参考資料

COSEL

TEST DATA OF ADA750F

ADA750F-24
(100V INPUT)

Regulated DC power supply
Jan. 21, 2003

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Kuniaki Nagahara Design Manager

Prepared by : Katsumi Ishikawa
Katsumi Ishikawa Design Engineer

INPUT : AC 85～132V

OUTPUT : V1: 24V 25A

コーセル株式会社
COSEL CO.,LTD.

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CONTENTS

(Final Page 24)

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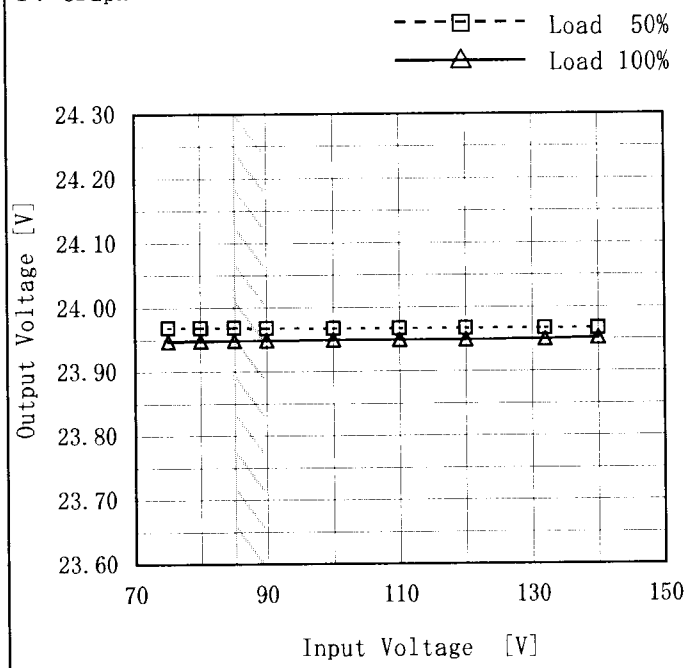
Model	ADA750F (ADA750F-24)
Item	Line Regulation 静的入力変動
Object	V1:+24V25A

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	23.969	23.947
80	23.968	23.948
85	23.968	23.949
90	23.968	23.949
100	23.967	23.949
110	23.967	23.949
120	23.967	23.949
132	23.967	23.950
140	23.967	23.952

BC−3460

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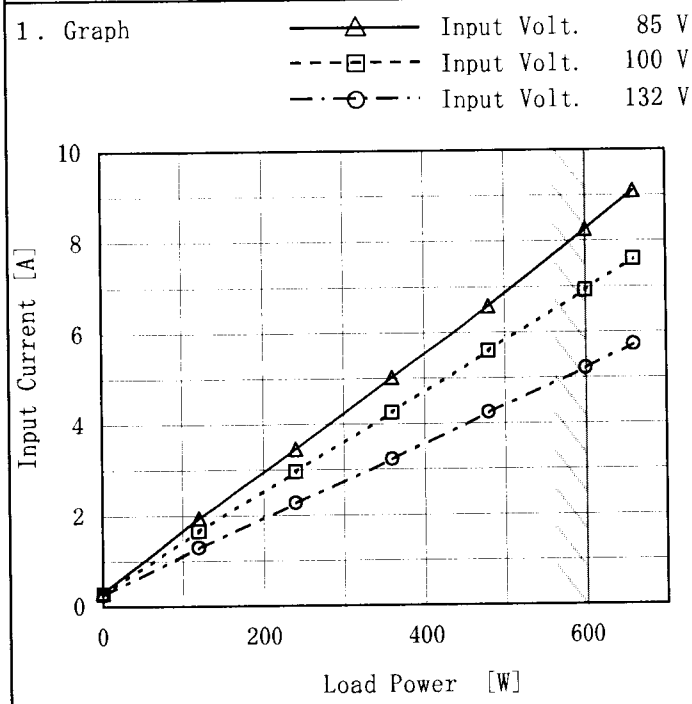
Model	ADA750F (ADA750F-24)
Item	Input Current (by Load Current) 入力電流（負荷電力特性）
Object	————————

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	0.300	0.270	0.250
120	1.940	1.660	1.290
240	3.460	2.960	2.270
360	5.020	4.250	3.220
480	6.580	5.600	4.240
600	8.260	6.920	5.210
660	9.100	7.600	5.730
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

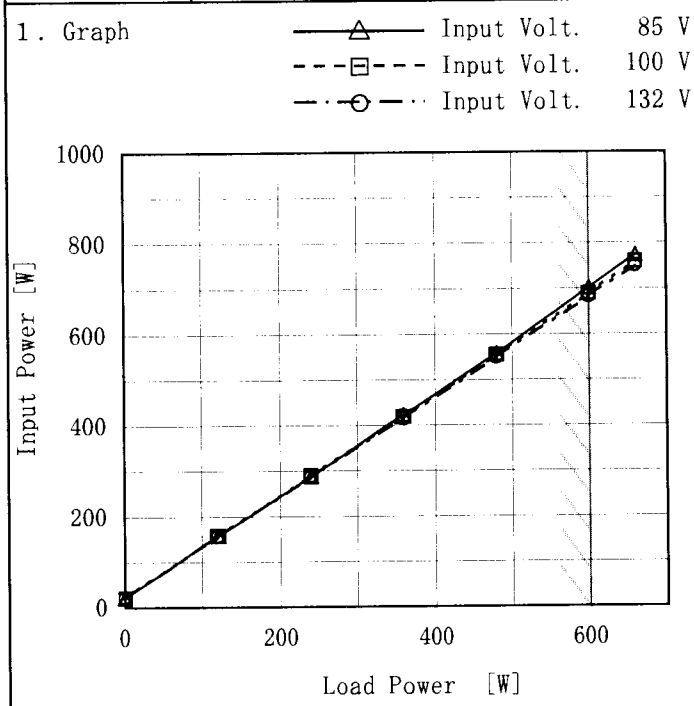
BC−3460

COSEL

Model	ADA750F (ADA750F-24)
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	21.0	21.0	21.0
120	158.0	158.0	156.0
240	288.0	290.0	288.0
360	423.0	419.0	416.0
480	558.0	555.0	549.0
600	702.0	689.0	683.0
660	774.0	759.0	750.0
--	—	—	—
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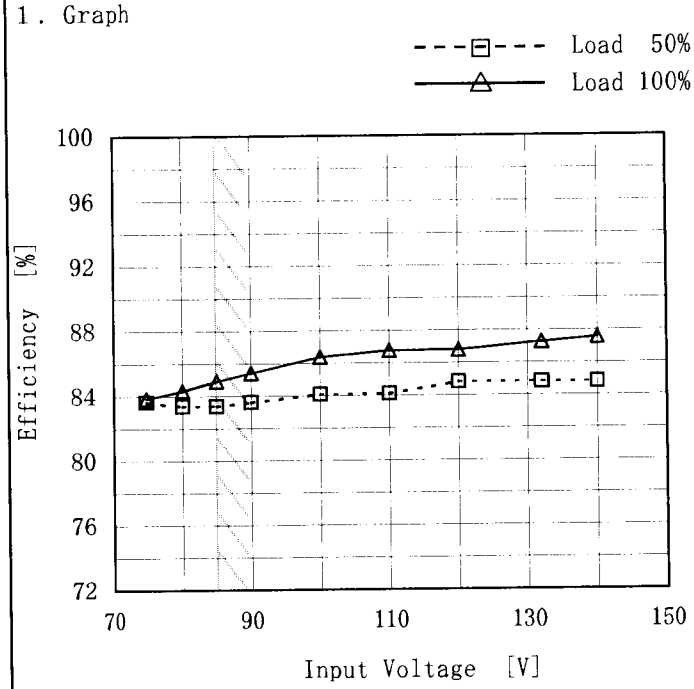
--	—	—	—
--	—	—	—

COSEL

Model	ADA750F (ADA750F-24)
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	83.6	83.8
80	83.4	84.3
85	83.4	84.9
90	83.6	85.4
100	84.1	86.4
110	84.1	86.8
120	84.8	86.8
132	84.8	87.3
140	84.8	87.5

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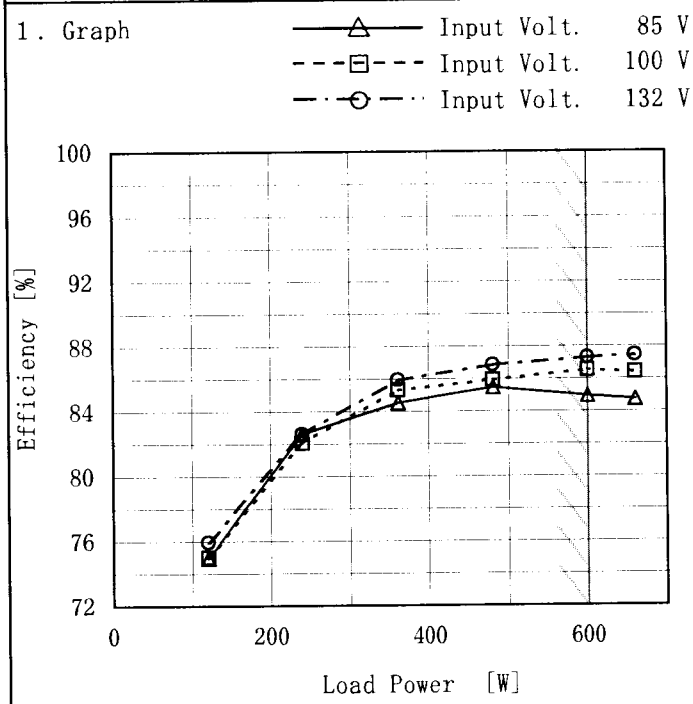
Model	ADA750F (ADA750F-24)
Item	Efficiency (by Load Power) 効率 (負荷電力特性)
Object	————————

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	—	—	—
120	74.9	75.0	75.9
240	82.6	82.1	82.6
360	84.5	85.3	85.9
480	85.5	85.9	86.9
600	84.9	86.5	87.3
660	84.7	86.4	87.4
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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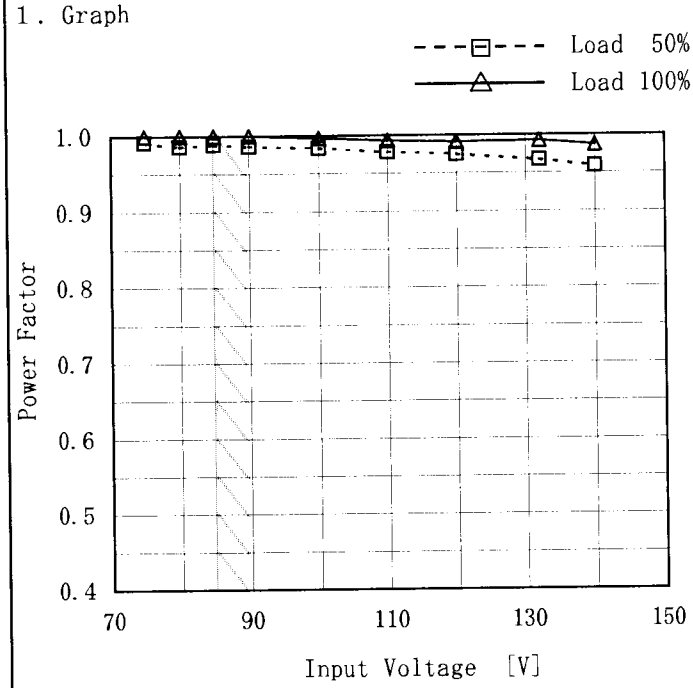
Model	ADA750F (ADA750F-24)
Item	Power Factor (by Input Voltage) 力率（入力電圧特性）
Object	――――――――――

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	0.992	0.999
80	0.986	0.999
85	0.989	0.999
90	0.986	0.999
100	0.983	0.997
110	0.978	0.993
120	0.975	0.991
132	0.967	0.993
140	0.959	0.987

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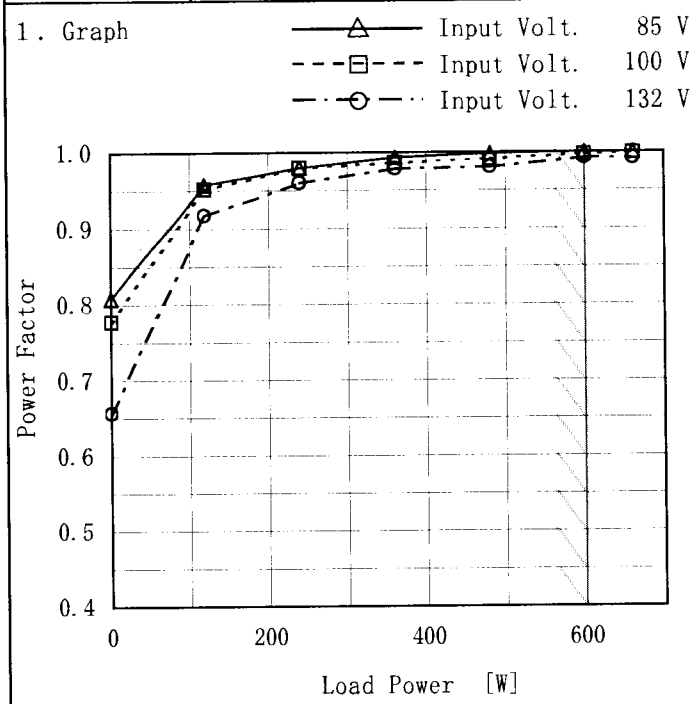
Model	ADA750F (ADA750F-24)
Item	Power Factor (by Load Power) 力率（負荷電力特性）
Object	————————

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

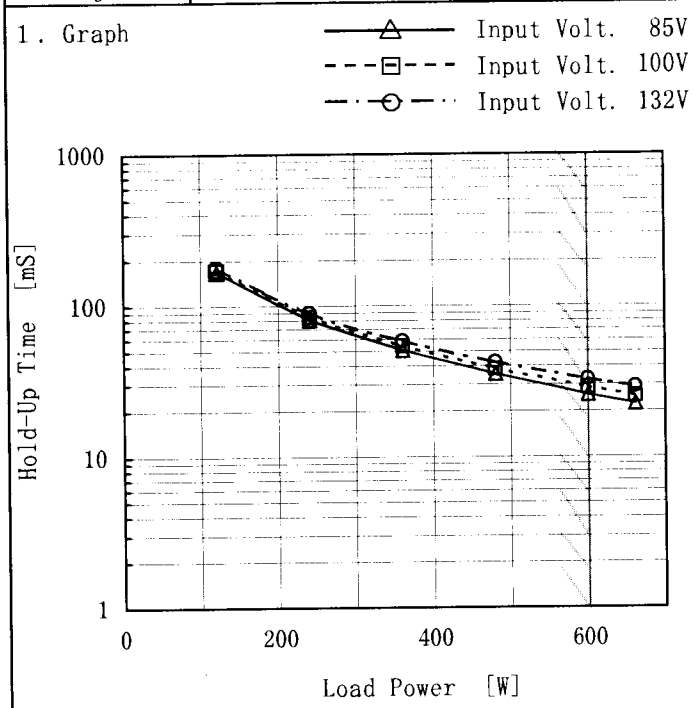
Load Power [W]	Power Factor		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	0.808	0.778	0.656
120	0.958	0.952	0.918
240	0.980	0.980	0.960
360	0.993	0.986	0.979
480	0.998	0.991	0.980
600	0.999	0.997	0.993
660	0.999	0.999	0.992
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—

COSEL

Model	ADA750F (ADA750F-24)
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	—	—	—
120	166	172	179
240	81	84	90
360	51	54	59
480	35	38	42
600	26	29	33
660	22	25	29
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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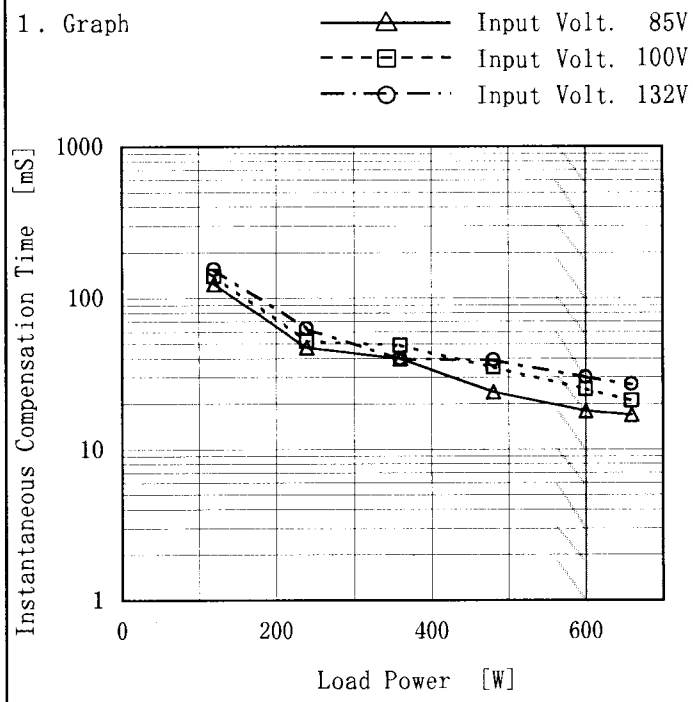
Model	ADA750F (ADA750F-24)
Item	Instantaneous Interruption Compensation (by Load Power) 瞬時停電保障（負荷電力特性）
Object	――――――――――

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	—	—	—
120	124	140	155
240	47	52	63
360	40	49	40
480	24	35	39
600	18	25	30
660	17	21	27
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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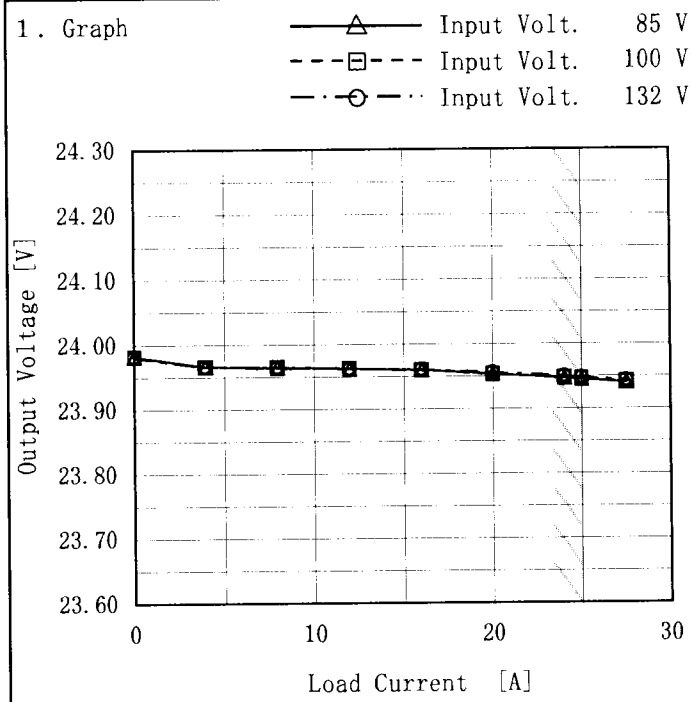
Model	ADA750F (ADA750F-24)
Item	Load Regulation 静的負荷変動
Object	V1:+24V25A

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

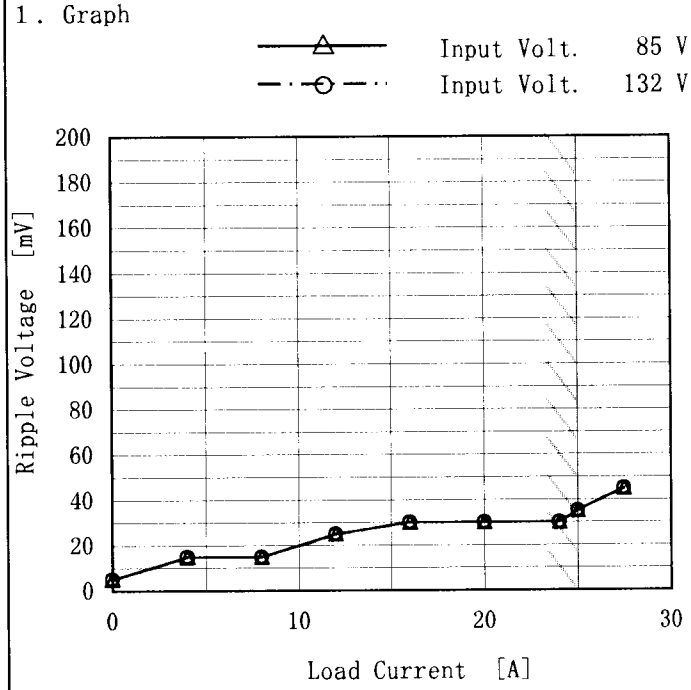
Load Current [A]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	23.982	23.982	23.982
4.0	23.966	23.967	23.966
8.0	23.965	23.965	23.965
12.0	23.962	23.963	23.963
16.0	23.960	23.960	23.961
20.0	23.954	23.954	23.956
24.0	23.947	23.948	23.950
25.0	23.945	23.946	23.948
27.5	23.941	23.942	23.944
--	—	—	—
--	—	—	—

COSEL

Model	ADA750F (ADA750F-24)
Item	Ripple Voltage (by Load Current) リップル電圧（負荷特性）
Object	V1:+24V25A

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

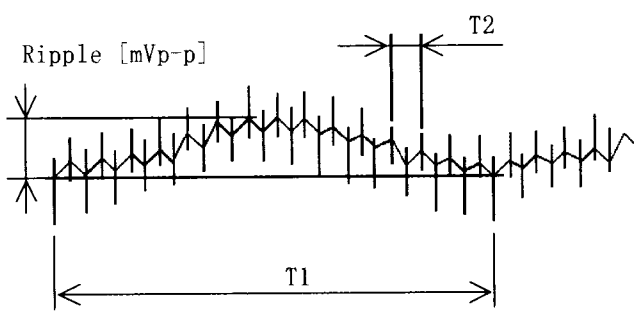


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

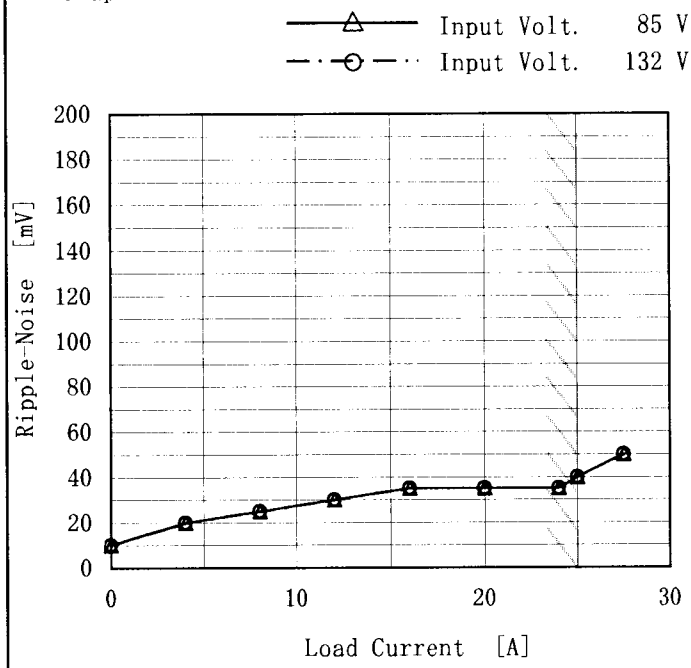
Load Current [A]	Ripple Output Voltage [mV]	
	Input Volt. 85[V]	Input Volt. 132[V]
0.0	5	5
4.0	15	15
8.0	15	15
12.0	25	25
16.0	30	30
20.0	30	30
24.0	30	30
25.0	35	35
27.5	45	45
--	—	—
--	—	—

COSEL

Model	ADA750F (ADA750F-24)
Item	Ripple-Noise リップルノイズ
Object	V1:+24V25A

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

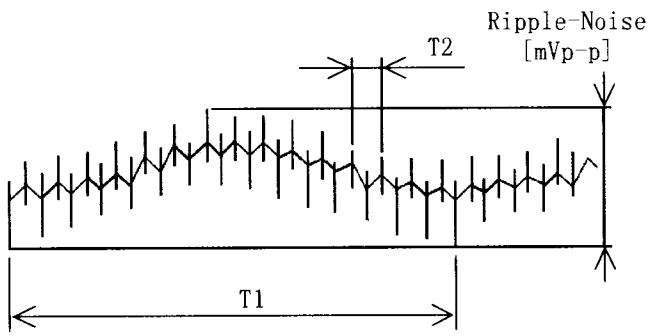


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

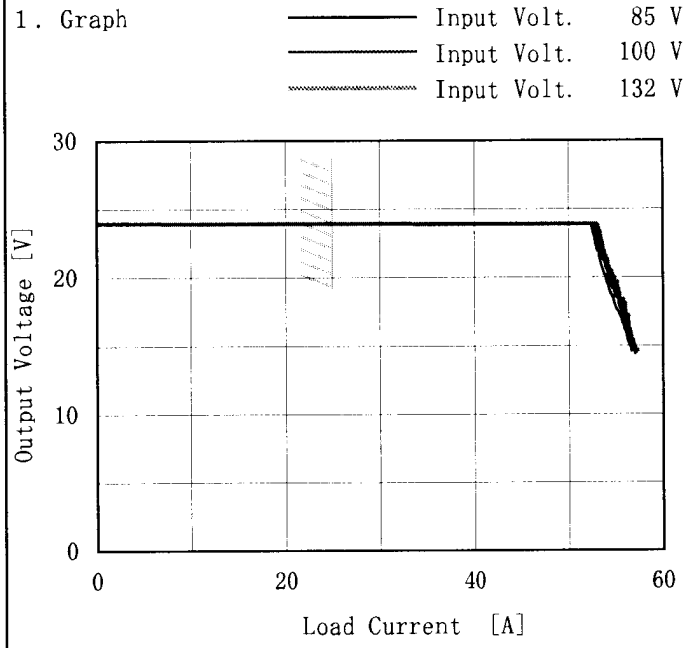
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85[V]	Input Volt. 132[V]
0.0	10	10
4.0	20	20
8.0	25	25
12.0	30	30
16.0	35	35
20.0	35	35
24.0	35	35
25.0	40	40
27.5	50	50
--	—	—
--	—	—

COSEL

Model	ADA750F (ADA750F-24)
Item	Overcurrent Protection 過電流保護
Object	V1:+24V25A

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 14.4V to 0V.
14.4V～0V間は、間欠モードとなる。

2. Values

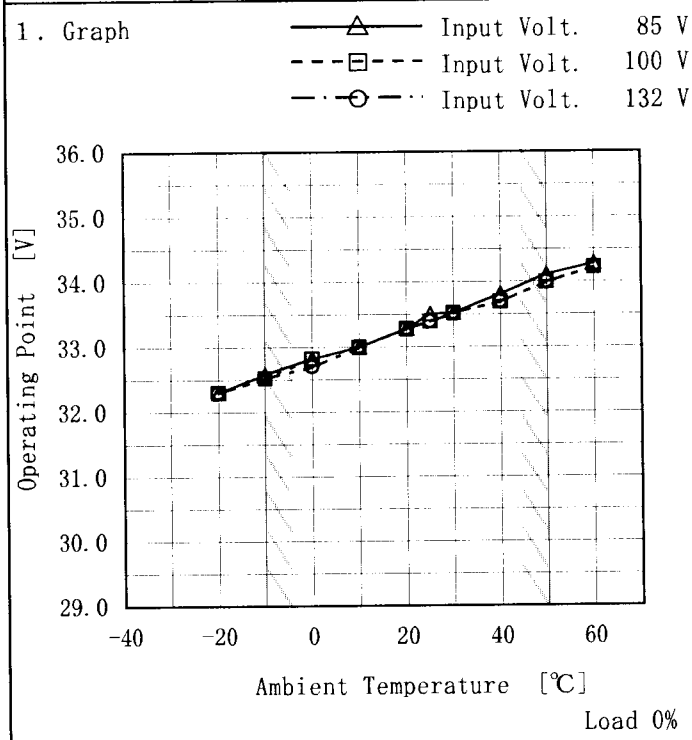
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
24.0	52.35	52.68	52.99
22.8	52.73	53.05	53.35
21.6	53.16	53.51	53.80
19.2	54.16	54.55	54.89
16.8	55.51	55.80	56.13
14.4	56.70	56.92	57.27
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	ADA750F (ADA750F-24)
Item	Overvoltage Protection 過電圧保護
Object	V1:+24V25A

Testing Circuitry Figure A

1. Graph



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

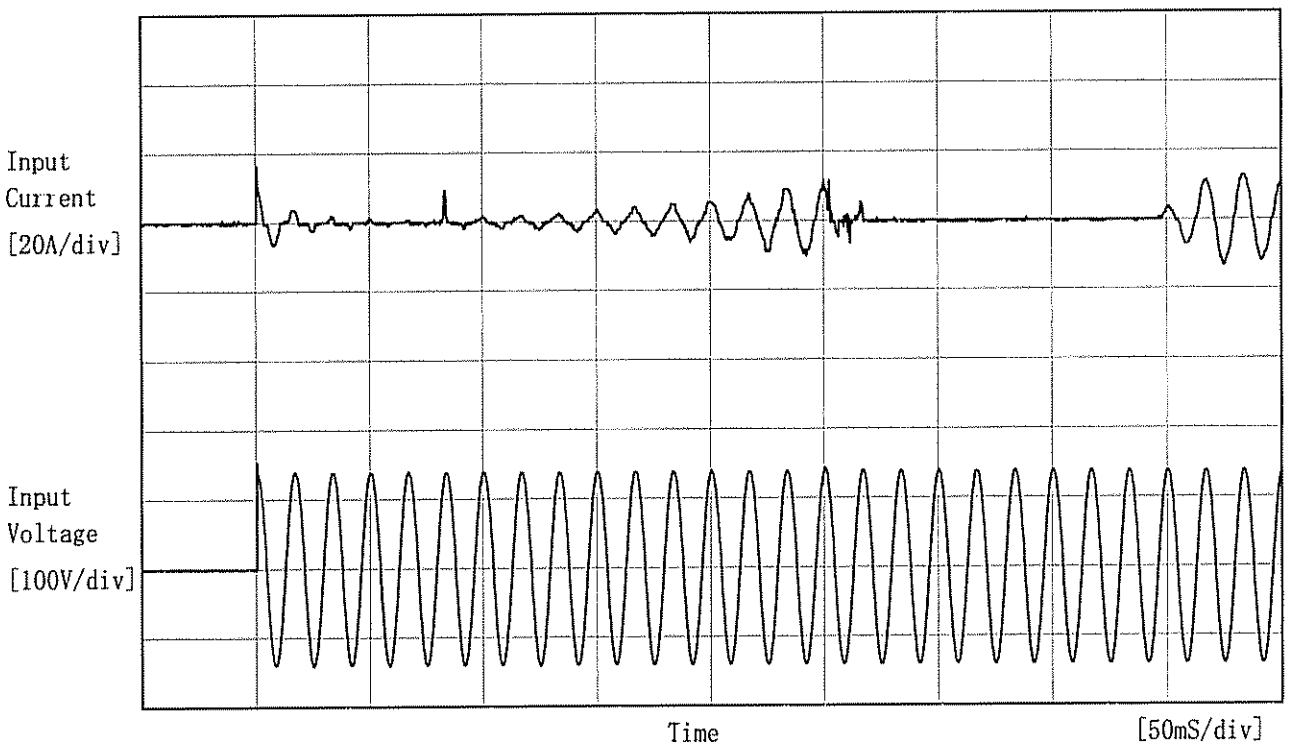
(注) 斜線は定格周囲温度範囲を示す。

2. Values

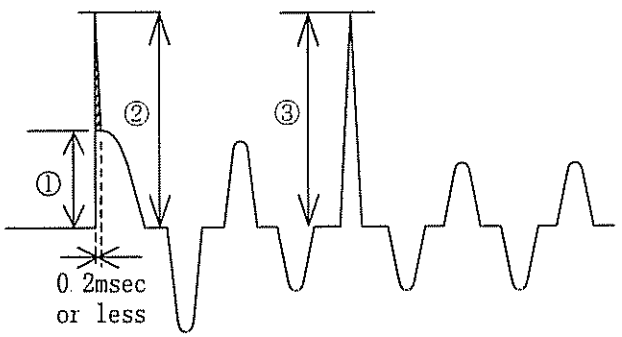
Ambient Temperature [℃]	Operating Point [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	32.30	32.30	32.30
-10	32.58	32.52	32.52
0	32.82	32.82	32.70
10	33.00	33.00	33.00
20	33.28	33.28	33.28
25	33.51	33.39	33.39
30	33.52	33.52	33.52
40	33.81	33.69	33.69
50	34.11	33.99	33.99
60	34.28	34.22	34.22
--	—	—	—

COSEL

Model	ADA750F (ADA750F-24)		
Item	Inrush Current 突入電流	Temperature Testing Circuitry	25℃ Figure A
Object	――――――		



Input Voltage 100 V
Frequency 60 Hz
Load 100 %
Inrush Current
① 11.4 [A]
② 16.2 [A] (0.2msec or less)*1
③ 7.2 [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

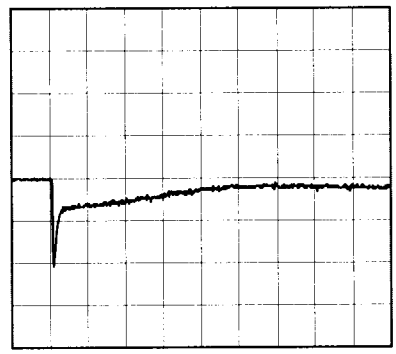
Model	ADA750F (ADA750F-24)		
Item	Dynamic Load Response 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	V1:+24V25A		

Input Volt. AC100 V

Cycle 1000 ms

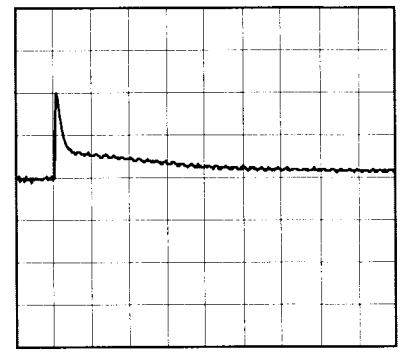
Load Current

Min. Load (0A) ⟷
Load 100% (25A)



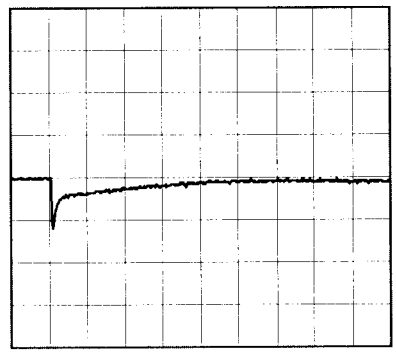
100 mV/div

10 ms/div



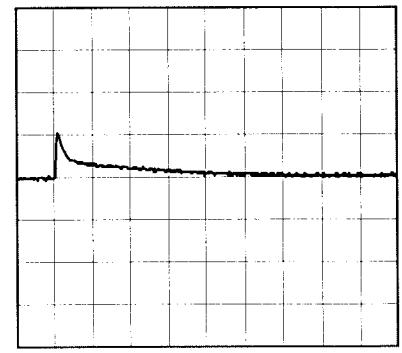
10 ms/div

Min. Load (0A) ⟷
Load 50% (12.5A)



100 mV/div

10 ms/div



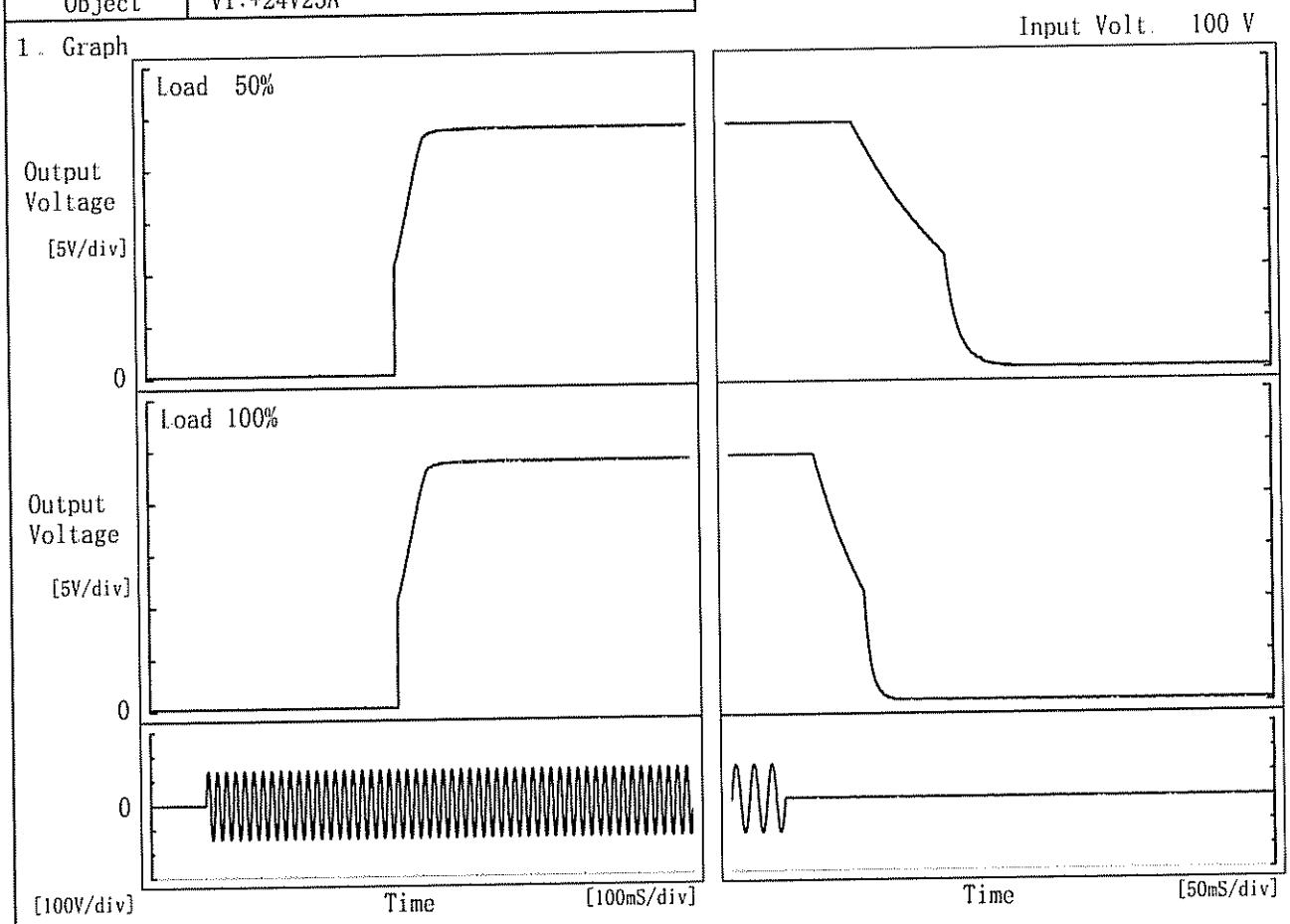
10 ms/div

COSEL

Model	ADA750F (ADA750F-24)
Item	Rise and Fall Time 立上り、立下り時間
Object	V1:+24V25A

Temperature 25℃
Testing Circuitry Figure A

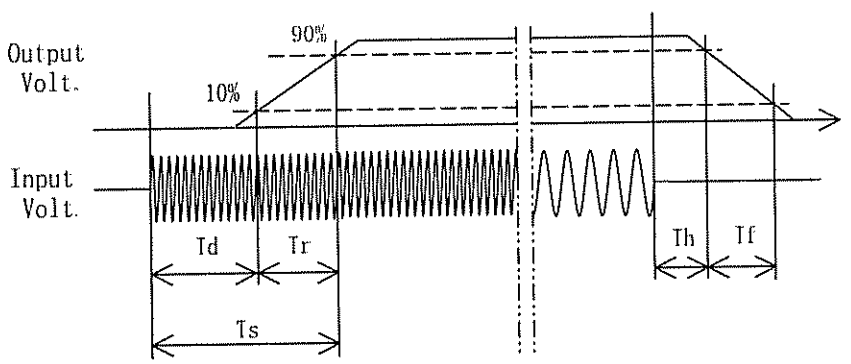
1. Graph



2. Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	357.0	49.5	406.5	77.0	92.5
100 %	356.5	50.0	406.5	34.3	49.3



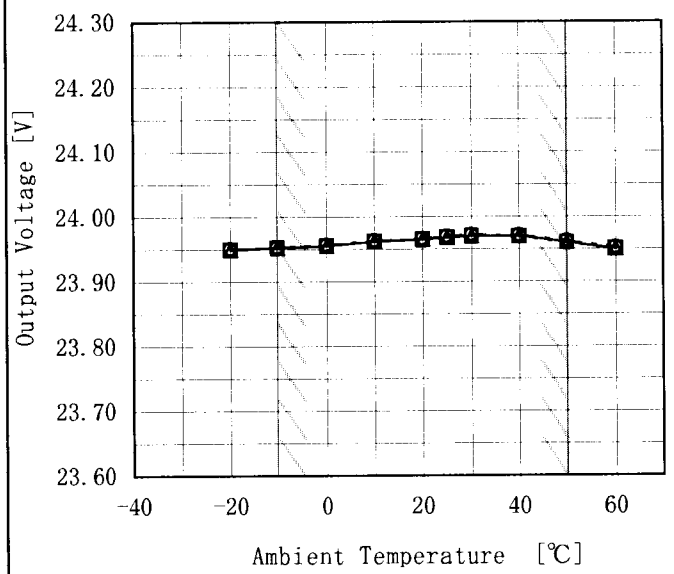
COSEL

Model	ADA750F (ADA750F-24)
Item	Ambient Temperature Drift 周囲温度変動
Object	V1:+24V25A

Testing Circuitry Figure A

1. Graph

△ Input Volt. 85 V
⊟ Input Volt. 100 V
○ Input Volt. 132 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

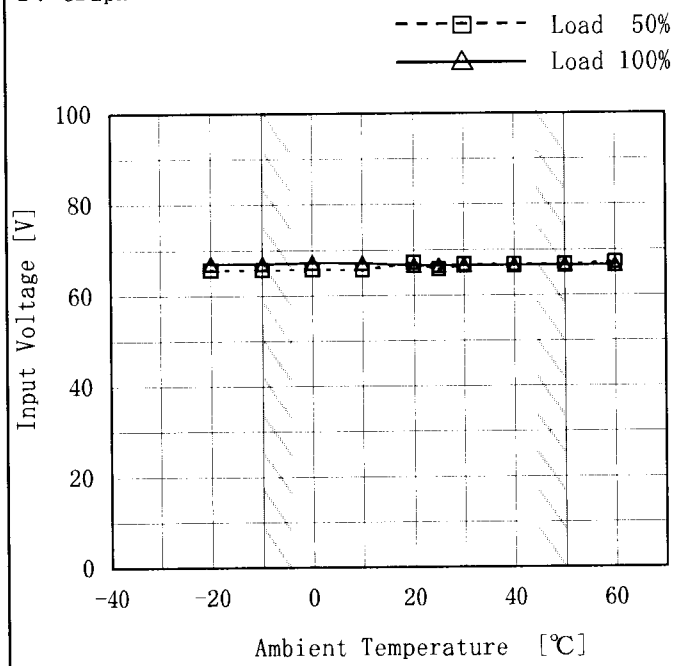
Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	23.949	23.950	23.951
-10	23.952	23.953	23.953
0	23.955	23.956	23.957
10	23.962	23.962	23.964
20	23.965	23.965	23.967
25	23.968	23.969	23.970
30	23.970	23.971	23.972
40	23.970	23.970	23.972
50	23.960	23.960	23.962
60	23.950	23.951	23.953
--	—	—	—

COSEL

Model	ADA750F (ADA750F-24)
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	V1:+24V25A

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

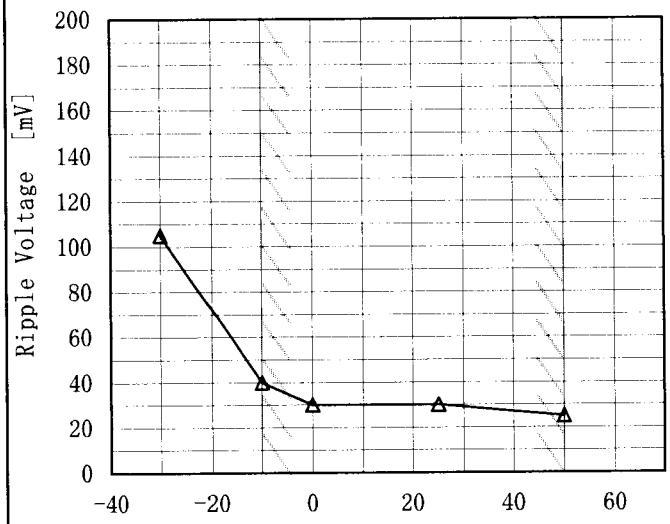
Ambient Temperature [℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	66	67
-10	66	67
0	66	67
10	66	67
20	67	67
25	66	67
30	67	67
40	67	67
50	67	67
60	67	67
--	—	—

COSEL

Model	ADA750F (ADA750F-24)
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	V1:+24V25A

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

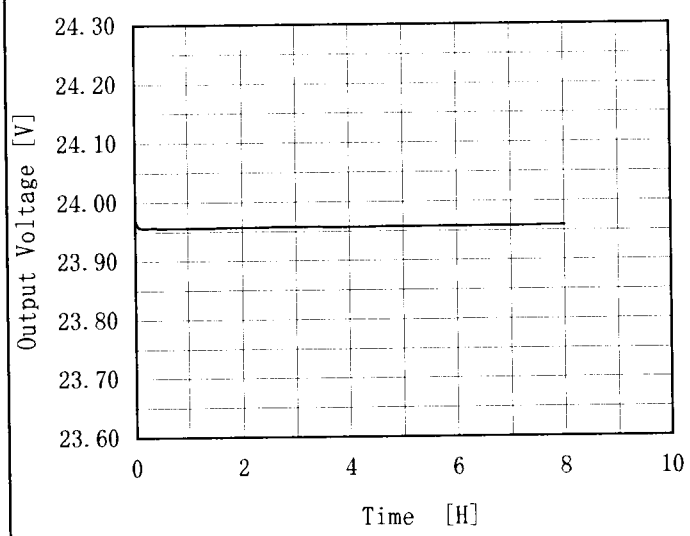
Ambient Temperature [℃]	Ripple Voltage [mV]
-30	105
-10	40
0	30
25	30
50	25
--	—
--	—
--	—
--	—
--	—
--	—

COSEL

Model	ADA750F (ADA750F-24)
Item	Time Lapse Drift 経時ドリフト
Object	V1:+24V25A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Input Volt. 100V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	23.971
0.5	23.956
1.0	23.956
2.0	23.957
3.0	23.957
4.0	23.957
5.0	23.958
6.0	23.958
7.0	23.958
8.0	23.959

COSEL

Model	ADA750F (ADA750F-24)
Item	Output Voltage Accuracy 定電圧精度
Object	V1:+24V25A

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 ～ 25A

* 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 ～ 25A

* 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	24.000	±25	±0.1
Minimum Voltage	-10	85	25	23.950		

COSEL

Model	ADA750F (ADA750F-24)		
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	0.19	0.22	0.28
(B) IEC60950	0.19	0.22	0.28

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

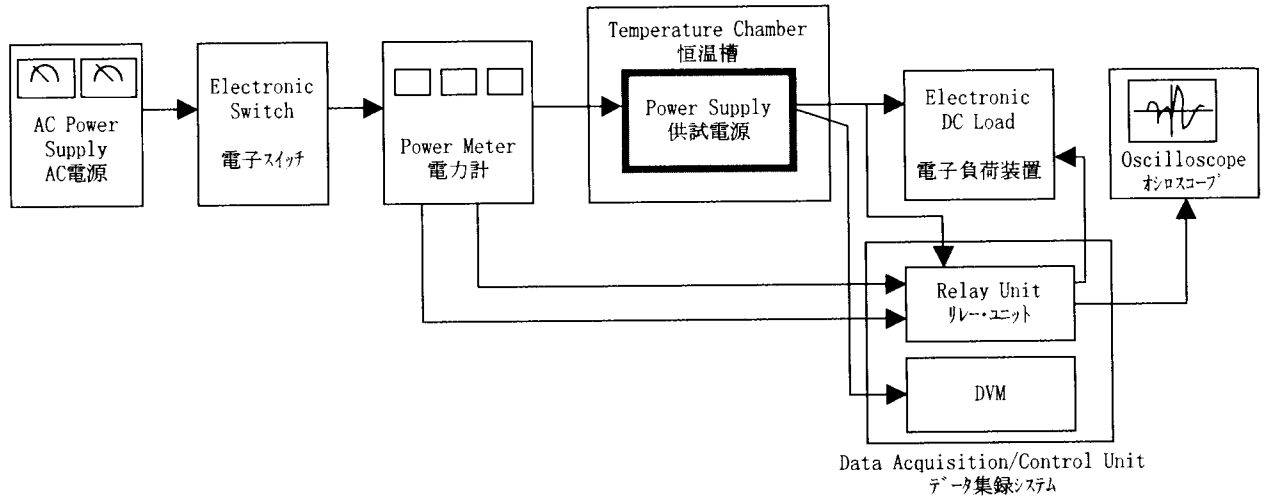


Figure A

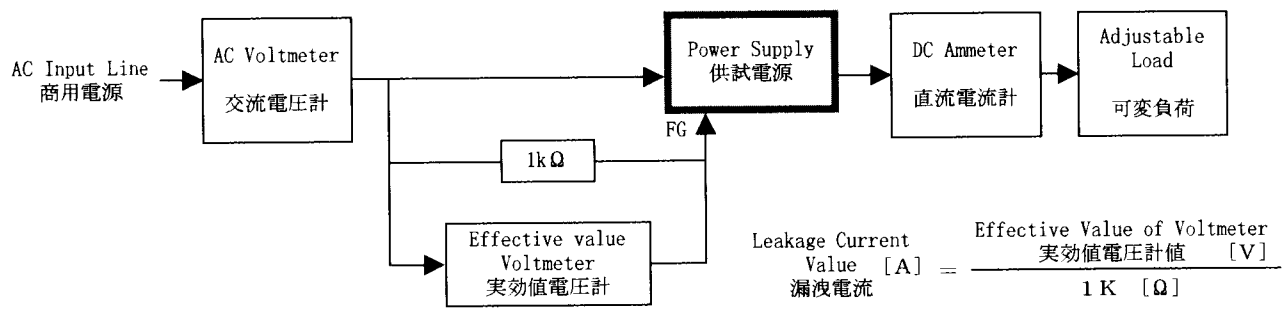


Figure B (DEN-AN)

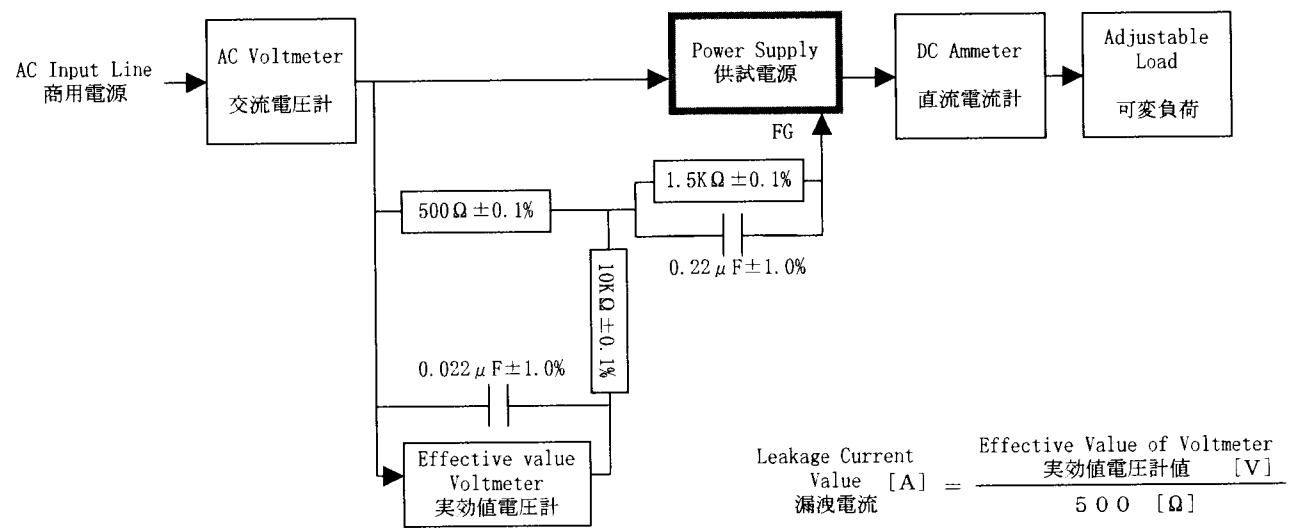


Figure B (IEC60950)