参考資料

COSEL

TEST DATA OF YS512A
(100V INPUT)

Regulated DC Power Supply

Sep. 22, 1999

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コーセル株式会社

COSEL CO., LTD.

参考資料

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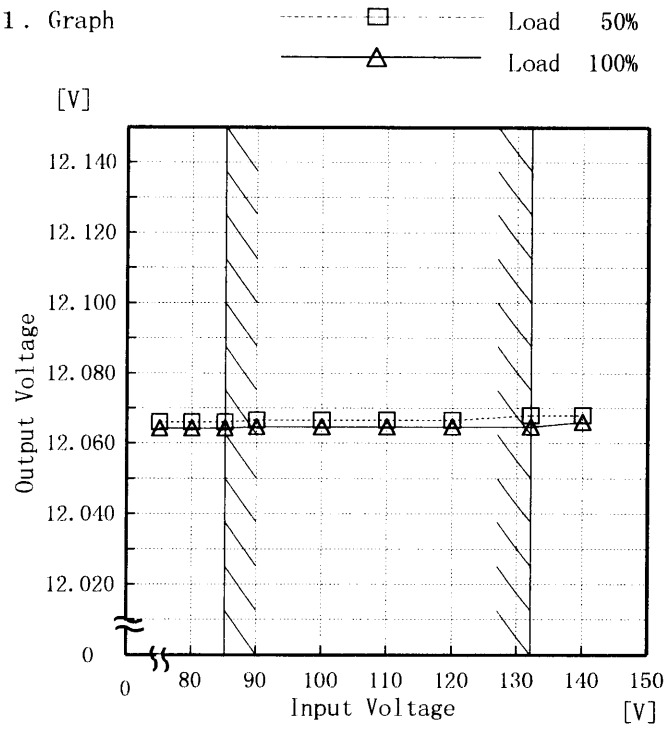
Model	YS512A
Item	Line Regulation 静的入力変動
Object	+12.0V0.45A

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]	Output Voltage [V]	
	Load 50%	Load 100%
75	12.066	12.064
80	12.066	12.064
85	12.066	12.064
90	12.067	12.065
100	12.067	12.065
110	12.067	12.065
120	12.067	12.065
132	12.068	12.065
140	12.068	12.066

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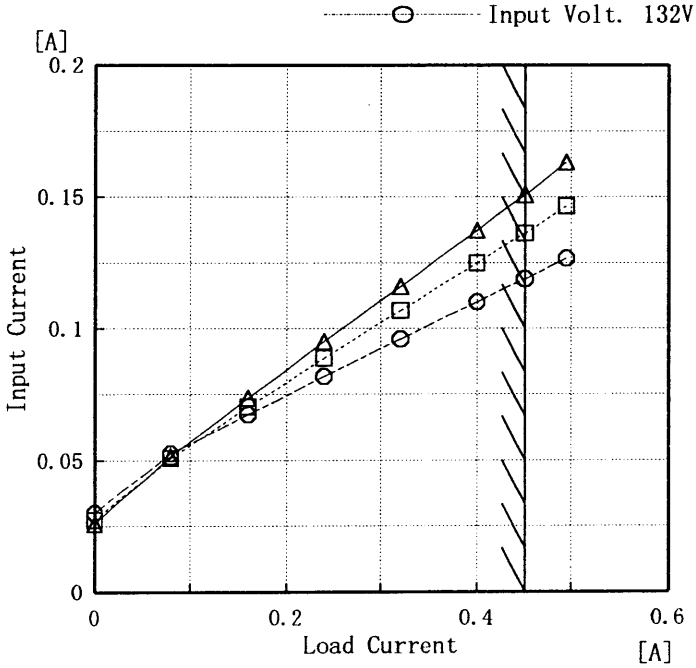
COSEL

Model	YS512A
Item	Input Current (by Load Current) 入力電流（負荷特性）
Output	————

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

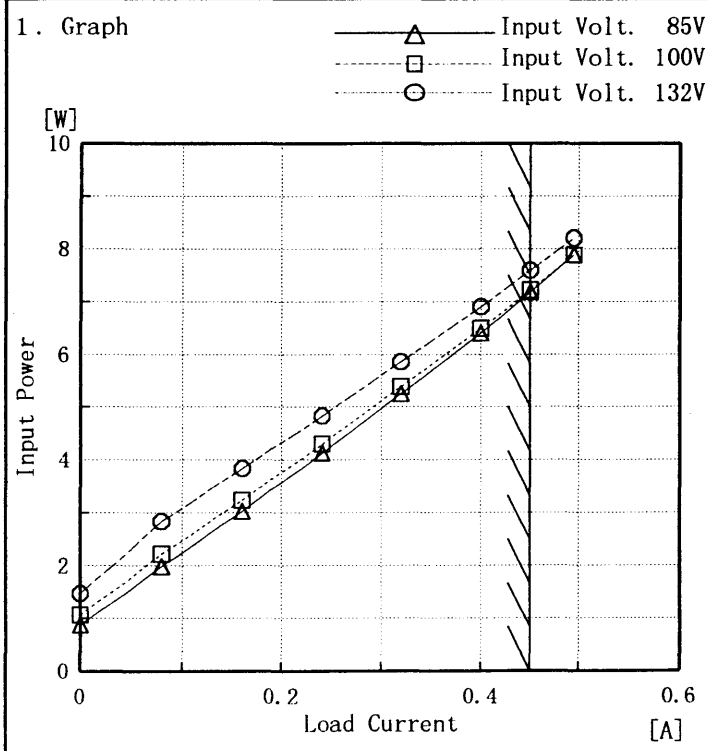
Load Current [A]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.000	0.026	0.027	0.030
0.080	0.052	0.051	0.053
0.160	0.074	0.070	0.068
0.240	0.095	0.089	0.082
0.320	0.116	0.107	0.096
0.400	0.137	0.125	0.110
0.450	0.151	0.136	0.119
0.495	0.163	0.147	0.127
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	YS512A
Item	Input Power (by Load Current) 入力電力（負荷特性）
Output	————

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 Power [W] Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.000	0.87	1.06	1.47
0.080	1.98	2.22	2.84
0.160	3.03	3.24	3.84
0.240	4.13	4.30	4.83
0.320	5.25	5.39	5.86
0.400	6.41	6.50	6.91
0.450	7.18	7.22	7.59
0.495	7.89	7.88	8.21
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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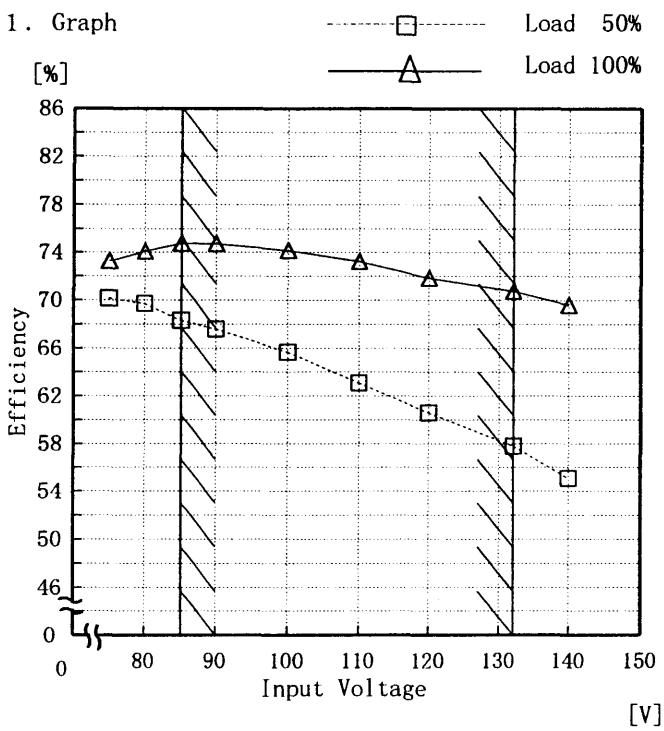
COSEL

Model	YS512A
Item	Efficiency (by Input Voltage) 効率（入力電圧特性）
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

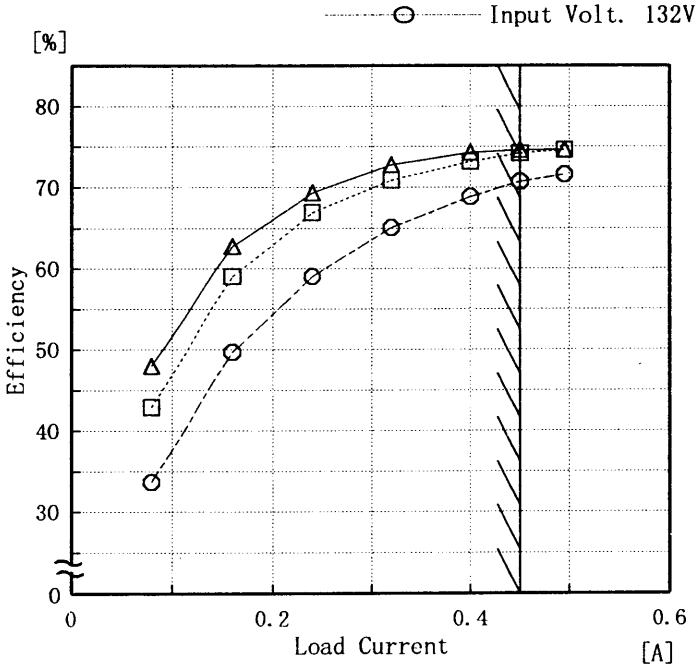
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
75	70.1	73.3
80	69.7	74.1
85	68.3	74.8
90	67.6	74.7
100	65.7	74.2
110	63.1	73.3
120	60.6	71.8
132	57.8	70.8
140	55.1	69.6

COSEL

Model	YS512A
Item	Efficiency (by Load Current) 効率（負荷特性）
Output	————

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

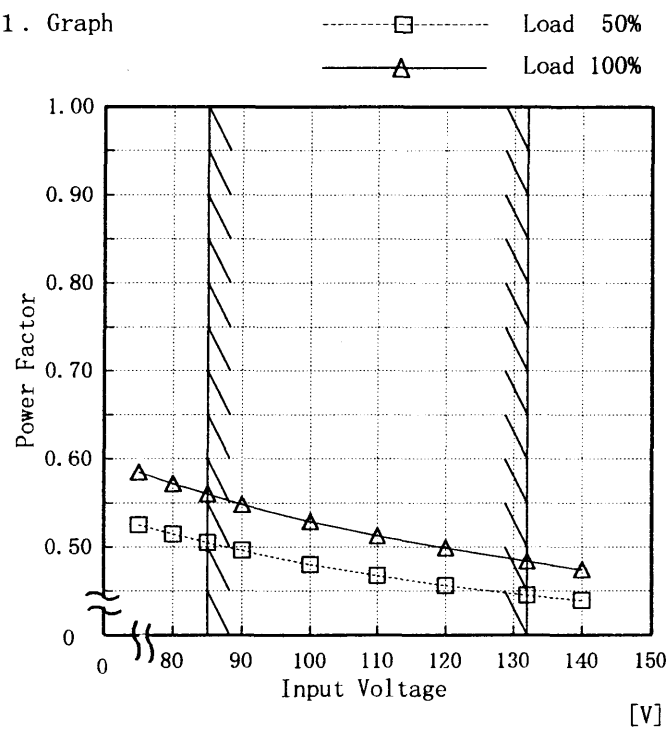
Load Current [A]	Efficiency [%] Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.080	48.0	42.9	33.7
0.160	62.8	59.1	49.7
0.240	69.3	66.9	59.1
0.320	72.8	70.9	65.1
0.400	74.3	73.2	68.9
0.450	74.6	74.2	70.7
0.495	74.7	74.6	71.6
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	YS512A
Item	Power Factor (by Input Voltage) 力率（入力電圧特性）
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

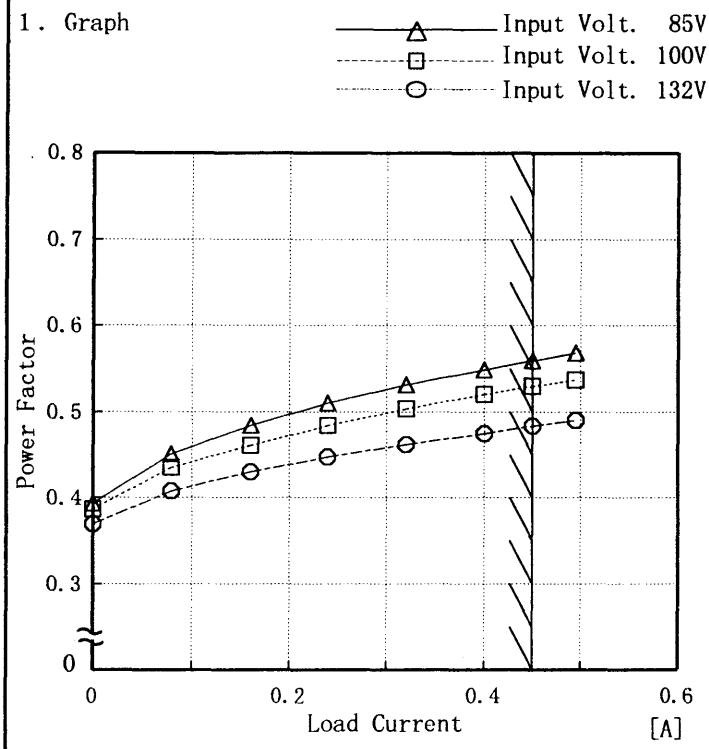
Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
75	0.53	0.58
80	0.51	0.57
85	0.51	0.56
90	0.50	0.55
100	0.48	0.53
110	0.47	0.51
120	0.46	0.50
132	0.45	0.48
140	0.44	0.47

COSEL

Model	YS512A
Item	Power Factor (by Load Current) 力率（負荷特性）
Output	————

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

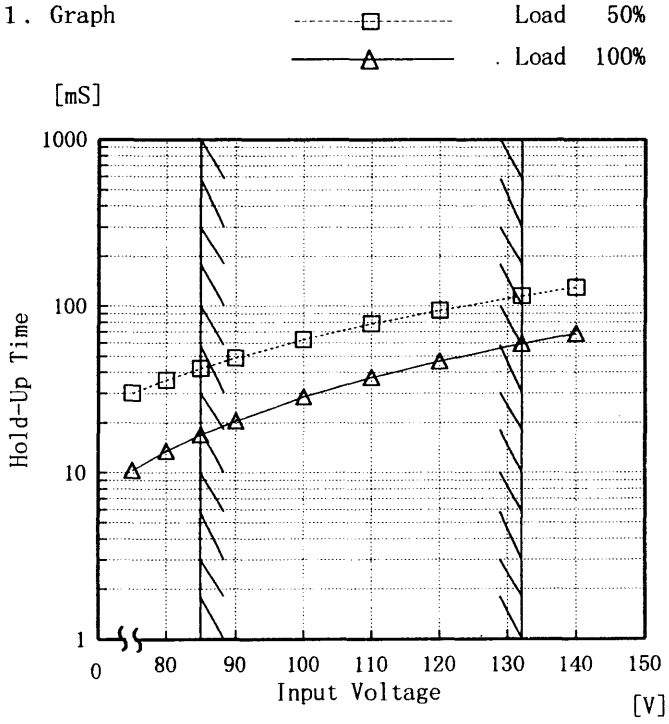
Load Current [A]	Power Factor Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.000	0.39	0.39	0.37
0.080	0.45	0.44	0.41
0.160	0.48	0.46	0.43
0.240	0.51	0.48	0.45
0.320	0.53	0.50	0.46
0.400	0.55	0.52	0.47
0.450	0.56	0.53	0.48
0.495	0.57	0.54	0.49
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	YS512A
Item	Hold-Up Time 出力保持時間
Object	+12.0V0.45A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

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

出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

2. Values

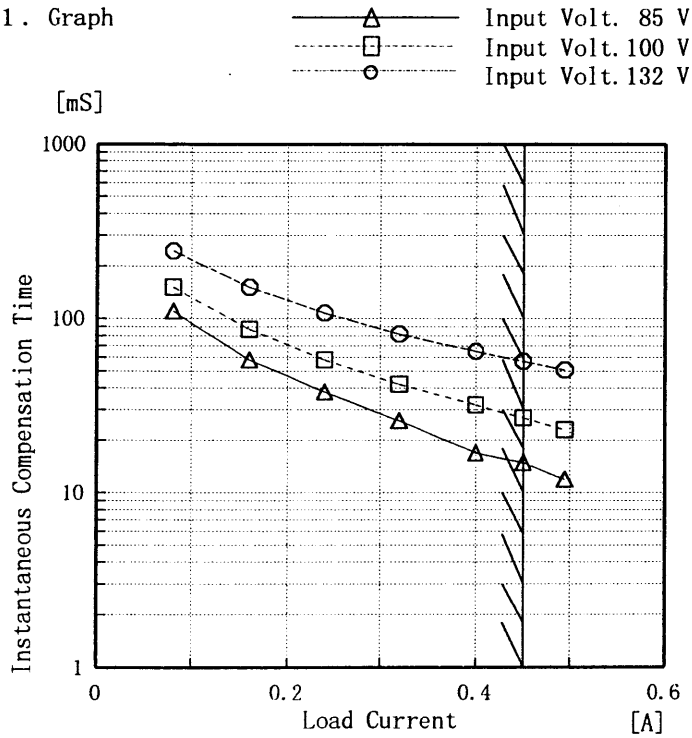
Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	30	10
80	36	13
85	42	17
90	49	21
100	63	28
110	78	37
120	95	47
132	115	59
140	130	68

COSEL

Model	YS512A
Item	Instantaneous Interruption Compensation 瞬時停電保障
Object	+12.0V0.45A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note:Slanted line shows the range of the rated load current.

瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。
(注)斜線は定格負荷電流範囲を示す。

2. Values

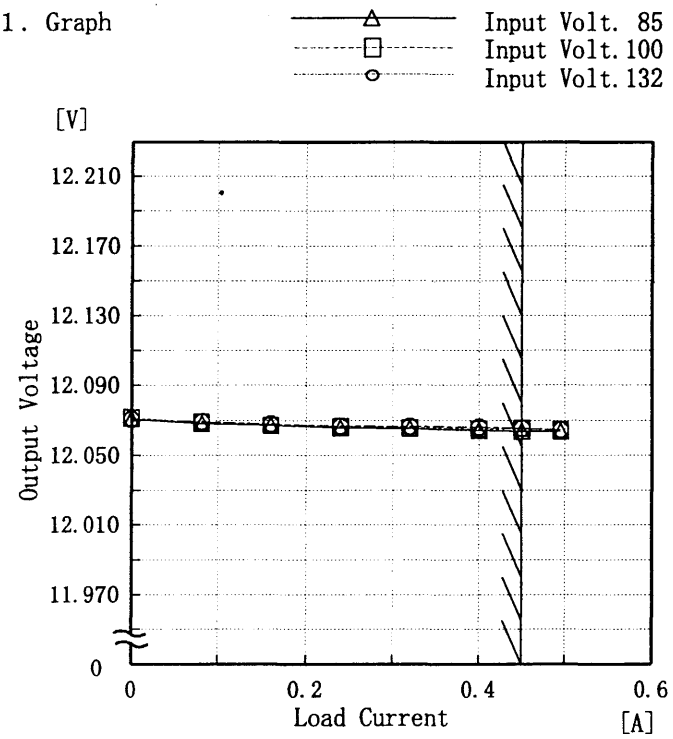
Load Current [A]	Time [mS]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.000	—	—	—
0.080	111	152	245
0.160	58	87	152
0.240	38	58	108
0.320	26	42	82
0.400	17	32	65
0.450	15	27	57
0.495	12	23	51
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	YS512A
Item	Load Regulation 静的負荷変動
Object	+12.0V0.45A

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

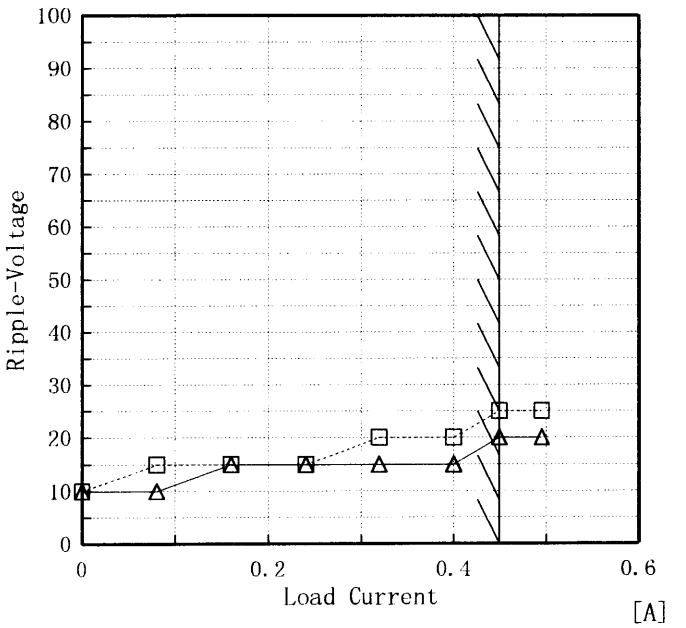
Load Current [A]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.000	12.071	12.072	12.071
0.080	12.068	12.069	12.069
0.160	12.067	12.067	12.068
0.240	12.066	12.067	12.067
0.320	12.065	12.066	12.067
0.400	12.065	12.065	12.066
0.450	12.064	12.066	12.065
0.495	12.064	12.065	12.065
—	—	—	—
—	—	—	—

COSEL

Model	YS512A
Item	Ripple Voltage(by Load Current) リップル電圧(負荷特性)
Object	+12.0V0.45A

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

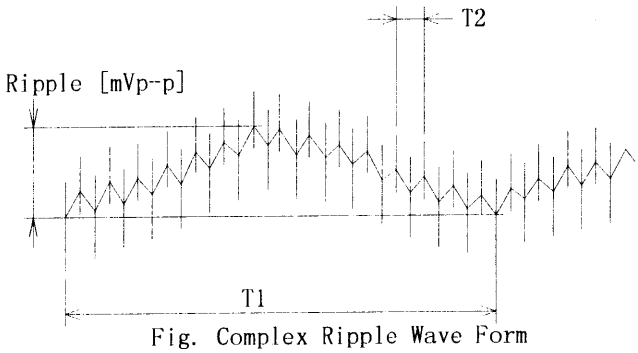


Fig. Complex Ripple Wave Form
図　リップル波形詳細図

2. Values

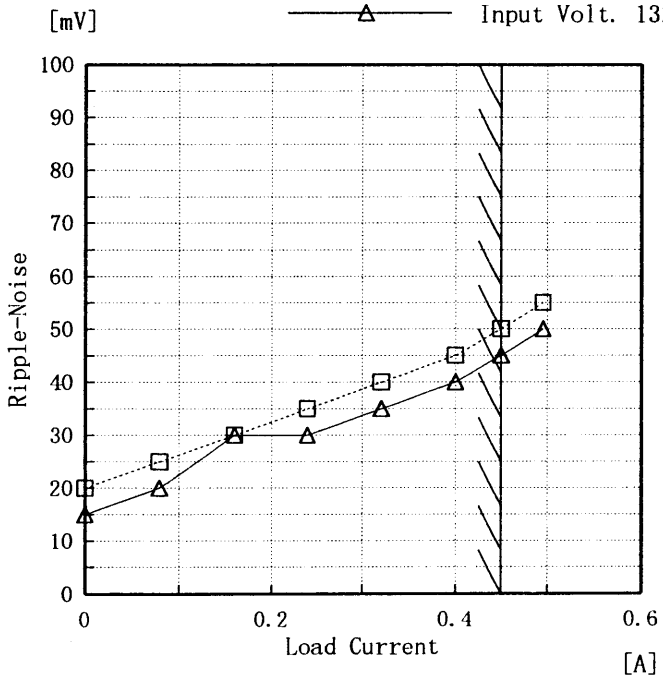
Load Current [A]	Ripple Output Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.000	10	10
0.080	15	10
0.160	15	15
0.240	15	15
0.320	20	15
0.400	20	15
0.450	25	20
0.495	25	20
—	—	—
—	—	—
—	—	—

COSEL

Model	YS512A
Item	Ripple-Noise リップルノイズ
Object	+12.0V0.45A

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

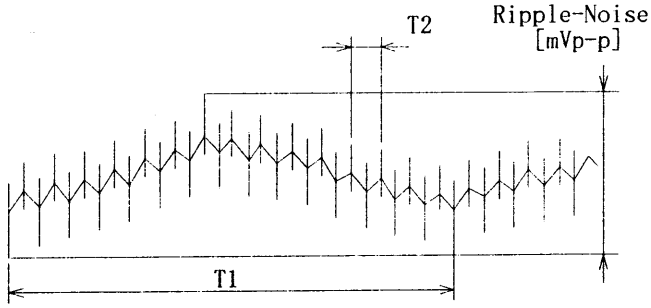


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

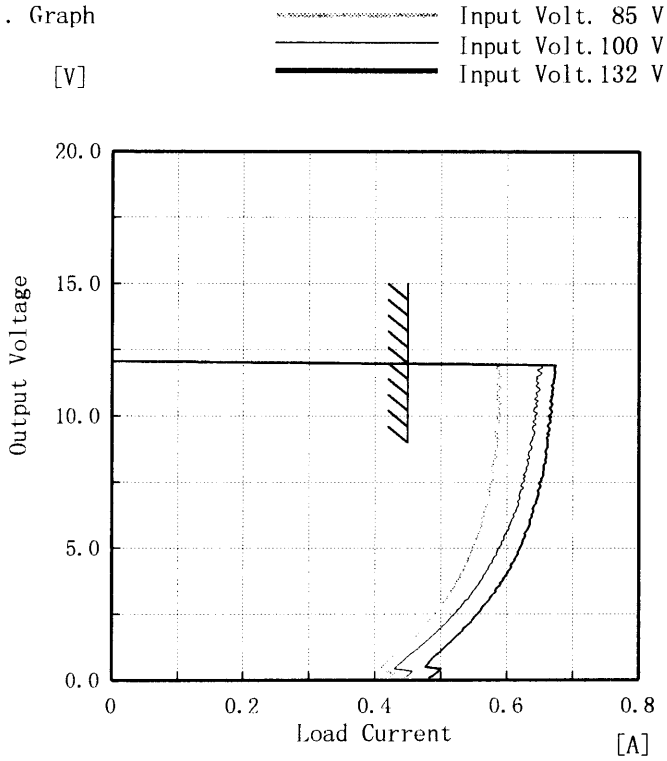
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.000	20	15
0.080	25	20
0.160	30	30
0.240	35	30
0.320	40	35
0.400	45	40
0.450	50	45
0.495	55	50
—	—	—
—	—	—
—	—	—

COSEL

Model	YS512A
Item	Overcurrent Protection 過電流保護
Object	+12.0V0.45A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

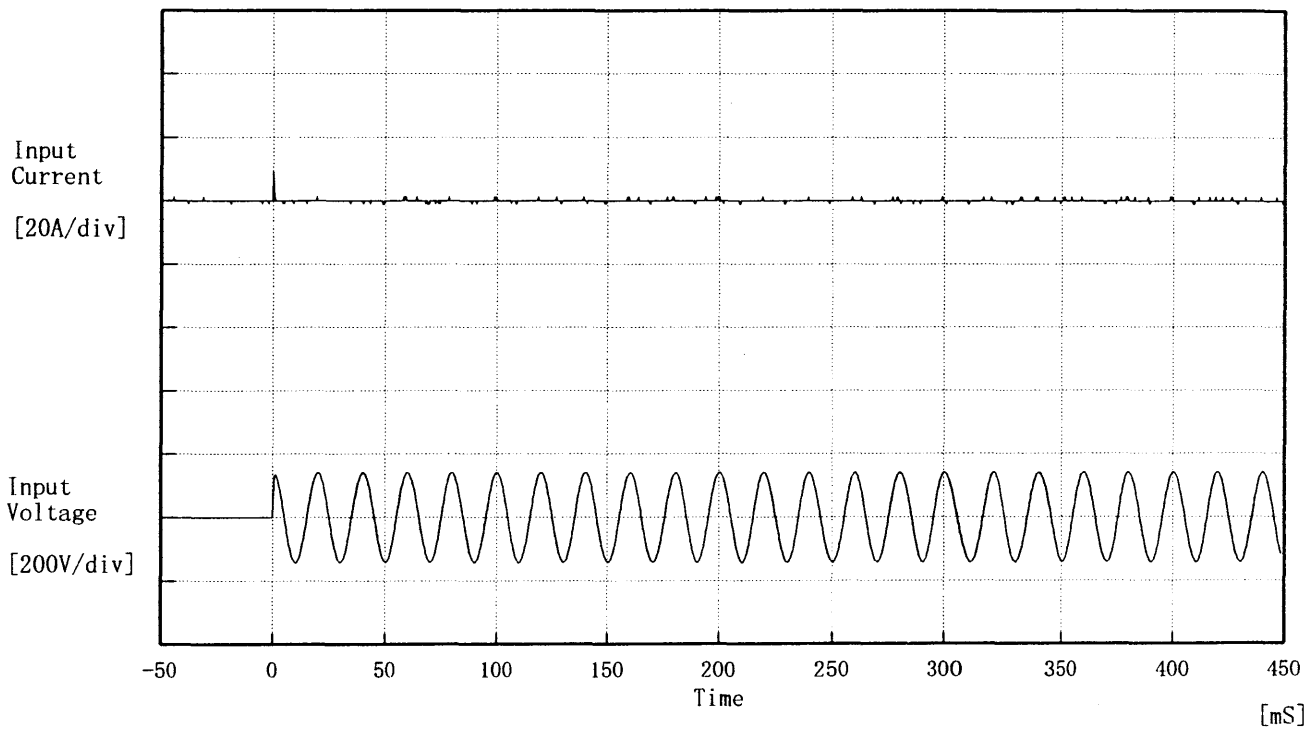
(注)斜線は定格負荷電流範囲を示す。

2. Values

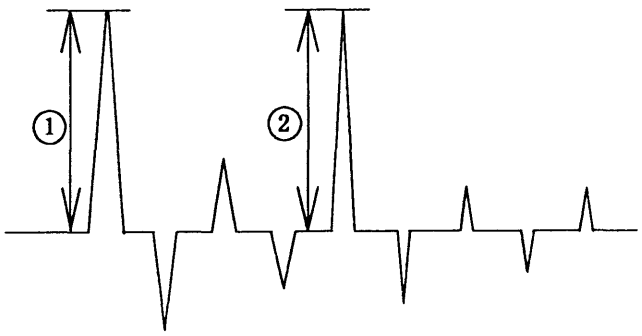
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
12.00	0.593	0.650	0.673
11.40	0.586	0.645	0.671
10.80	0.584	0.644	0.668
9.60	0.582	0.639	0.661
8.40	0.584	0.635	0.659
7.20	0.575	0.625	0.650
6.00	0.565	0.606	0.635
4.80	0.546	0.584	0.616
3.60	0.523	0.557	0.590
2.40	0.492	0.520	0.555
1.20	0.447	0.469	0.507
0.00	0.425	0.445	0.481

COSEL

Model	YS512A	Temperature	25℃
Item	Inrush Current 突入電流	Testing Circuitry	Figure A
Object	――――――		



Input Voltage 100 V
Frequency 50 Hz
Load 100 %
Inrush Current
① 8.97 [A]
② 1.12 [A]



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COSEL

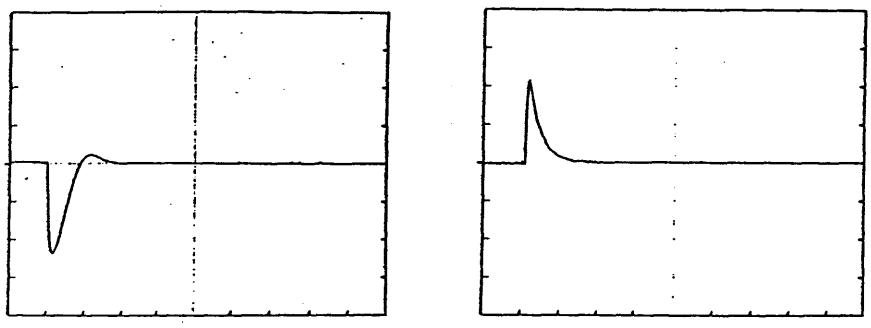
Model	YS512A		
Item	Dynamic Load Responce 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	+12.0V0.45A		

Input Volt. 100 V

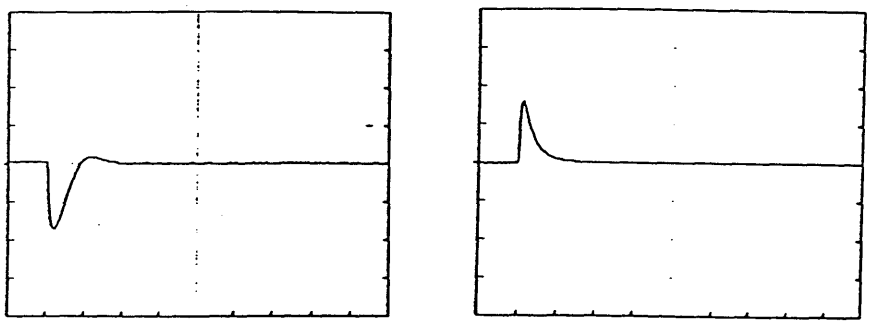
Cycle 1000 mS

Load Current

Load 0% ⟷
Load 100 %



Load 0% ⟷
Load 50 %



200 mV/div

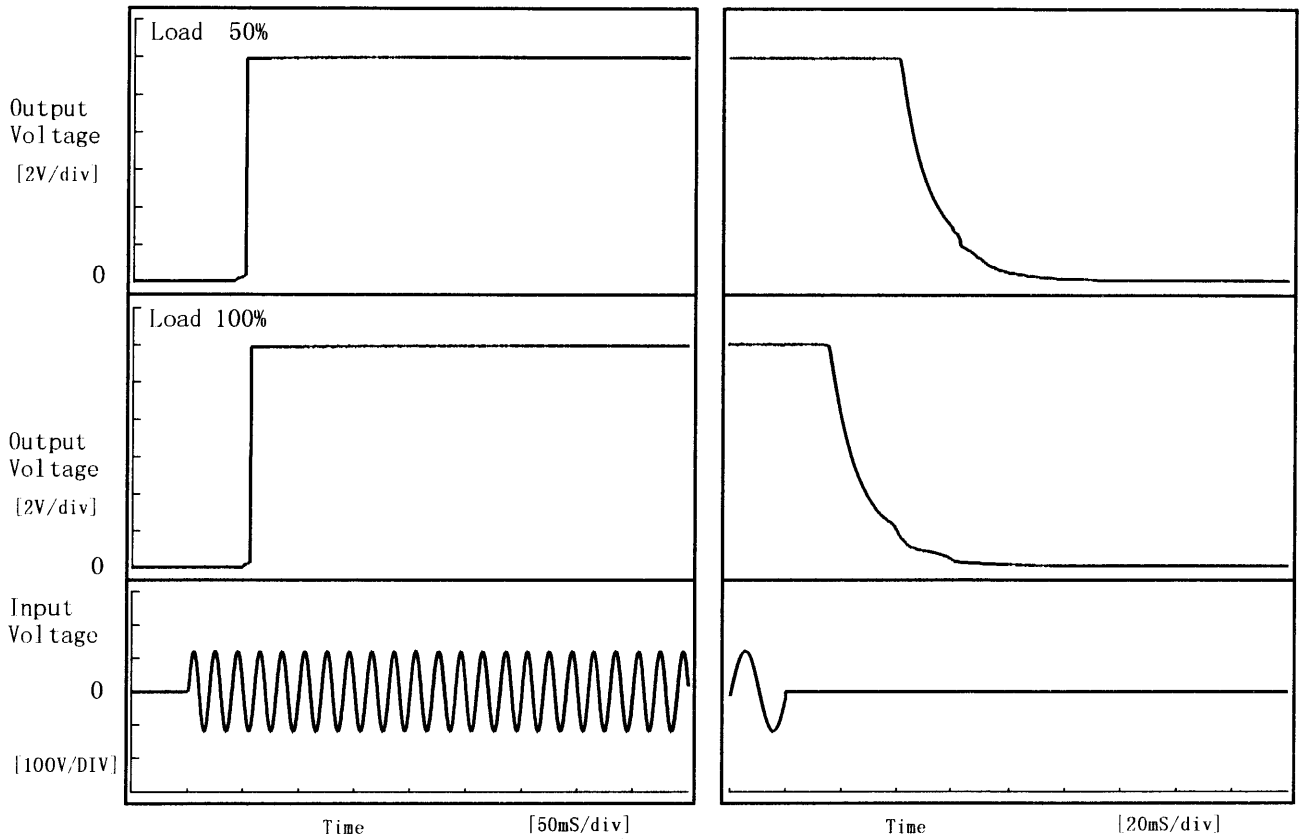
1 mS/div

COSEL

Model	YS512A		
Item	Rise and Fall Time 立上り、立下り時間	Temperature Testing Circuitry	25℃ Figure A
Object	+12.0V0.45A		

1. Graph

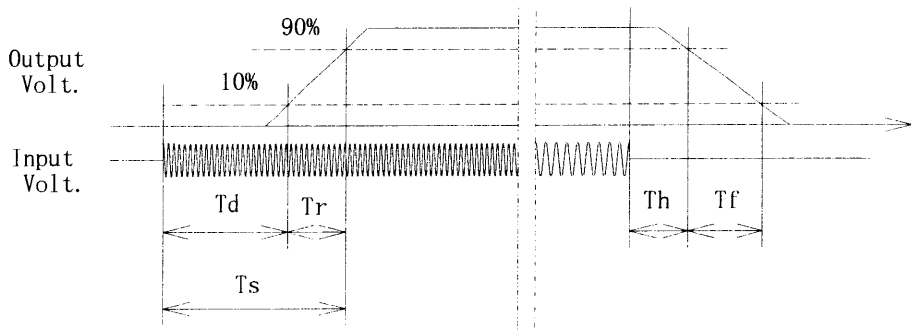
Input Volt. 85 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	53.8	1.0	54.8	42.4	27.9
100 %	56.3	1.0	57.3	16.8	26.7

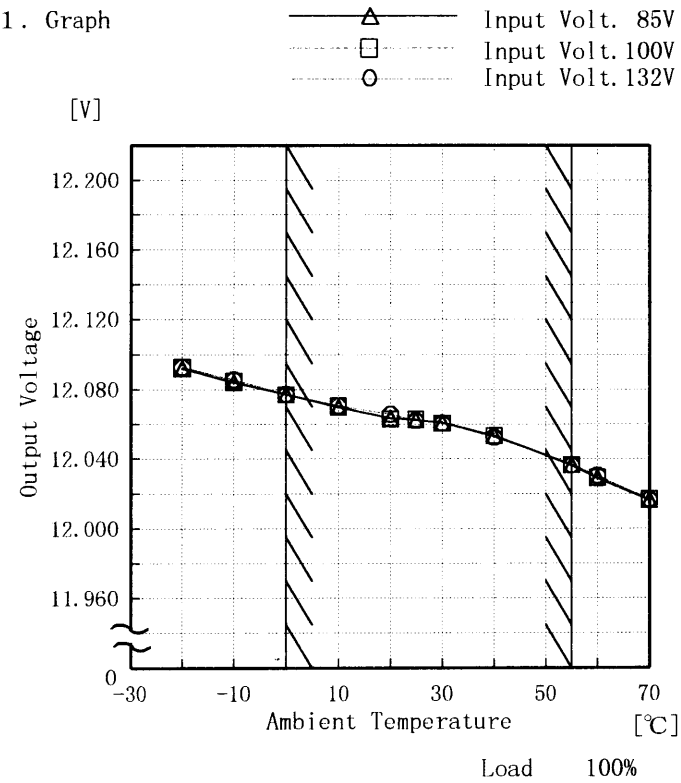


COSEL

Model	YS512A
Item	Ambient Temperature Drift 周囲温度変動
Object	+12.0V0.45A

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

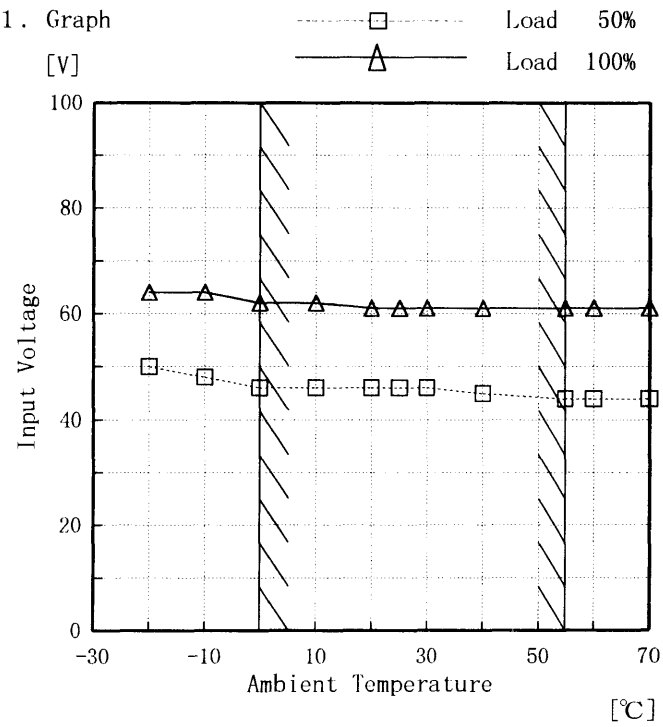
Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	12.092	12.093	12.093
-10	12.084	12.085	12.086
0	12.077	12.077	12.077
10	12.070	12.071	12.071
20	12.064	12.063	12.066
25	12.062	12.063	12.062
30	12.061	12.060	12.060
40	12.053	12.053	12.052
55	12.036	12.036	12.037
60	12.029	12.029	12.030
70	12.017	12.017	12.017

COSEL

Model	YS512A
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+12.0V0.45A

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

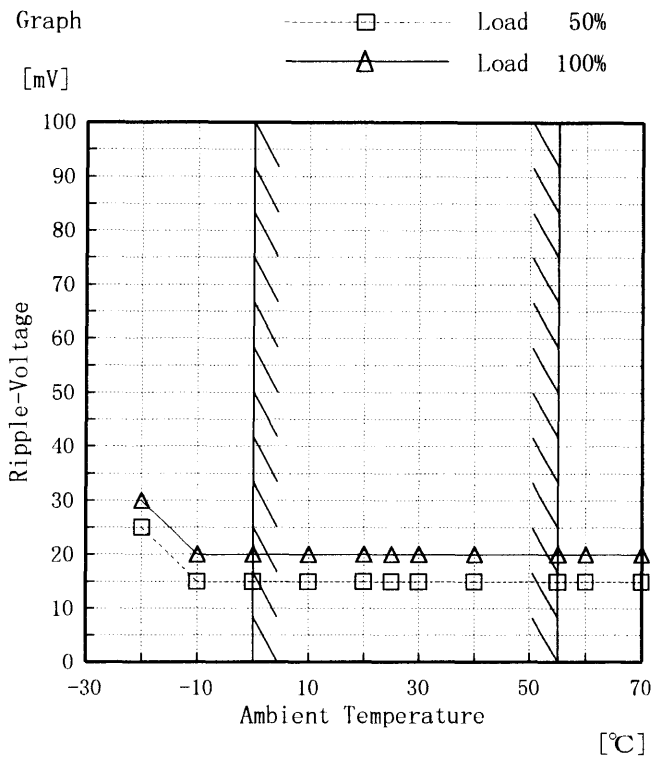
Ambient Temperature [℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	50	64
-10	48	64
0	46	62
10	46	62
20	46	61
25	46	61
30	46	61
40	45	61
55	44	61
60	44	61
70	44	61

COSEL

Model	YS512A
Item	Ripple Voltage (by Ambient Temp.) リップル電圧（周囲温度特性）
Object	+12.0V0.45A

Testing Circuitry　Figure A

1. Graph



Input Volt.　100 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

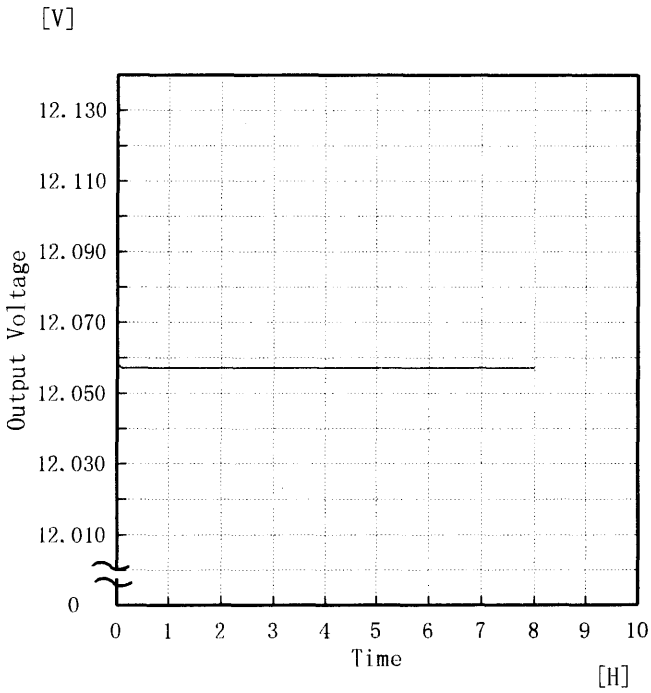
Ambient Temperature [℃]	Ripple Output Voltage [mV]	
	Load 50%	Load 100%
-20	25	30
-10	15	20
0	15	20
10	15	20
20	15	20
25	15	20
30	15	20
40	15	20
55	15	20
60	15	20
70	15	20

COSEL

Model	YS512A
Item	Time Lapse Drift 経時ドリフト
Object	+12.0V0.45A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Input Volt. 100V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	12.058
0.5	12.057
1.0	12.057
2.0	12.057
3.0	12.057
4.0	12.057
5.0	12.057
6.0	12.057
7.0	12.057
8.0	12.057

COSEL

Model	YS512A	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	+12.0V0.45A	

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 0～55 ℃
Input Voltage : 85～132 V
Load Current : 0～0.45 A

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

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

1. 定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、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 0～55 ℃
入力電圧 85～132 V
負荷電流 0～0.45 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

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

2. Values

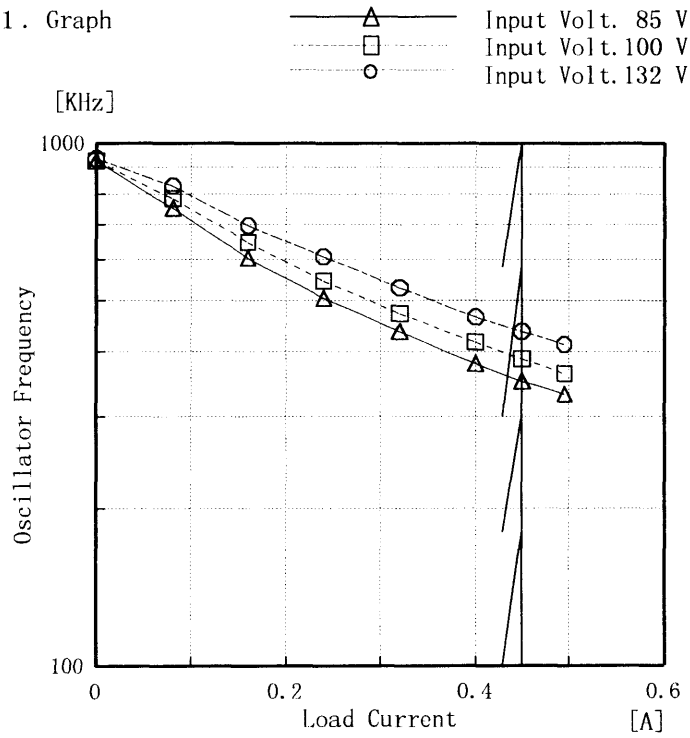
Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration)[%]
Maximum Voltage	0	132	0.00	12.085	±25	±0.3
Minimum Voltage	55	85	0.45	12.036		

COSEL

Model	YS512A
Item	Oscillator Frequency 発振周波数
Object	+12.0V0.45A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Oscillator Frequency [KHz]		
0.000	926	926	934
0.080	752	784	829
0.160	604	647	697
0.240	506	545	607
0.320	437	472	529
0.400	379	417	465
0.450	351	387	437
0.495	331	363	413
—	—	—	—
—	—	—	—
—	—	—	—

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COSEL

Model	YS512A	
Item	Condensation 結露特性	Testing Circuitry Figure A
Object	+12.0V0.45A	

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 25℃ and the humidity is 40%RH.

③ Testing electrical characteristics of the unit to confirm there be no fault.

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２５℃、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行い、異常のないことを確認する。

2. Values

Item	Data	Testing Conditions
Output Voltage [V]	12.064	Input Volt.: 100V, Load Current:0.45A
Line Regulation [mV]	2	Input Volt.: 85～132V, Load Current:0.45A
Load Regulation [mV]	7	Input Volt.: 100V, Load Current:0.00～0.45A

COSEL

Model	YS512A		
Item	Leakage Current 漏洩電流	Temperature Testing Circuitry	25℃ Figure B
Object	――――――		

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	0.16	0.19	0.25
(B) IEC60950	0.15	0.18	0.24

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(B) IEC60950	—	—	—

2. Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

交流入力の両相について測定し、その大きい方を漏洩電流測定値とする。

COSEL

Model	YS512A		
Item	Line Noise Tolerance 入力雑音耐量	Temperature Testing Circuitry	25℃ Figure C
Object	+12.0V0.45A		

1. Results

Pulse Width [nS]	MODE	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation
1000	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation

2. Conditions

Input Voltage : 100 V
Pulse Voltage : 2000 V
Pulse Cycle : 10 mS
Pulse Input Duration : 1 min. or more
Load : 100 %

COSEL

Model	YS512A
Item	Conducted Emission 雑音端子電圧
Object	――――――

Testing Circuitry　Figure D

1. Graph

Remarks

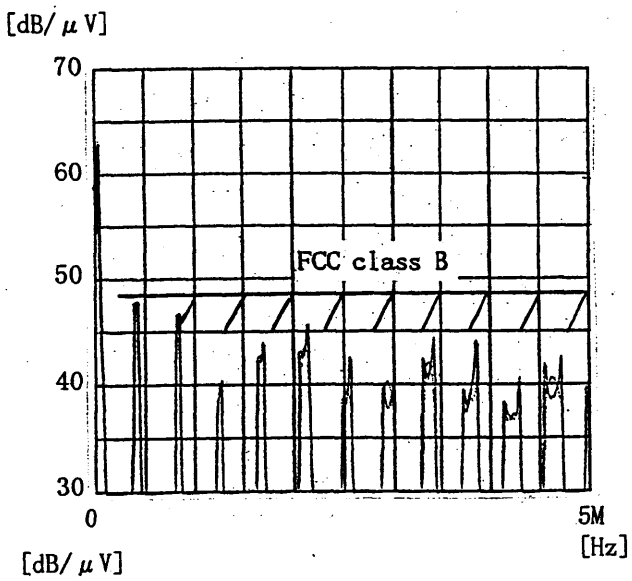
Input Volt.　120 V

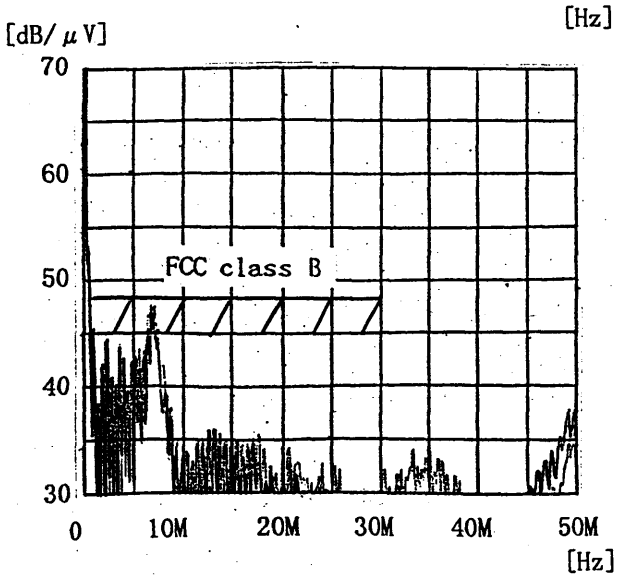
Load　100 %

Note: Slanted line shows the range of Tolerance.

(注)斜線は許容値を示す。

NO	Standards	Standards Complied	Frequency [MHz]	Tolerance [dB/μV]
1	FCC class A		0.45～1.6	60
			1.6～30	69.5
2	FCC class B	○	0.45～30	48
3	VCCI class A		0.15～0.5	79
			0.5～30	73
4	VCCI class B		0.15～0.5	66-56
			0.5～5	56
			5～30	60
5	CISPR Pub.22 class A (EN55022)		0.15～0.5	79
			0.5～30	73
6	CISPR Pub.22 class B (EN55022)		0.15～0.5	66-56
			0.5～5	56
			5～30	60





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COSEL

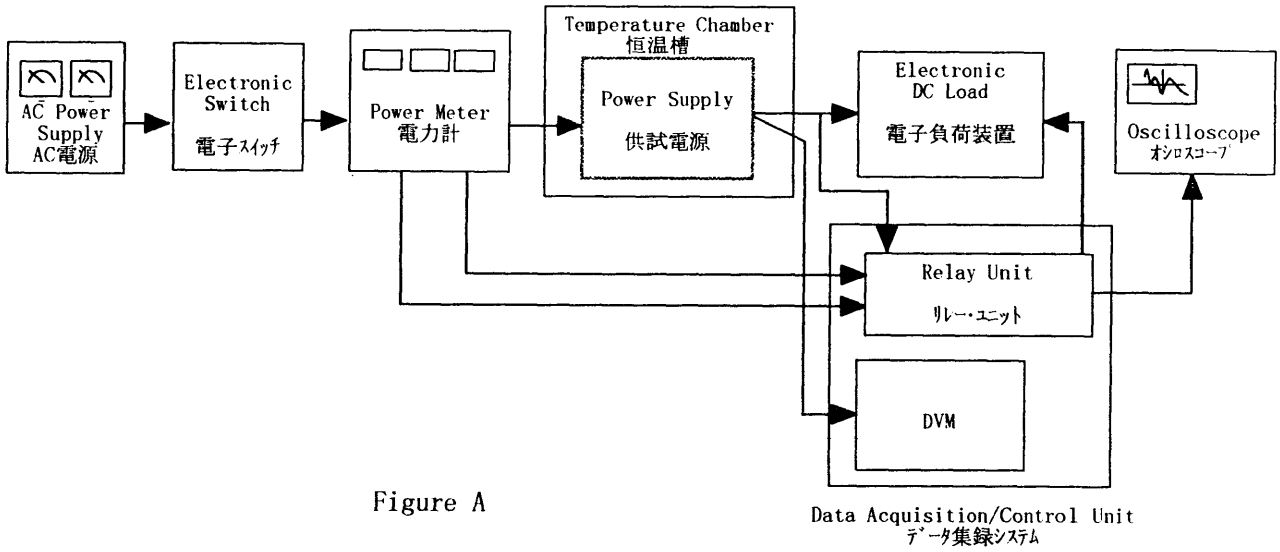

Figure A

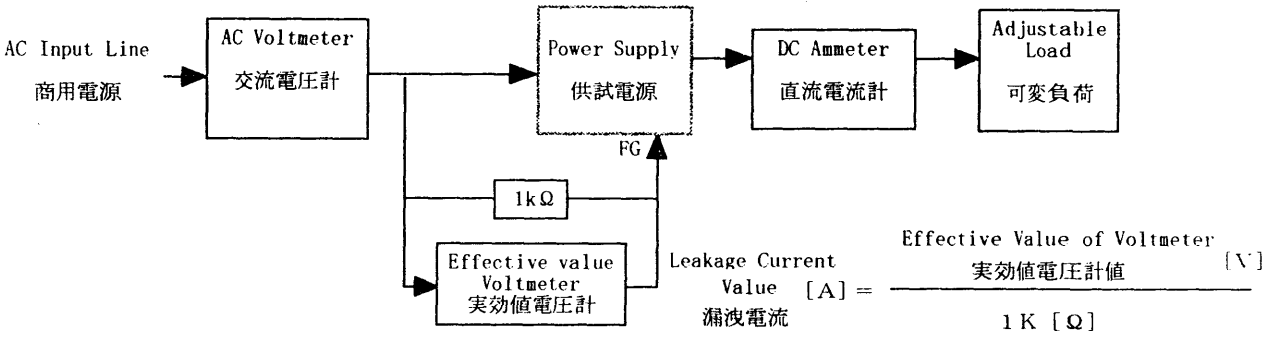

Figure B(DENTORI)

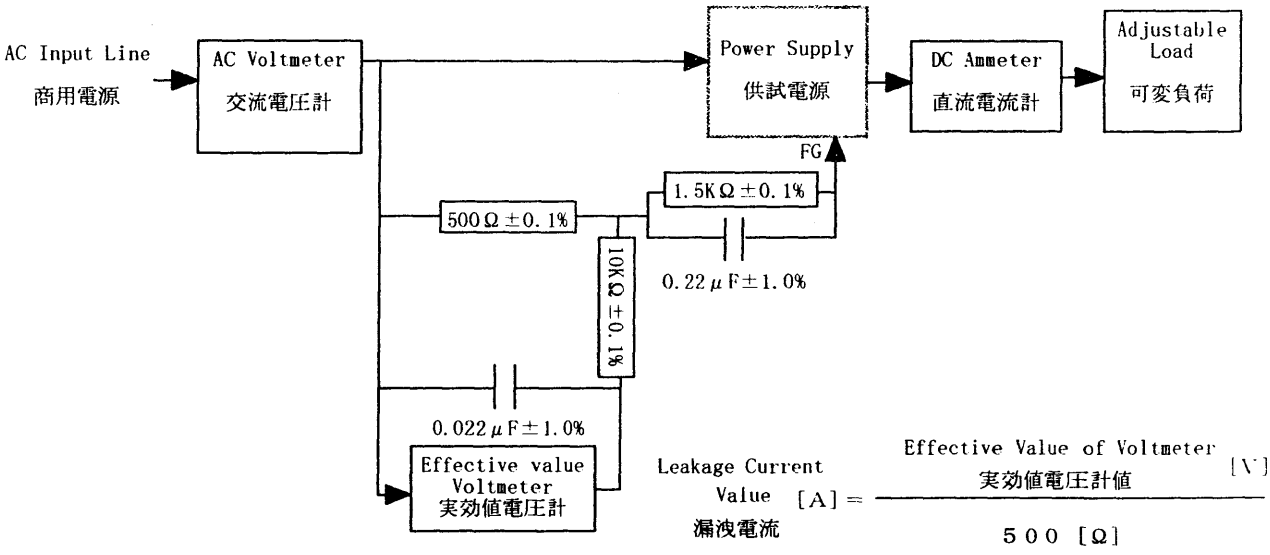

Figure B（IEC60950）

COSEL

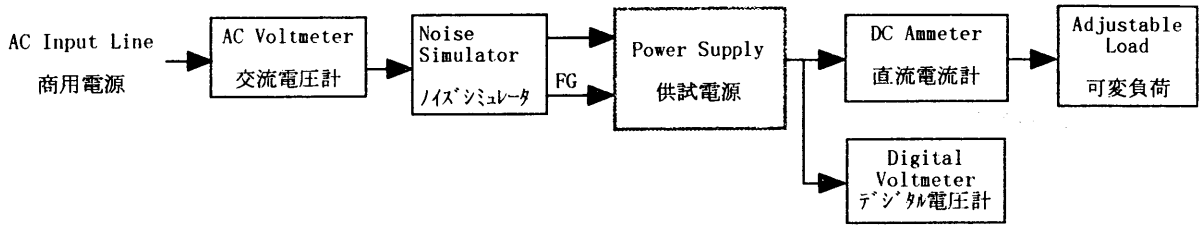

Figure C

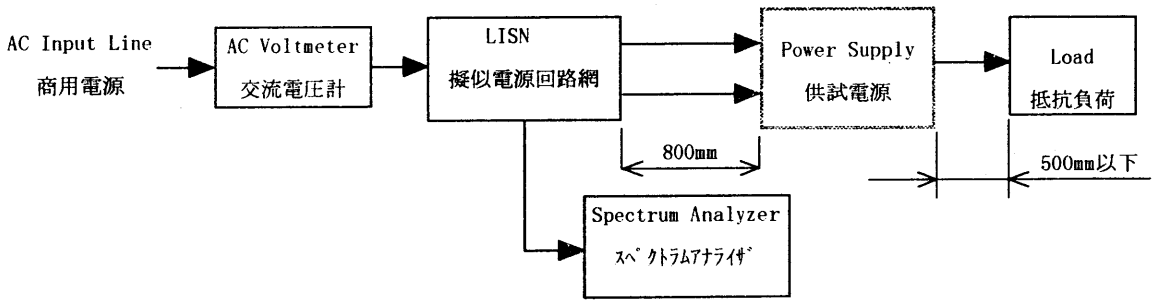

Figure D

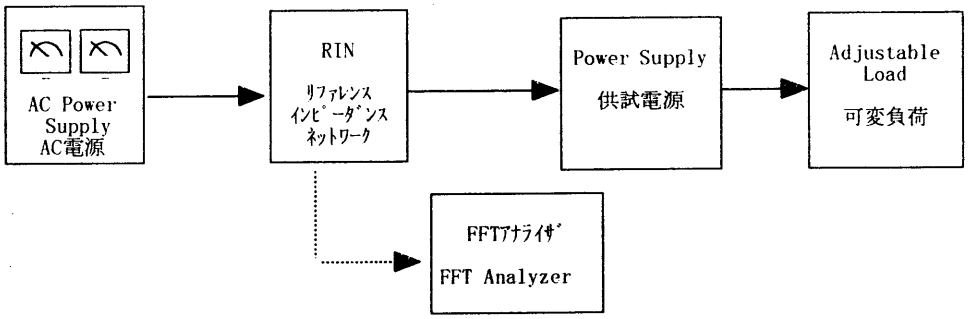

Figure E