参考資料

COSEL

TEST DATA OF ZUS1R54805

(48.0V INPUT)

Regulated DC Power Supply

Date : June 14. 1996

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コーセル株式会社

COSEL CO.,LTD.

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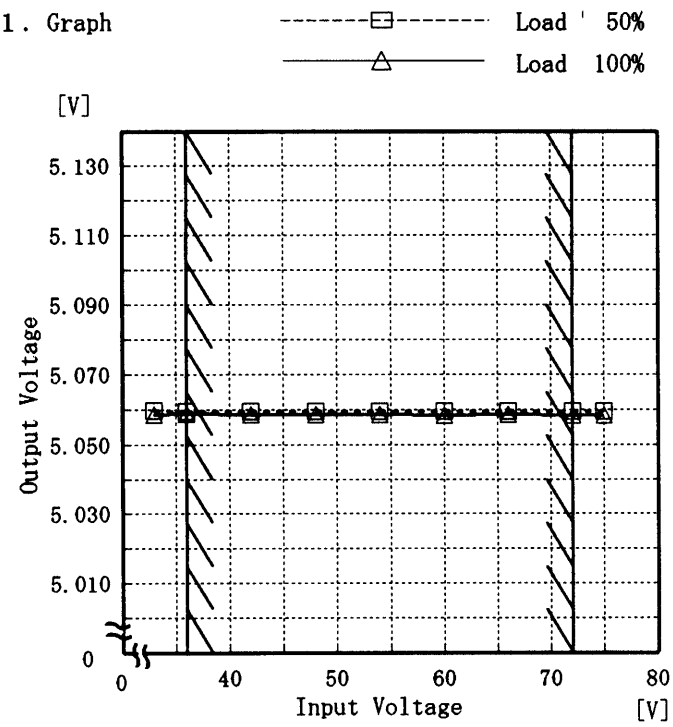


Note: Slanted line shows the range of the rated input voltage.

(注)斜線は定格入力電圧範囲を示す。

2. Values

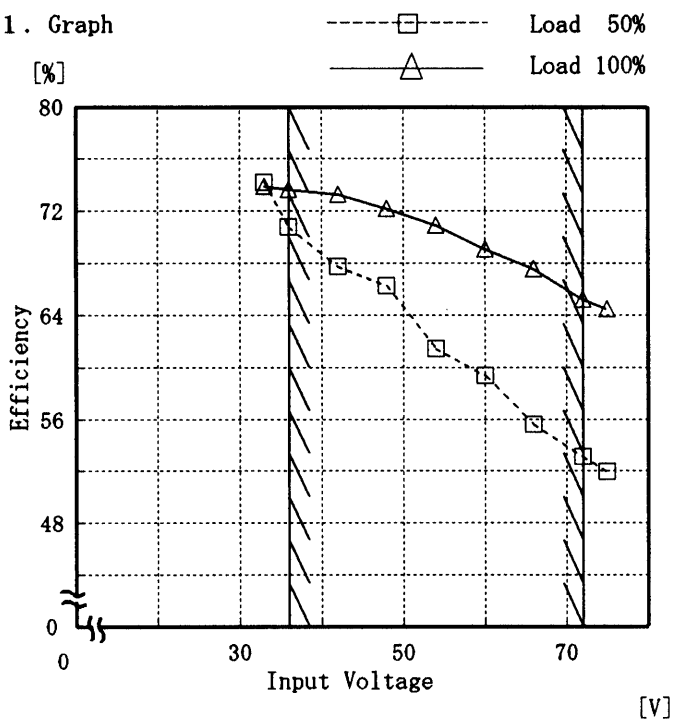
Input Voltage [V]	Load 50% Output Volt. [V]	Load 100% Output Volt. [V]
33.0	5.060	5.059
36.0	5.060	5.059
42.0	5.059	5.059
48.0	5.060	5.058
54.0	5.059	5.058
60.0	5.060	5.058
66.0	5.059	5.058
72.0	5.059	5.058
75.0	5.059	5.058
—	—	—
—	—	—
—	—	—

COSEL

Model	ZUS1R54805
Item	Efficiency 効率
Object	――――――――――

Temperature 25℃
Testing Circuitry Figure A

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

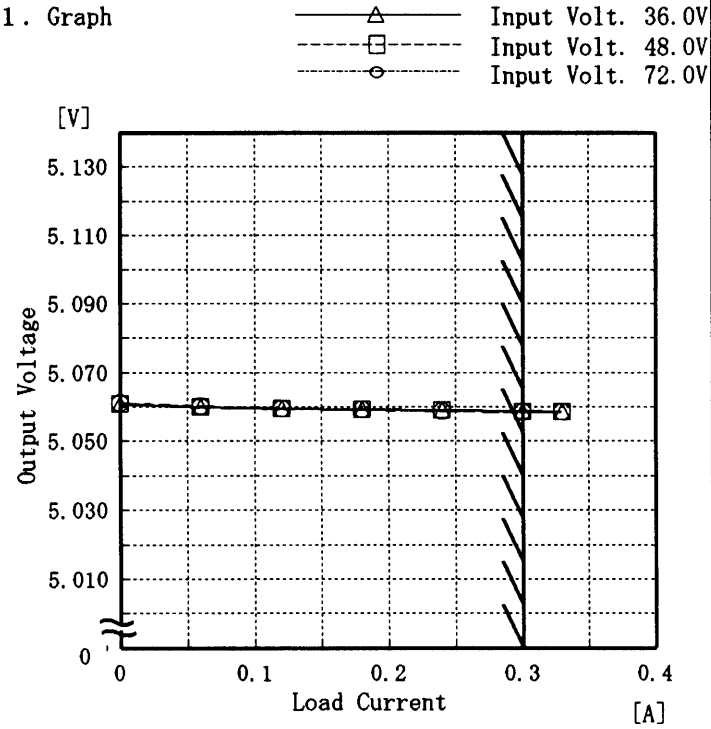
Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]
33.0	74.2	73.9
36.0	70.8	73.7
42.0	67.7	73.2
48.0	66.3	72.2
54.0	61.5	70.9
60.0	59.4	69.1
66.0	55.6	67.5
72.0	53.1	65.2
75.0	51.9	64.5
—	—	—
—	—	—
—	—	—

COSEL

Model	ZUS1R54805
Item	Load Regulation 静的負荷変動
Object	+5V0.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

(注)斜線は定格負荷電流範囲を示す。

2. Values

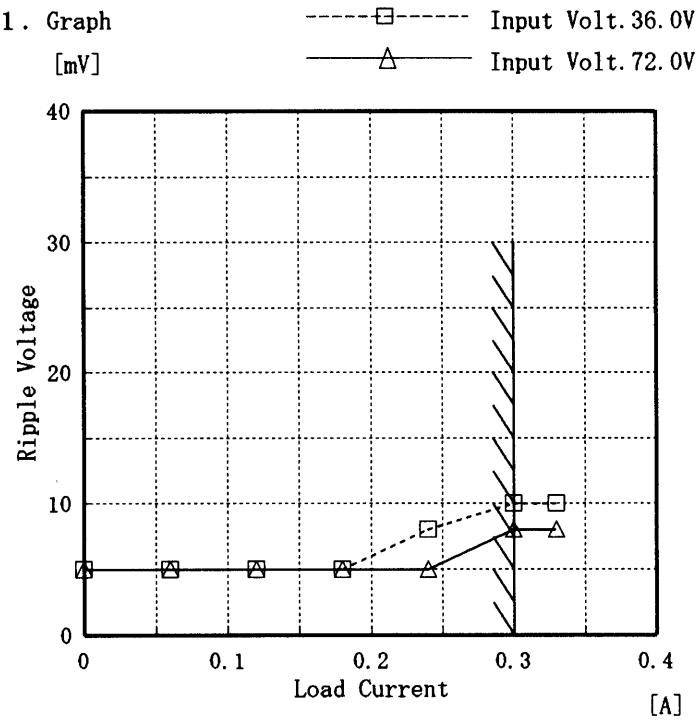
Load Current [A]	Input Volt. 36.0[V] Output Volt. [V]	Input Volt. 48.0[V] Output Volt. [V]	Input Volt. 72.0[V] Output Volt. [V]
0.00	5.061	5.061	5.061
0.06	5.060	5.060	5.060
0.12	5.060	5.060	5.060
0.18	5.059	5.059	5.059
0.24	5.059	5.059	5.059
0.30	5.059	5.059	5.059
0.33	5.059	5.059	5.059
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	ZUS1R54805
Item	Ripple Voltage(by Load Current) リップル電圧(負荷電流特性)
Object	+5V 0.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

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

リップル電圧は、下図ｐ－ｐ値で示される。

(注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

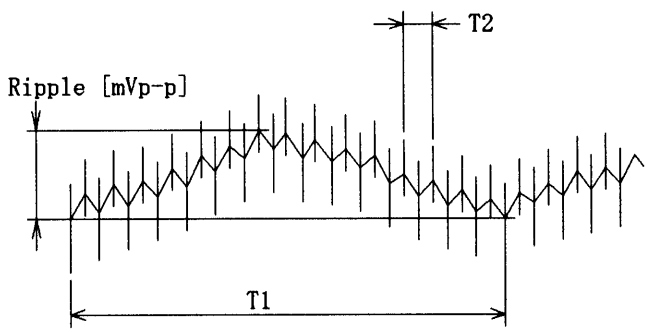


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

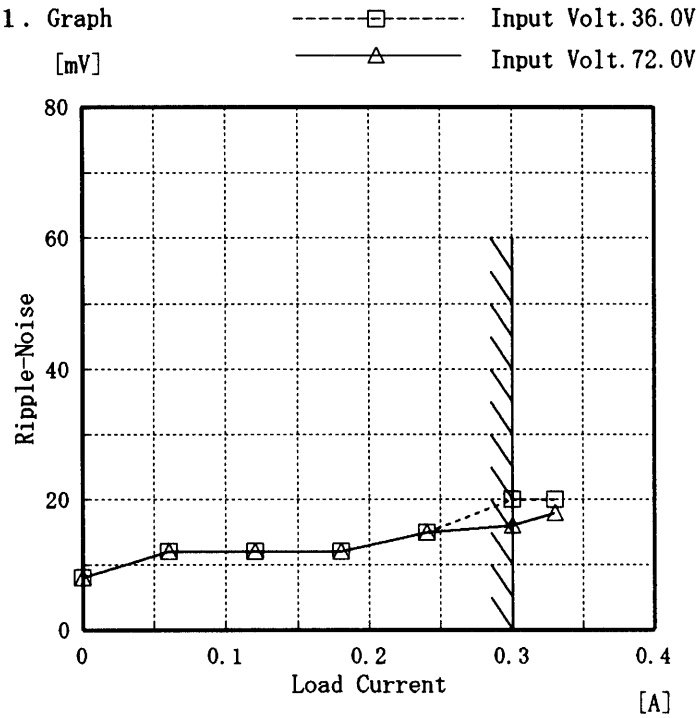
Load Current [A]	Input Volt. 36.0 [V] Ripple Output Volt. [mV]	Input Volt. 72.0 [V] Ripple Output Volt. [mV]
0.00	5	5
0.06	5	5
0.12	5	5
0.18	5	5
0.24	8	5
0.30	10	8
0.33	10	8
—	—	—
—	—	—
—	—	—
—	—	—

COSEL

Model	ZUS1R54805
Item	Ripple-Noise リップルノイズ
Object	+5V0.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

リップルノイズは、下図ｐ－ｐ値で示される。
(注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

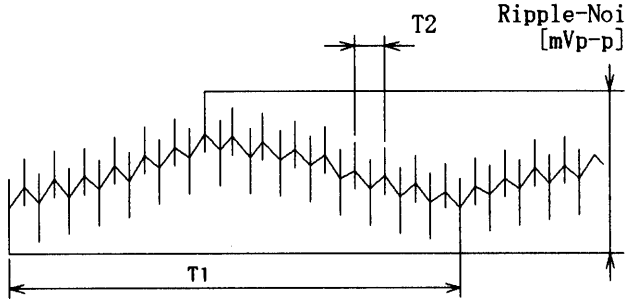


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

Load current [A]	Input Volt. 36.0 [V] Ripple-Noise [mV]	Input Volt. 72.0 [V] Ripple-Noise [mV]
0.00	8	8
0.06	12	12
0.12	12	12
0.18	12	12
0.24	15	15
0.30	20	16
0.33	20	18
—	—	—
—	—	—
—	—	—
—	—	—

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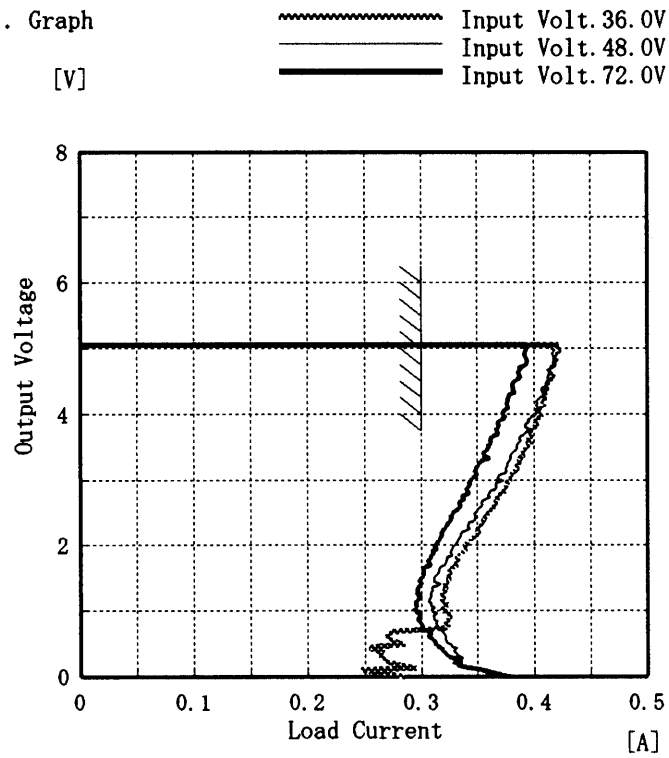
Model	ZUS1R54805
Item	Overcurrent Protection 過電流保護
Object	+5V0.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

(注)斜線は定格負荷電流範囲を示す。

2. Values

Output Voltage [V]	Input Volt. 36.0[V] Load Current [A]	Input Volt. 48.0[V] Load Current [A]	Input Volt. 72.0[V] Load Current [A]
5.00	0.42	0.42	0.39
4.75	0.42	0.42	0.39
4.50	0.42	0.41	0.38
4.00	0.40	0.40	0.37
3.50	0.39	0.38	0.36
3.00	0.38	0.37	0.34
2.50	0.36	0.35	0.33
2.00	0.34	0.33	0.31
1.50	0.32	0.31	0.30
1.00	0.32	0.31	0.29
0.50	0.28	0.32	0.31
0.00	0.31	0.39	0.42

COSEL

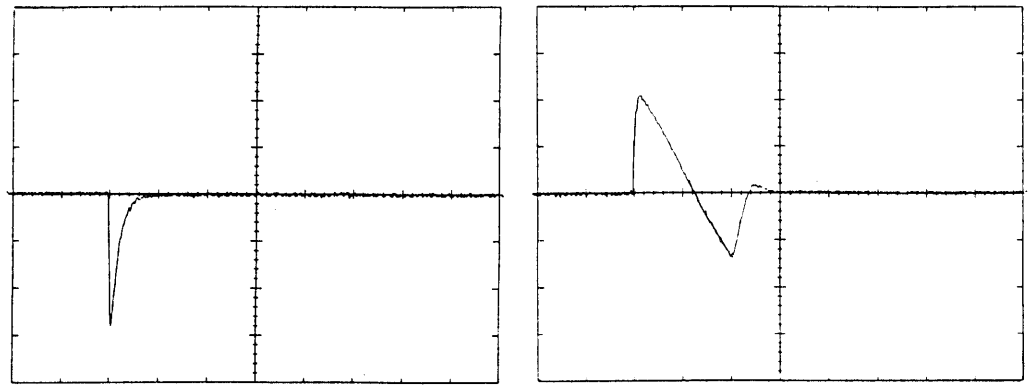
Model	ZUS1R54805		
Item	Dynamic Load Responce 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	+5V0.3A		

Input Volt. 48.0 V

Cycle 100 mS

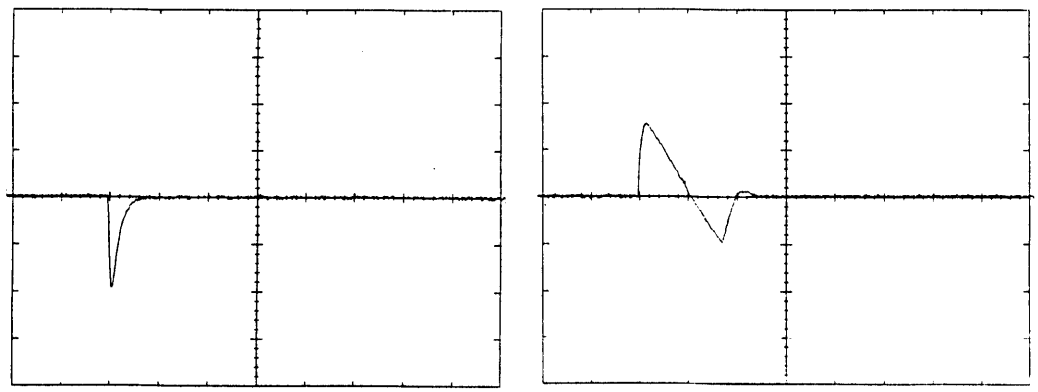
Load Current

Min. Load ⟷
Load 100 %



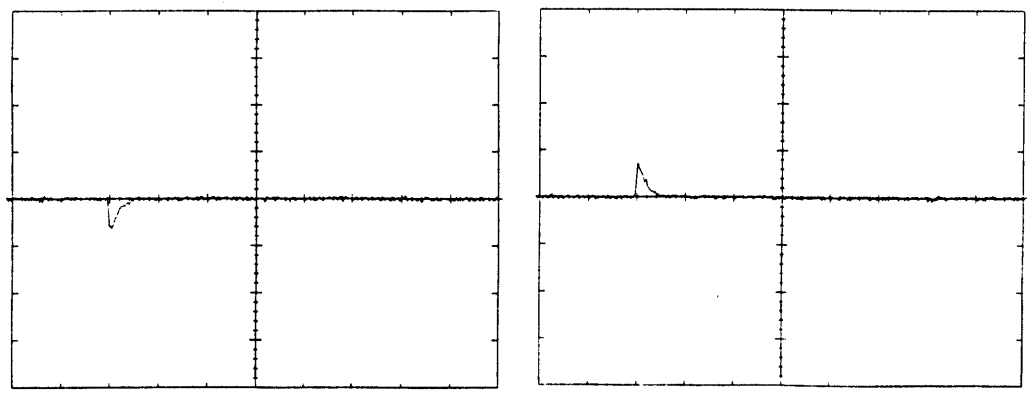
100 mV/div

Min. Load ⟷
Load 50 %



100 mV/div

Load 50%⟷
Load 100 %



100 mV/div

1 mS/div

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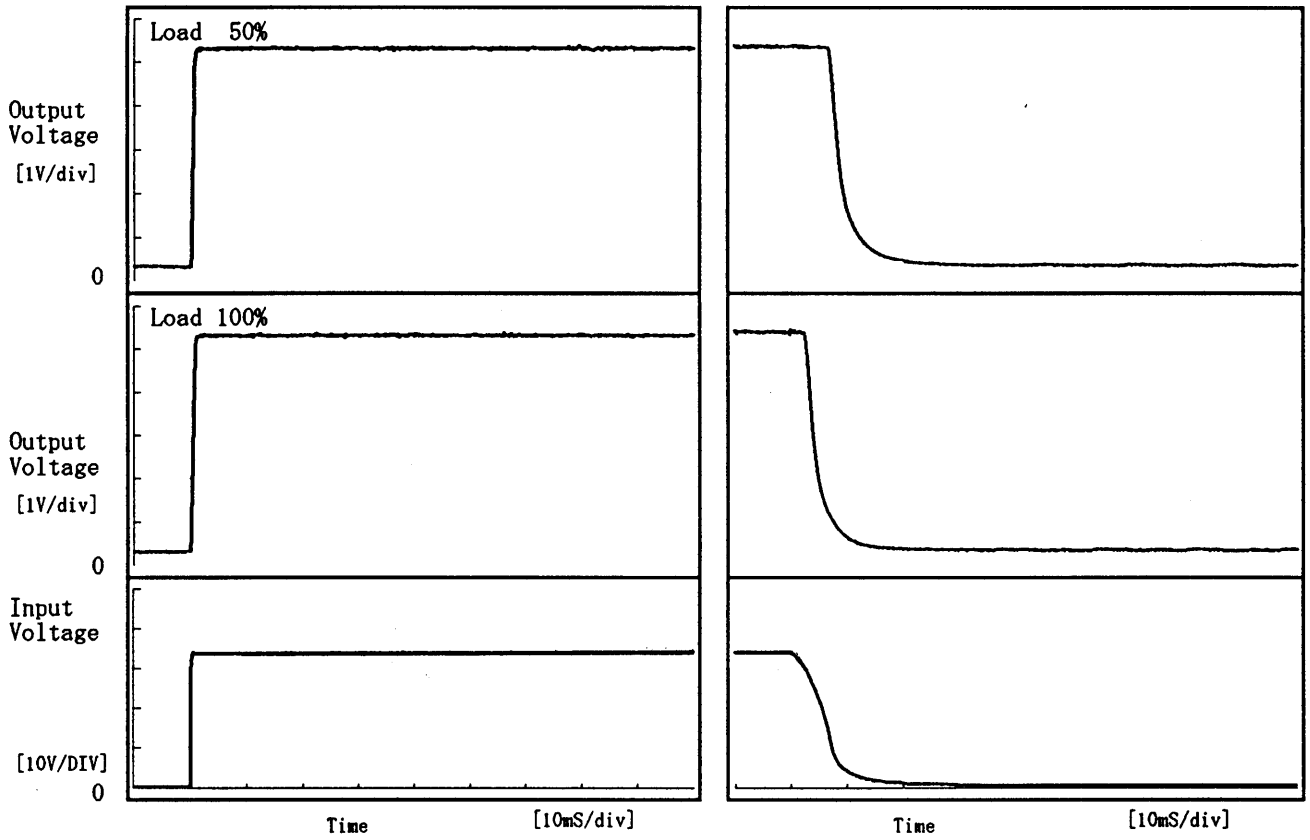
Model	ZUS1R54805
Item	Rise and Fall Time 立上り、立下り時間
Object	+5V0.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph

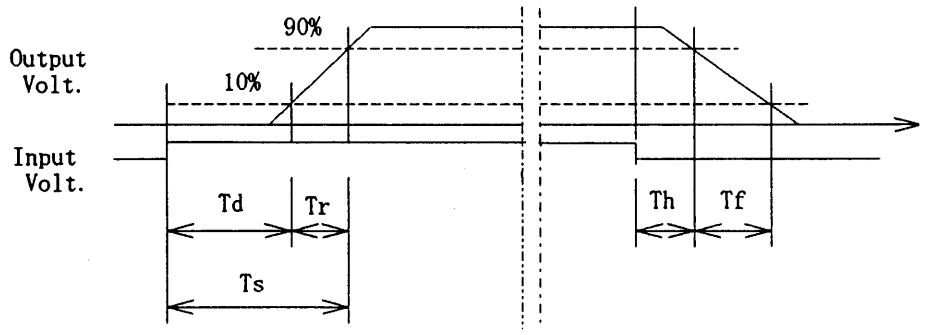
Input Volt. 36.0 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	0.10	0.55	0.65	7.35	6.65
100 %	0.10	0.75	0.85	3.10	5.85



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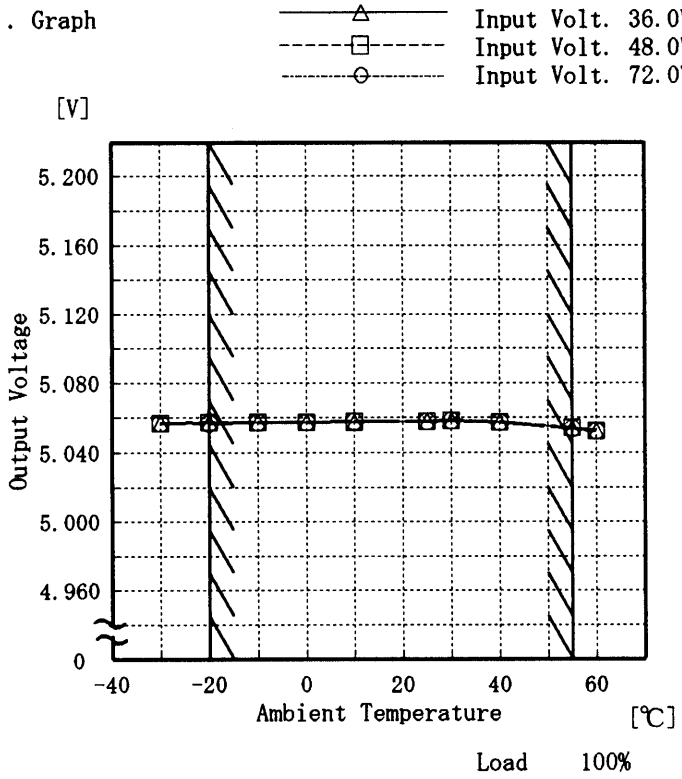
Model	ZUS1R54805
Item	Ambient Temperature Drift 周囲温度変動
Object	+5V0.3A

Testing Circuitry Figure A

1. Graph



Load 100%

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. 36.0[V] Output Volt. [V]	Input Volt. 48.0[V] Output Volt. [V]	Input Volt. 72.0[V] Output Volt. [V]
-30	5.057	5.057	5.057
-20	5.057	5.057	5.057
-10	5.058	5.058	5.057
0	5.057	5.058	5.057
10	5.057	5.058	5.058
25	5.058	5.058	5.058
30	5.058	5.058	5.058
40	5.057	5.057	5.057
55	5.054	5.054	5.054
60	5.052	5.052	5.052
—	—	—	—

COSEL

Model	ZUS1R54805
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+5V0.3A

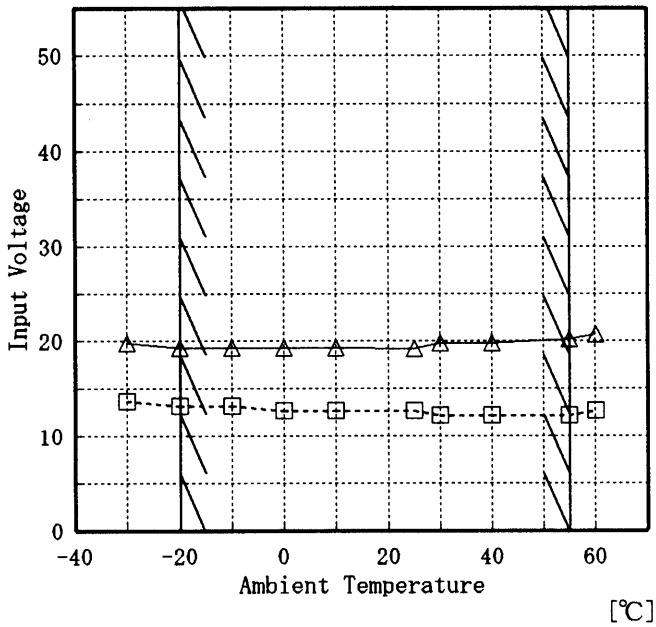
Testing Circuitry Figure A

1. Graph

[V]

------□------ Load 50%

——△—— Load 100%



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

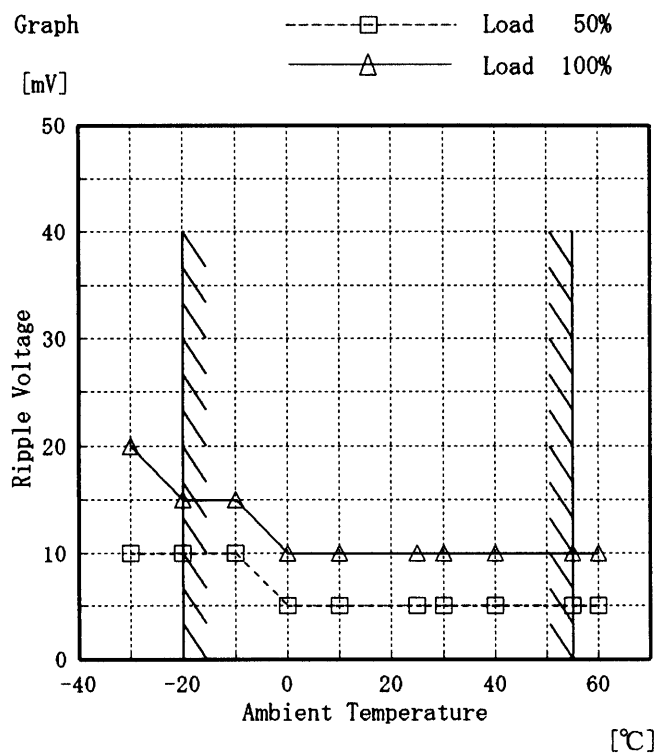
Ambient Temp. [℃]	Load 50% Input Volt. [V]	Load 100% Input Volt. [V]
-30	13.7	19.7
-20	13.2	19.2
-10	13.2	19.2
0	12.7	19.2
10	12.7	19.2
25	12.7	19.2
30	12.2	19.7
40	12.2	19.7
55	12.2	20.2
60	12.7	20.7
—	—	—

COSEL

Model	ZUS1R54805
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



Input Volt. 36.0 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

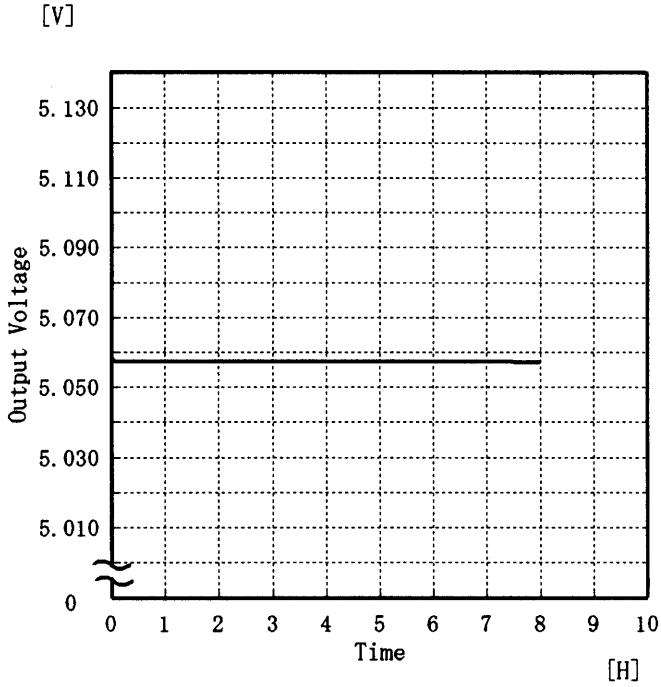
Ambient Temp. [℃]	Load 50% Ripple Output Volt. [mV]	Load 100% Ripple Output Volt. [mV]
-30	10	20
-20	10	15
-10	10	15
0	5	10
10	5	10
25	5	10
30	5	10
40	5	10
55	5	10
60	5	10
—	—	—

COSEL

Model	ZUS1R54805
Item	Time Lapse Drift 経時ドリフト
Object	+5V0.3A

Temperature 25 ℃
Testing Circuitry Figure A

1. Graph



Input Volt. 48V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	5.059
0.5	5.057
1.0	5.058
2.0	5.057
3.0	5.057
4.0	5.057
5.0	5.058
6.0	5.057
7.0	5.057
8.0	5.057

COSEL

Model	ZUS1R54805	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
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 ℃
Input Voltage : 36.0～72.0 V
Load Current : 0.0～0.3 A

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

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

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 ℃
入力電圧 36.0～72.0 V
負荷電流 0.0～0.3 A

* 定電圧精度(変動値) = ±(出力電圧の最高値−出力電圧の最低値)／2

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

Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ration) [%]
Maximum Voltage	25	72.0	0.0	5.061	±4	±0.1
Minimum Voltage	55	72.0	0.3	5.053		

COSEL

Model	ZUS1R54805	
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℃ 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℃ 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℃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℃、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	5.057	10	15
	2	5.057	10	15
	3	5.057	10	15
Load 100 %	1	5.056	10	15
	2	5.056	10	15
	3	5.056	10	15

Input Volt. 48.0 V

COSEL

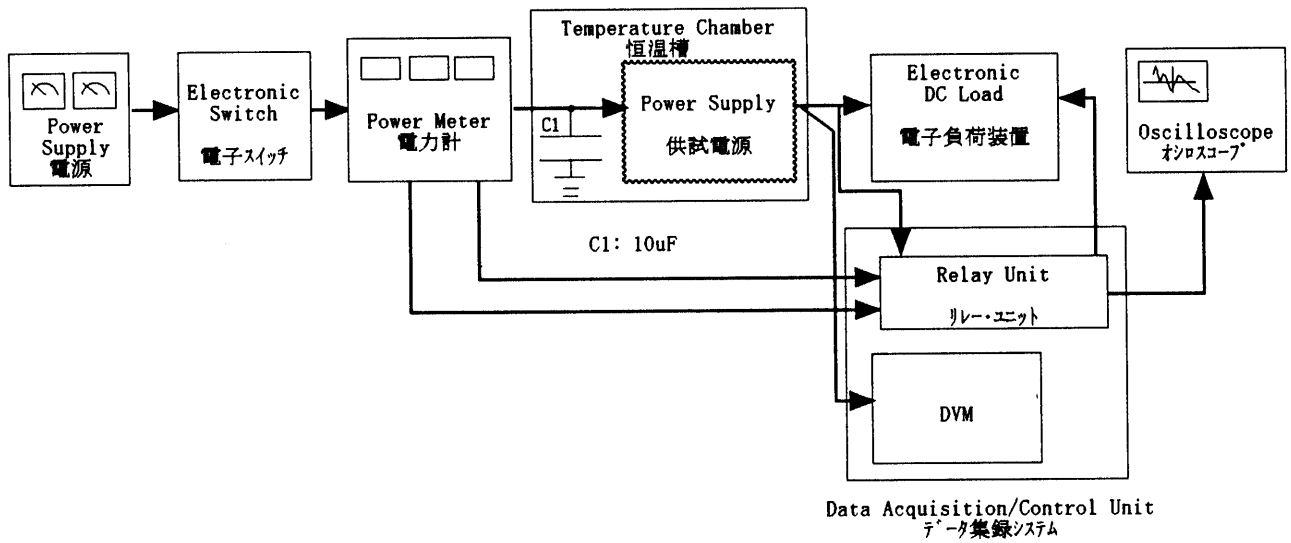


Figure A