



TEST DATA OF ZUS1R51205

(12.0V INPUT)

Regulated DC Power Supply

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COSEL CO., LTD.

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Model		ZUS1R51205	
Item		Line Regulation 静的入力変動	
Object		+5V0.3A	

1. Graph

-----□----- Load 50%

-----△----- Load 100%

[V]

Output Voltage

Input Voltage [V]

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

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Load 50%	Load 100%
	Output Volt. [V]	Output Volt. [V]
8.0	5.049	5.048
9.0	5.049	5.048
10.0	5.049	5.048
12.0	5.049	5.048
15.0	5.049	5.048
18.0	5.049	5.048
20.0	5.049	5.048
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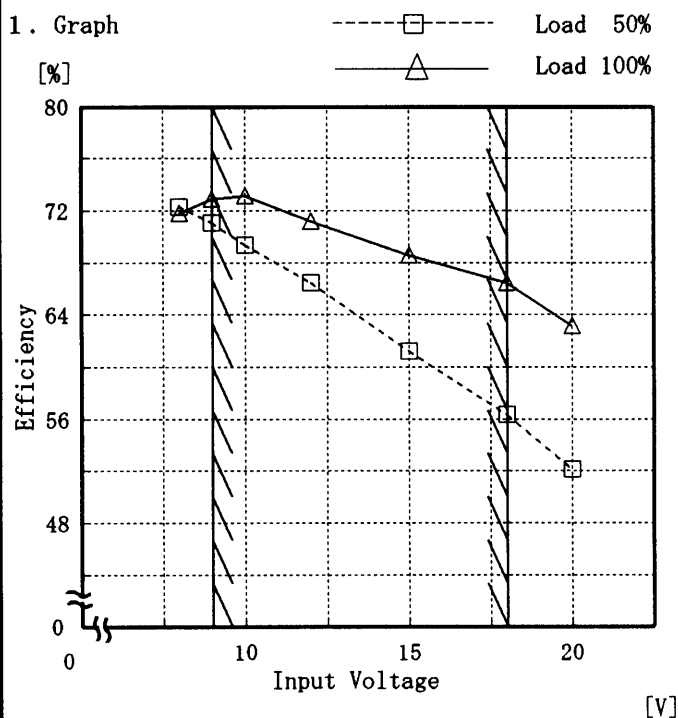
Model ZUS1R51205

Item Efficiency 効率

Temperature 25°C
Testing Circuitry Figure A

Object

1. Graph



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

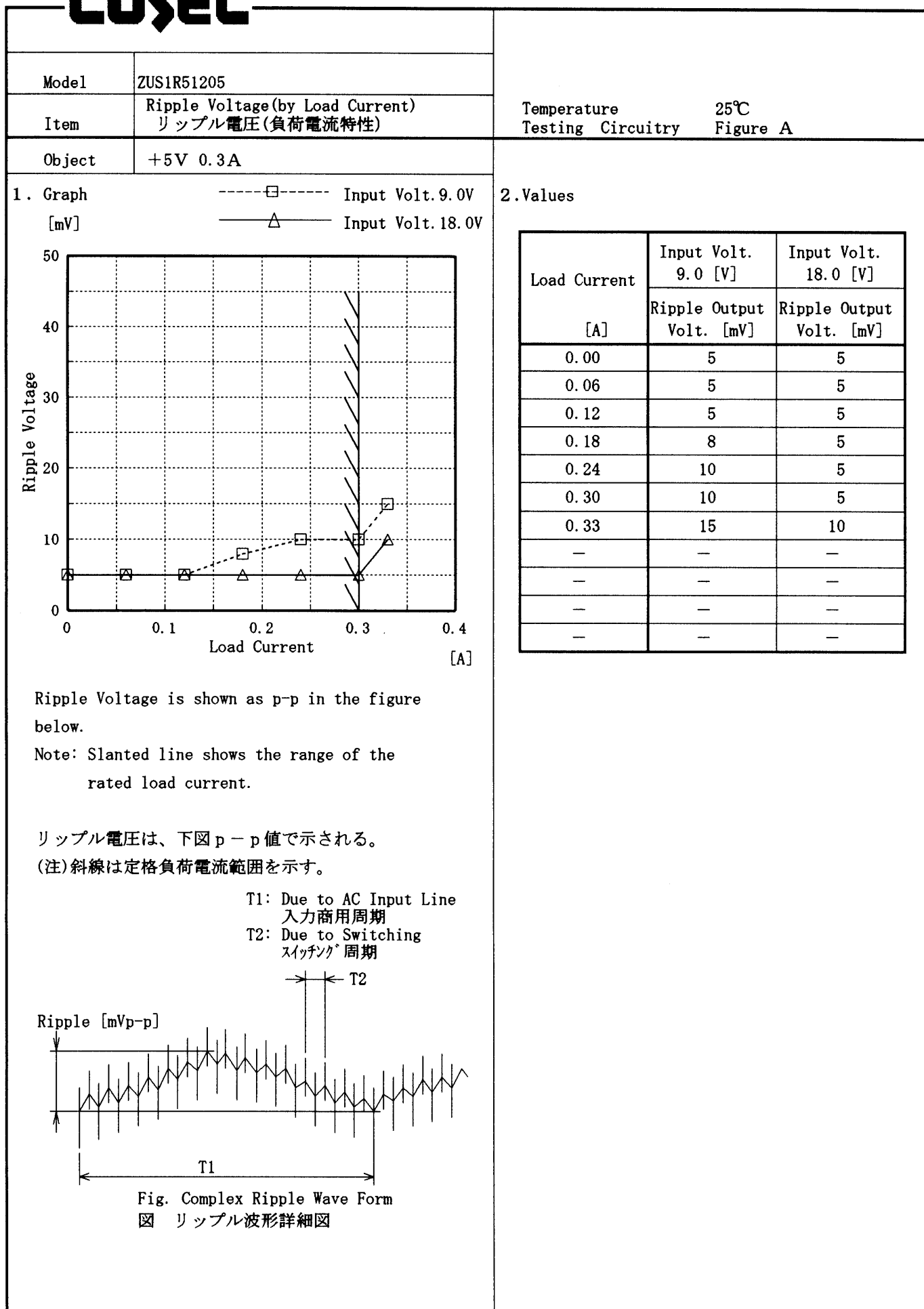
(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Load 50%	Load 100%
	Efficiency [%]	Efficiency [%]
8.0	72.3	71.8
9.0	71.1	72.9
10.0	69.4	73.2
12.0	66.5	71.2
15.0	61.2	68.6
18.0	56.3	66.4
20.0	52.1	63.2
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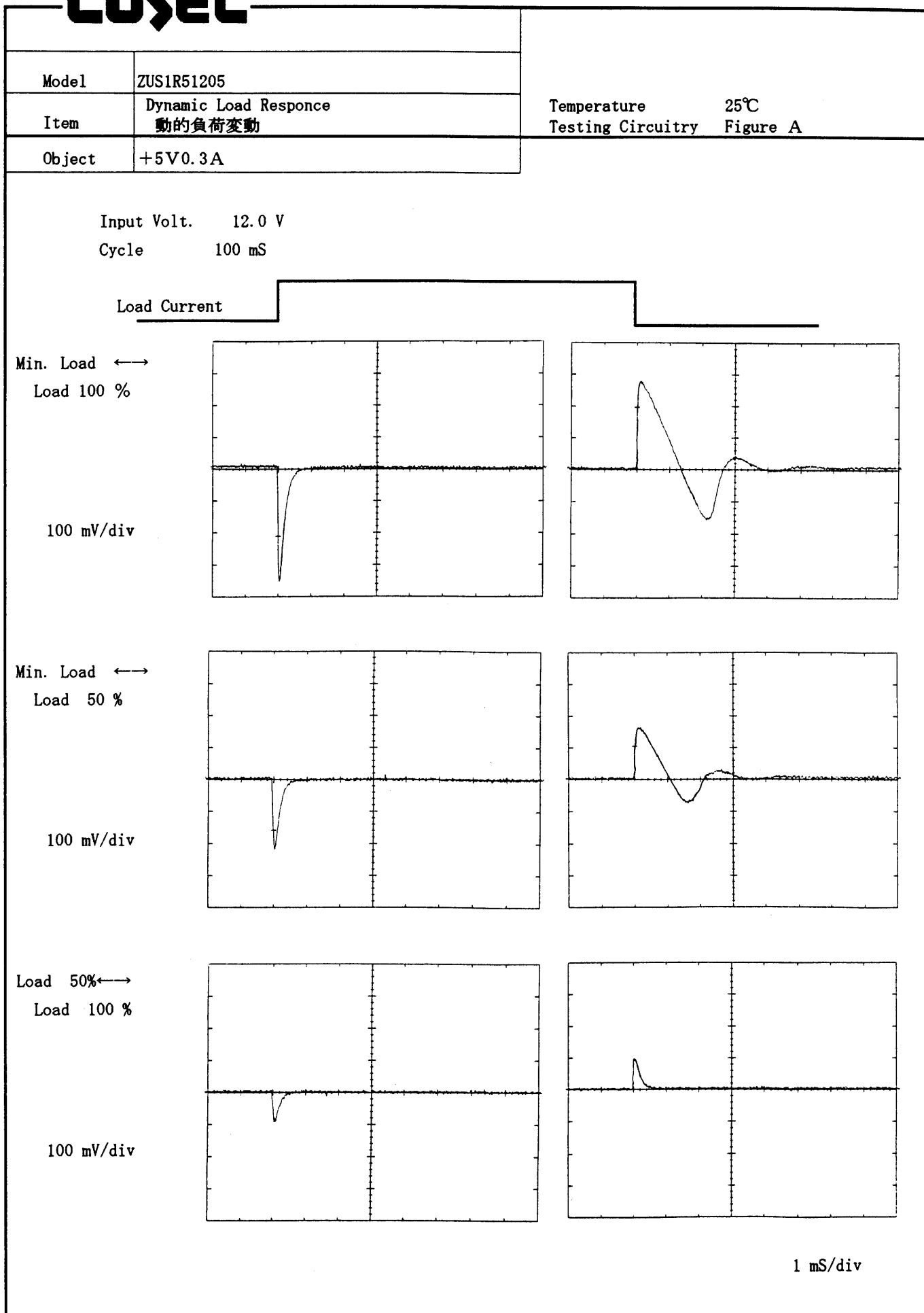
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Model		ZUS1R51205	Temperature25℃ Testing Circuitry Figure A																																																								
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		<table><tr><th rowspan="2">Output Voltage [V]</th><th>Input Volt. 9.0[V]</th><th>Input Volt. 12.0[V]</th><th>Input Volt. 18.0[V]</th></tr><tr><th>Load Curr-ent [A]</th><th>Load Curr-ent [A]</th><th>Load Curr-ent [A]</th></tr><tr><td>5.00</td><td>0.44</td><td>0.48</td><td>0.42</td></tr><tr><td>4.75</td><td>0.45</td><td>0.48</td><td>0.41</td></tr><tr><td>4.50</td><td>0.46</td><td>0.49</td><td>0.42</td></tr><tr><td>4.00</td><td>0.46</td><td>0.49</td><td>0.40</td></tr><tr><td>3.50</td><td>0.46</td><td>0.49</td><td>0.39</td></tr><tr><td>3.00</td><td>0.47</td><td>0.47</td><td>0.38</td></tr><tr><td>2.50</td><td>0.47</td><td>0.47</td><td>0.37</td></tr><tr><td>2.00</td><td>0.46</td><td>0.46</td><td>0.35</td></tr><tr><td>1.50</td><td>0.46</td><td>0.44</td><td>0.34</td></tr><tr><td>1.00</td><td>0.46</td><td>0.43</td><td>0.33</td></tr><tr><td>0.50</td><td>0.45</td><td>0.43</td><td>0.33</td></tr><tr><td>0.00</td><td>0.50</td><td>0.55</td><td>0.44</td></tr></table>			Output Voltage [V]	Input Volt. 9.0[V]	Input Volt. 12.0[V]	Input Volt. 18.0[V]	Load Curr-ent [A]	Load Curr-ent [A]	Load Curr-ent [A]	5.00	0.44	0.48	0.42	4.75	0.45	0.48	0.41	4.50	0.46	0.49	0.42	4.00	0.46	0.49	0.40	3.50	0.46	0.49	0.39	3.00	0.47	0.47	0.38	2.50	0.47	0.47	0.37	2.00	0.46	0.46	0.35	1.50	0.46	0.44	0.34	1.00	0.46	0.43	0.33	0.50	0.45	0.43	0.33	0.00	0.50	0.55	0.44
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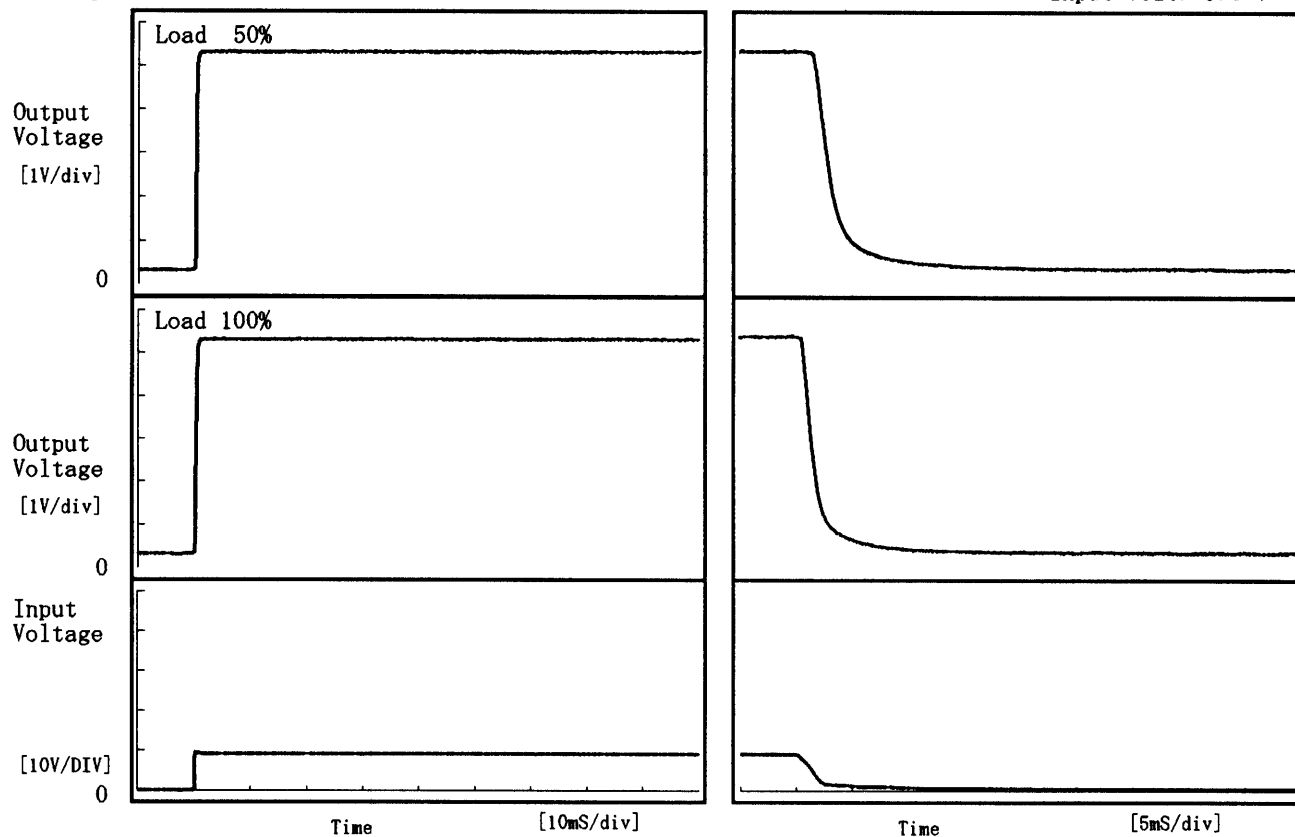
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Model	ZUS1R51205	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+5V0.3A		

1. Graph

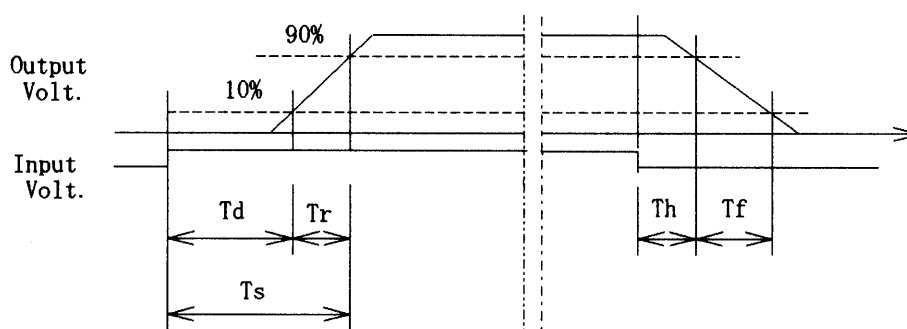
Input Volt. 9.0 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	0.05	0.40	0.45	1.85	4.25
100 %	0.10	0.40	0.50	0.75	3.25



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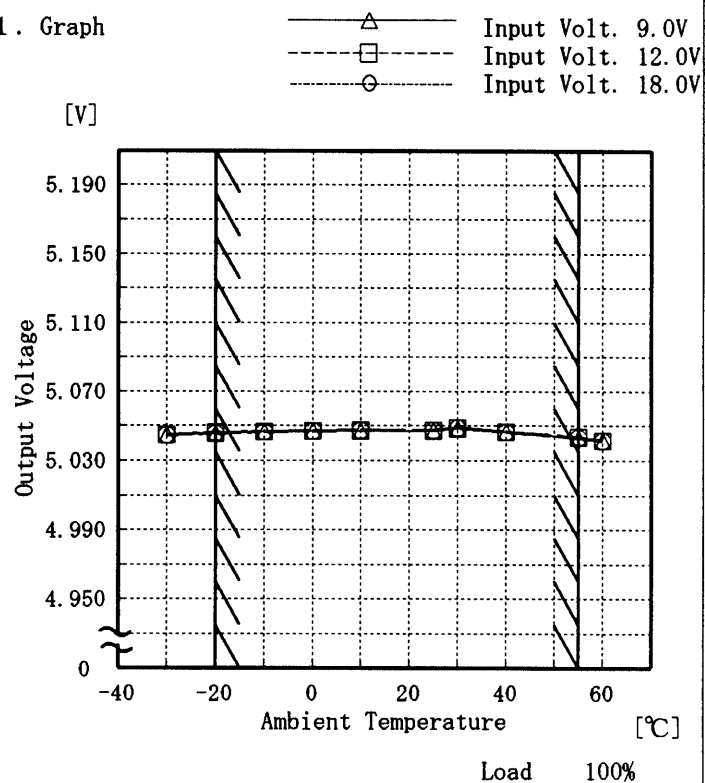
Model ZUS1R51205

Item Ambient Temperature Drift
周囲温度変動

Object +5V0.3A

Testing Circuitry Figure A

1. Graph



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

(注) 斜線は定格周囲温度範囲を示す。

2. Values

Temperature	Input Volt. 9.0[V]	Input Volt. 12.0[V]	Input Volt. 18.0[V]
[°C]	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
-30	5.045	5.045	5.045
-20	5.046	5.046	5.046
-10	5.046	5.047	5.047
0	5.047	5.047	5.047
10	5.047	5.047	5.047
25	5.047	5.047	5.047
30	5.048	5.049	5.049
40	5.046	5.047	5.046
55	5.043	5.044	5.043
60	5.042	5.042	5.042
—	—	—	—

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Model

ZUS1R51205

Item

Minimum Input Voltage for Regulated Output Voltage
最低レギュレーション電圧

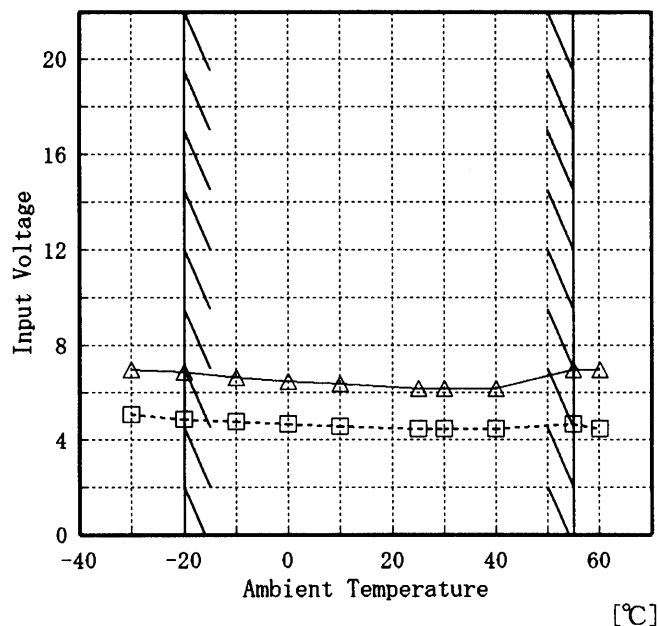
Object

+5V0.3A

Testing Circuitry Figure A

1. Graph

[V]



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

(注) 斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Input Volt. [V]	Input Volt. [V]
-30	5.1	7.0
-20	4.9	6.9
-10	4.8	6.7
0	4.7	6.5
10	4.6	6.4
25	4.5	6.2
30	4.5	6.2
40	4.5	6.2
55	4.7	7.0
60	4.5	7.0
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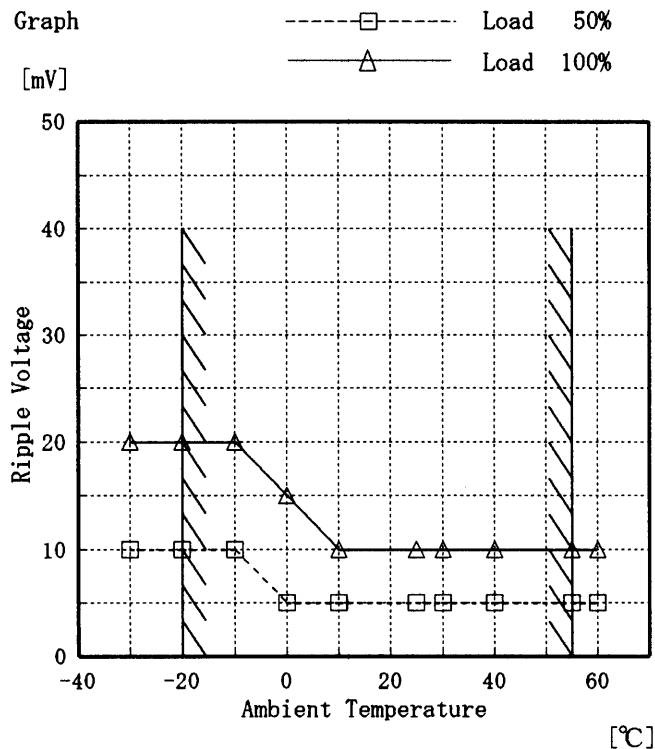
Model ZUS1R51205

Item Ripple Voltage (by Ambient Temp.)
リップル電圧 (周囲温度特性)

Object +5V0.3A

Testing Circuitry Figure A

1. Graph



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

(注) 斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-30	10	20
-20	10	20
-10	10	20
0	5	15
10	5	10
25	5	10
30	5	10
40	5	10
55	5	10
60	5	10
—	—	—

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Model	ZUS1R51205
Item	Time Lapse Drift 経時ドリフト
Object	+5V0.3A

1. Graph

[V]

Output Voltage

Time

[H]

Input Volt. 12V

Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.048
0.5	5.047
1.0	5.047
2.0	5.047
3.0	5.047
4.0	5.047
5.0	5.047
6.0	5.047
7.0	5.047
8.0	5.047

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Model		ZUS1R51205	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+5V0.3A	

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 : -20~55 °C

Input Voltage : 9.0~18.0 V

Load Current : 0.0~0.3 A

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

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

定電圧精度

周囲温度、入力電圧、負荷を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 : -20~55 °C

入力電圧 : 9.0~18.0 V

負荷電流 : 0.0~0.3 A

* 定電圧精度(変動値) = $\pm (\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

* 定電圧精度(変動率) = $\frac{\text{変動値}}{\text{定格出力電圧}} \times 100$

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	25	18.0	0.0	5.053	±6	±0.2
Minimum Voltage	55	18.0	0.3	5.042		

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Model ZUS1R51205

Item Condensation 結露特性

Testing Circuitry Figure A

Object +5V 0.3A

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10°C for an hour with the input off.
- ② Taking it out of the tank and dewing itself in a room where the temperature is 24°C and the humidity is 40%RH.
- ③ Testing electrical characteristics of the unit to confirm there be no fault.
- ④ Repeating ①, ② and ③ three times.

1. 結露特性試験

入力を切った状態で、恒温槽で -10°C に冷却しておき、約1時間後に恒温槽から取り出し、室温 24°C 、湿度40%RHの状態におき結露させ、その電気的特性の測定を3度行い、異常のないことを確認する。

2. Values

	Times	Output Voltage [V]	Ripple Voltage [mV]	Ripple Noise [mV]
Load 50 %	1	5.023	10	20
	2	5.023	10	20
	3	5.023	10	20
Load 100 %	1	5.021	10	30
	2	5.022	10	30
	3	5.021	10	30

Input Volt. 12.0 V

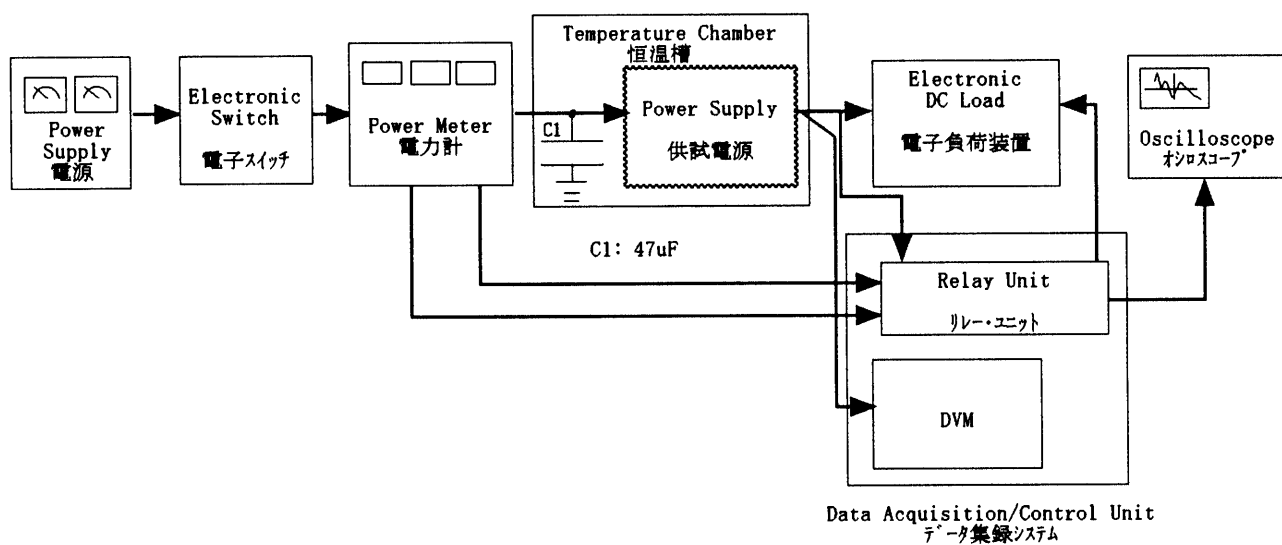
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Figure A