参考資料

COSEL

TEST DATA OF MODULE B

(RB series)

Regulated DC Power Supply
November 25, 2019

Approved by : Yoshimichi Hirokawa

Yoshimichi Hirokawa　　Design Manager

Prepared by : Yutaka Murai

Yutaka Murai　　Design Engineer

COSEL CO.,LTD.

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CONTENTS

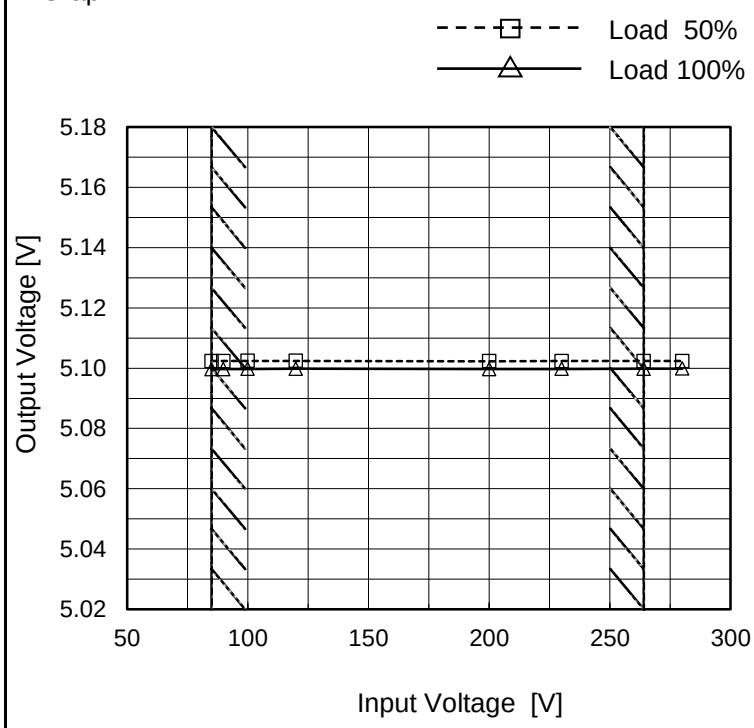
(Final Page 12)

COSEL

Model	MODULE B
Item	Line Regulation
Object	+5V3A

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%
85	5.102	5.100
90	5.102	5.100
100	5.102	5.100
120	5.102	5.100
200	5.102	5.100
230	5.102	5.100
264	5.102	5.100
280	5.102	5.100
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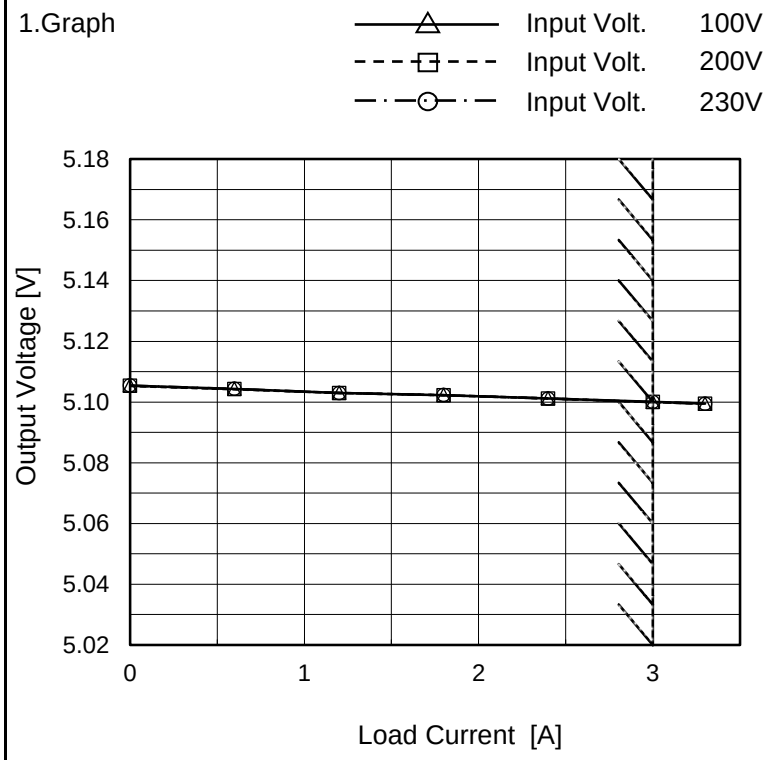
Model	MODULE B
Item	Load Regulation
Object	+5V3A

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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	5.105	5.105	5.105
0.6	5.104	5.104	5.104
1.2	5.103	5.103	5.103
1.8	5.102	5.102	5.102
2.4	5.101	5.101	5.101
3.0	5.100	5.100	5.100
3.3	5.099	5.099	5.099
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	MODULE B
Item	Dynamic Load Response
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure A

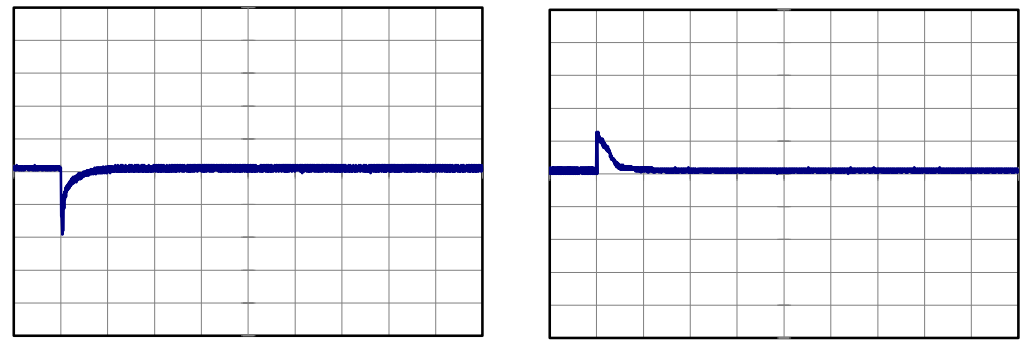
Input Volt. 100 V
Cycle 1000 ms

t1,t2 = 50 μsTyp

Load Current

t1 t2

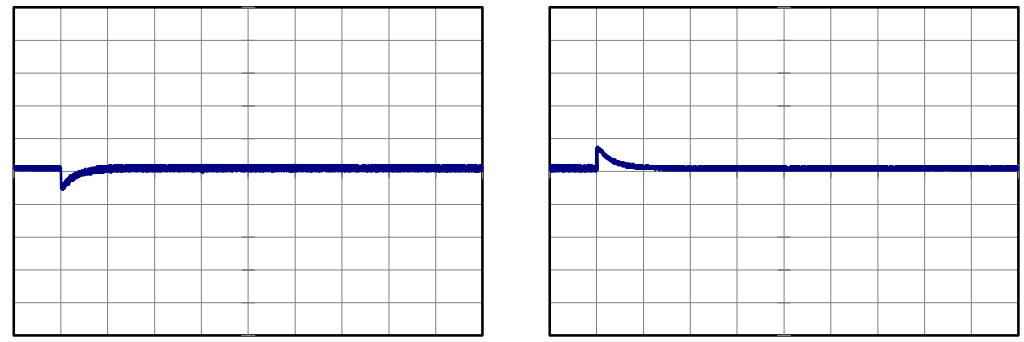
Min.Load (0A)←→
Load 100% (3A)



100 mV/div

4 ms/div 4 ms/div

Min.Load (0A)←→
Load 50% (1.5A)



100 mV/div

4 ms/div 4 ms/div

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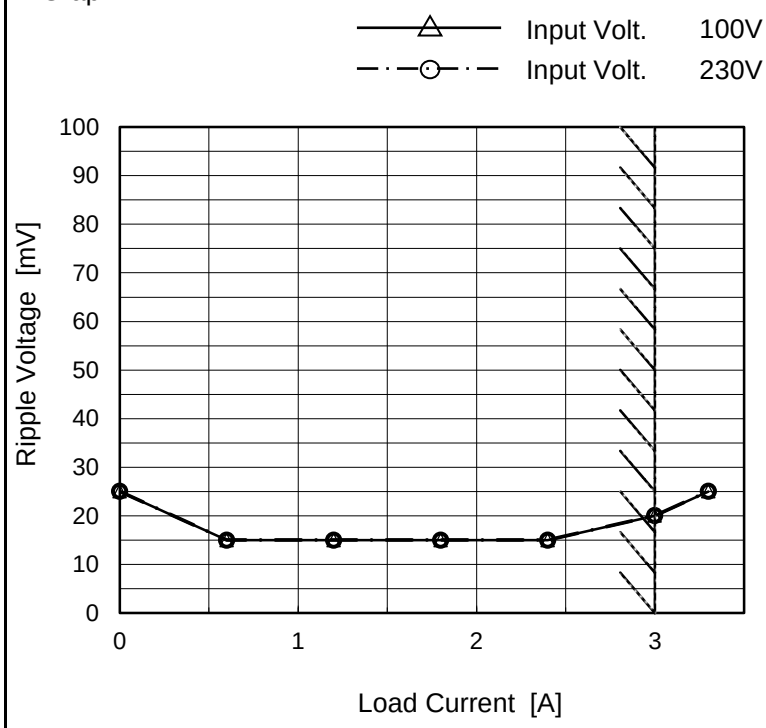
Model	MODULE B
Item	Ripple Voltage (by Load Current)
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

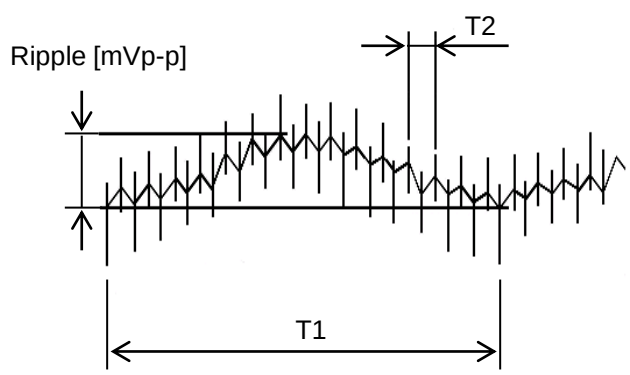


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
0.0	25	25
0.6	15	15
1.2	15	15
1.8	15	15
2.4	15	15
3.0	20	20
3.3	25	25
--	-	-
--	-	-
--	-	-
--	-	-

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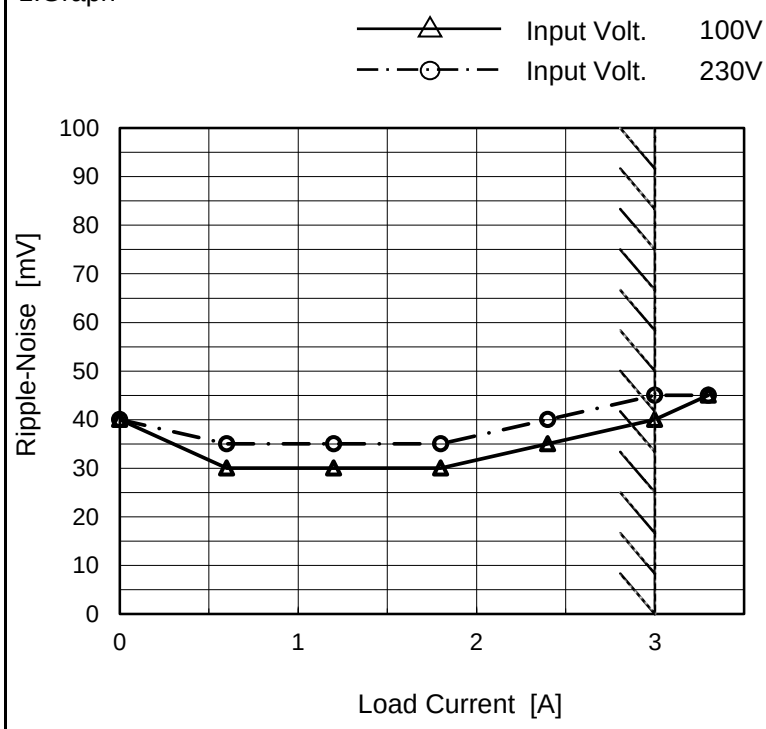
Model	MODULE B
Item	Ripple-Noise
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

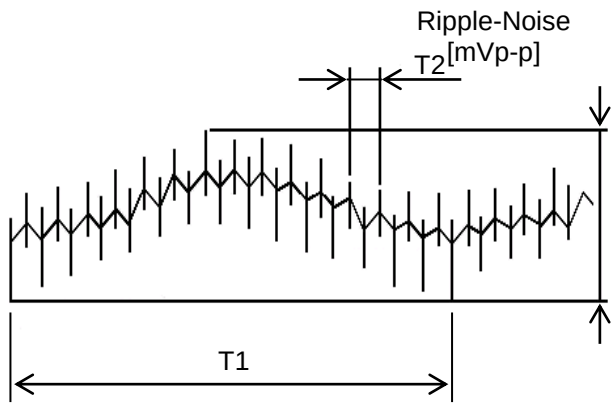


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV] Input Volt. 100 [V]	Ripple-Noise [mV] Input Volt. 230 [V]
0.0	40	40
0.6	30	35
1.2	30	35
1.8	30	35
2.4	35	40
3.0	40	45
3.3	45	45
--	-	-
--	-	-
--	-	-
--	-	-

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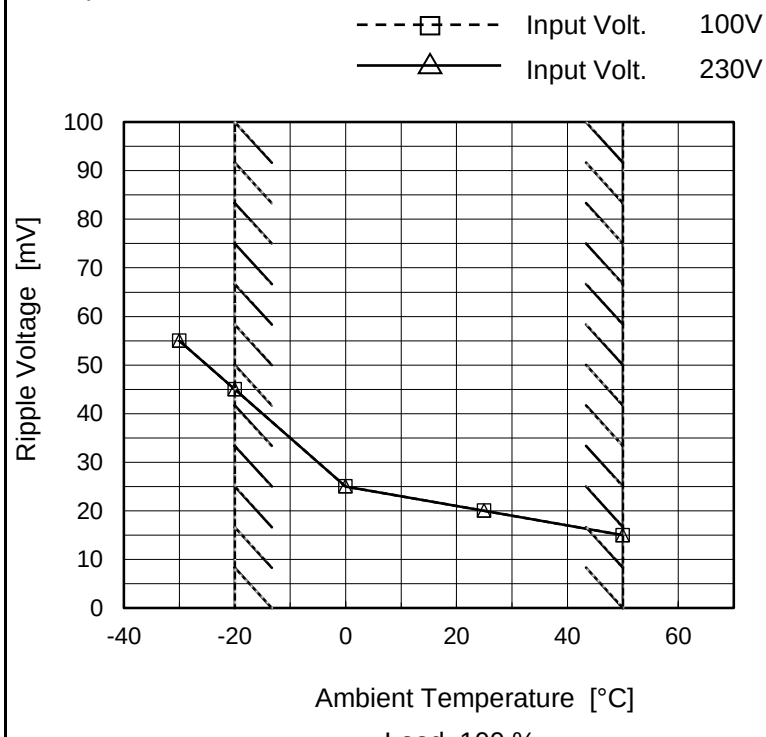
Model	MODULE B
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V3A

Testing Circuitry Figure B

1.Graph



Measured by 20 MHz Oscilloscope.

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

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
-30	55	55
-20	45	45
0	25	25
25	20	20
50	15	15
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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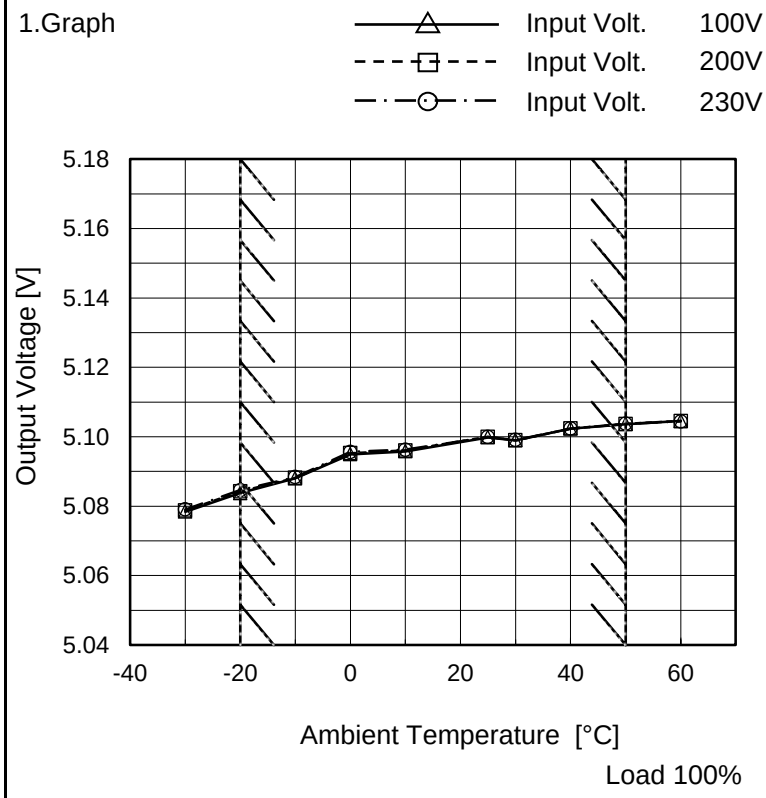
Model	MODULE B
Item	Ambient Temperature Drift
Object	+5V3A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-30	5.078	5.079	5.079
-20	5.084	5.084	5.085
-10	5.088	5.088	5.088
0	5.095	5.095	5.096
10	5.096	5.096	5.096
25	5.100	5.100	5.100
30	5.099	5.099	5.099
40	5.102	5.102	5.102
50	5.104	5.104	5.104
60	5.105	5.105	5.104
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Model	MODULE B	
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 : -20 - 50°C
Input Voltage : 85 - 264V
Load Current : 0 - 3A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ratio)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	50	85	0.00	5.119	±14	±0.3
Minimum Voltage	-20	85	3.00	5.091		

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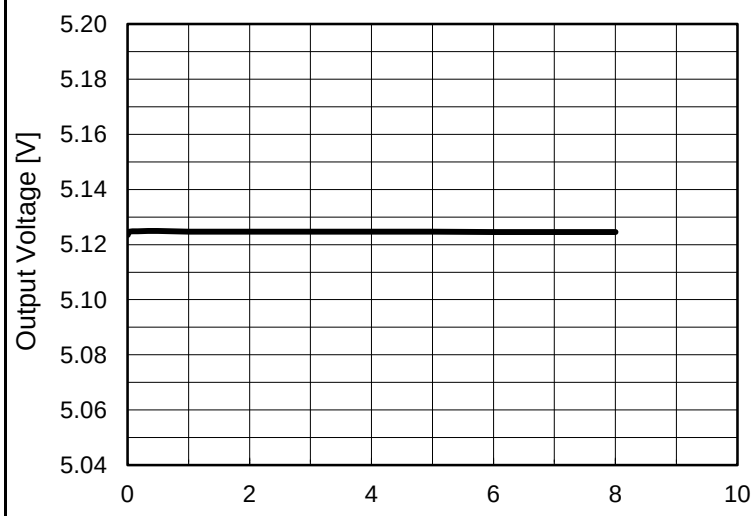
Model	MODULE B
Item	Time Lapse Drift
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

* The characteristic of AC230V is equal.

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.124
0.5	5.125
1.0	5.125
2.0	5.125
3.0	5.125
4.0	5.125
5.0	5.125
6.0	5.125
7.0	5.125
8.0	5.125

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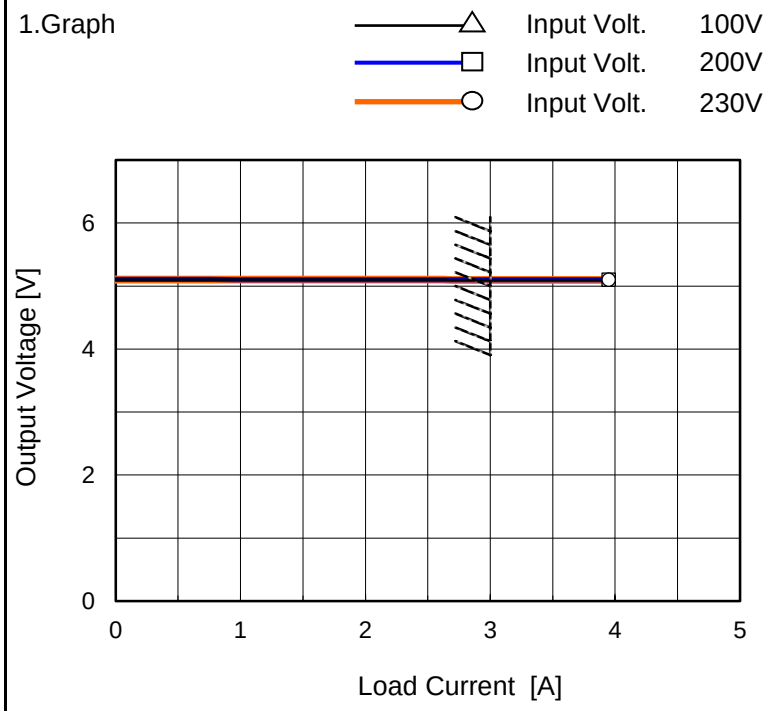
Model	MODULE B
Item	Overcurrent Protection
Object	+5V3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
5	3.95	3.95	3.95
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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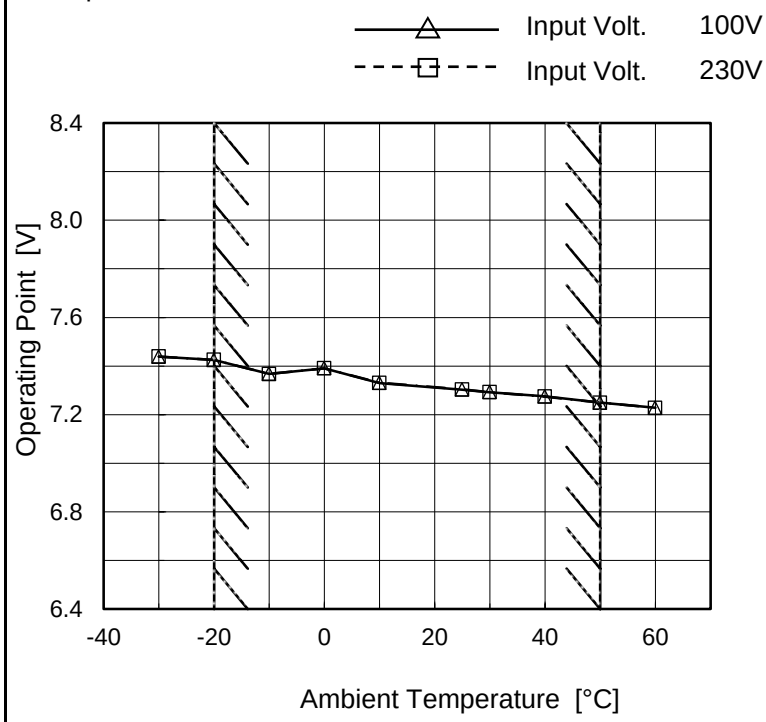
Model	MODULE B
Item	Overvoltage Protection
Object	+5V3A

Testing Circuitry Figure A

1.Graph



Load 0%

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

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 230[V]
-30	7.44	7.44
-20	7.42	7.43
-10	7.37	7.37
0	7.39	7.39
10	7.33	7.33
25	7.30	7.30
30	7.29	7.29
40	7.27	7.27
50	7.25	7.25
60	7.23	7.23
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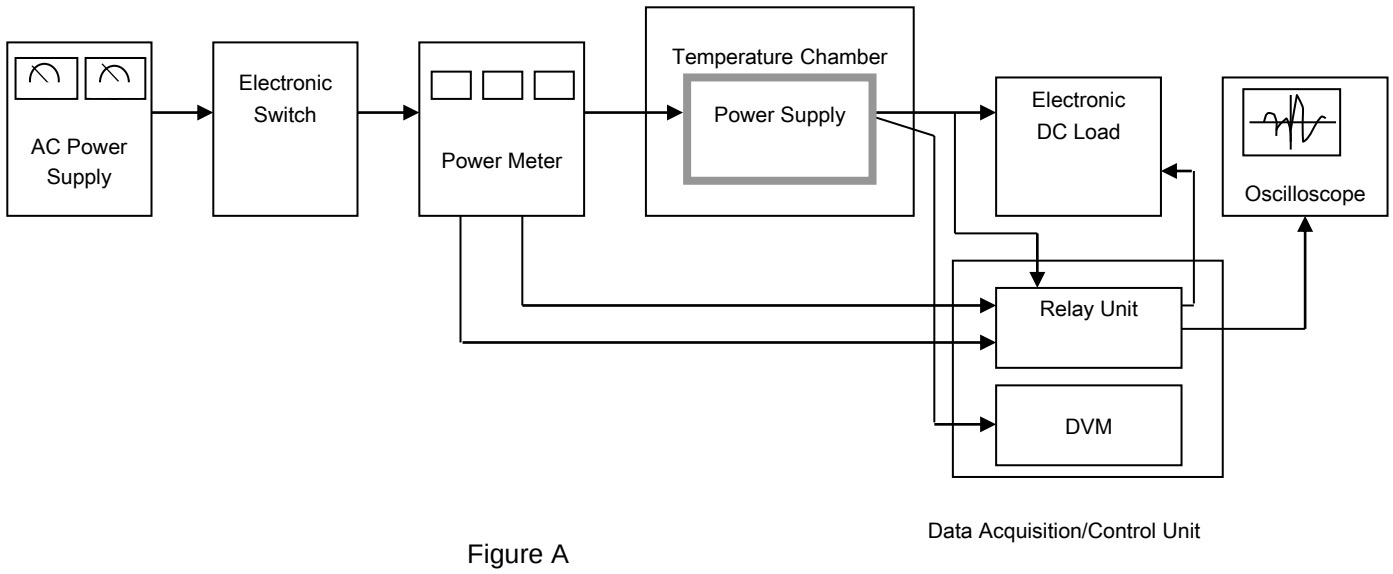
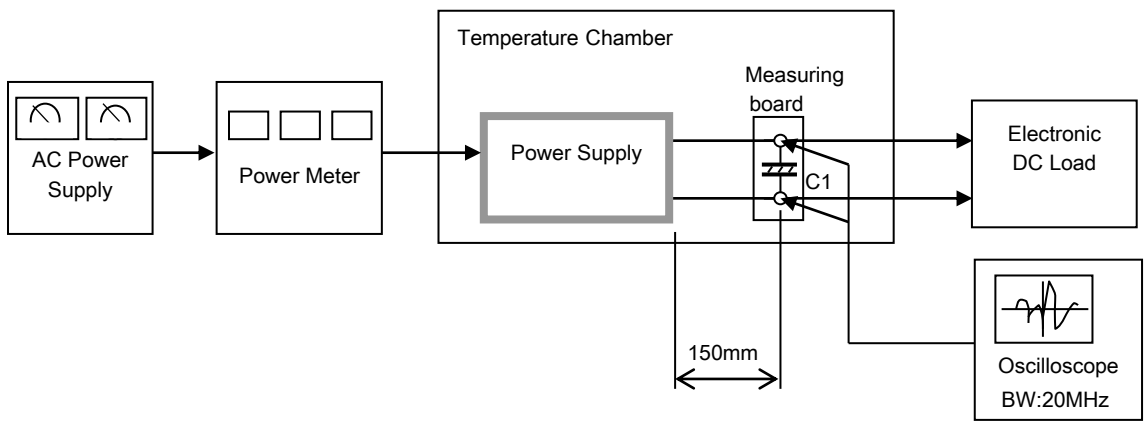


Figure A



C1= 22 μF
(Electrolytic capacitor)

Figure B