COSEL

TEST DATA OF MGS154805

Regulated DC Power Supply
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Approved by : *Kazunari Asano*
Kazunari Asano   Design Manager

Prepared by : *Hidetaka Kobayashi*
Hidetaka Kobayashi   Design Engineer

COSEL CO.,LTD.

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参考資料

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Model	MGS154805
Item	Input Current (by Input Voltage)
Object	

Temperature 25°C
Testing Circuitry Figure A

1.Graph

———△——— Load 100%
- - -□- - - Load 50%
—·—○—·— Load 0%

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

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
8.0	0.002	0.002	0.003
16.0	0.003	0.003	0.003
24.0	0.003	0.003	0.003
28.0	0.003	0.003	0.003
32.0	0.003	0.003	0.003
32.8	0.019	0.263	0.534
33.6	0.019	0.258	0.522
34.0	0.019	0.254	0.516
36.0	0.018	0.241	0.486
40.0	0.018	0.216	0.435
48.0	0.016	0.181	0.361
60.0	0.015	0.145	0.288
70.0	0.014	0.126	0.247
76.0	0.013	0.116	0.228
80.0	0.013	0.111	0.217
--	-	-	-
--	-	-	-

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Model	MGS154805
Item	Input Current (by Load Current)
Object	

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

———△——— Input Volt. 36V
- - -□- - - Input Volt. 48V
—·—○—·— Input Volt. 76V

Input Current [A] vs Load Current [A]

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

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.019	0.016	0.014
0.6	0.105	0.081	0.054
1.2	0.194	0.147	0.095
1.8	0.288	0.216	0.138
2.4	0.386	0.287	0.182
3.0	0.485	0.359	0.227
3.3	0.537	0.397	0.250
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MGS154805
Item	Input Power (by Load Current)
Object	

Temperature 25°C
Testing Circuitry Figure A

1.Graph

—△— Input Volt. 36V
- - -⊟- - - Input Volt. 48V
—·—○—·— Input Volt. 76V

Input Power [W] vs Load Current [A]

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

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.68	0.79	1.05
0.6	3.78	3.88	4.14
1.2	7.01	7.05	7.26
1.8	10.38	10.37	10.52
2.4	13.88	13.79	13.89
3.0	17.45	17.24	17.27
3.3	19.32	19.04	19.03
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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参考資料

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Model	MGS154805

Item	Efficiency (by Input Voltage)

Object	

Temperature 25°C
Testing Circuitry Figure A

1.Graph

--⊟-- Load 50%
—△— Load 100%

Efficiency [%] vs Input Voltage [V]

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

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
34	87.4	86.5
36	87.5	86.6
40	87.5	87.1
48	87.4	87.6
60	86.9	87.8
76	85.7	87.4
80	85.4	87.3
--	-	-
--	-	-

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Model	MGS154805
Item	Efficiency (by Load Current)
Object	————————

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

——△—— Input Volt.   36V
---□--- Input Volt.   48V
—·—○—·— Input Volt.   76V

Efficiency [%] vs Load Current [A]

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	-	-	-
0.6	80.3	78.3	73.4
1.2	86.7	86.2	83.7
1.8	87.8	87.9	86.7
2.4	87.6	88.1	87.5
3.0	86.7	87.7	87.6
3.3	86.2	87.4	87.5
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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

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Model	MGS154805
Item	Line Regulation
Object	+5V3A

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

- - - ⊟ - - - Load 50%
——— △ ——— Load 100%

Output Voltage [V] vs Input Voltage [V]

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

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	5.065	5.063
36	5.065	5.064
40	5.065	5.064
48	5.065	5.064
60	5.064	5.064
76	5.064	5.064
80	5.064	5.064
--	-	-
--	-	-

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Model	MGS154805
Item	Load Regulation
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

— △ — Input Volt. 36V
- - - ⊟ - - - Input Volt. 48V
— · — ○ — · — Input Volt. 76V

Output Voltage [V] vs Load Current [A]

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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	5.066	5.065	5.065
0.6	5.065	5.065	5.065
1.2	5.065	5.065	5.065
1.8	5.065	5.065	5.065
2.4	5.064	5.064	5.064
3.0	5.064	5.064	5.064
3.3	5.064	5.064	5.064
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MGS154805
Item	Dynamic Load Response
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 48 V
Cycle 1000 ms

t_1、t_2 = 50µs

Load Current

t_1 t_2
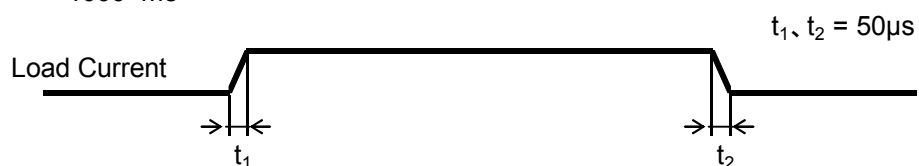
Min. Load (0A) ←→
  Load 100% (3A)

100mV/div
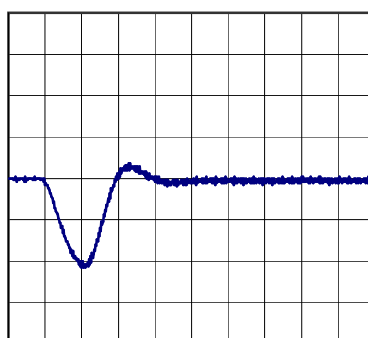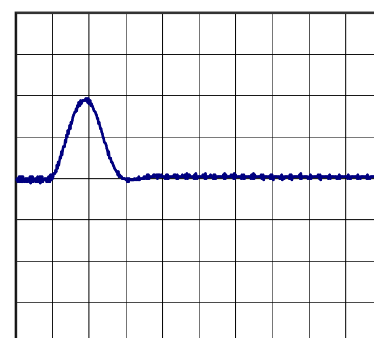
50µs/div   50µs/div

Min. Load (0A) ←→
  Load 50% (1.5A)

100mV/div
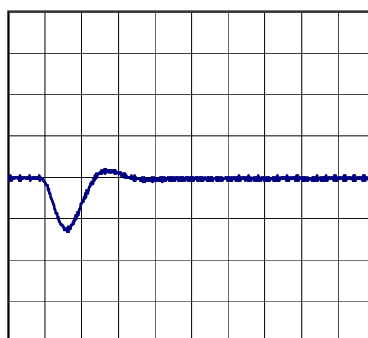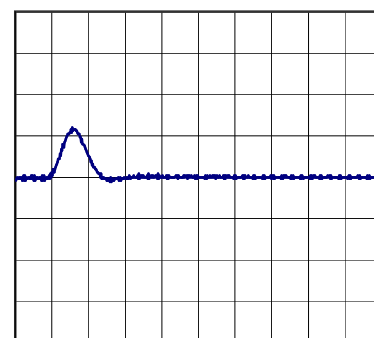
50µs/div   50µs/div

Load 50% (1.5A) ←→
  Load 100% (3A)

100mV/div

50µs/div   50µs/div

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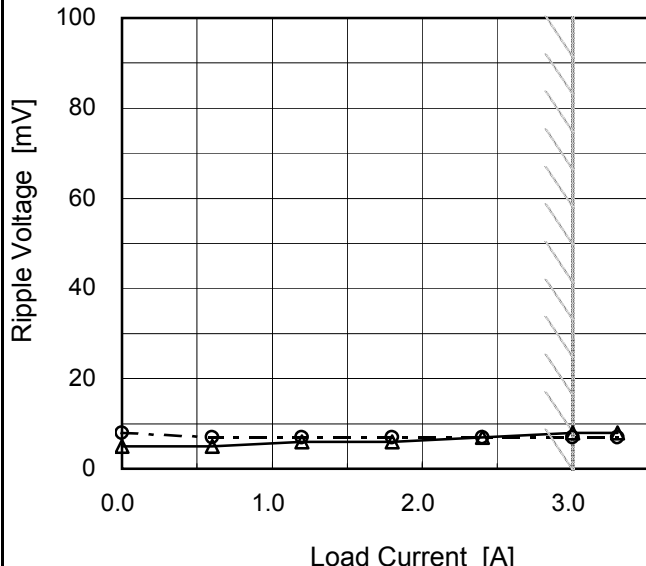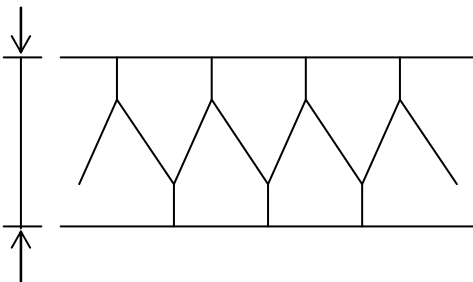
Model	MGS154805
Item	Ripple Voltage (by Load Current)
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

———△——— Input Volt. 36V
—·—○—·— Input Volt. 76V

Load Current [A]

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.

Ripple [mVp-p]

Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV] Input Volt. 36 [V]	Ripple Voltage [mV] Input Volt. 76 [V]
0.0	4	5
0.6	4	5
1.2	5	6
1.8	5	6
2.4	5	6
3.0	6	6
3.3	6	6
--	-	-
--	-	-
--	-	-
--	-	-

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Model	MGS154805
Item	Ripple-Noise
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

——△—— Input Volt. 36V
—··—○—··— Input Volt. 76V

Ripple Voltage [mV] vs Load Current [A]

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.

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	5	8
0.6	5	7
1.2	6	7
1.8	6	7
2.4	7	7
3.0	8	7
3.3	8	7
--	-	-
--	-	-
--	-	-
--	-	-

Ripple
Noise[mVp-p]

Fig.Complex Ripple Noise Wave Form

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Model	MGS154805
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V3A

Testing Circuitry　Figure B

1.Graph

- - -□- - - 　Load 50%
————△———— 　Load 100%

Ambient Temperature [°C]
Input Volt.　　48V

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%
-60	9	12
-40	9	12
-20	8	11
0	8	11
25	7	10
60	7	10
65	7	10
--	-	-
--	-	-
--	-	-
--	-	-

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参考資料

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Model	MGS154805

Item	Ambient Temperature Drift

Object	+5V3A

Testing Circuitry   Figure A

1.Graph

— △ — Input Volt.　36V
- - □ - - Input Volt.　48V
—·— ○ —·— Input Volt.　76V

Ambient Temperature [°C]

Load 100%

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

2.Values

Ambient Temperature	Output Voltage [V]		
	Input Volt.	Input Volt.	Input Volt.
[°C]	36[V]	48[V]	76[V]
-60	5.022	5.023	5.023
-40	5.036	5.036	5.036
-20	5.047	5.047	5.048
0	5.056	5.056	5.056
25	5.063	5.063	5.063
60	5.067	5.067	5.068
65	5.067	5.067	5.068
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MGS154805		
Item	Output Voltage Accuracy	Testing Circuitry	Figure A
Object	+5V3A		

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 - 60°C

Input Voltage : 36 - 76V

Load Current : 0 - 3A
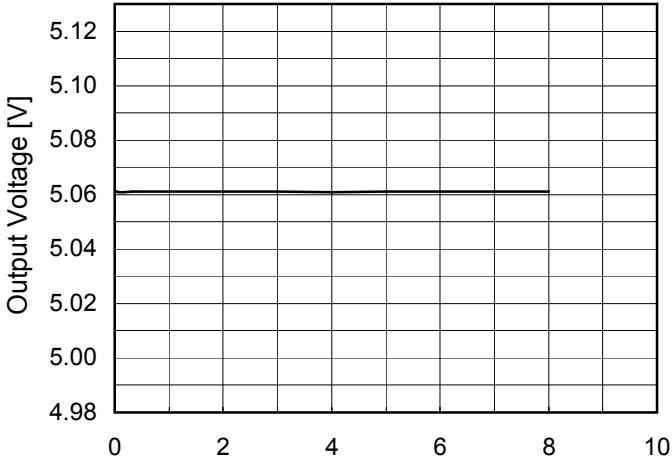
* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

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

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	36	0	5.069	±17	±0.3
Minimum Voltage	-40	36	3	5.036		

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Model	MGS154805
Item	Time Lapse Drift
Object	+5V3A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

Input Volt.   48V
Load   100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.061
0.5	5.061
1.0	5.061
2.0	5.061
3.0	5.061
4.0	5.061
5.0	5.061
6.0	5.061
7.0	5.061
8.0	5.061

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Model	MGS154805
Item	Rise and Fall Time
Object	+5V3A

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

Input Volt.   48 V

Load 50%

Output
Volt.

[1V/div]

0

Load 100%

Output
Volt.

[1V/div]

0

Input
Volt.

0

[10V/div]   Time   [10ms/div]   Time   [10ms/div]

2.Values   [ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.1	2.2	3.3	4.0	4.5
100 %	1.1	2.2	3.3	2.0	2.2

Output
Volt.

90%

10%

Input
Volt.

Td   Tr   Th   Tf

Ts

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Model	MGS154805		
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry	Figure A
Object	+5V3A		

1.Graph

--- ⊟ --- Load 50%
——— △ ——— Load 100%

Input Voltage [V] vs Ambient Temperature [°C]

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

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	30.3	30.5
-40	30.5	30.4
-20	30.5	30.4
0	30.5	30.4
25	30.5	30.4
60	30.3	30.5
65	30.3	30.5
--	-	-
--	-	-
--	-	-
--	-	-

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Model	MGS154805
Item	Overcurrent Protection
Object	+5V3A

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

———△ Input Volt. 36V
———□ Input Volt. 48V
———○ Input Volt. 76V

Load Current [A]

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

Intermittent operation occurs when overcurrent protection is activated.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
5.00	3.99	4.14	3.78
4.75	-	-	-
4.50	-	-	-
4.00	-	-	-
3.50	-	-	-
3.00	-	-	-
2.50	-	-	-
2.00	-	-	-
1.50	-	-	-
1.00	-	-	-
0.50	-	-	-
0.00	-	-	-

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Figure A

Temperature Chamber

DC Power Supply → Electronic Switch → Power Meter → Power Supply → Electronic DC Load → Oscilloscope

Relay Unit

DVM

Data Acquisition/Control Unit

Measuring board

C1=22μF(Ceramic Capacitor)

Input pin   Output pin

+Vin   +Vout

Power Supply

C1

Electric DC Load

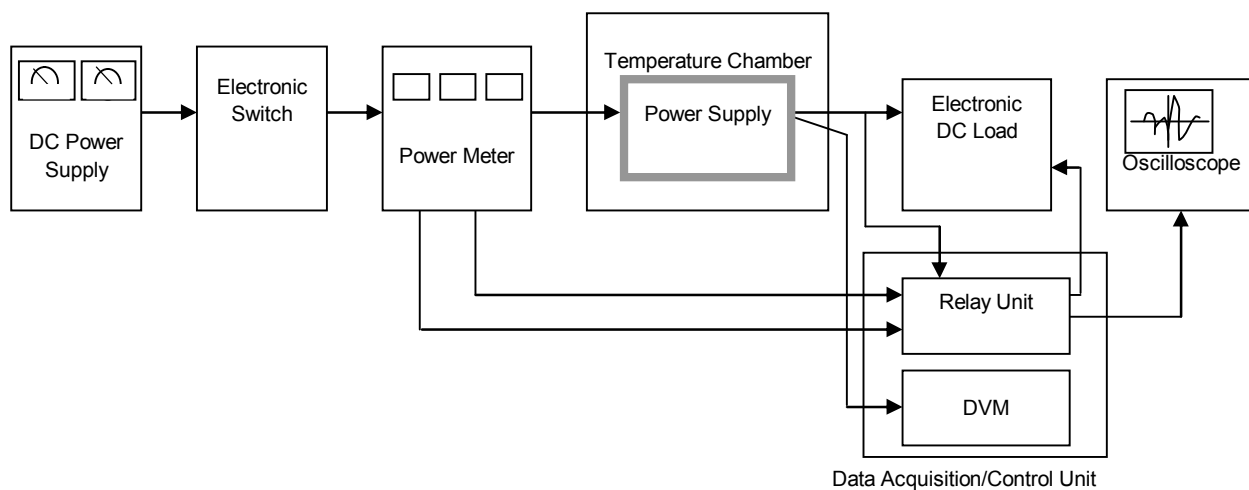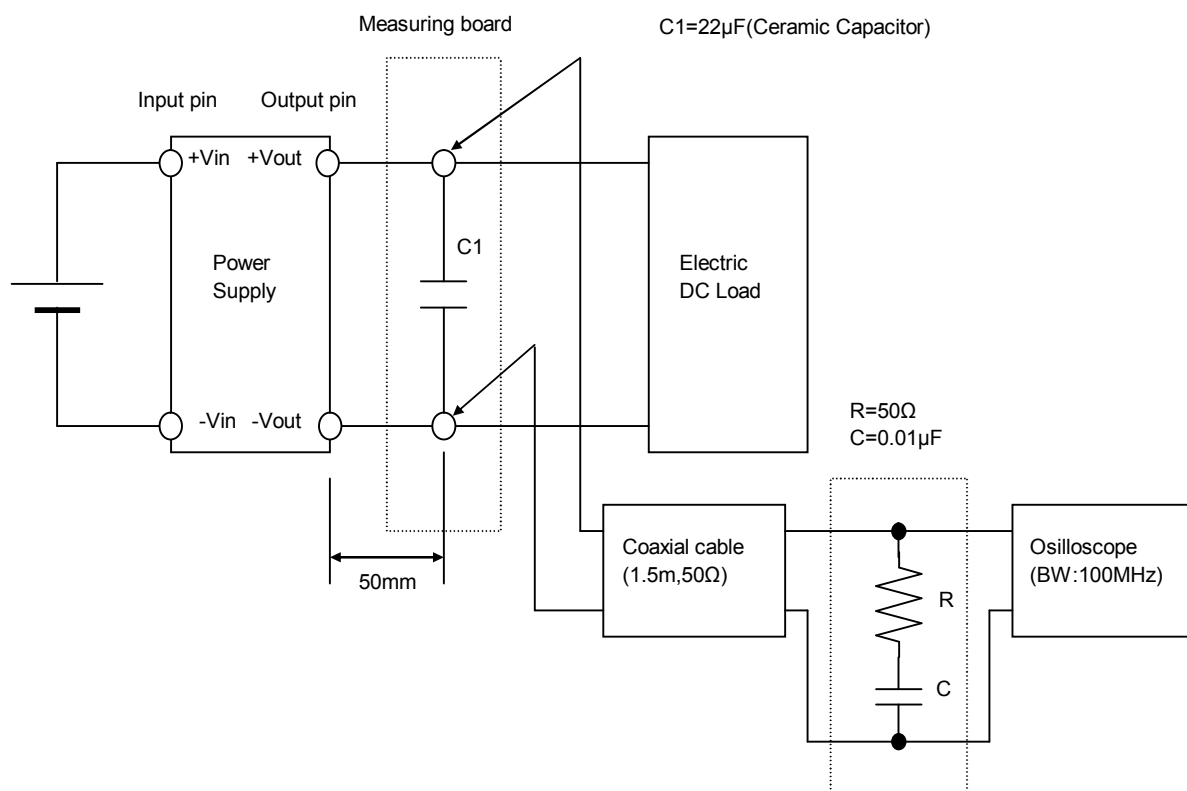-Vin   -Vout

50mm

R=50Ω
C=0.01μF

Coaxial cable
(1.5m,50Ω)

R

C

Osilloscope
(BW:100MHz)

Figure B（Ripple and Ripple noise Characteristic）

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