CO$EL

TEST DATA OF SUS31205

Regulated DC Power Supply
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Model	SUS31205
Item	Input Current (by Input Voltage)
Object	————

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

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

Input Current [A] vs Input Voltage [V]

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
2.0	0.000	0.000	0.000
2.6	0.055	0.634	0.052
3.0	0.047	0.681	0.642
3.4	0.041	0.691	0.649
4.0	0.035	0.564	0.662
5.0	0.030	0.410	0.694
5.8	0.027	0.349	0.714
6.0	0.026	0.336	0.692
8.0	0.023	0.244	0.488
9.0	0.022	0.216	0.423
10.0	0.022	0.195	0.384
12.0	0.022	0.164	0.315
14.0	0.023	0.143	0.271
16.0	0.024	0.128	0.237
18.0	0.025	0.117	0.212
20.0	0.027	0.109	0.193
...	...	...	...

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Model	SUS31205
Item	Input Current (by Load Current)
Object	

Temperature　　25°C
Testing Circuitry　Figure A

1.Graph

—△—	Input Volt.	9V
- - -❺- - -	Input Volt.	12V
— · —◯— · · —	Input Volt.	18V

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]
0.00	0.022	0.022	0.025
0.12	0.099	0.078	0.061
0.24	0.177	0.135	0.098
0.36	0.256	0.193	0.135
0.48	0.340	0.253	0.173
0.60	0.423	0.315	0.212
0.66	0.468	0.346	0.232
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SUS31205
Item	Input Power (by Load Current)
Object	

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

———△——— Input Volt. 9V
---⊟--- Input Volt. 12V
—·—○—·— Input Volt. 18V

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	0.19	0.26	0.45
0.12	0.88	0.93	1.10
0.24	1.58	1.62	1.76
0.36	2.30	2.32	2.44
0.48	3.04	3.04	3.13
0.60	3.81	3.76	3.82
0.66	4.21	4.14	4.18
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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COSEL

Model	SUS31205
Item	Efficiency (by Input Voltage)
Object	

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

--- ⊟ --- Load 50%
——△—— Load 100%

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

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8	78.1	78.4
9	78.1	79.3
10	78.0	79.9
12	77.1	80.3
15	75.1	80.1
18	72.2	79.4
20	70.1	78.1
---	-	-
--	-	-

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Model	SUS31205
Item	Efficiency (by Load Current)
Object	

Temperature	25°C
Testing Circuitry	Figure A

1. Graph

Input Volt. 9V (——△——)
Input Volt. 12V (- - -◻- - -)
Input Volt. 18V (—·—○—·—)

Efficiency [%] vs Load Current [A]

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]
0.00	-	-	-
0.12	68.9	65.2	55.0
0.24	76.6	74.8	68.7
0.36	78.9	78.4	74.4
0.48	79.5	79.7	77.4
0.60	79.4	80.4	79.2
0.66	79.1	80.3	79.6
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

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Model	SUS31205
Item	Line Regulation
Object	+5V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

--- ⊟ --- Load 50%
———△——— Load 100%

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

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8	5.040	5.039
9	5.040	5.039
10	5.040	5.039
12	5.040	5.039
15	5.040	5.039
18	5.040	5.039
20	5.040	5.039
--	-	-
--	-	-

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Model	SUS31205
Item	Load Regulation
Object	+5V0.6A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

————△———— Input Volt.   9V
– – –⊟– – – Input Volt.   12V
—·–○—·· Input Volt.   18V

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	5.041	5.041	5.041
0.12	5.041	5.041	5.041
0.24	5.040	5.040	5.040
0.36	5.040	5.040	5.040
0.48	5.040	5.040	5.040
0.60	5.039	5.039	5.039
0.66	5.039	5.039	5.039
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

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Model	SUS31205
Item	Dynamic Load Response
Object	+5V0.6A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 12 V
Cycle 100 mS

t_1、t_2 = 50μs

Load Current

t_1

t_2
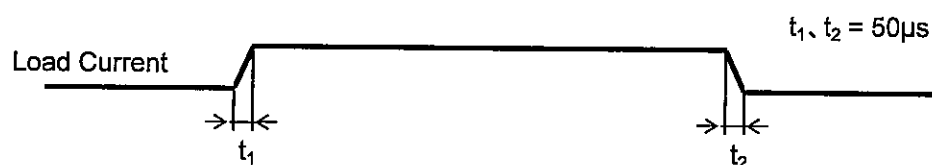
Min. Load (0A) ⟵⟶
Load 100% (0.6A)

100mV/div
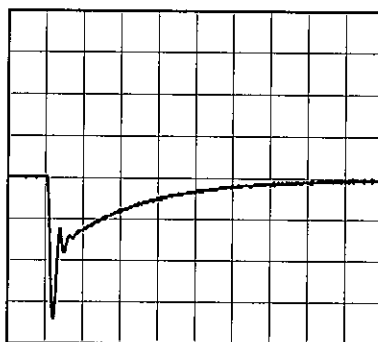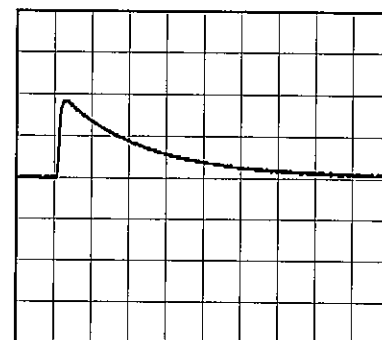
200μs/div

200μs/div

Min. Load (0A) ⟵⟶
Load 50% (0.3A)

100mV/div
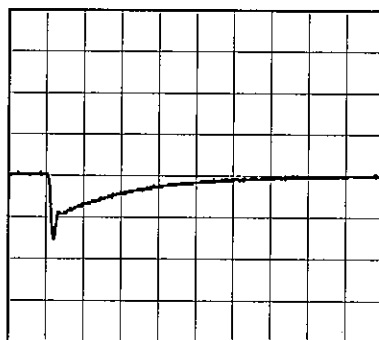
200μs/div
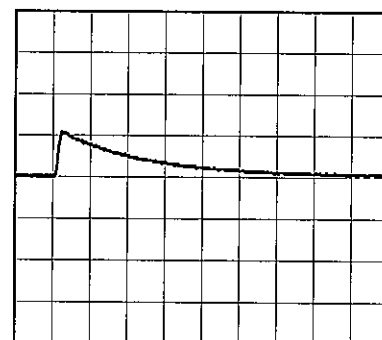
200μs/div

Load 50% (0.3A) ⟵⟶
Load 100% (0.6A)

100mV/div

200μs/div

200μs/div

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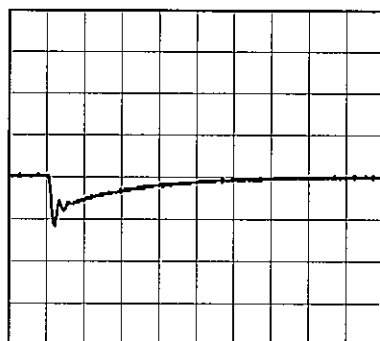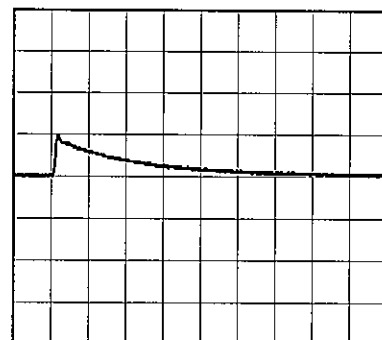
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Model	SUS31205
Item	Ripple Voltage (by Load Current)
Object	+5V0.6A

Temperature　　25°C
Testing Circuitry　Figure B

1.Graph

— △ — Input Volt.　9V
— ○ — Input Volt.　18V

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.

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	3	3
0.12	3	3
0.24	5	3
0.36	8	4
0.48	11	5
0.60	17	7
0.66	21	7
--	-	-
--	-	-
--	-	-
--	-	-

Ripple [mVp-p]

Fig.Complex Ripple Wave Form

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Model	SUS31205
Item	Ripple-Noise
Object	+5V0.6A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

— △ — Input Volt. 9V
— ○ — Input Volt. 18V

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. 9 [V]	Input Volt. 18 [V]
0.00	8	10
0.12	11	13
0.24	14	15
0.36	16	16
0.48	19	18
0.60	22	20
0.66	24	21
--	-	-
--	-	-
--	-	-
--	-	-

Ripple
Noise[mVp-p]

Fig.Complex Ripple Noise Wave Form

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Model	SUS31205
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V0.6A

Testing Circuitry   Figure B

1.Graph

--- ⊟ --- Load 50%
—— △ —— Load 100%

Ripple Voltage [mV] vs Ambient Temperature [°C]

Input Volt.   12V

Measured by 100 MHz Oscilloscope.
Note: Slanted line shows the range of the rated
ambient temperature.
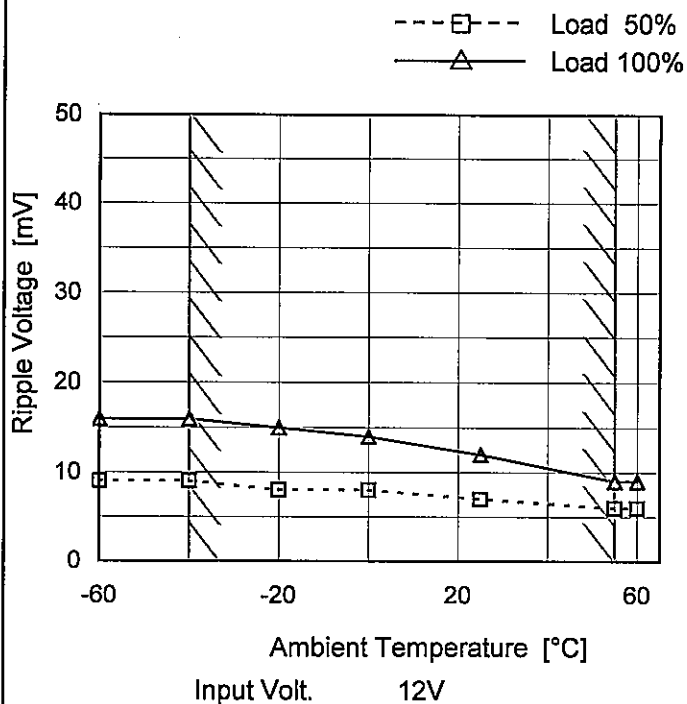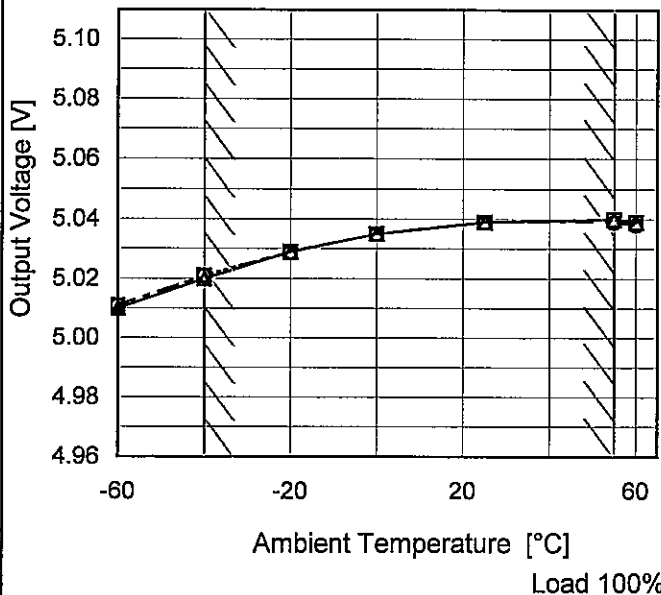
2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	9	16
-40	9	16
-20	8	15
0	8	14
25	7	12
55	6	9
60	6	9
--	-	-
--	-	-
--	-	-
--	-	-

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Model	SUS31205
Item	Ambient Temperature Drift
Object	+5V0.6A

Testing Circuitry   Figure A

1.Graph

— △ — Input Volt. 9V
- - - ⊟ - - - Input Volt. 12V
— · — ○ — · · Input Volt. 18V

Ambient Temperature [°C]

Load 100%

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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
-60	5.010	5.011	5.011
-40	5.020	5.021	5.021
-20	5.029	5.029	5.029
0	5.035	5.035	5.035
25	5.039	5.039	5.039
55	5.040	5.040	5.039
60	5.039	5.039	5.038
---	-	--	-
--	-	-	-
---	--	-	--
---	-	-	-

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Model	SUS31205	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V0.6A	

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 - 55°C

Input Voltage : 9 - 18V

Load Current : 0 - 0.6A
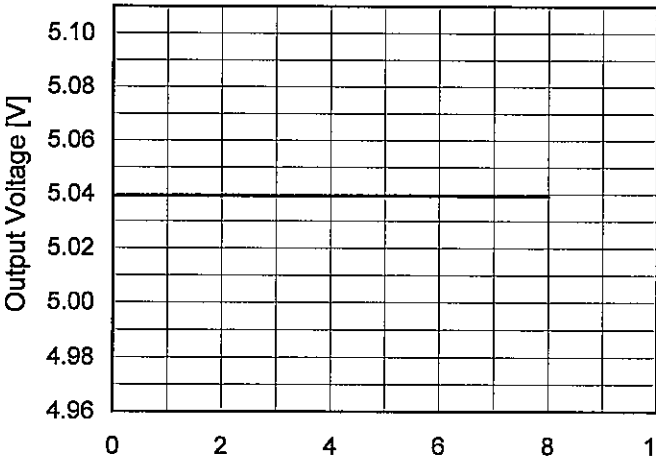
* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

* 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	55	18	0	5.042	±11	±0.2
Minimum Voltage	-40	9	0.6	5.020		

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Model	SUS31205
Item	Time Lapse Drift
Object	+5V0.6A

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

Input Volt.   12V
Load   100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.039
0.5	5.039
1.0	5.039
2.0	5.039
3.0	5.039
4.0	5.039
5.0	5.039
6.0	5.039
7.0	5.039
8.0	5.039

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Model	SUS31205
Item	Rise and Fall Time
Object	+5V0.6A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

Input Volt.   12 V

Output Volt. [1V/div]   Load 50%

0

Output Volt. [1V/div]   Load 100%

0

Input Volt.

0

[10V/div]   Time   [10mS/div]   Time   [5mS/div]

2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	0.9	1.0	0.2	1.4
100 %	0.1	1.0	1.1	0.1	0.7

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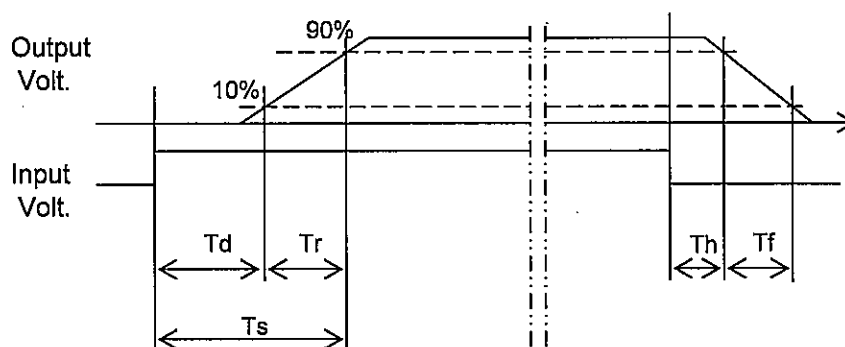
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Model	SUS31205
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V0.6A
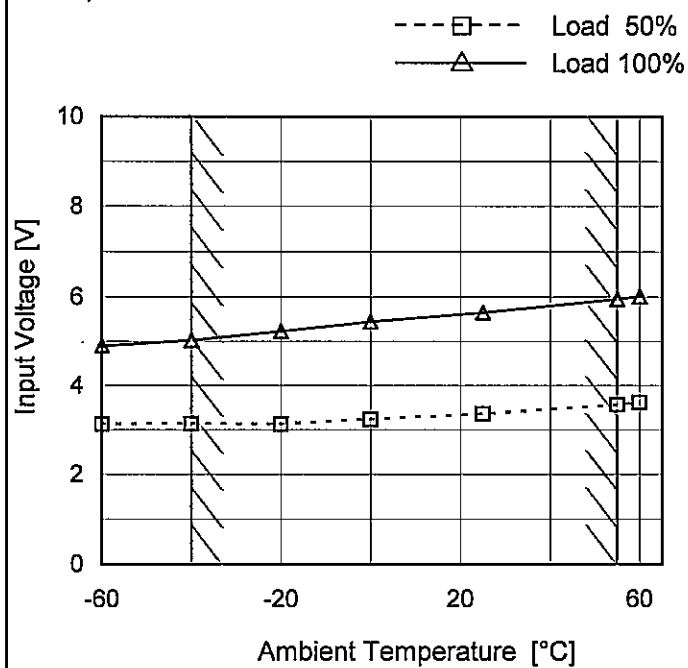
Testing Circuitry   Figure A

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	3.2	4.9
-40	3.2	5.1
-20	3.2	5.3
0	3.3	5.5
25	3.4	5.7
55	3.6	6.0
60	3.7	6.1
--	-	-
--	-	-
--	-	-
--	-	-

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Model	SUS31205
Item	Overcurrent Protection
Object	+5V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

———— Input Volt. 9V
———— Input Volt. 12V
━━━━ Input Volt. 18V

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]
5.00	0.60	0.60	0.60
4.75	0.90	0.94	0.93
4.50	0.92	0.96	0.94
4.00	0.97	0.99	0.96
3.50	1.01	1.03	0.99
3.00	1.06	1.06	1.01
2.50	1.10	1.09	1.03
2.00	1.15	1.11	1.04
1.50	1.17	1.11	1.02
1.00	1.15	1.07	0.98
0.50	1.07	0.99	0.91
0.00	1.04	0.95	0.91

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Figure A

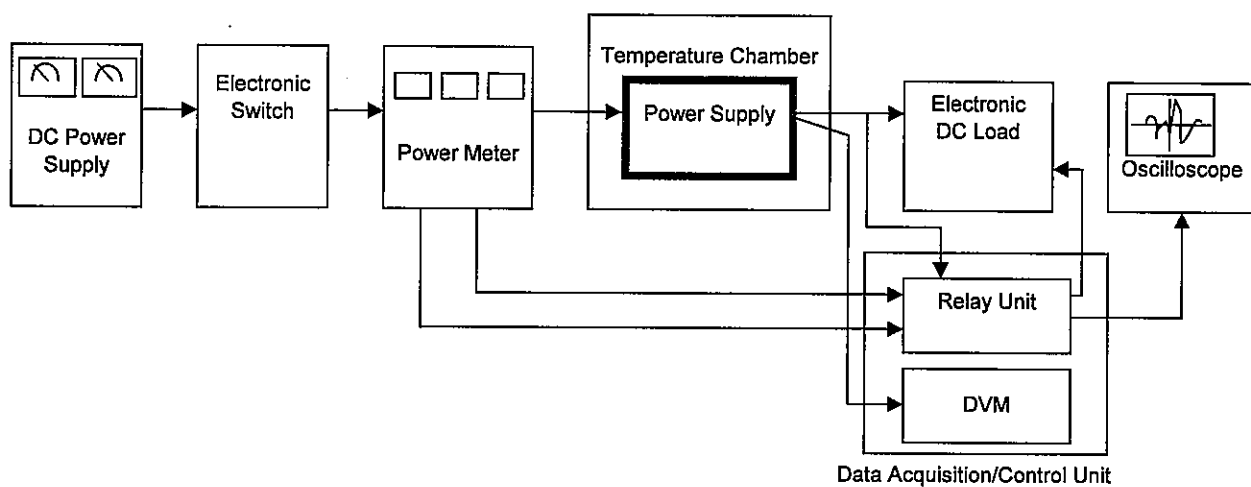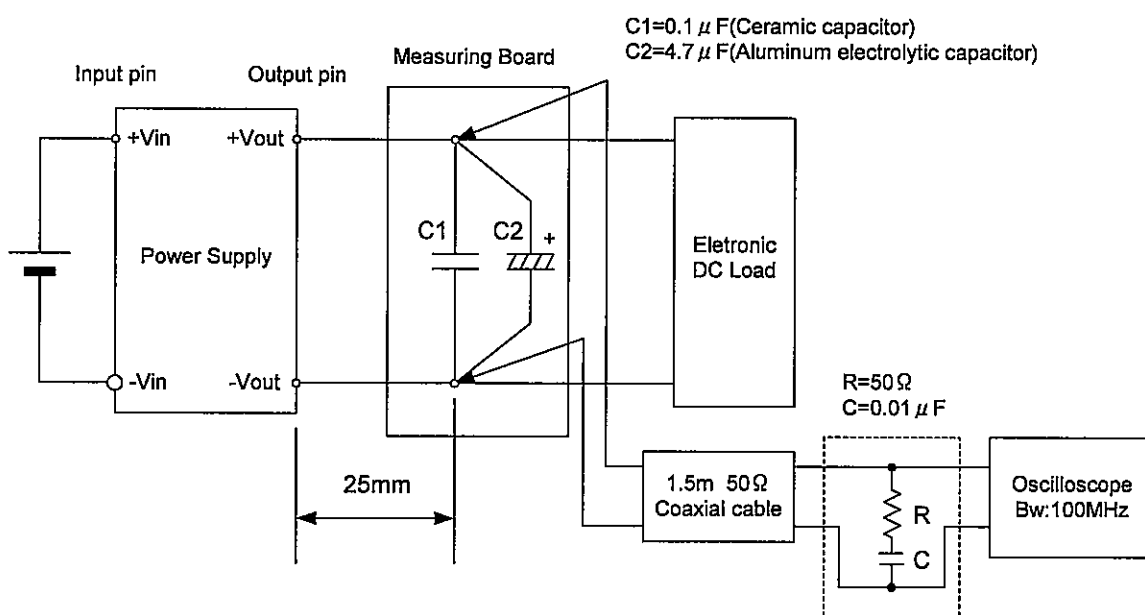C1=0.1 μ F(Ceramic capacitor)
C2=4.7 μ F(Aluminum electrolytic capacitor)

Figure B (Ripple and Ripple noise Characteristic)