参考資料

COSEL

TEST DATA OF MHFS32412

Regulated DC Power Supply
May 27, 2020

Approved by : Kenichi Tsukada

Kenichi Tsukada Design Manager

Prepared by : Yoshihiko Saeki

Yoshihiko Saeki Design Engineer

COSEL CO.,LTD.

COSEL

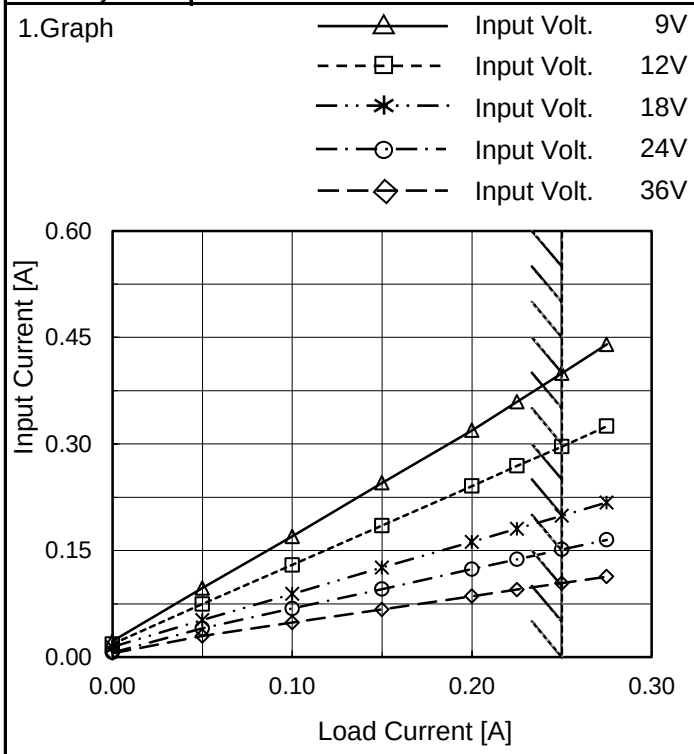
CONTENTS

COSEL

Model	MHFS32412
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Input Current [A]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.000	0.022	0.019	0.014	0.006	0.006
0.050	0.097	0.075	0.052	0.041	0.030
0.100	0.170	0.130	0.089	0.069	0.049
0.150	0.245	0.185	0.126	0.096	0.067
0.200	0.319	0.241	0.162	0.124	0.086
0.225	0.359	0.269	0.181	0.138	0.095
0.250	0.400	0.296	0.199	0.152	0.104
0.275	0.440	0.325	0.218	0.165	0.113
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

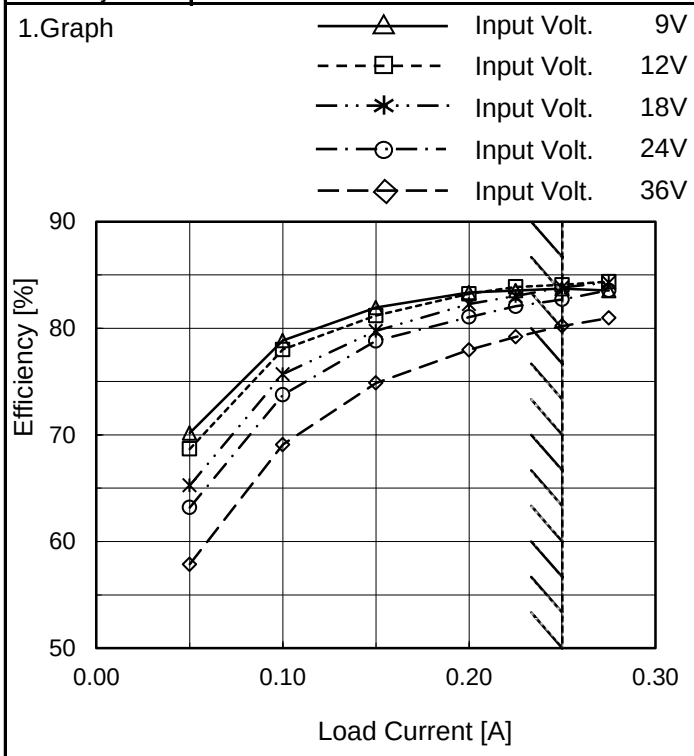
BC-11613

COSEL

Model	MHFS32412
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

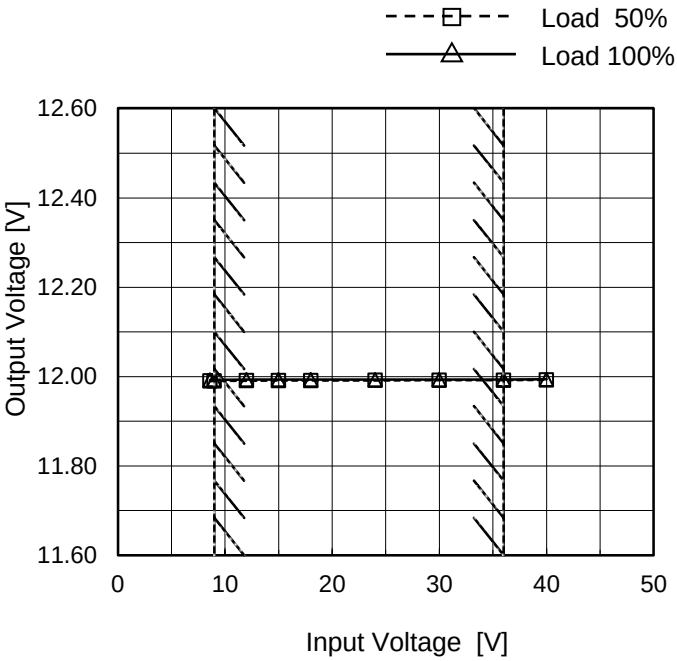
Load Current [A]	Efficiency [%]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.000	-	-	-	-	-
0.050	70.2	68.7	65.3	63.2	57.9
0.100	78.8	78.0	75.7	73.8	69.1
0.150	81.9	81.2	79.7	78.8	74.9
0.200	83.3	83.2	82.3	81.1	78.0
0.225	83.5	83.9	83.0	82.1	79.2
0.250	83.7	84.1	83.8	82.7	80.2
0.275	83.5	84.4	84.3	83.6	81.0
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	MHFS32412
Item	Line Regulation
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

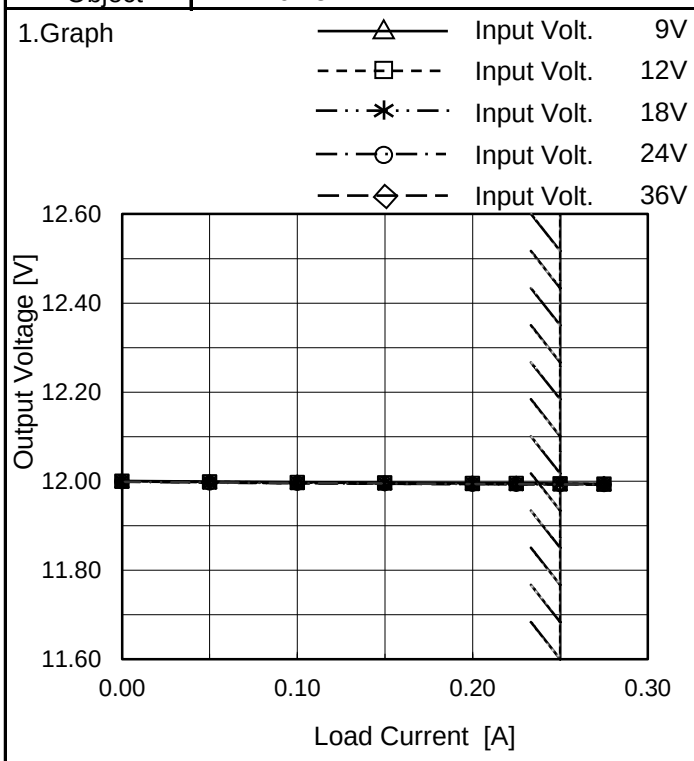
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.6	11.990	11.993
9.0	11.990	11.993
12.0	11.991	11.993
15.0	11.991	11.993
18.0	11.991	11.993
24.0	11.992	11.993
30.0	11.992	11.993
36.0	11.992	11.994
40.0	11.992	11.994

COSEL

Model	MHFS32412
Item	Load Regulation
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

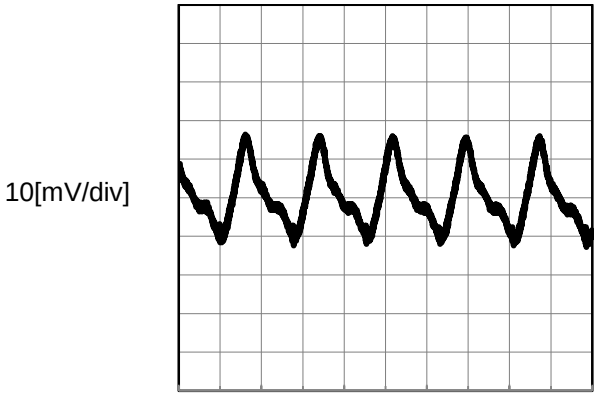
Load Current [A]	Output Voltage [V]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.000	12.001	12.000	11.999	11.999	11.999
0.050	11.999	11.998	11.997	11.996	11.998
0.100	11.998	11.997	11.996	11.995	11.995
0.150	11.997	11.996	11.995	11.994	11.994
0.200	11.996	11.995	11.994	11.993	11.993
0.225	11.995	11.995	11.993	11.993	11.993
0.250	11.995	11.994	11.993	11.993	11.993
0.275	11.994	11.994	11.993	11.992	11.993
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

Item	Ripple-Noise
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

Input Voltage 24V
Load 100%



BC-11613

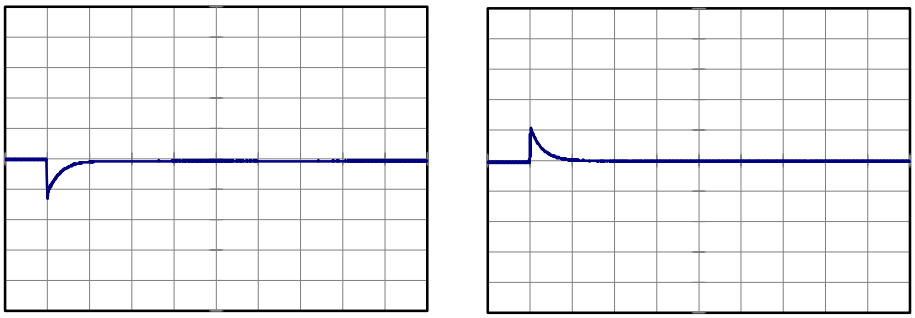
COSEL

Model	MHFS32412
Item	Dynamic Load Response
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 24 V
Cycle 100 ms

Min.Load (0A)←→
Load 100% (0.25A)

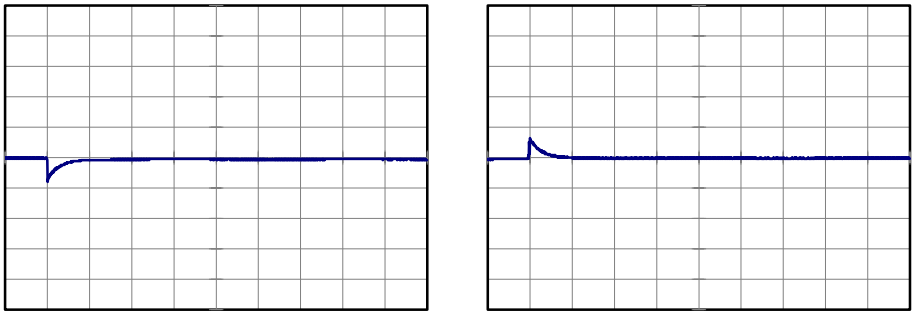


200 mV/div

4 ms/div

4 ms/div

Min.Load (0A)←→
Load 50% (0.125A)



200 mV/div

4 ms/div

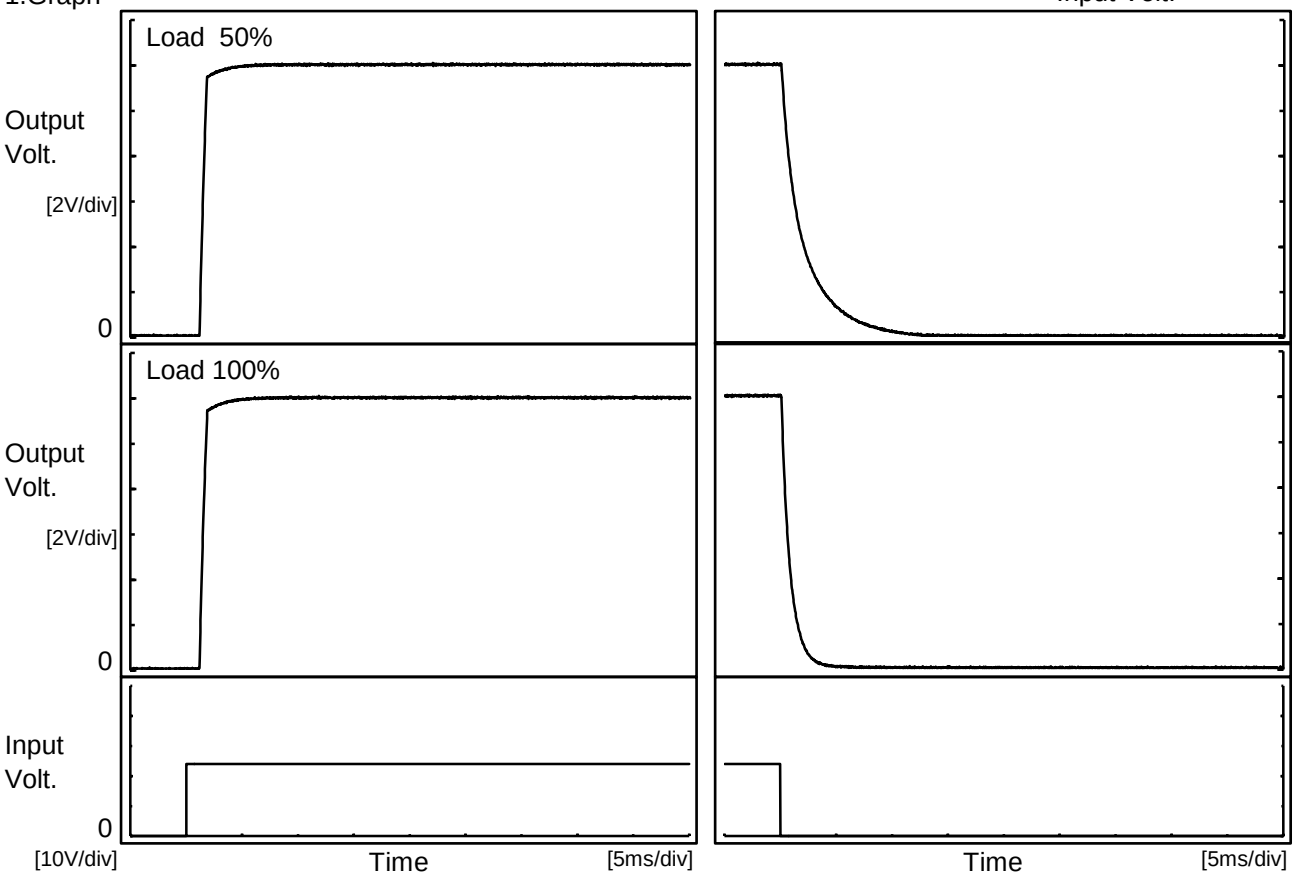
4 ms/div

COSEL

Model	MHFS32412	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+12V0.25A	

1.Graph

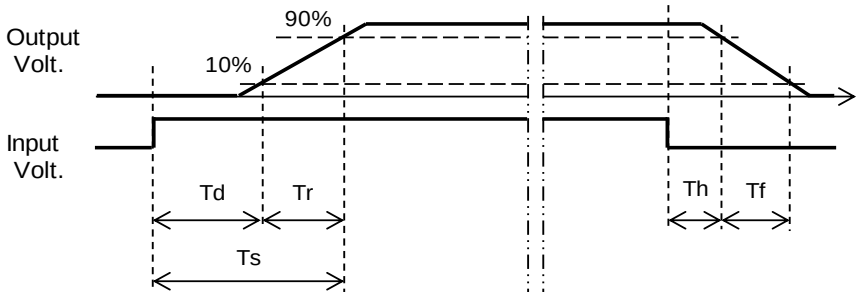
Input Volt. 24 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.3	0.6	1.9	0.2	5.0
100 %	1.3	0.6	1.9	0.2	1.8

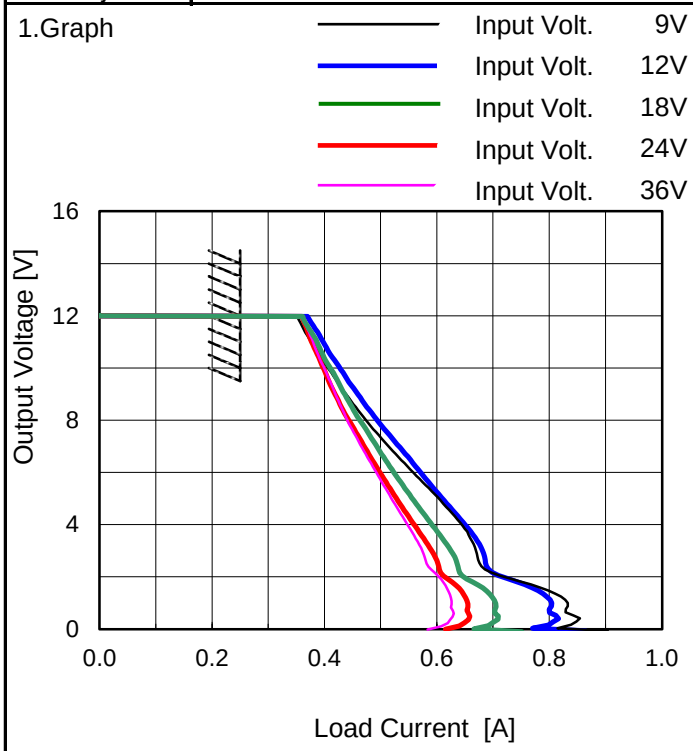


COSEL

Model	MHFS32412
Item	Overcurrent Protection
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
11.4	0.366	0.387	0.377	0.371	0.373
10.8	0.380	0.400	0.389	0.379	0.382
9.6	0.416	0.436	0.419	0.404	0.406
8.4	0.456	0.476	0.449	0.431	0.430
7.2	0.502	0.520	0.484	0.463	0.458
6.0	0.553	0.567	0.520	0.496	0.490
4.8	0.612	0.618	0.559	0.531	0.522
3.6	0.656	0.664	0.606	0.569	0.556
2.4	0.679	0.688	0.638	0.602	0.582
1.2	0.821	0.796	0.699	0.651	0.624
0.0	0.904	0.865	0.751	0.616	0.583
--	-	-	-	-	-

COSEL

Model	MHFS32412	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+12V0.25A	

1.Values

Ambient Temperature[℃]	Output Voltage [V]				
	Input Volt. 9V	Input Volt. 12V	Input Volt. 18V	Input Volt. 24V	Input Volt. 36V
-40	11.891	11.892	11.892	11.894	11.895
25	11.989	11.989	11.989	11.990	11.990
75	12.019	12.020	12.020	12.020	12.020

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+12V0.25A	

1.Values

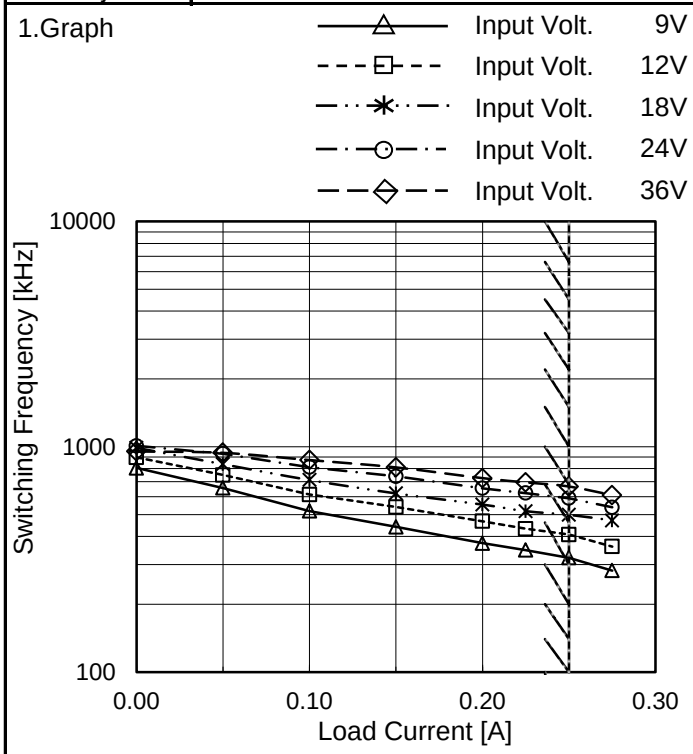
Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-40	7.3	7.3
25	7.2	7.3
75	7.0	7.0

COSEL

Model	MHFS32412
Item	Switching frequency (by Load Current)
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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.

2.Values

Load Current [A]	Switching Frequency [kHz]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.000	806	898	990	1009	954
0.050	657	750	837	931	940
0.100	519	614	712	812	874
0.150	441	540	621	739	810
0.200	373	467	554	655	726
0.225	348	433	518	623	695
0.250	321	408	499	592	667
0.275	282	361	471	539	610
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

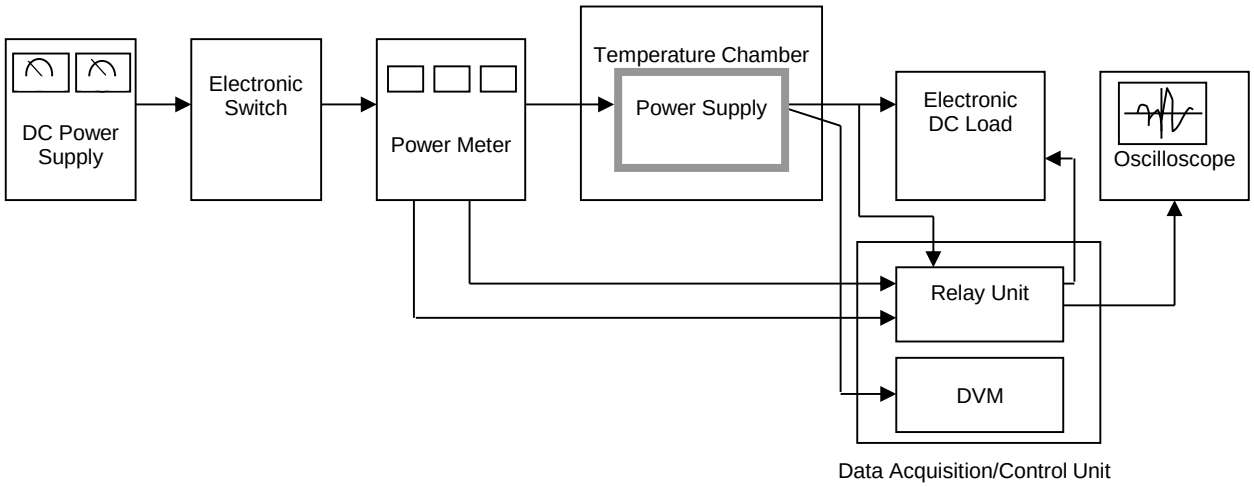


Figure A

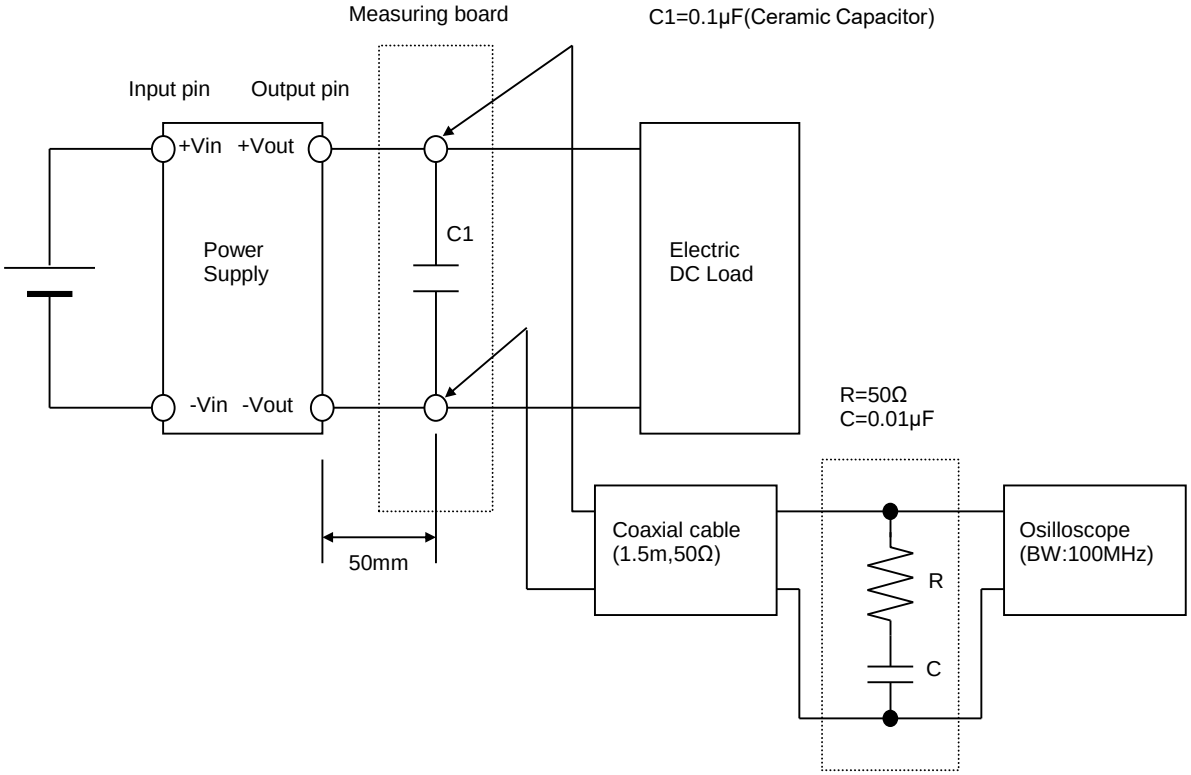


Figure B