

TEST DATA OF MODULE V5

(AME series)

Regulated DC Power Supply
September 22, 2021

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Design Manager

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Design Engineer

COSEL CO.,LTD.



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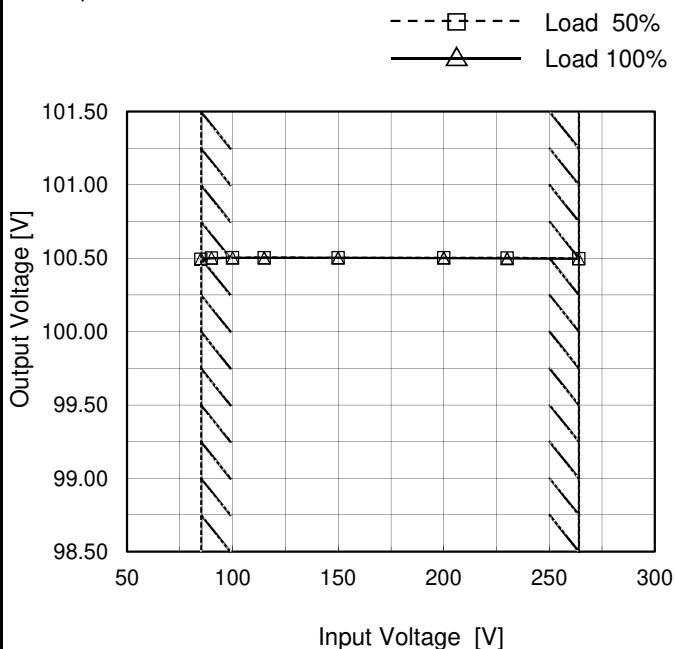
(Final Page 12)

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Model	MODULE V5
Item	Line Regulation
Object	+100V2.25A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph



2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	100.493	100.497
90	100.502	100.501
100	100.504	100.503
115	100.505	100.503
130	100.504	100.503
150	100.504	100.503
200	100.504	100.501
230	100.502	100.499
264	100.499	100.498
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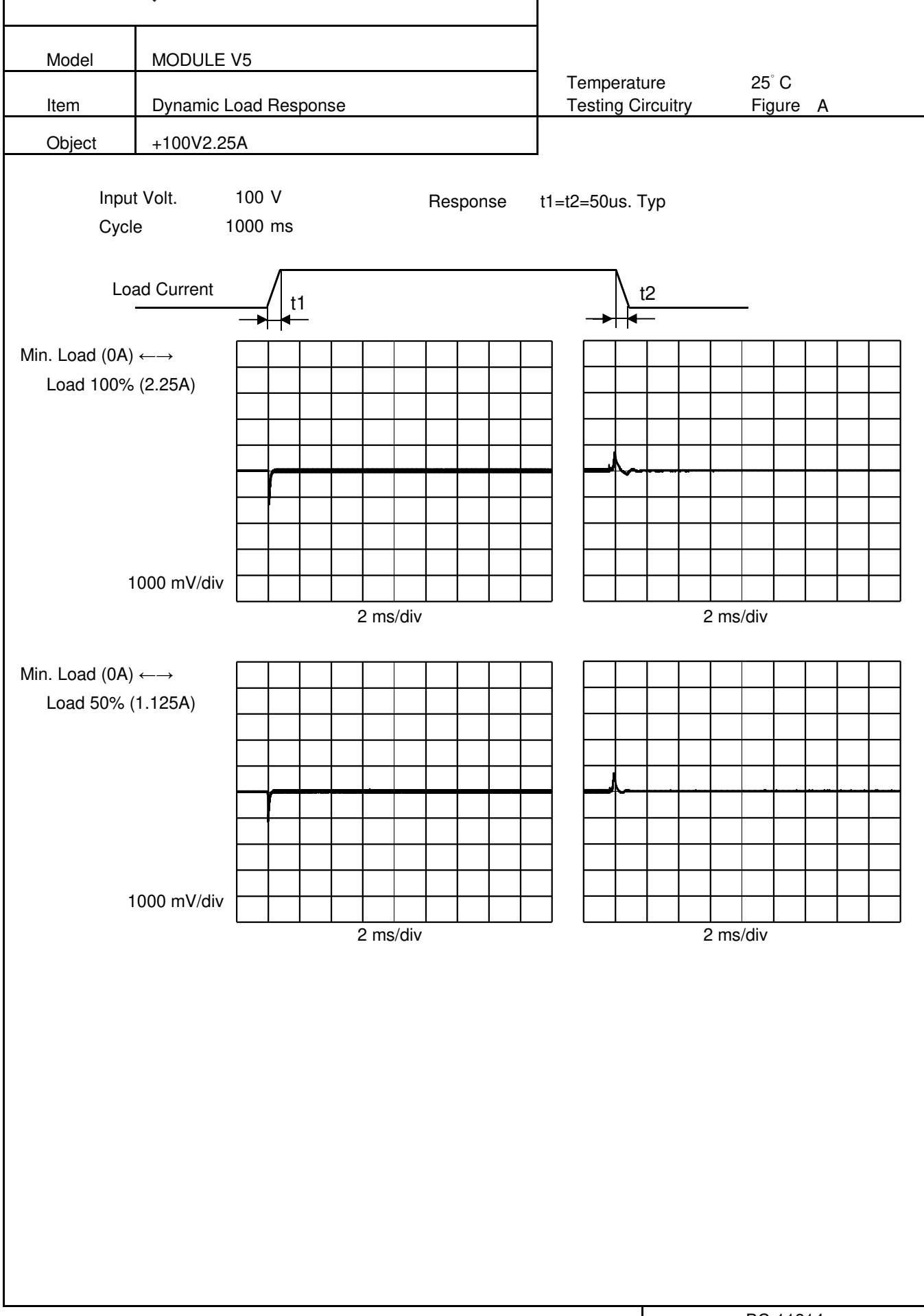
Note:

Hatched line shows the input voltage range.

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Model	MODULE V5																																																					
Item	Load Regulation																																																					
Object	+100V2.25A																																																					
1. Graph	<p>Output Voltage [V]</p> <p>Load Current [A]</p> <ul style="list-style-type: none"> — ▲ — Input Volt. 100V - - - □ - - Input Volt. 200V - - - ○ - - Input Volt. 230V 																																																					
2. Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr> <td>0.00</td> <td>100.473</td> <td>100.506</td> <td>100.520</td> </tr> <tr> <td>0.45</td> <td>100.481</td> <td>100.513</td> <td>100.526</td> </tr> <tr> <td>0.90</td> <td>100.490</td> <td>100.519</td> <td>100.533</td> </tr> <tr> <td>1.35</td> <td>100.495</td> <td>100.523</td> <td>100.535</td> </tr> <tr> <td>1.80</td> <td>100.499</td> <td>100.524</td> <td>100.539</td> </tr> <tr> <td>2.25</td> <td>100.503</td> <td>100.525</td> <td>100.538</td> </tr> <tr> <td>2.48</td> <td>100.507</td> <td>100.527</td> <td>100.536</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>			Load Current [A]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	100.473	100.506	100.520	0.45	100.481	100.513	100.526	0.90	100.490	100.519	100.533	1.35	100.495	100.523	100.535	1.80	100.499	100.524	100.539	2.25	100.503	100.525	100.538	2.48	100.507	100.527	100.536	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Note: Hatched line shows the range of the rated load current.

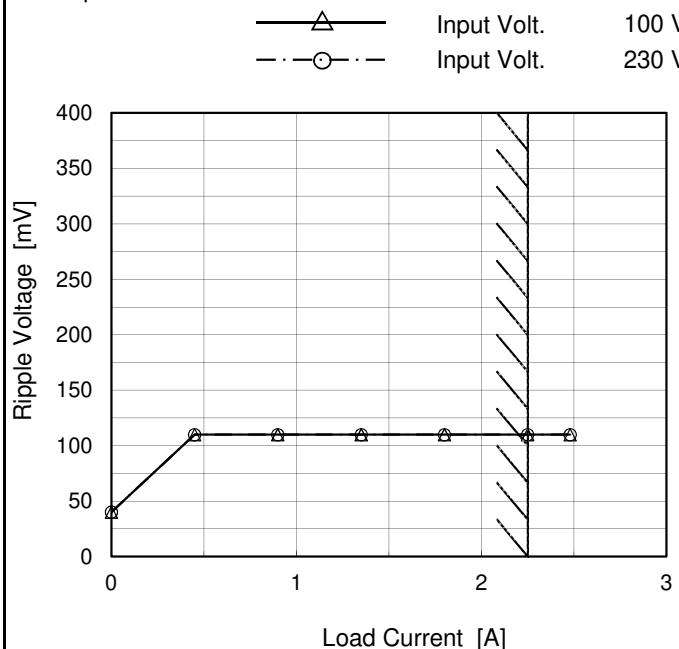
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Model	MODULE V5
Item	Ripple Voltage (by Load Current)
Object	+100V2.25A

Temperature 25°C
 Testing Circuitry Figure B

1. Graph



2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100[V]	Input Volt. 230[V]
0.00	40	40
0.45	110	110
0.90	110	110
1.35	110	110
1.80	110	110
2.25	110	110
2.48	110	110
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Note:

Measured by 20MHz Oscilloscope.

Ripple Voltage is shown as p-p in the figure below.

Hatched line shows the range of the rated load current.

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

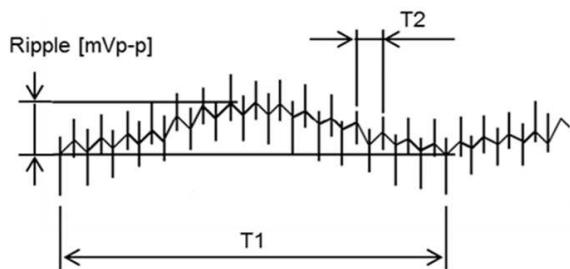
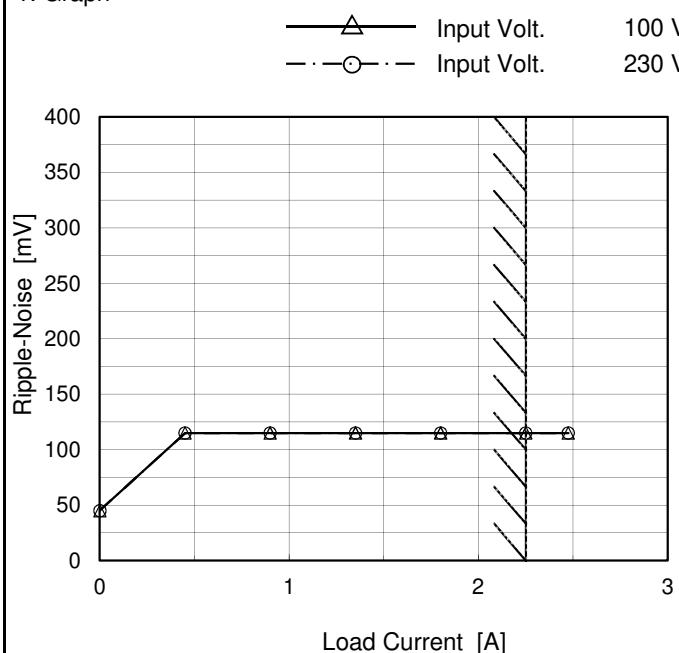


Fig. Complex Ripple Wave Form

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Model	MODULE V5	Temperature	25°C
Item	Ripple Noise	Testing Circuitry	Figure B
Object	+100V2.25A		

1. Graph



2. Values

Load Current [A]	Ripple Noise [mV]	
	Input Volt. 100[V]	Input Volt. 230[V]
0.00	45	45
0.45	115	115
0.90	115	115
1.35	115	115
1.80	115	115
2.25	115	115
2.48	115	115
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Note:

Measured by 20MHz Oscilloscope.

Ripple Noise is shown as p-p in the figure below.

Hatched line shows the range of the rated load current.

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

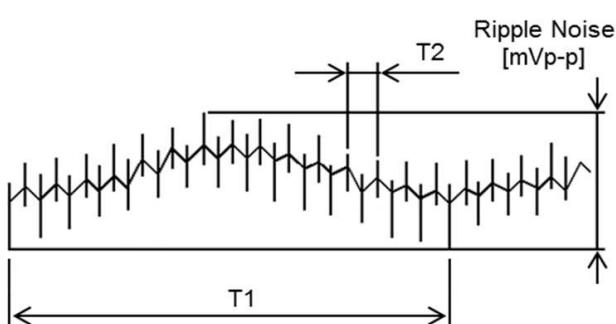
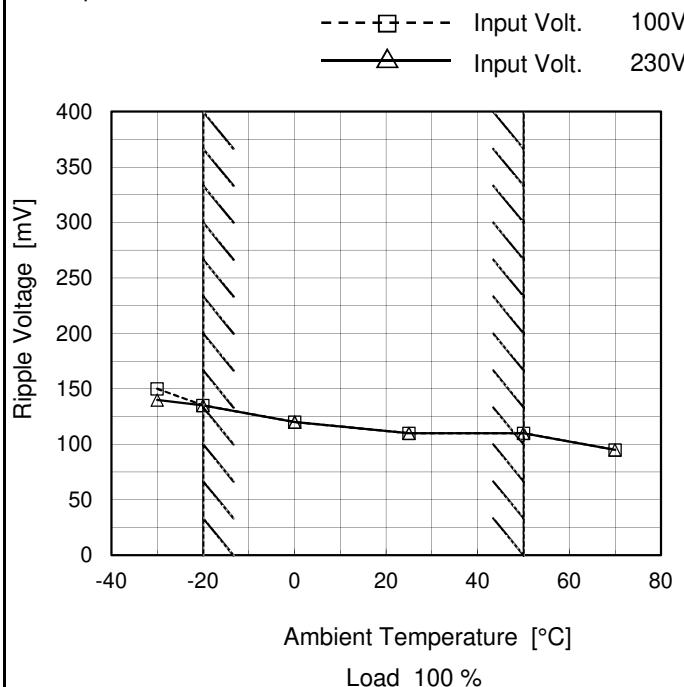


Fig. Complex Ripple Wave Form

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Model	MODULE V5
Item	Ripple Voltage (by Ambient Temp.)
Object	+100V2.25A

1. Graph



Testing Circuitry Figure B

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
-30	150	140
-20	135	135
0	120	120
25	110	110
50	110	110
70	95	95
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

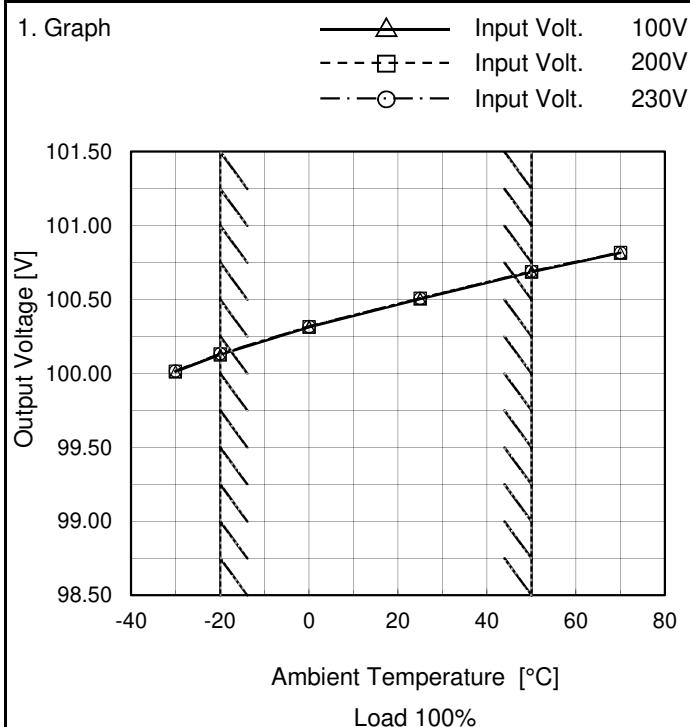
Note:

Measured by 20MHz Oscilloscope.

Hatched line shows the range of the rated operating temperature.



Model	MODULE V5
Item	Ambient Temperature Drift
Object	+100V2.25A



Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-30	100.010	100.015	100.016
-20	100.126	100.131	100.133
0	100.313	100.316	100.318
25	100.503	100.508	100.508
50	100.686	100.688	100.692
70	100.814	100.817	100.818
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Note:

Hatched line shows the range of the rated operating temperature.



Model	MODULE V5	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+100V2.25A	

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 - 2.25A

* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	50	230	3.0	100.692	± 304	± 0.3
Minimum Voltage	-20	85	0.0	100.084		

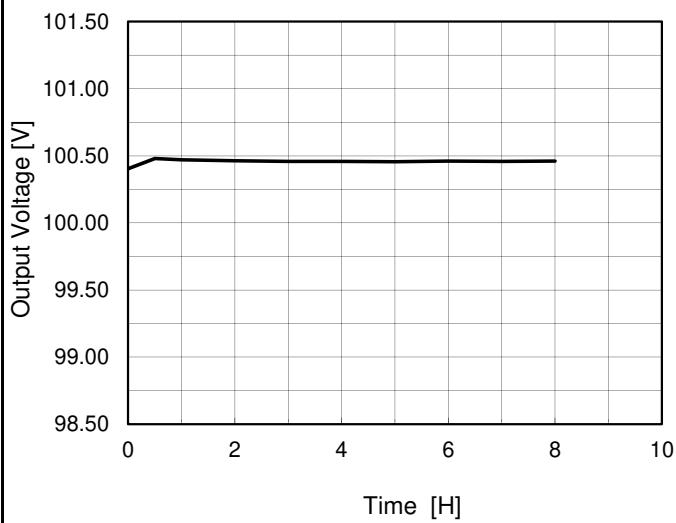
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Model MODULE V5

Item Time Lapse Drift

Object +100V2.25A

1. Graph

Temperature 25°C
Testing Circuitry Figure A

2. Values

Time since start [H]	Output Voltage [V]
0.0	100.403
0.5	100.481
1.0	100.470
2.0	100.464
3.0	100.459
4.0	100.458
5.0	100.457
6.0	100.461
7.0	100.459
8.0	100.460



Model	MODULE V5																																																													
Item	Overcurrent Protection																																																													
Object	+100V2.25A																																																													
1. Graph	— Input Volt. 100V — Input Volt. 200V — Input Volt. 230V	2. Values																																																												
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Note:

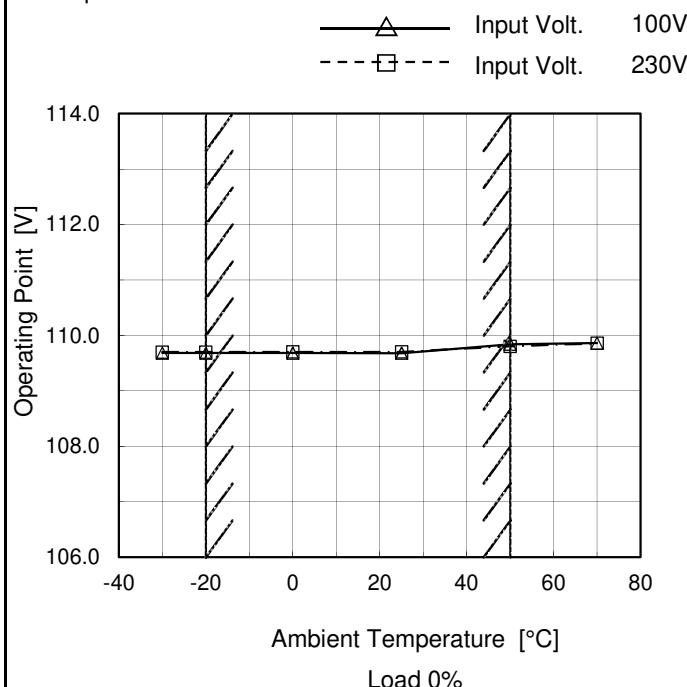
Hatched line shows the range of the rated load current.

Hiccup mode activates when the output voltage is below 50V.



Model	MODULE V5
Item	Overvoltage Protection
Object	+100V2.25A

1. Graph



Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 230[V]
-30	109.68	109.70
-20	109.68	109.70
0	109.68	109.70
25	109.68	109.70
50	109.84	109.80
70	109.86	109.86
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--	-	-
--	-	-
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Note:

Hatched line shows the range of the rated operating temperature.

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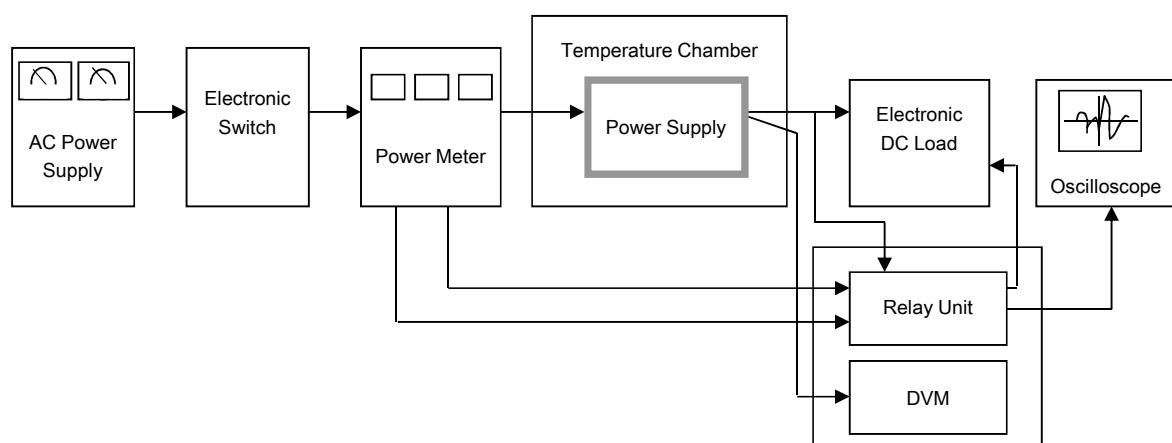


Figure A

Data Acquisition/Control Unit

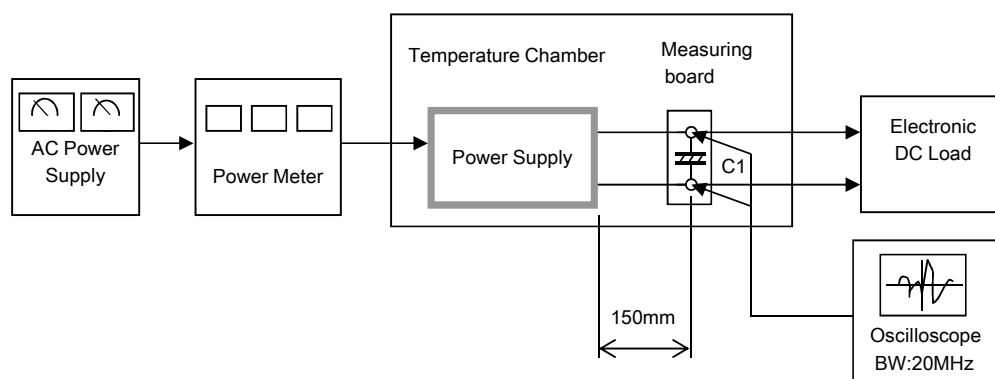


Figure B

$C1 = 22 \mu F$
(Electrolytic capacitor)