参考資料

COSEL

TEST DATA OF ADA750F

ADA750F-36
(200V INPUT)

Regulated DC power supply
Mar. 24, 2003

Approved by : Kuniaki Nagahara
Kuniaki Nagahara Design Manager

Prepared by : Katsumi Ishikawa
Katsumi Ishikawa Design Engineer

INPUT : AC 170～264V

OUTPUT : V1: 36V 20.5A

コーセル株式会社
COSEL CO.,LTD.

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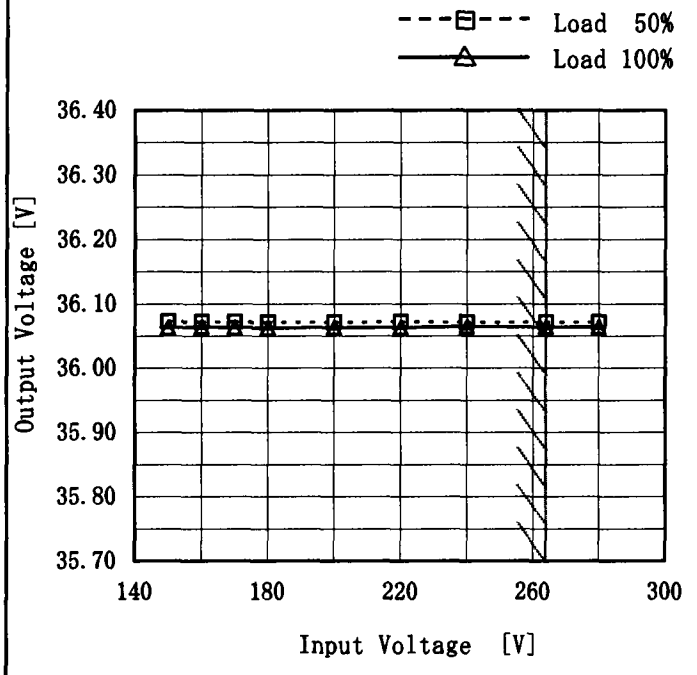
Item	Line Regulation 静的入力変動
Object	V1:+36V20.5A

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

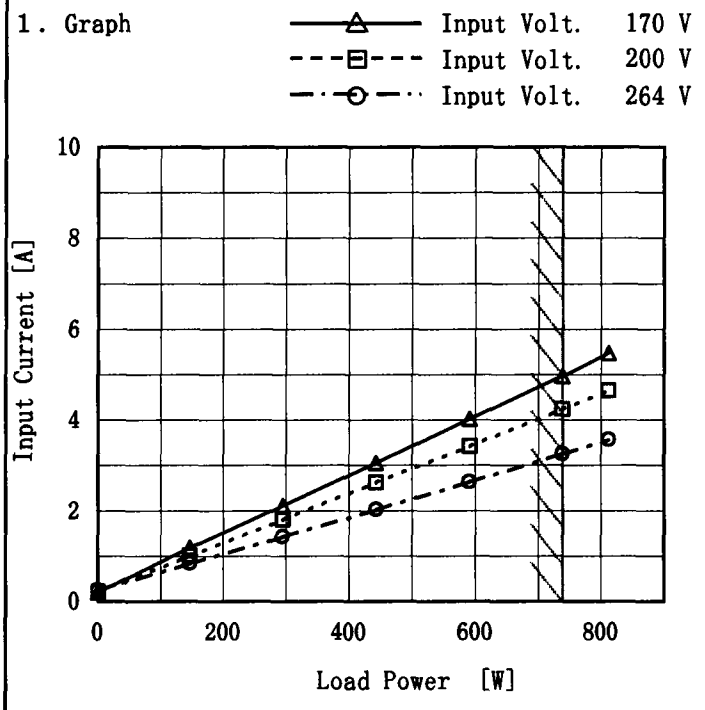
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
150	36.073	36.064
160	36.072	36.064
170	36.072	36.064
180	36.072	36.063
200	36.072	36.063
220	36.072	36.063
240	36.072	36.065
264	36.072	36.064
280	36.072	36.064

COSEL

Model	ADA750F (ADA750F-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. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	0.201	0.217	0.257
147.6	1.184	1.012	0.840
295.2	2.109	1.811	1.427
442.8	3.059	2.628	2.030
590.4	4.020	3.423	2.640
738.0	4.970	4.240	3.261
811.8	5.470	4.650	3.573
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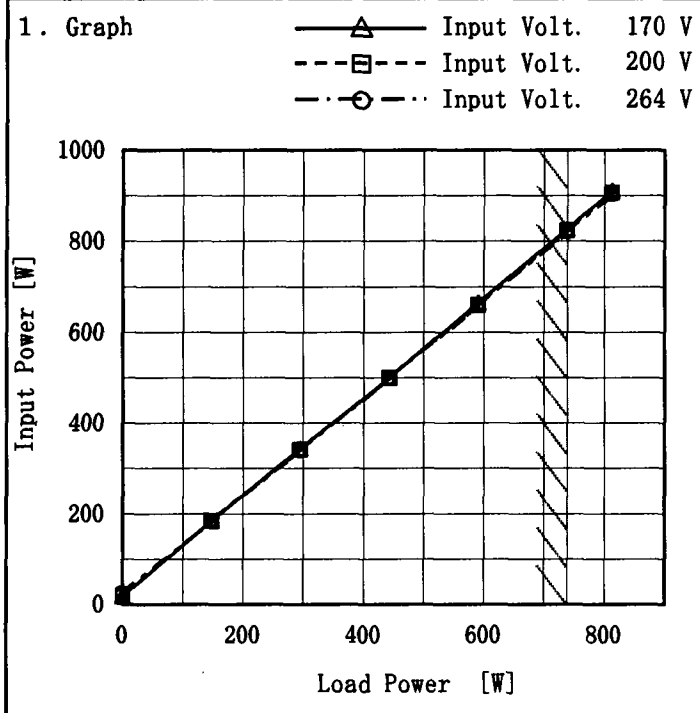
COSEL

Model	ADA750F (ADA750F-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. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	18.0	19.4	23.9
147.6	184.9	184.4	184.7
295.2	343.0	341.0	339.6
442.8	500.0	500.0	499.0
590.4	665.0	660.0	658.0
738.0	827.0	824.0	820.0
811.8	911.0	907.0	902.0
--	—	—	—
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--	—	—	—

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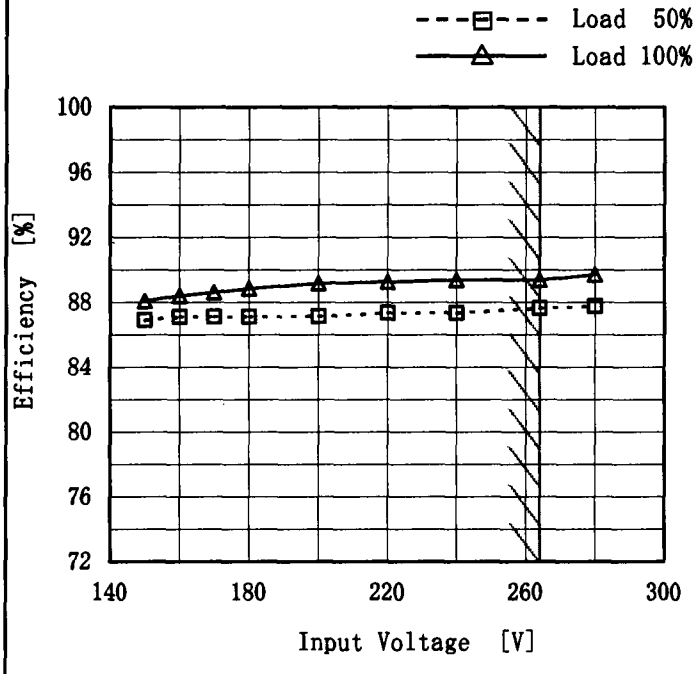
Model	ADA750F (ADA750F-36)
Item	Efficiency (by Input Voltage) 効率（入力電圧特性）
Object	――――――――――

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

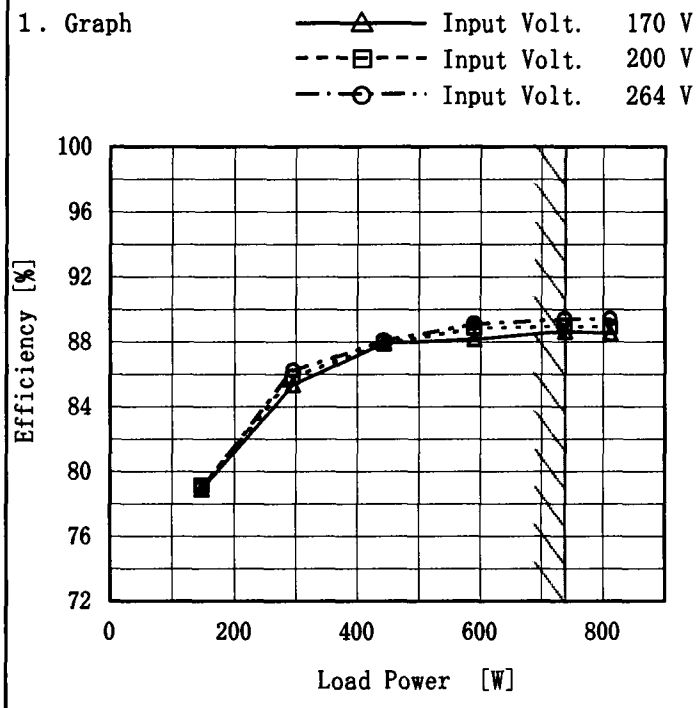
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
150	86.9	88.1
160	87.1	88.4
170	87.1	88.6
180	87.1	88.8
200	87.1	89.2
220	87.4	89.3
240	87.4	89.4
264	87.6	89.4
280	87.8	89.7

COSEL

Model	ADA750F (ADA750F-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. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	—	—	—
147.6	78.9	79.1	79.0
295.2	85.3	85.9	86.2
442.8	87.9	87.9	88.1
590.4	88.2	88.8	89.1
738.0	88.6	89.0	89.4
811.8	88.5	88.9	89.4
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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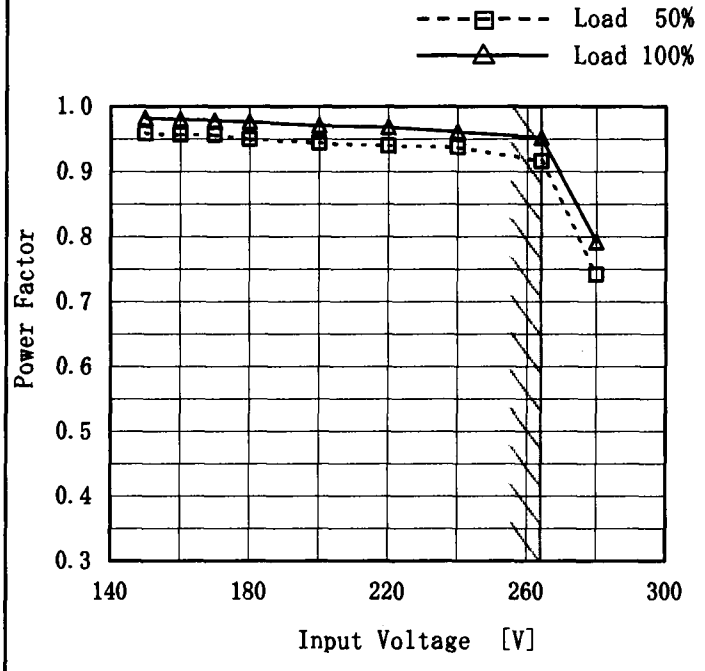
COSEL

Model	ADA750F (ADA750F-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%
150	0.959	0.982
160	0.957	0.980
170	0.957	0.979
180	0.950	0.976
200	0.944	0.970
220	0.939	0.968
240	0.937	0.961
264	0.916	0.952
280	0.742	0.792

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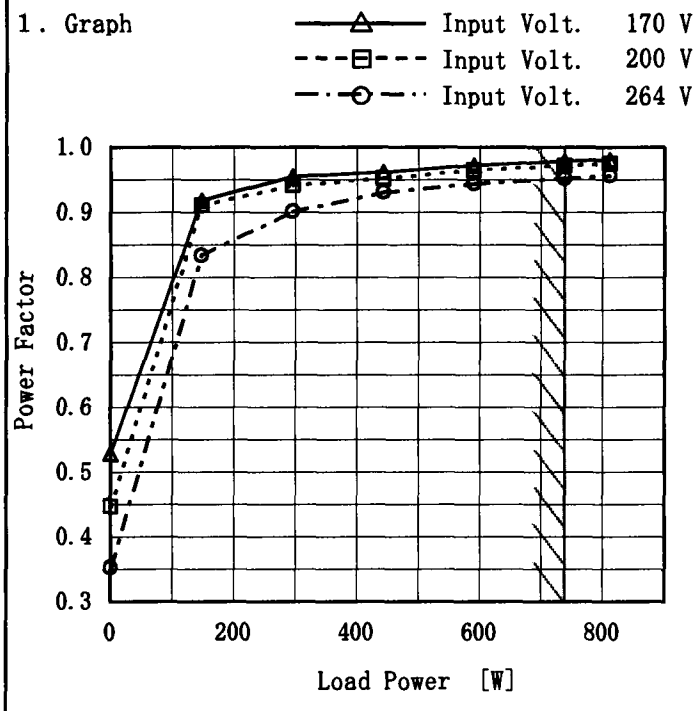
Model	ADA750F (ADA750F-36)
Item	Power Factor (by Load Power) 力率（負荷電力特性）
Object	————————

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

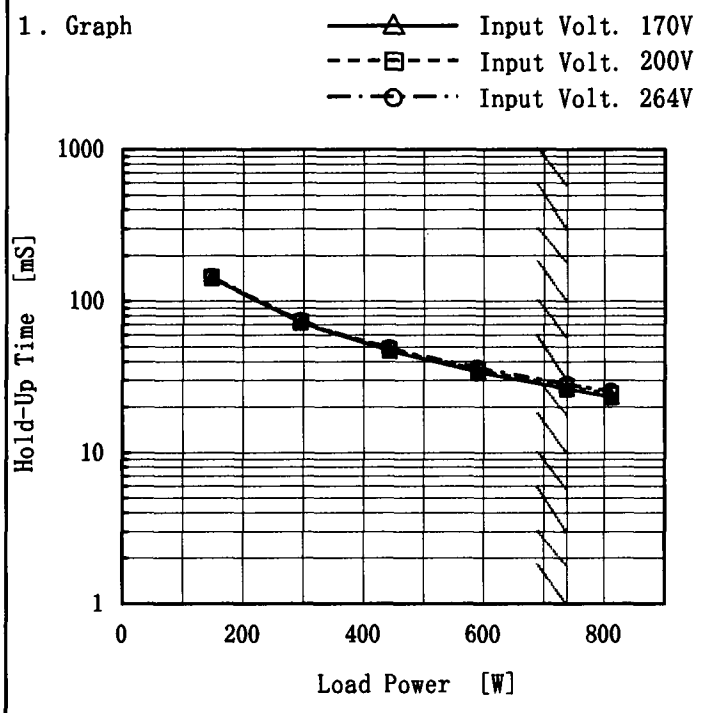
Load Power [W]	Power Factor		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	0.528	0.447	0.352
147.6	0.919	0.911	0.834
295.2	0.955	0.942	0.902
442.8	0.962	0.952	0.931
590.4	0.972	0.965	0.944
738.0	0.979	0.972	0.952
811.8	0.981	0.975	0.957
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—

COSEL

Model	ADA750F (ADA750F-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

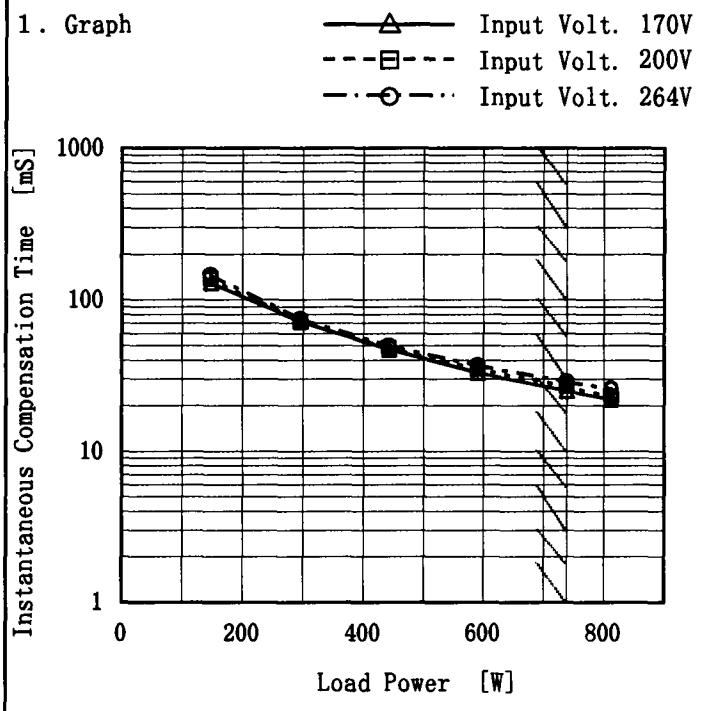
Load Power [W]	Hold-Up Time [mS] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	—	—	—
147.6	143	145	146
295.2	72	74	75
442.8	47	48	50
590.4	34	35	37
738.0	26	28	29
811.8	23	25	26
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—

COSEL

Model	ADA750F (ADA750F-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. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	—	—	—
147.6	129	138	146
295.2	72	72	75
442.8	47	48	50
590.4	33	35	37
738.0	25	27	29
811.8	22	23	26
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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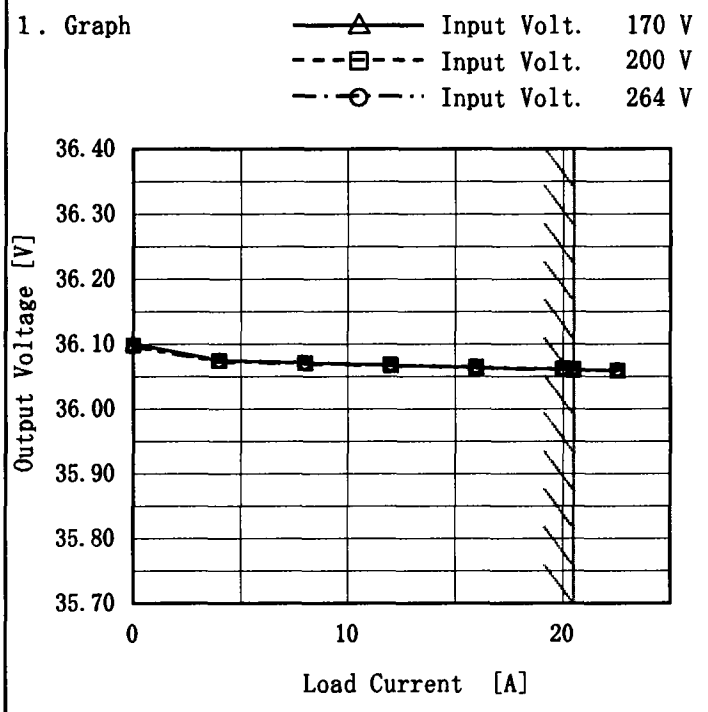
Model	ADA750F (ADA750F-36)
Item	Load Regulation 静的負荷変動
Object	V1:+36V20.5A

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

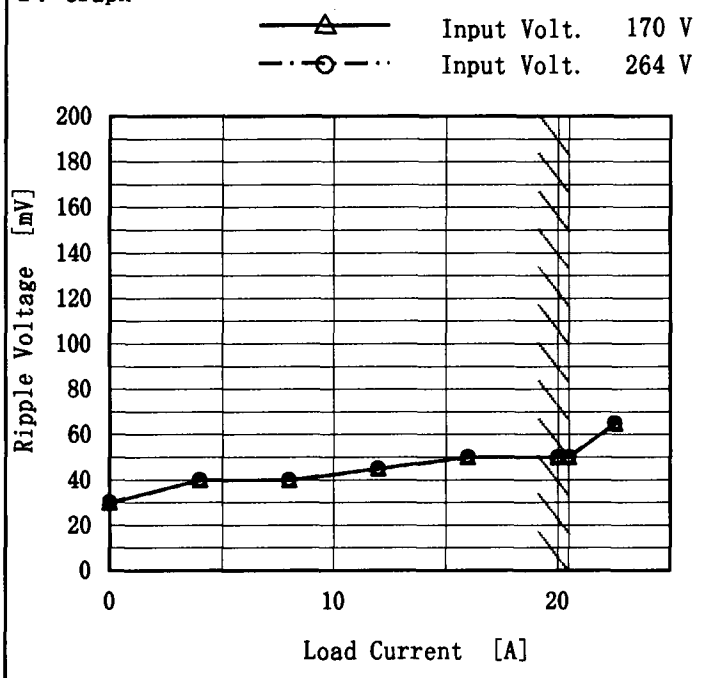
Load Current [A]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.00	36.101	36.098	36.097
4.00	36.075	36.074	36.074
8.00	36.071	36.071	36.070
12.00	36.068	36.068	36.068
16.00	36.064	36.064	36.064
20.00	36.061	36.061	36.061
20.50	36.060	36.061	36.061
22.55	36.059	36.059	36.059
--	—	—	—
--	—	—	—
--	—	—	—

COSEL

Model	ADA750F (ADA750F-36)
Item	Ripple Voltage (by Load Current) リップル電圧 (負荷特性)
Object	V1:+36V20.5A

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

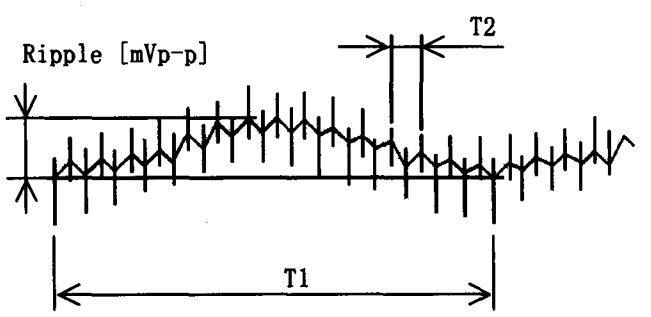


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

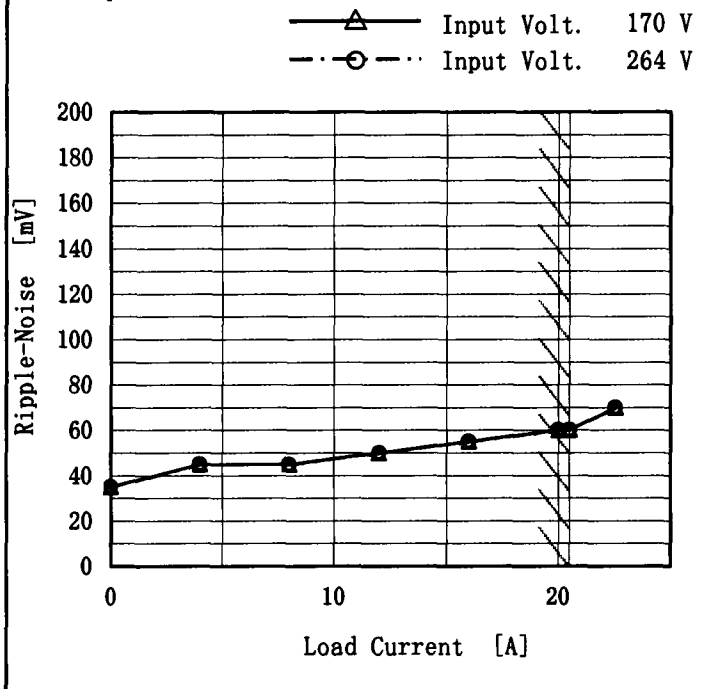
Load Current [A]	Ripple Output Voltage [mV]	
	Input Volt. 170[V]	Input Volt. 264[V]
0.00	30	30
4.00	40	40
8.00	40	40
12.00	45	45
16.00	50	50
20.00	50	50
20.50	50	50
22.55	65	65
--	-	-
--	-	-
--	-	-

COSEL

Model	ADA750F (ADA750F-36)
Item	Ripple-Noise リップルノイズ
Object	V1:+36V20.5A

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

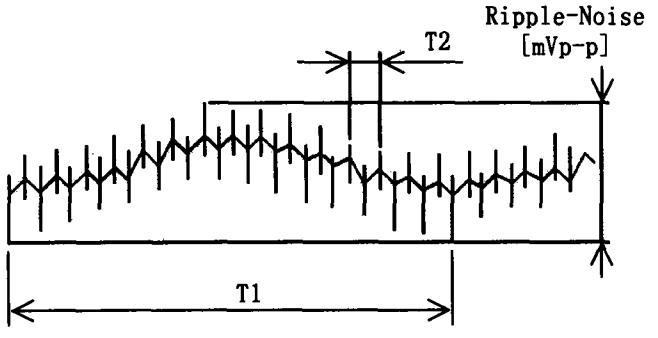


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

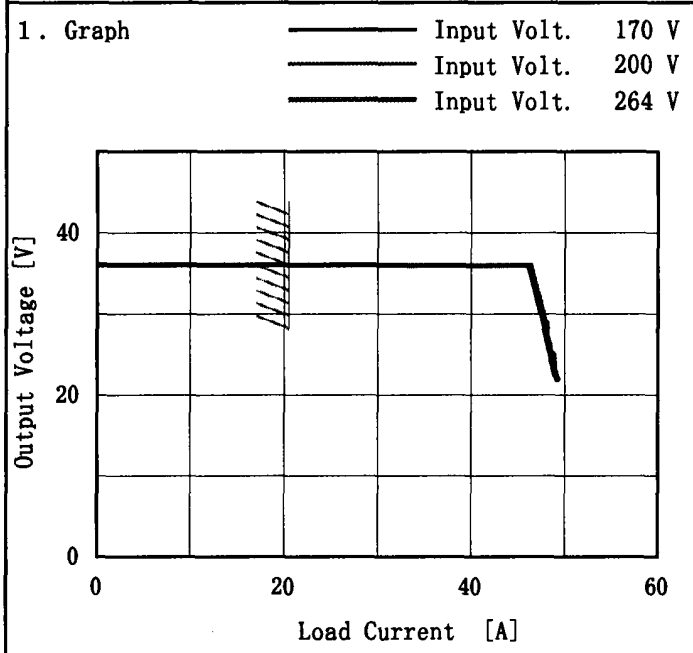
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 170[V]	Input Volt. 264[V]
0.00	35	35
4.00	45	45
8.00	45	45
12.00	50	50
16.00	55	55
20.00	60	60
20.50	60	60
22.55	70	70
--	—	—
--	—	—
--	—	—

COSEL

Model	ADA750F (ADA750F-36)
Item	Overcurrent Protection 過電流保護
Object	V1:+36V20.5A

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 21.6V to 0V.
21.6V～0V間は、間欠モードとなる。

2. Values

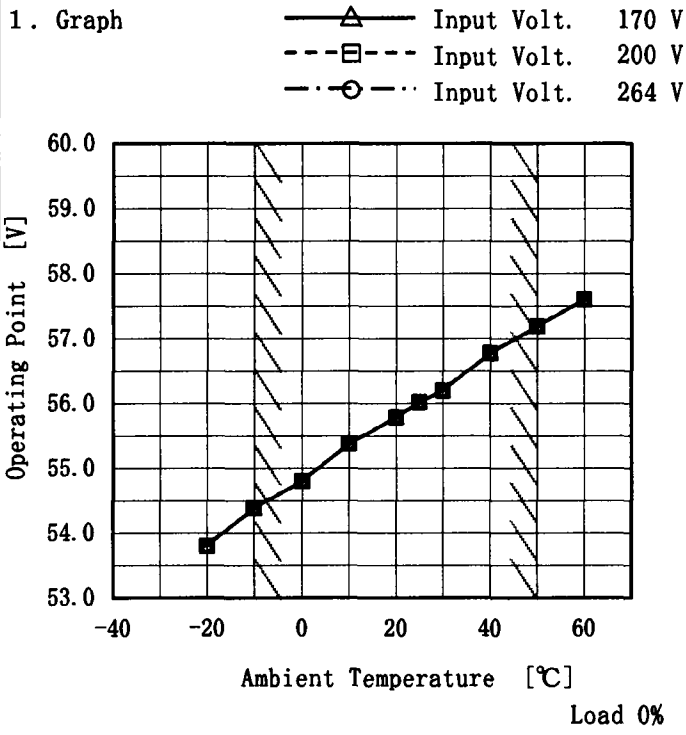
Output Voltage [V]	Load Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
36.0	46.07	46.19	46.40
34.2	46.40	46.59	46.81
32.4	46.80	46.97	47.19
28.8	47.63	47.78	47.96
25.2	48.34	48.48	48.57
21.6	49.03	49.18	49.35
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—

COSEL

Model	ADA750F (ADA750F-36)
Item	Overvoltage Protection 過電圧保護
Object	V1:+36V20.5A

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。

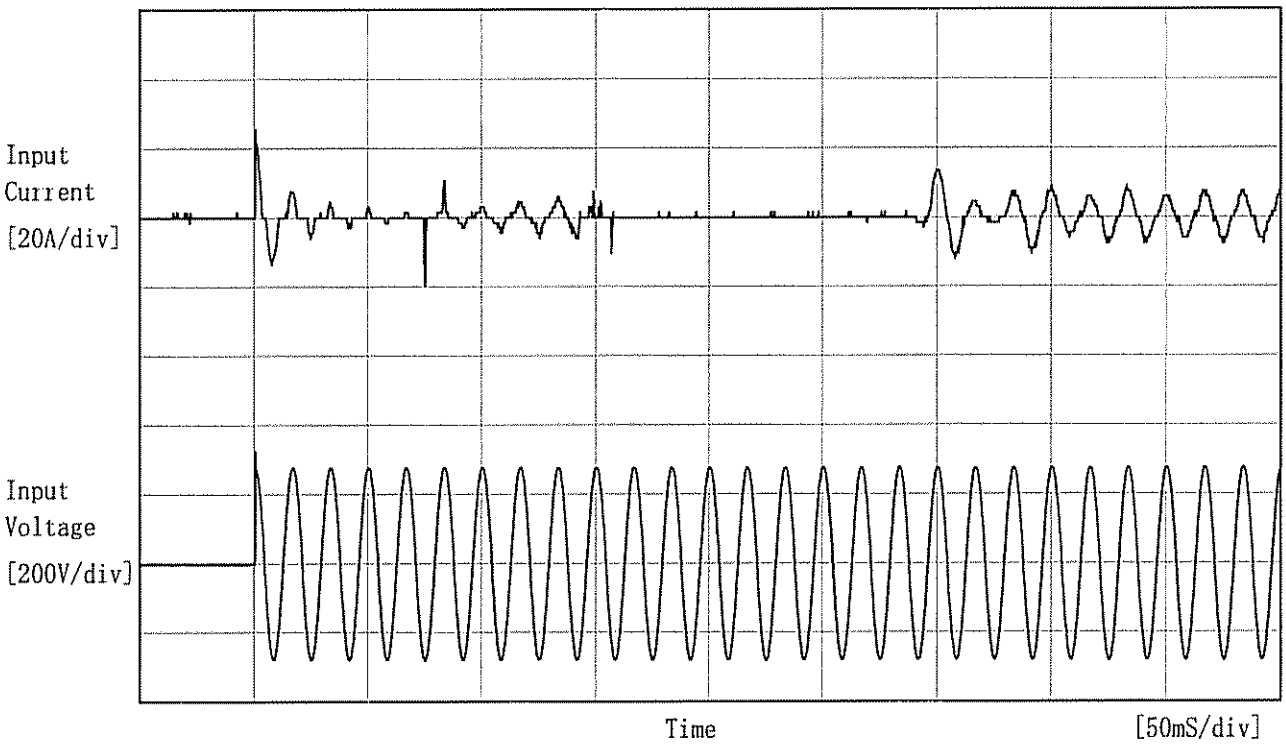
2. Values

Ambient Temperature [℃]	Operating Point [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	53.80	53.80	53.80
-10	54.39	54.39	54.39
0	54.80	54.80	54.80
10	55.38	55.38	55.38
20	55.79	55.79	55.79
25	56.02	56.02	56.02
30	56.20	56.20	56.20
40	56.78	56.78	56.78
50	57.19	57.19	57.19
60	57.60	57.60	57.60
--	—	—	—

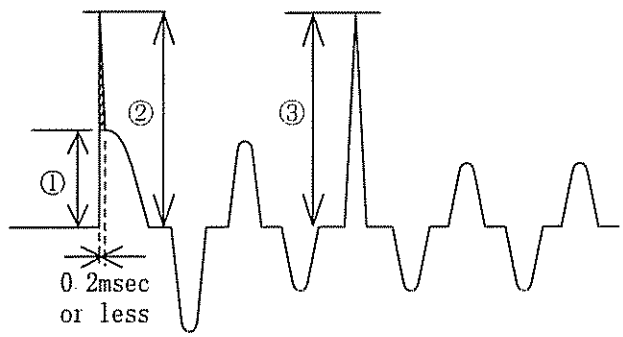
COSEL

Model	ADA750F (ADA750F-36)
Item	Inrush Current 突入電流
Object	――――――

Temperature 25℃
Testing Circuitry Figure A



Input Voltage 200 V
Frequency 60 Hz
Load 100 %
Inrush Current
① 21.0 [A]
② 25.5 [A] (0.2msec or less)*1
③ 19.5 [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.

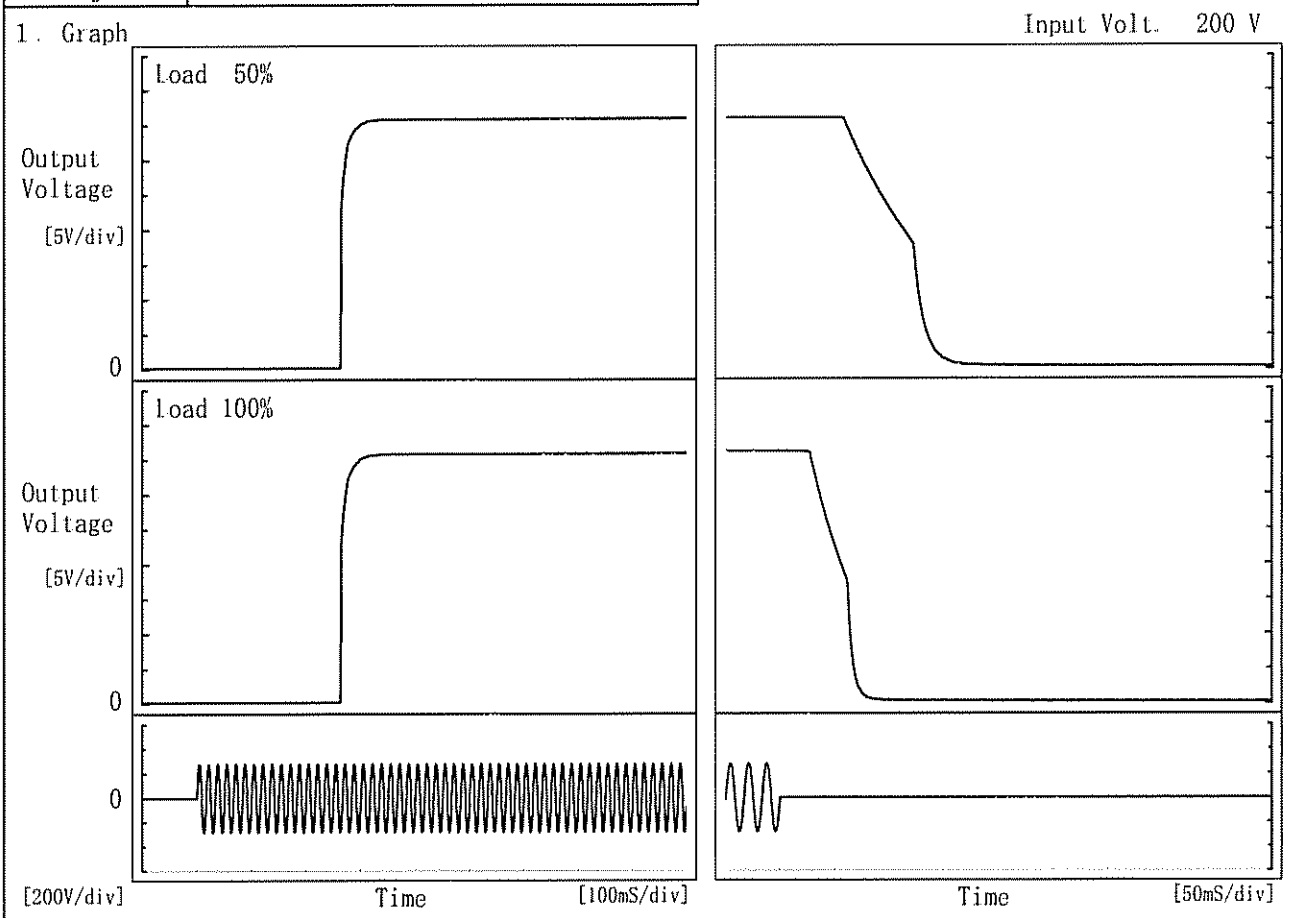
本製品の突入電流(1次ｻｰｼﾞ)の仕様は、内蔵ﾉｲｽﾞﾌｨﾙﾀ部への
ｻｰｼﾞ電流(0.2msec以下:波形②)を除きます。

BC－3482

COSEL

Model	ADA750F (ADA750F-36)		
Item	Rise and Fall Time 立上り、立下り時間	Temperature Testing Circuitry	25℃ Figure A
Object	VI:+36V20.5A		

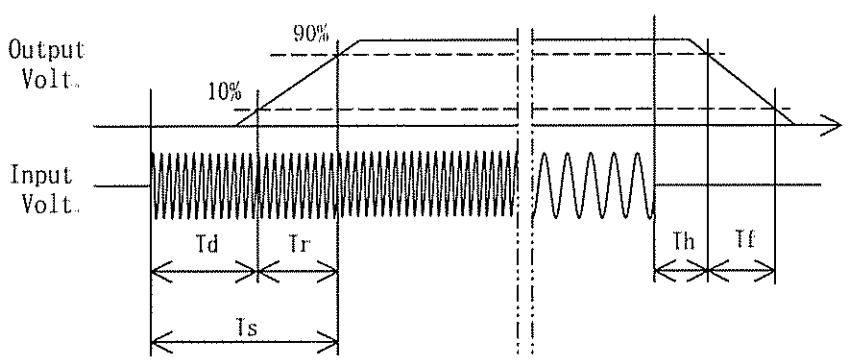
1. Graph



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	263.5	15.5	279.0	67.3	70.5
100 %	263.5	16.0	279.5	32.0	37.8

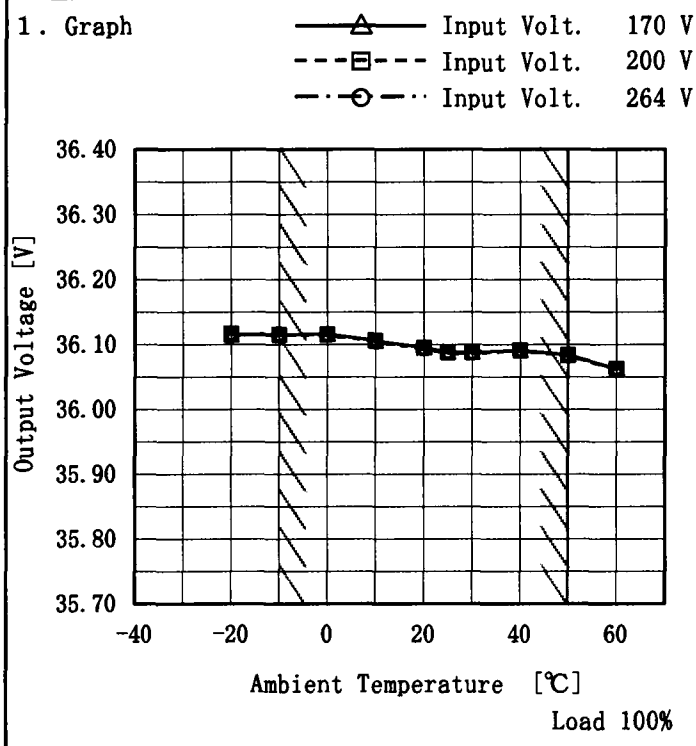


COSEL

Model	ADA750F (ADA750F-36)
Item	Ambient Temperature Drift 周囲温度変動
Object	V1:+36V20.5A

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

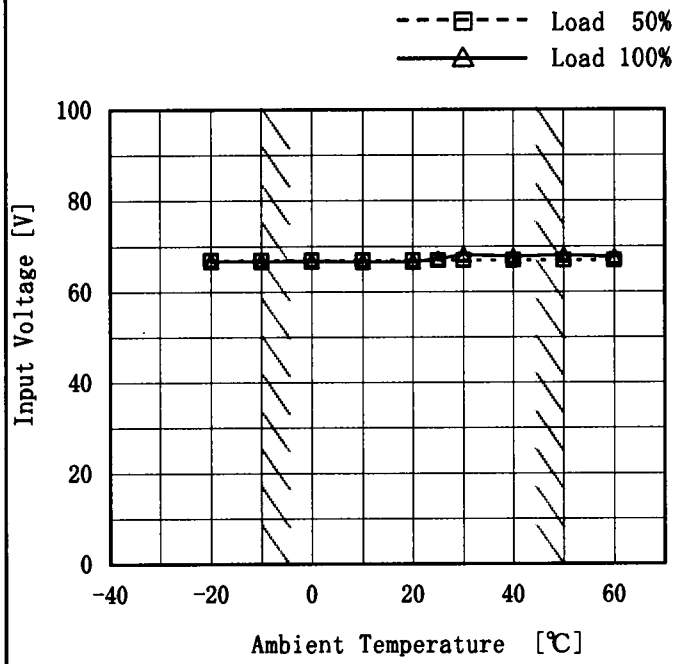
Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	36.116	36.117	36.116
-10	36.115	36.115	36.114
0	36.116	36.115	36.115
10	36.106	36.106	36.106
20	36.096	36.095	36.093
25	36.088	36.088	36.088
30	36.089	36.088	36.087
40	36.092	36.091	36.091
50	36.084	36.084	36.083
60	36.063	36.063	36.062
--	—	—	—

COSEL

Model	ADA750F (ADA750F-36)
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	V1:+36V20.5A

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	67
30	67	68
40	67	68
50	67	68
60	67	68
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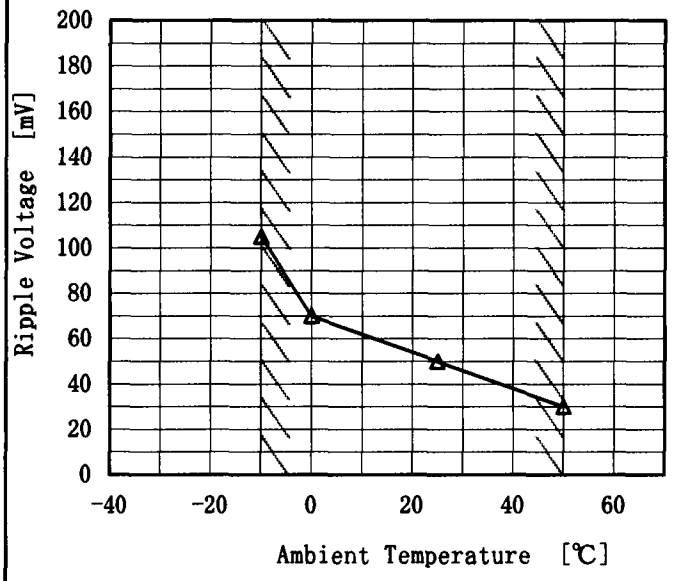
COSEL

Model	ADA750F (ADA750F-36)
Item	Ripple Voltage (by Ambient Temp.) リップル電圧（周囲温度特性）
Object	V1:+36V20.5A

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	105
0	70
25	50
50	30
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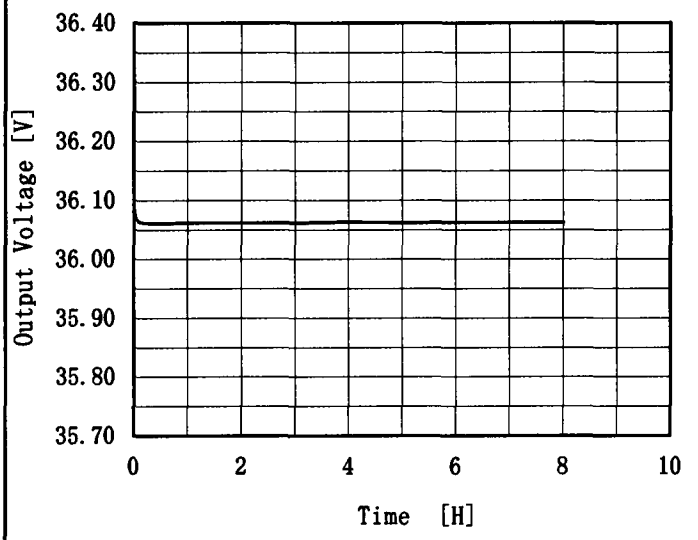
COSEL

Model	ADA750F (ADA750F-36)
Item	Time Lapse Drift 経時ドリフト
Object	V1:+36V20.5A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Input Volt. 200V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	36.092
0.5	36.061
1.0	36.062
2.0	36.062
3.0	36.062
4.0	36.063
5.0	36.062
6.0	36.062
7.0	36.062
8.0	36.062

COSEL

Model	ADA750F (ADA750F-36)	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	V1:+36V20.5A	

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 : 170 ～ 264V

Load Current : 0 ～ 20.5A

* 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 : 170 ～ 264V

負荷電流 : 0 ～ 20.5A

* 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	-10	200	0	36.135	±29	±0.1
Minimum Voltage	50	170	20.5	36.078		

COSEL

Model	ADA750F (ADA750F-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	―	―	―
(B) IEC60950	―	―	―

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(B) IEC60950	0.39	0.56	0.61

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

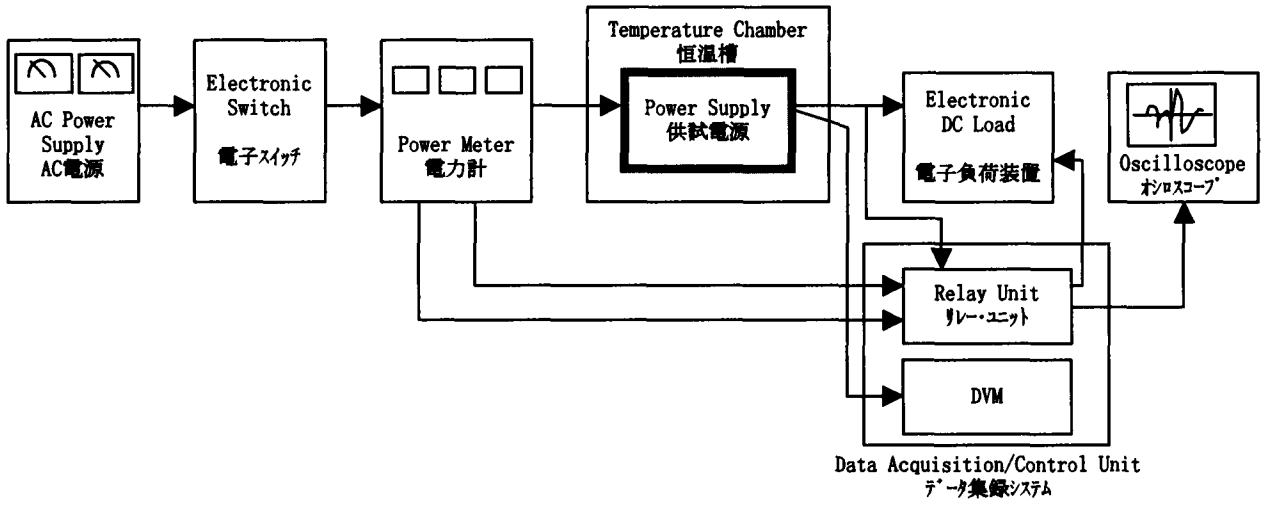


Figure A

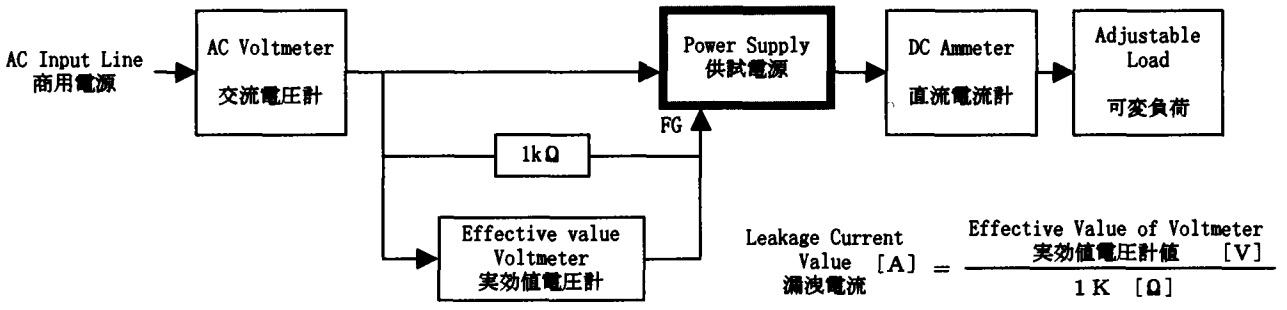


Figure B (DEN-AN)

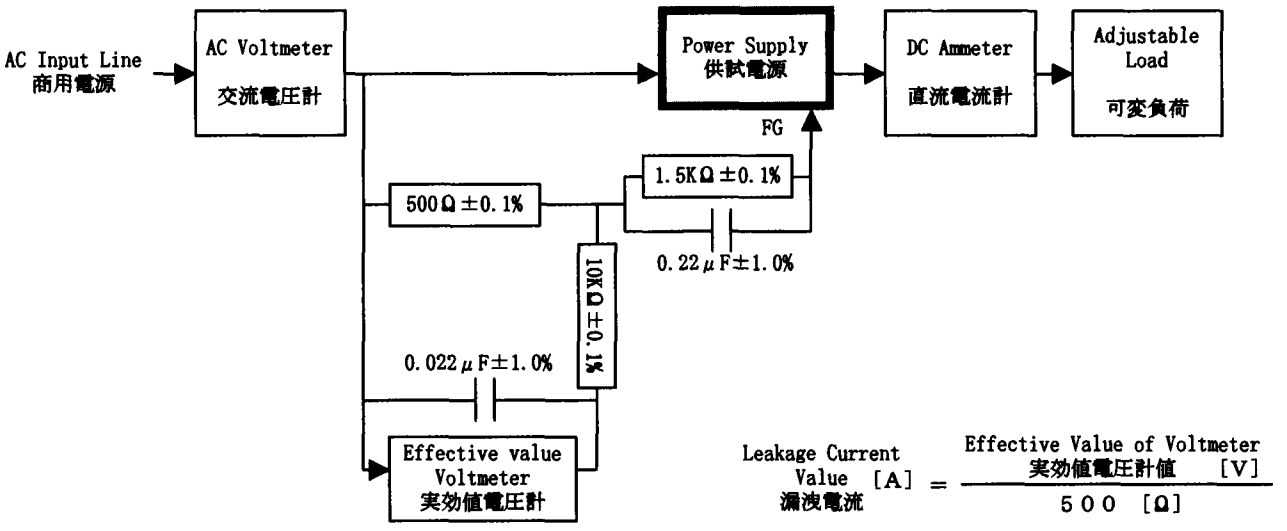


Figure B (IEC60950)