参考資料

COSEL

TEST DATA OF ADA

ADA600F-36
(100V INPUT)

Regulated DC power supply
Mar. 11, 2003

Approved by : Kuniaki Nagahara
Kuniaki Nagahara Design Manager

Prepared by : Koji Todo
Koji Todo Design Engineer

INPUT : AC 85～132V

OUTPUT : V1: 36V 14A

コーセル株式会社
COSEL CO.,LTD.

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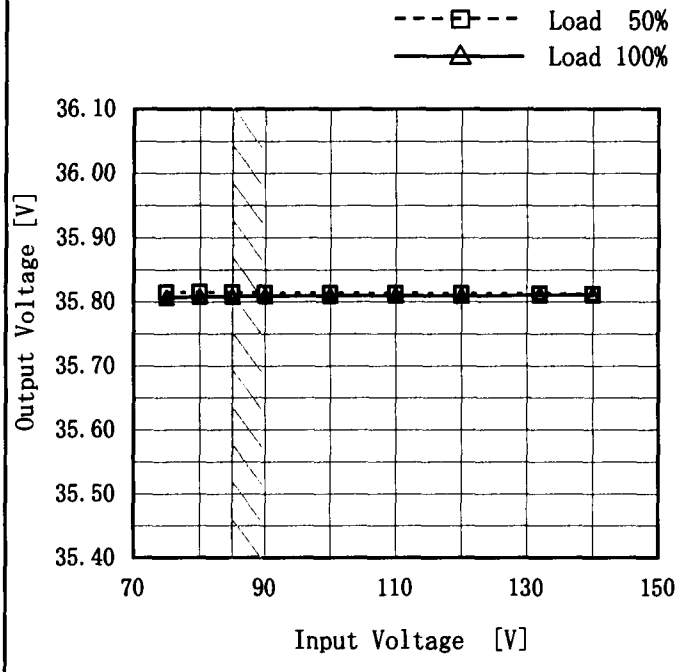
Testing Circuitry Figure A

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

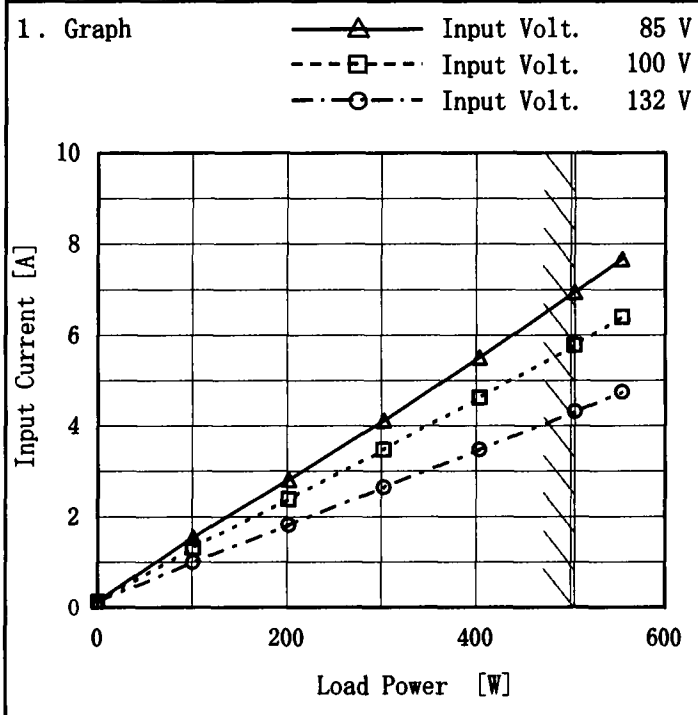
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	35.815	35.807
80	35.815	35.808
85	35.814	35.809
90	35.814	35.809
100	35.813	35.809
110	35.813	35.810
120	35.813	35.810
132	35.813	35.810
140	35.812	35.811

COSEL

Model	ADA600F (ADA600F-36)
Item	Input Current (by Load Current) 入力電流（負荷電力特性）
Object	————————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

（注）斜線は定格電力範囲を示す。

2. Values

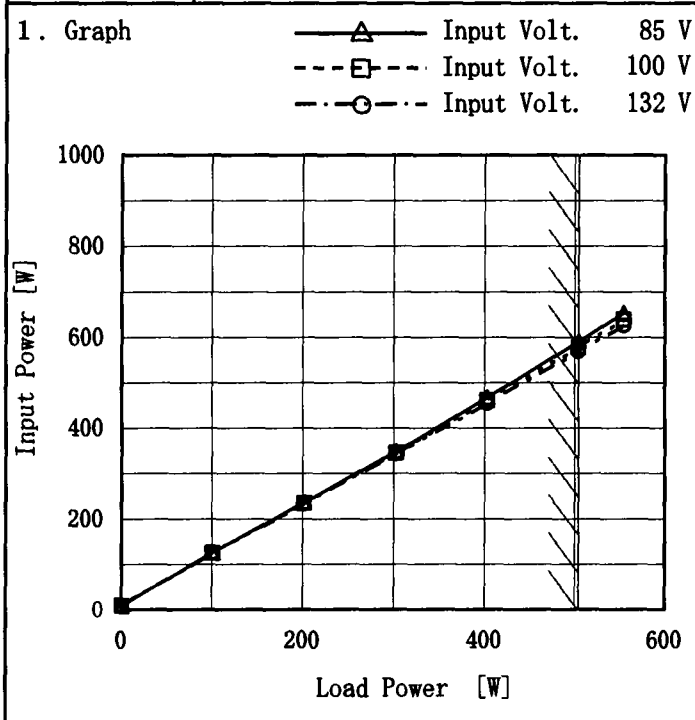
Load Power [W]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	0.139	0.131	0.127
100.8	1.542	1.310	1.003
201.6	2.817	2.387	1.821
302.4	4.120	3.479	2.643
403.2	5.500	4.620	3.474
504.0	6.940	5.780	4.320
554.4	7.670	6.400	4.750
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Input Power (by Load Power) 入力電力 (負荷電力特性)
Object	————————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

(注) 斜線は定格電力範囲を示す。

2. Values

Load Power [W]	Input Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	8.3	8.0	8.1
100.8	126.1	125.0	124.6
201.6	235.9	234.0	233.3
302.4	349.0	345.2	343.1
403.2	467.0	461.0	455.0
504.0	590.0	578.0	569.0
554.4	653.0	639.0	626.0
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

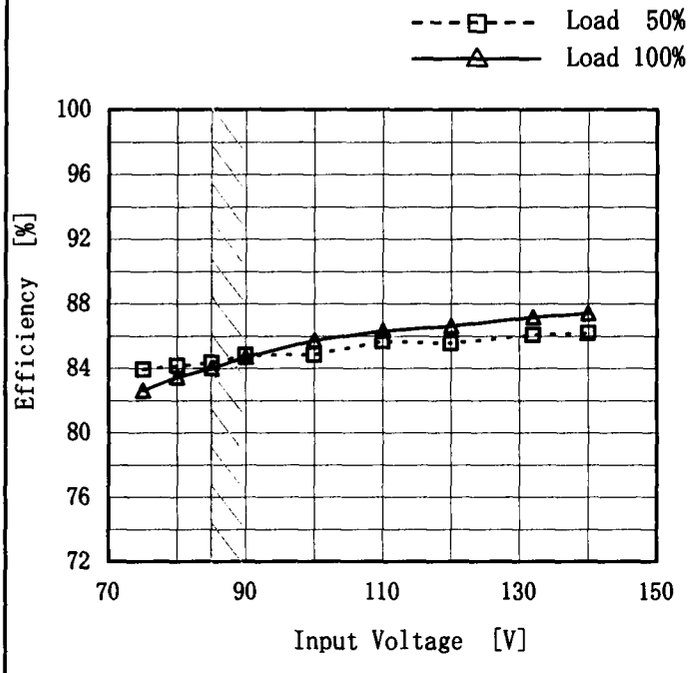
BC−3477

COSEL

Model	ADA600F (ADA600F-36)
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

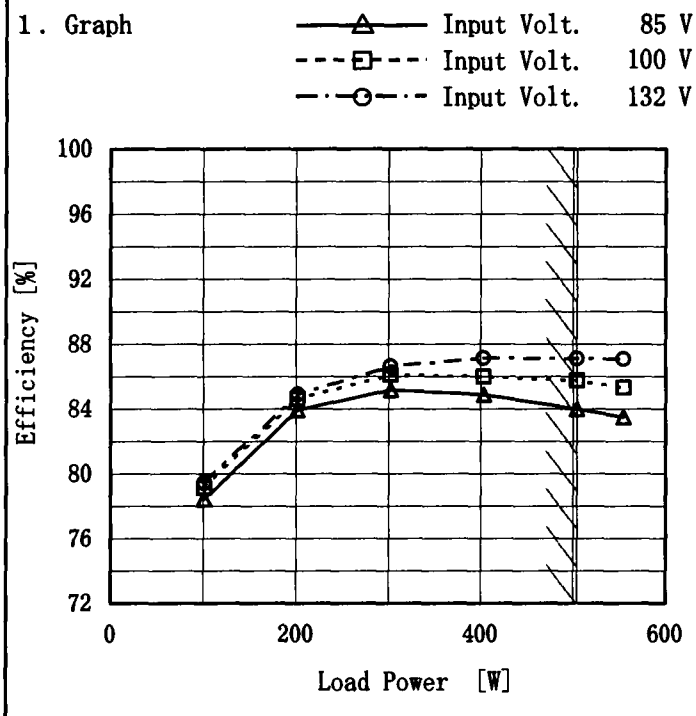
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
75	83.9	82.6
80	84.1	83.4
85	84.3	84.0
90	84.8	84.7
100	84.9	85.7
110	85.7	86.3
120	85.6	86.6
132	86.1	87.2
140	86.2	87.4

COSEL

Model	ADA600F (ADA600F-36)
Item	Efficiency (by Load Power) 効率（負荷電力特性）
Object	————————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

（注）斜線は定格電力範囲を示す。

2. Values

Load Power [W]	Efficiency [%]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	—	—	—
100.8	78.4	79.1	79.4
201.6	83.9	84.6	84.9
302.4	85.2	86.1	86.7
403.2	84.9	86.0	87.1
504.0	84.0	85.8	87.1
554.4	83.5	85.3	87.1
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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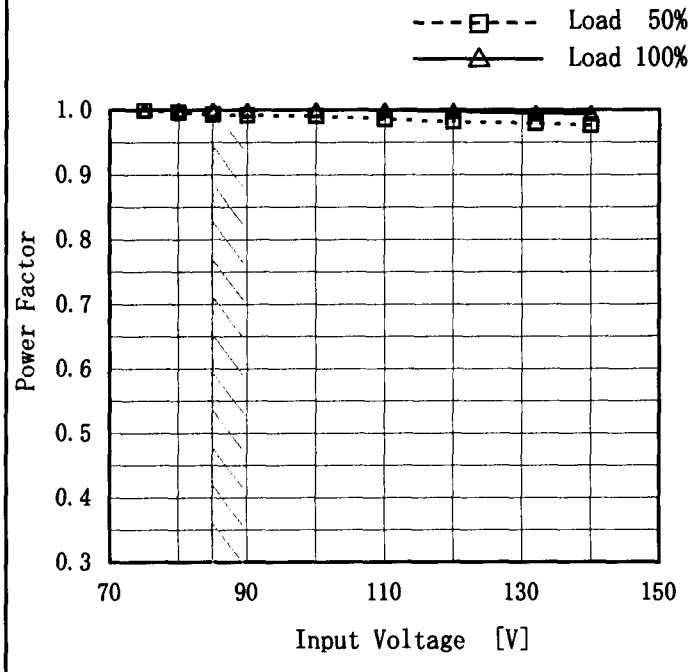
Model	ADA600F (ADA600F-36)
Item	Power Factor (by Input Voltage) 力率 (入力電圧特性)
Object	———————————

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	0.999	0.999
80	0.996	0.999
85	0.993	0.999
90	0.992	0.999
100	0.990	0.999
110	0.986	0.999
120	0.982	0.998
132	0.979	0.995
140	0.977	0.995

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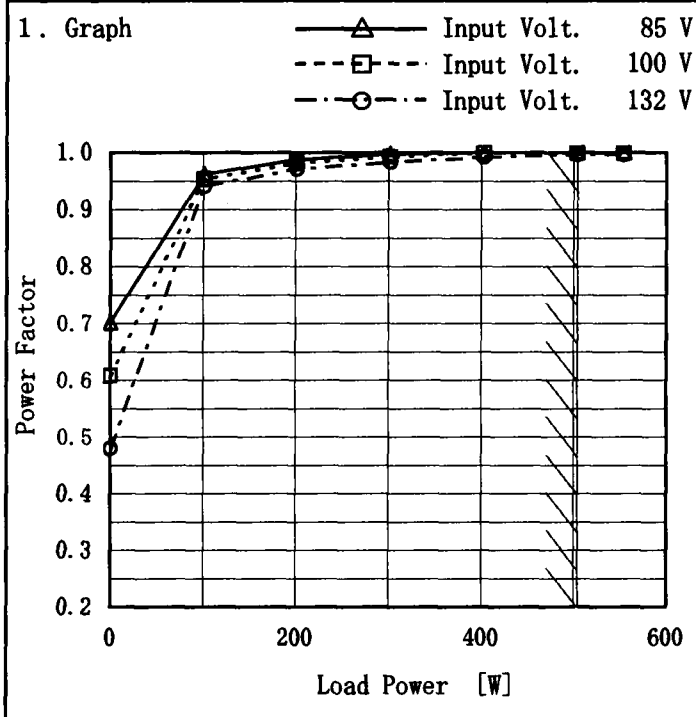
Model	ADA600F (ADA600F-36)
Item	Power Factor (by Load Power) 力率（負荷電力特性）
Object	————————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

（注）斜線は定格電力範囲を示す。

2. Values

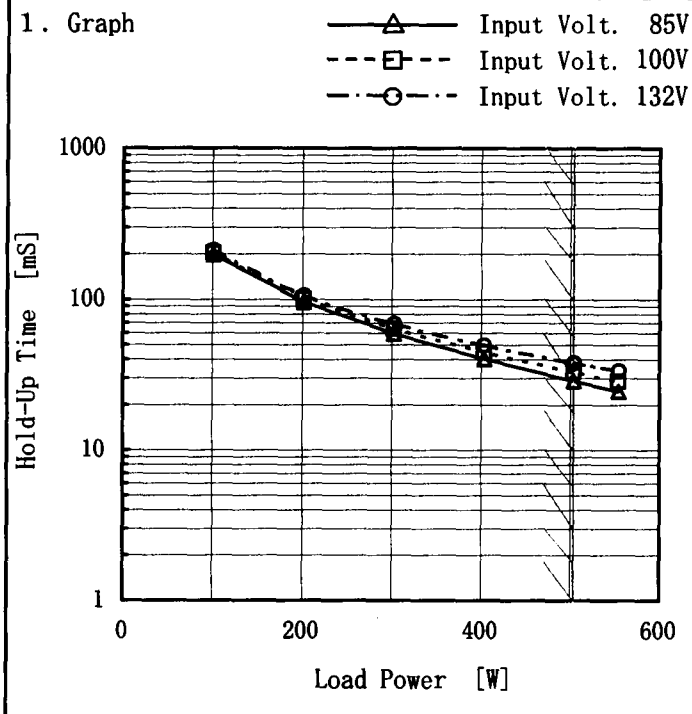
Load Power [W]	Power Factor		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	0.702	0.609	0.479
100.8	0.963	0.954	0.941
201.6	0.987	0.982	0.971
302.4	0.997	0.993	0.983
403.2	0.999	0.999	0.992
504.0	0.999	0.999	0.996
554.4	0.999	0.999	0.997
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Hold-Up Time (by Load Power) 出力保持時間（負荷電力特性）
Object	――――――――――

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 power.

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範囲を保持しているところまでの時間。
（注）斜線は定格電力範囲を示す。

2. Values

Load Power [W]	Hold-Up Time [mS]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	—	—	—
100.8	199	204	212
201.6	96	101	107
302.4	59	64	69
403.2	40	45	50
504.0	29	33	38
554.4	25	29	34
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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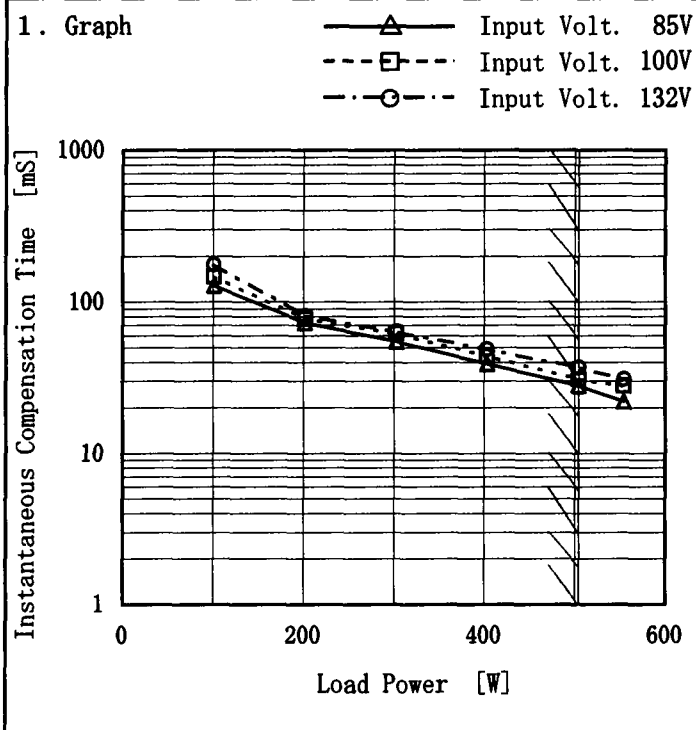
Model	ADA600F (ADA600F-36)
Item	Instantaneous Interruption Compensation (by Load Power) 瞬時停電保障（負荷電力特性）
Object	————————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

（注）斜線は定格電力範囲を示す。

2. Values

Load Power [W]	Time [mS] Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	—	—	—
100.8	128	147	177
201.6	73	78	81
302.4	55	62	64
403.2	39	44	49
504.0	28	31	37
554.4	22	28	31
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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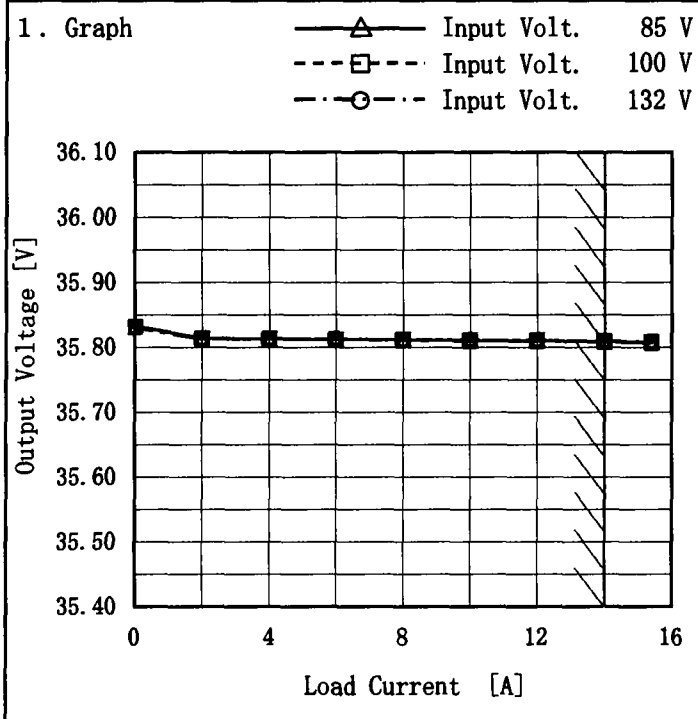
Model	ADA600F (ADA600F-36)
Item	Load Regulation 静的負荷変動
Object	V1:+36V14A

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

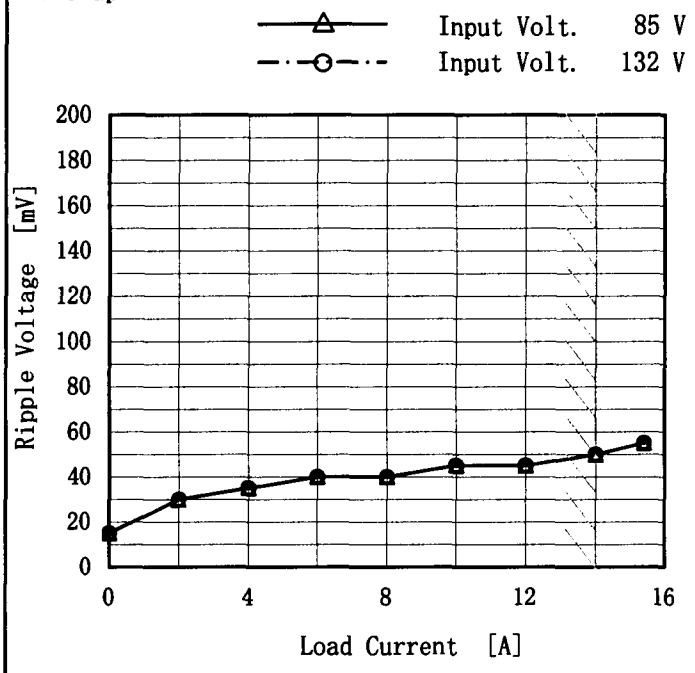
Load Current [A]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	35.833	35.831	35.831
2.0	35.814	35.814	35.813
4.0	35.813	35.813	35.813
6.0	35.813	35.813	35.813
8.0	35.812	35.812	35.812
10.0	35.811	35.811	35.812
12.0	35.811	35.811	35.811
14.0	35.809	35.809	35.810
15.4	35.808	35.808	35.809
—	—	—	—
—	—	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Ripple Voltage (by Load Current) リップル電圧 (負荷特性)
Object	V1:+36V14A

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

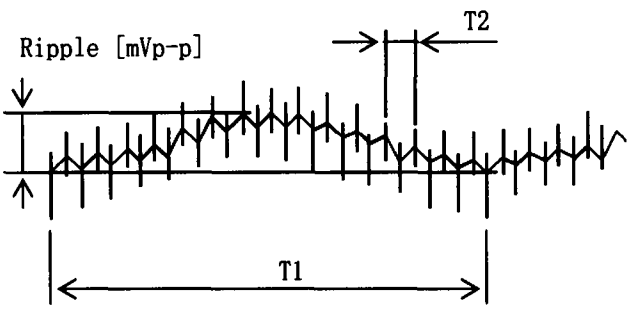


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

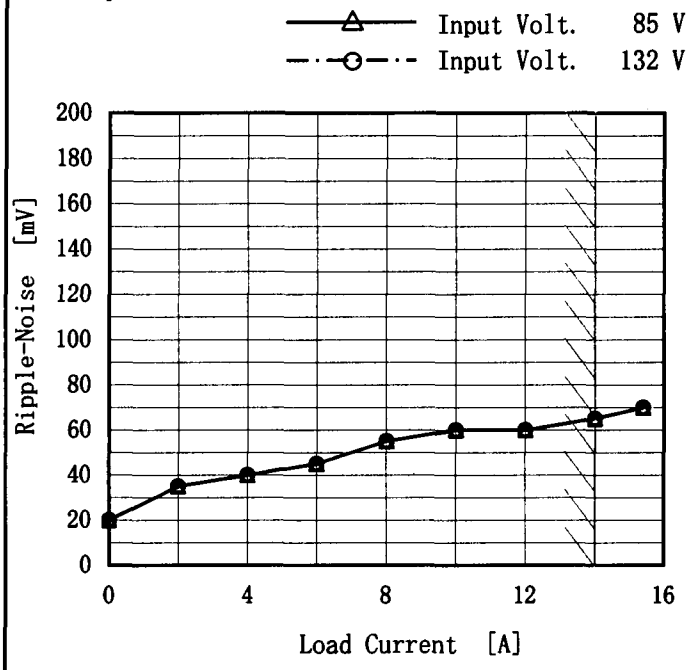
Load Current [A]	Ripple Output Voltage [mV]	
	Input Volt. 85[V]	Input Volt. 132[V]
0.0	15	15
2.0	30	30
4.0	35	35
6.0	40	40
8.0	40	40
10.0	45	45
12.0	45	45
14.0	50	50
15.4	55	55
—	—	—
—	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Ripple-Noise リップルノイズ
Object	V1:+36V14A

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

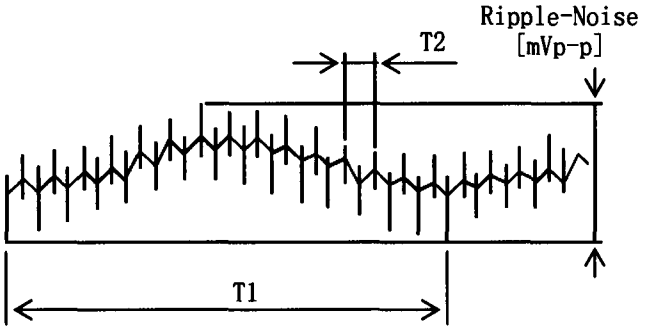


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

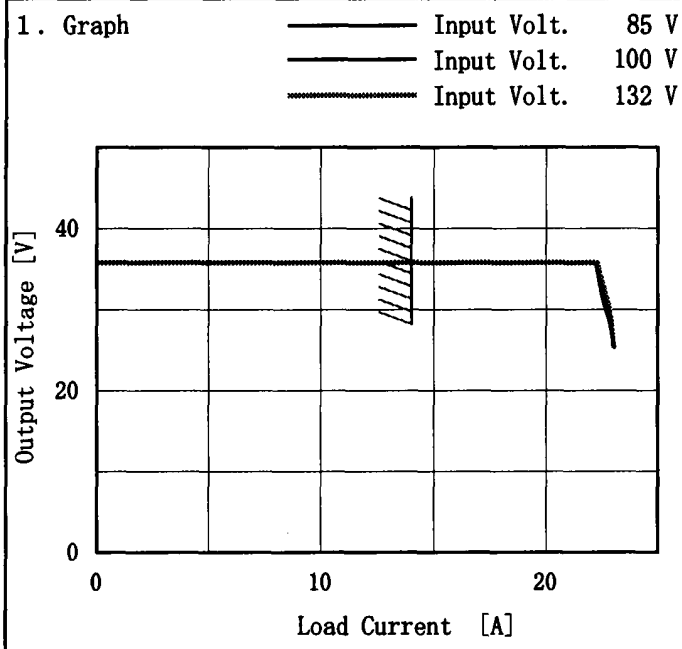
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85[V]	Input Volt. 132[V]
0.0	20	20
2.0	35	35
4.0	40	40
6.0	45	45
8.0	55	55
10.0	60	60
12.0	60	60
14.0	65	65
15.4	70	70
—	—	—
—	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Overcurrent Protection 過電流保護
Object	V1:+36V14A

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。

Intermittent operation occurs when the output voltage is from 25.2V to 0V.
25.2V～0V間は、間欠モードとなる。

2. Values

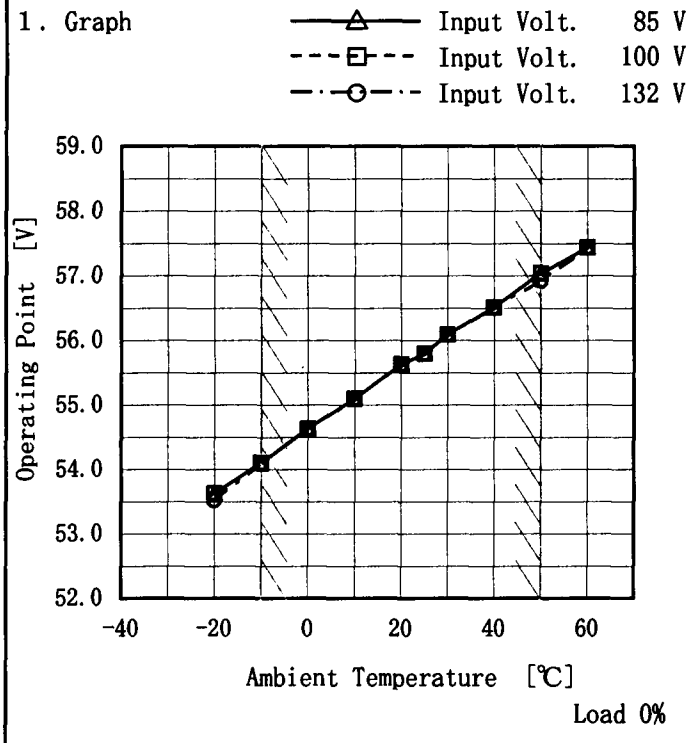
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
36.0	22.07	21.98	22.30
34.2	22.33	22.36	22.43
32.4	22.44	22.50	22.62
28.8	22.78	22.87	22.91
25.2	23.07	23.07	23.06
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Overvoltage Protection 過電圧保護
Object	V1:+36V14A

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。

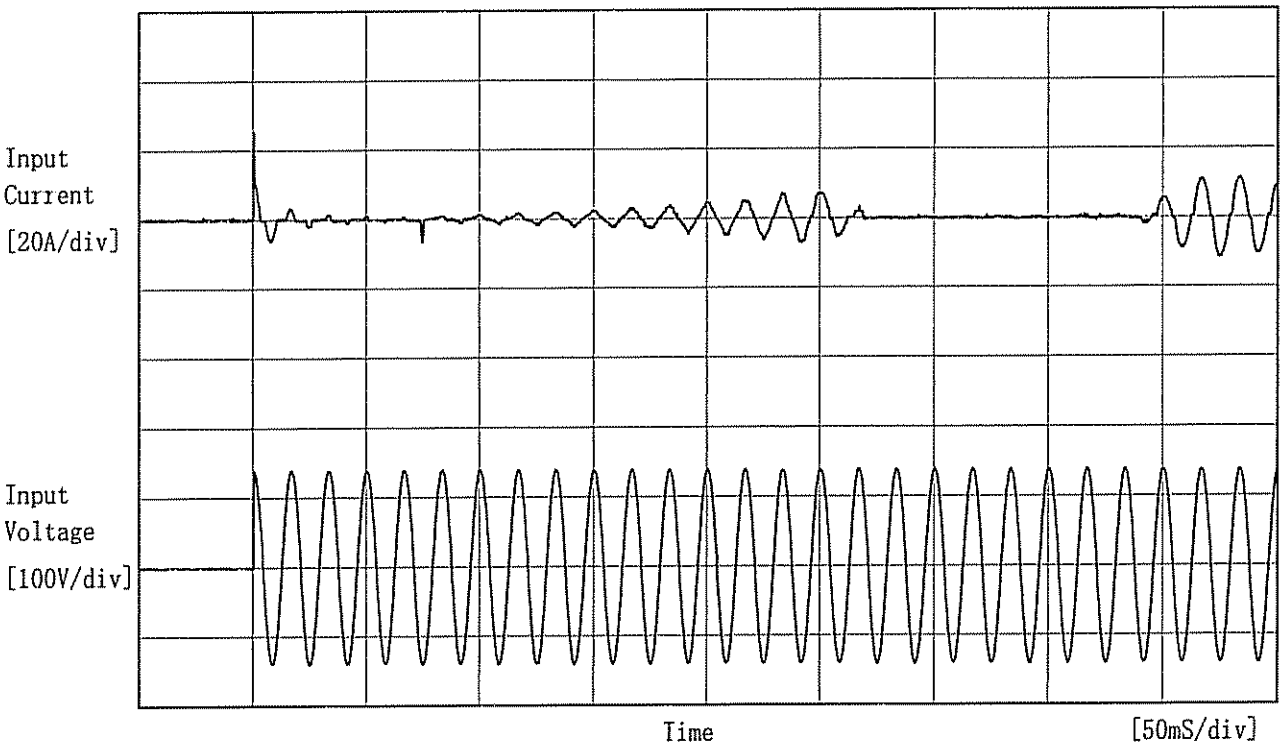
2. Values

Ambient Temperature [℃]	Operating Point [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	53.63	53.63	53.52
-10	54.10	54.10	54.10
0	54.64	54.63	54.63
10	55.10	55.10	55.10
20	55.63	55.63	55.63
25	55.80	55.80	55.80
30	56.10	56.09	56.09
40	56.51	56.51	56.51
50	57.04	57.04	56.92
60	57.44	57.44	57.44
—	—	—	—

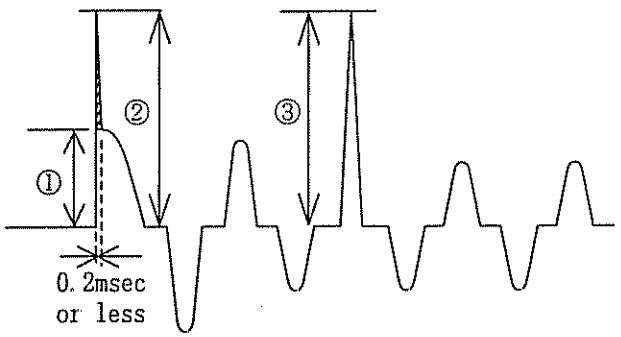
COSEL

Model	ADA600F (ADA600F-36)
Item	Inrush Current 突入電流
Object	————————

Temperature 25℃
Testing Circuitry Figure A



Input Voltage 100 V
Frequency 60 Hz
Load 100 %
Inrush Current
① 12.6 [A]
② 25.5 [A] (0.2msec or less)*1
③ 6.6 [A]



*1 The specification of the inrush current (primary surge) means that the surge current to a built-in noise filter (0.2msec or less : waveform ②) is excluded.

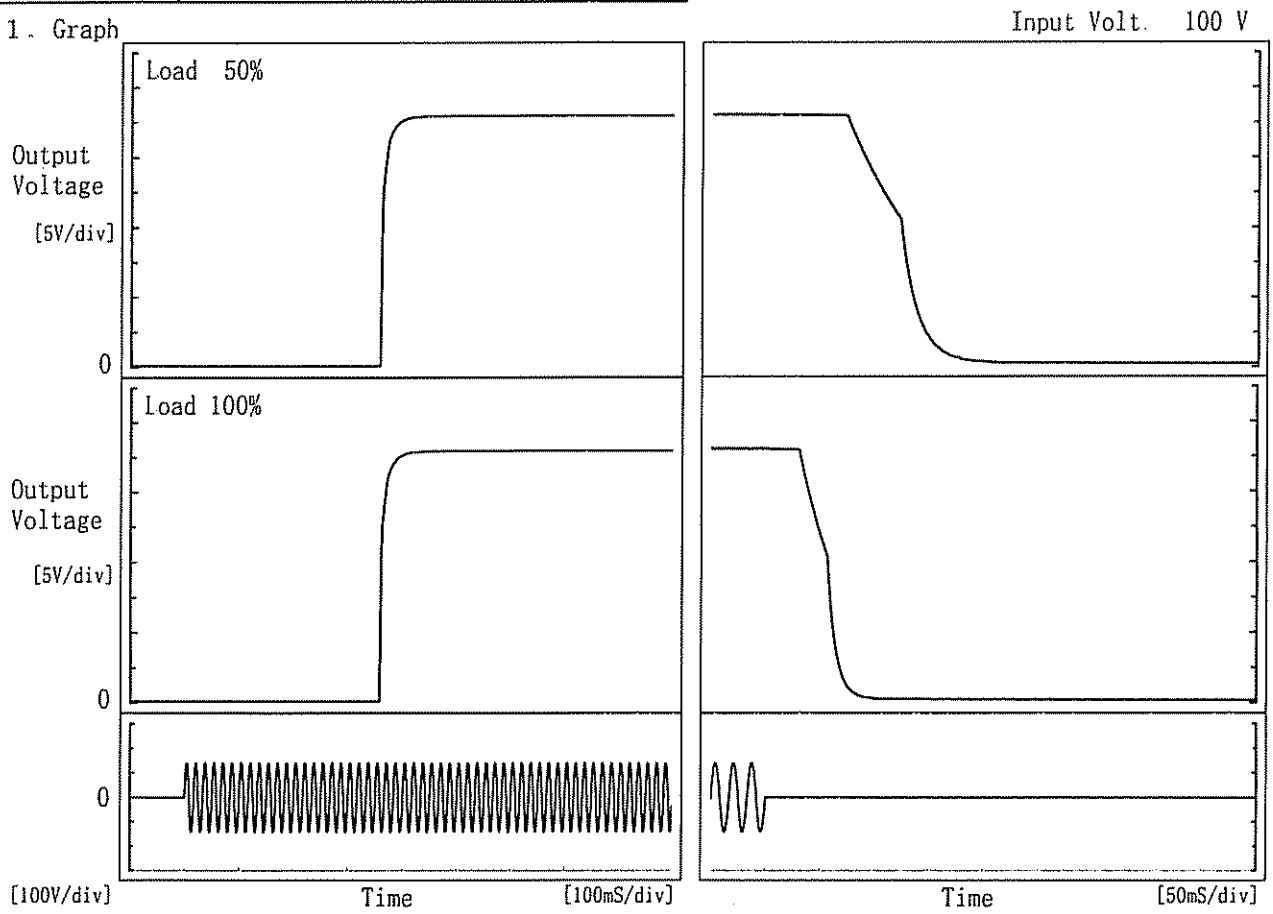
本製品の突入電流(1次ｻｰｼﾞ)の仕様は、内蔵ﾉｲｽﾞﾌｨﾙﾀ部への
ｻｰｼﾞ電流(0.2msec以下:波形②)を除きます。

COSEL

Model	ADA600F (ADA600F-36)
Item	Rise and Fall Time 立上り、立下り時間
Object	V1:+36V14A

Temperature 25℃
Testing Circuitry Figure A

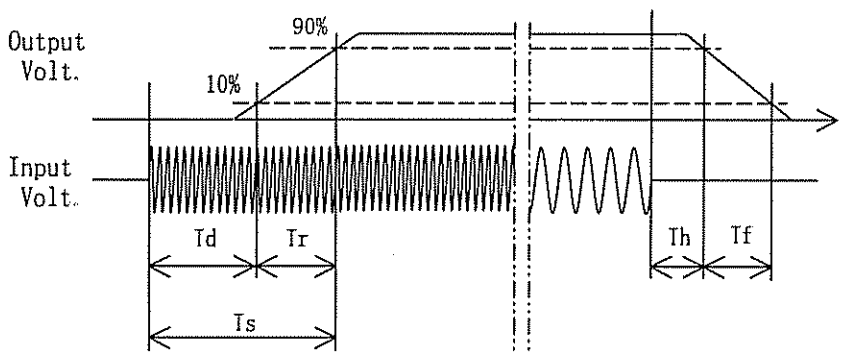
1. Graph



2. Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	358.5	16.5	375.0	82.0	69.3
100 %	358.5	16.5	375.0	35.0	36.0

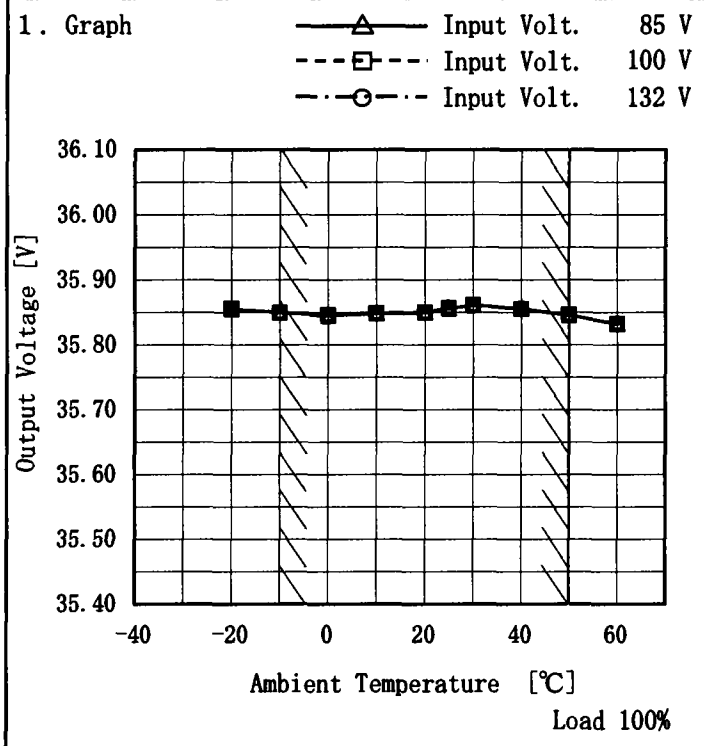


COSEL

Model	ADA600F (ADA600F-36)
Item	Ambient Temperature Drift 周囲温度変動
Object	V1:+36V14A

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

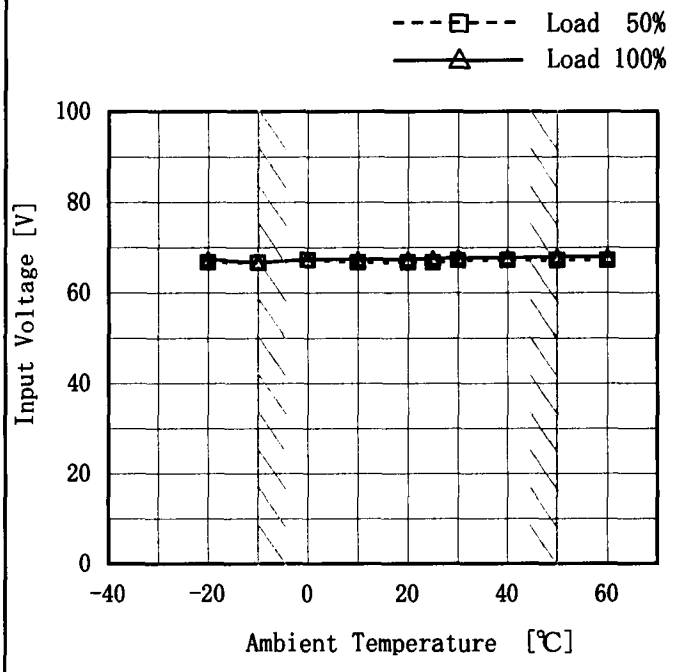
Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	35.855	35.856	35.854
-10	35.850	35.849	35.850
0	35.845	35.846	35.845
10	35.848	35.848	35.848
20	35.850	35.850	35.850
25	35.856	35.856	35.857
30	35.861	35.861	35.861
40	35.856	35.855	35.856
50	35.845	35.846	35.846
60	35.832	35.833	35.833
—	—	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	V1:+36V14A

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

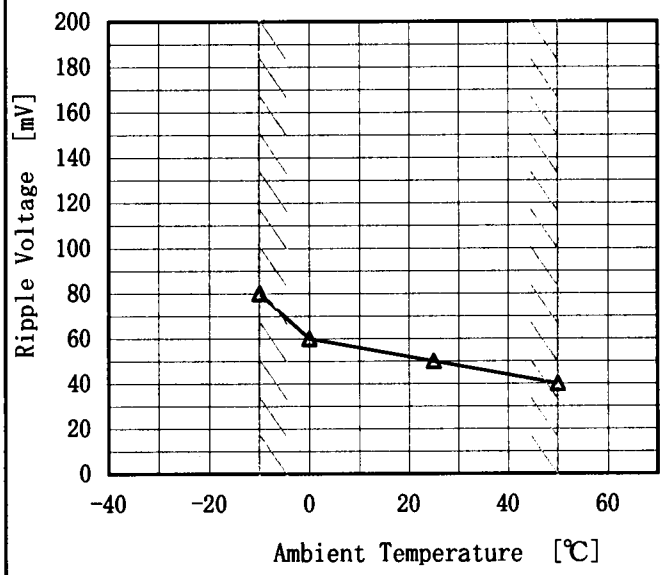
Ambient Temperature [℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	67	67
-10	67	67
0	67	67
10	67	67
20	67	67
25	67	68
30	67	68
40	67	68
50	67	68
60	67	68
--	—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	V1:+36V14A

Testing Circuitry Figure A

1. Graph



Input Volt. 100 V

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

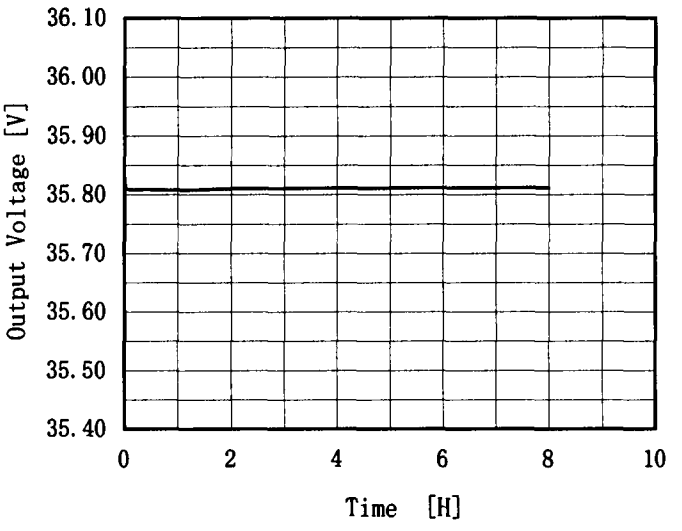
Ambient Temperature [℃]	Ripple Voltage [mV]
-10	80
0	60
25	50
50	40
—	—
—	—
—	—
—	—
—	—
—	—
—	—

COSEL

Model	ADA600F (ADA600F-36)
Item	Time Lapse Drift 経時ドリフト
Object	V1:+36V14A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Input Volt. 100V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	35.829
0.5	35.809
1.0	35.808
2.0	35.811
3.0	35.811
4.0	35.811
5.0	35.811
6.0	35.811
7.0	35.811
8.0	35.811

COSEL

Model	ADA600F (ADA600F-36)
Item	Output Voltage Accuracy 定電圧精度
Object	V1:+36V14A

Testing Circuitry Figure A

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 : -10 ～ 50℃
Input Voltage : 85 ～ 132V
Load Current : 0 ～ 14A

* 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 : -10 ～ 50℃
入力電圧 : 85 ～ 132V
負荷電流 : 0 ～ 14A

* 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		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	85	0	35.877	±20	±0.1
Minimum Voltage	50	85	14	35.838		

COSEL

Model	ADA600F (ADA600F-36)		
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)DEN-AN	0.15	0.18	0.24
(B)IEC60950	0.15	0.18	0.24

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 240 [V]	Input Volt. 264 [V]
(B)IEC60950	—	—	—

2. Condition

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

交流入力の各相について測定し、その大きい方を漏洩電流測定値とする。

COSEL

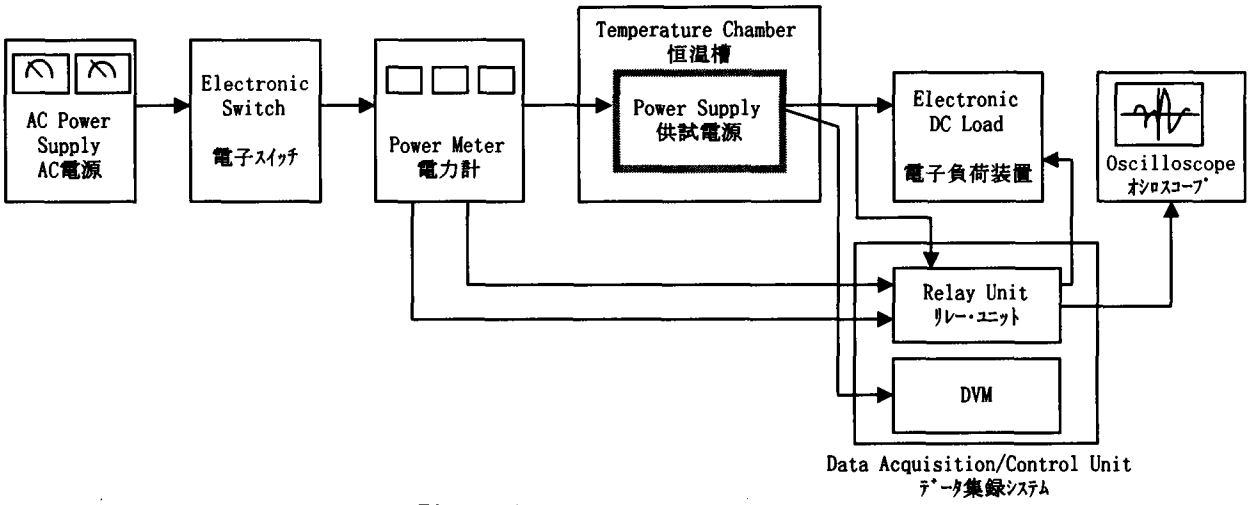


Figure A

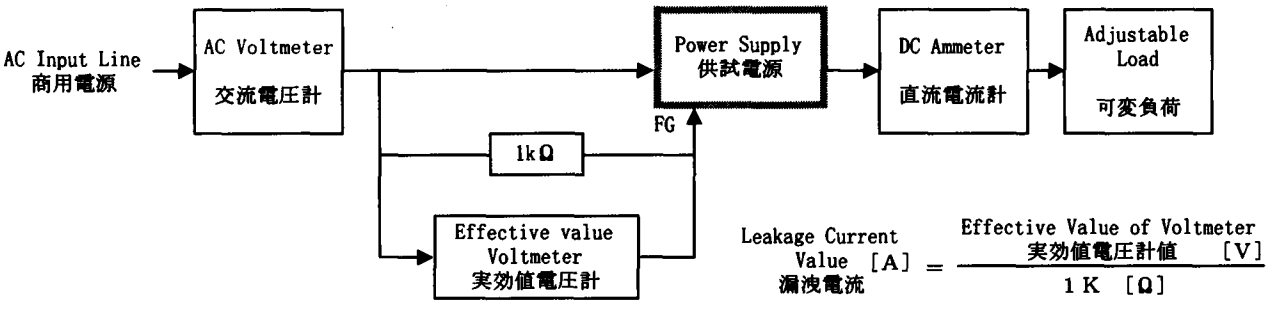


Figure B (DEN-AN)

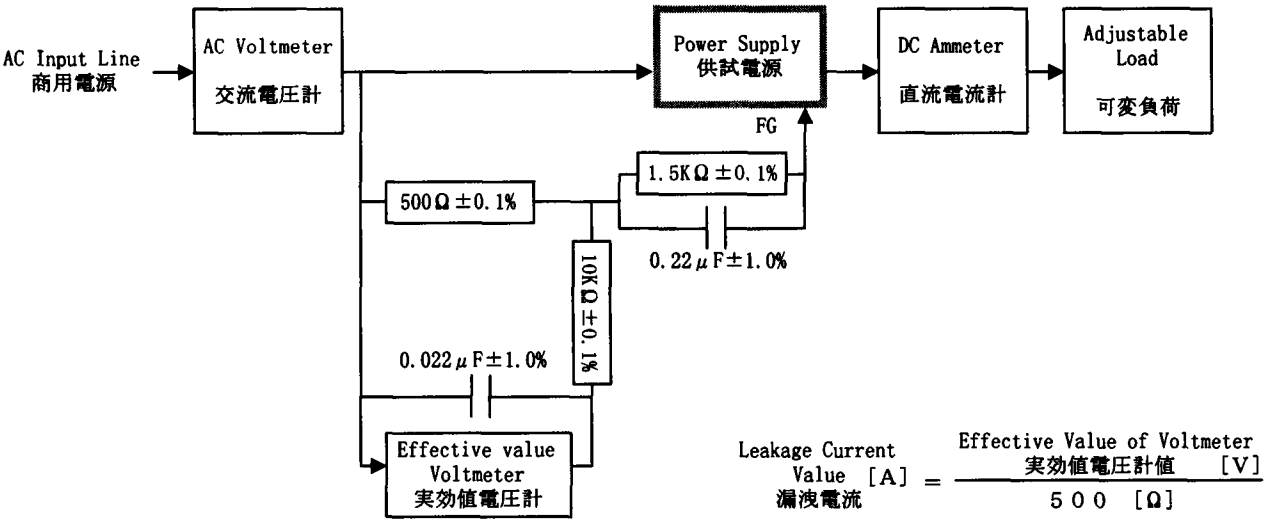


Figure B (IEC60950)