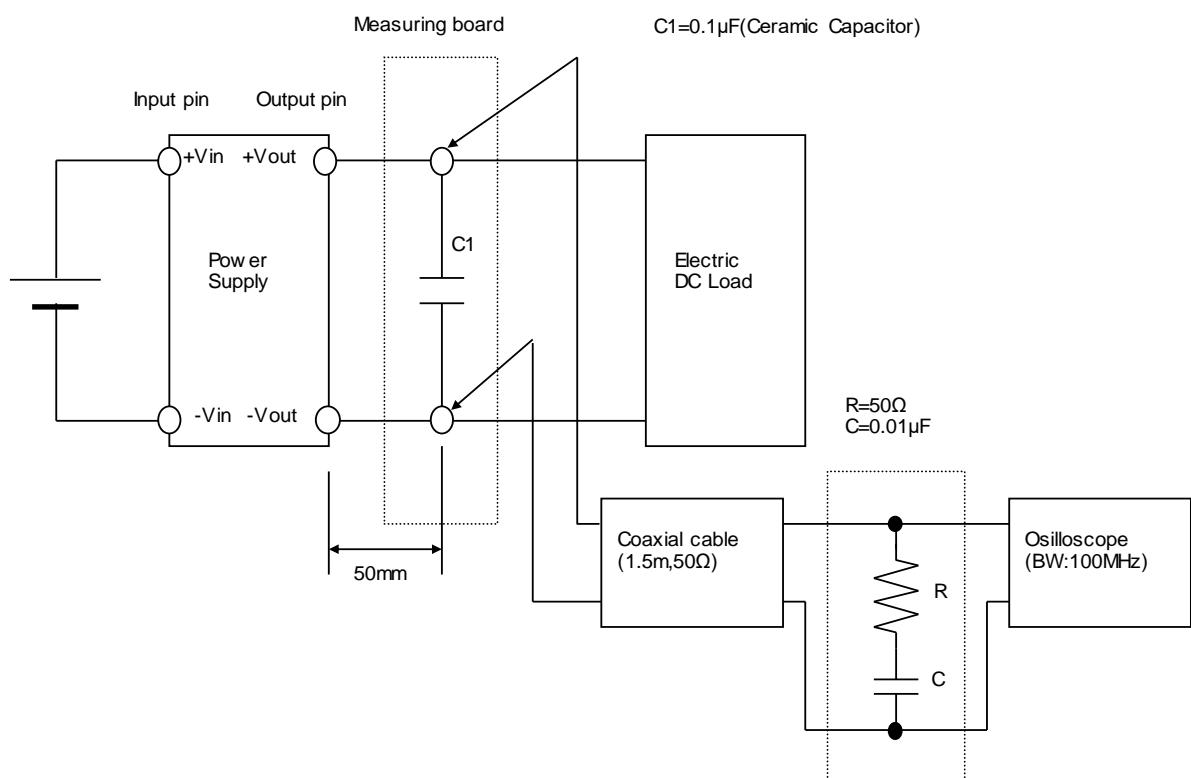


Figure B