



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

coesel株式会社
COSEL CO.,LTD.



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Model	ADA750F (ADA750F-36)																																	
Item	Line Regulation 靜的入力変動	Temperature 25°C Testing Circuitry Figure A																																
Object	V1:+36V20.5A																																	
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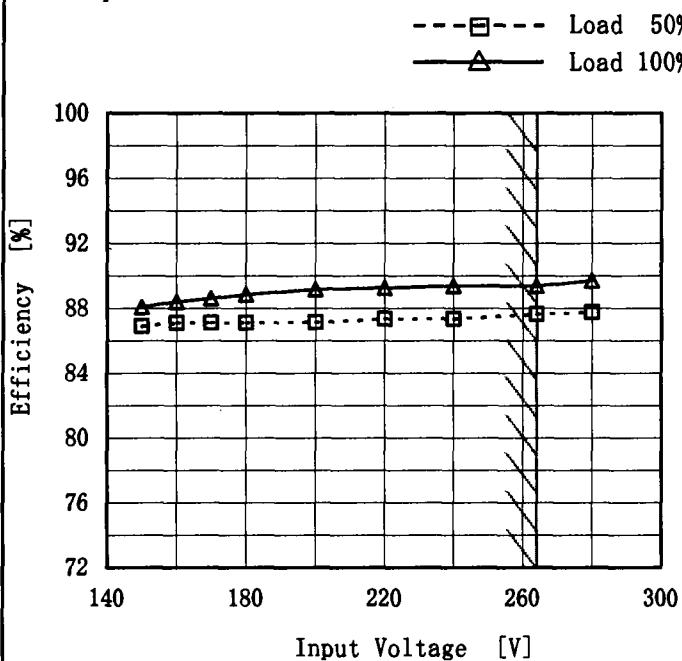
Note: Slanted line shows the range of the rated load power.

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

1. Graph



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

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Temperature 25°C
Testing Circuitry Figure A

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
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<p>The graph plots Power Factor against Input Voltage. The x-axis ranges from 140 to 300 V, and the y-axis ranges from 0.3 to 1.0. Two sets of data points are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a slight decrease in power factor as input voltage increases beyond 220V. A slanted line on the graph indicates the rated input voltage range.</p>																																		
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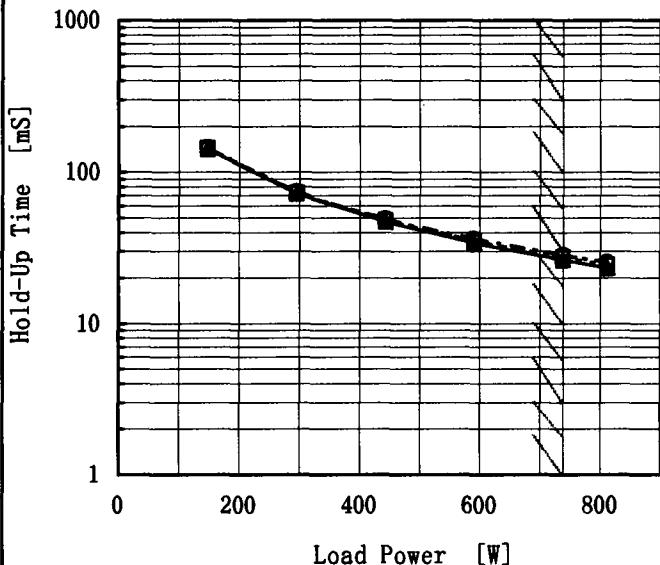
COSEL

Model	ADA750F (ADA750F-36)																																																					
Item	Power Factor (by Load Power) 力率 (負荷電力特性)	Temperature Testing Circuitry	25°C Figure A																																																			
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Note: Slanted line shows the range of the rated load power.

(注) 斜線は定格電力範囲を示す。

COSEL

Model	ADA750F (ADA750F-36)																																																					
Item	Hold-Up Time (by Load Power) 出力保持時間 (負荷電力特性)	Temperature Testing Circuitry	25°C Figure A																																																			
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COSEL

Model	ADA750F (ADA750F-36)																																																					
Item	Instantaneous Interruption Compensation (by Load Power)	Temperature	25°C																																																			
Object	瞬時停電保障 (負荷電力特性)	Testing Circuitry	Figure A																																																			
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Note: Slanted line shows the range of the rated load power.

(注) 斜線は定格電力範囲を示す。

COSEL

Model	ADA750F (ADA750F-36)		
Item	Load Regulation 靜的負荷變動	Temperature Testing Circuitry	25°C Figure A
Object	V1:+36V20.5A		
1. Graph	<p>—△— Input Volt. 170 V - - - □ - - Input Volt. 200 V - - ○ - - Input Volt. 264 V</p>		
2. Values	Load Current [A]	Output Voltage [V]	
Load Current [A]	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
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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。

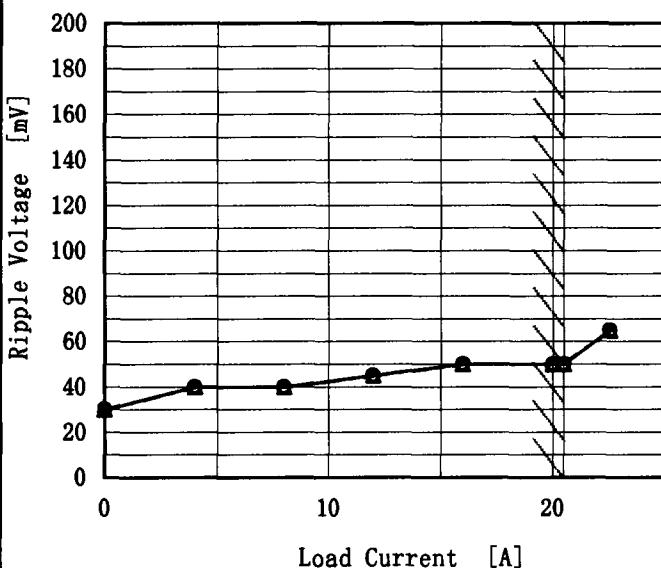
COSEL

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°C
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 170 V
---○--- Input Volt. 264 V



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
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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
スイッチング周期

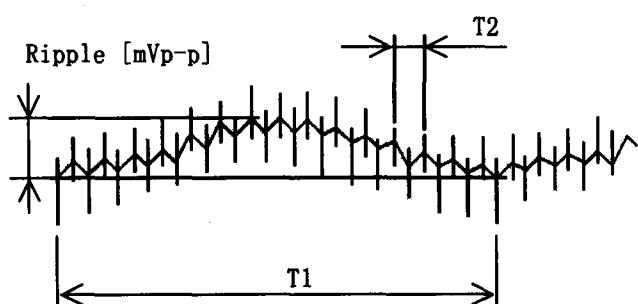


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

COSEL

Model	ADA750F (ADA750F-36)																																							
Item	Ripple-Noise リップルノイズ	Temperature 25°C Testing Circuitry Figure A																																						
Object	V1:+36V20.5A																																							
1. Graph																																								
<p>Graph showing Ripple-Noise [mV] vs Load Current [A]. The Y-axis ranges from 0 to 200 mV, and the X-axis ranges from 0 to 20 A. Two curves are plotted: one for Input Volt. 170 V (solid line with triangle markers) and one for Input Volt. 264 V (dashed line with circle markers). Both curves show a slight increase in noise as load current increases. A slanted line indicates the rated load current range.</p>																																								
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COSEL

Model	ADA750F (ADA750F-36)																																																									
Item	Overcurrent Protection 過電流保護	Temperature Testing Circuitry	25°C Figure A																																																							
Object	V1:+36V20.5A																																																									
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Note: Slanted line shows the range of the rated load current.

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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。

COSEL

Model Item Object	ADA750F (ADA750F-36)	Testing Circuitry Figure A																																														
	Overvoltage Protection 過電圧保護																																															
	V1:+36V20.5A																																															
1. Graph	<p>—△— Input Volt. 170 V - - - ■ - - Input Volt. 200 V - - ○ - - Input Volt. 264 V</p> <table border="1"> <caption>Data points estimated from Figure A Graph</caption> <thead> <tr> <th>Ambient Temperature [°C]</th> <th>170[V]</th> <th>200[V]</th> <th>264[V]</th> </tr> </thead> <tbody> <tr><td>-20</td><td>53.80</td><td>53.80</td><td>53.80</td></tr> <tr><td>-10</td><td>54.39</td><td>54.39</td><td>54.39</td></tr> <tr><td>0</td><td>54.80</td><td>54.80</td><td>54.80</td></tr> <tr><td>10</td><td>55.38</td><td>55.38</td><td>55.38</td></tr> <tr><td>20</td><td>55.79</td><td>55.79</td><td>55.79</td></tr> <tr><td>25</td><td>56.02</td><td>56.02</td><td>56.02</td></tr> <tr><td>30</td><td>56.20</td><td>56.20</td><td>56.20</td></tr> <tr><td>40</td><td>56.78</td><td>56.78</td><td>56.78</td></tr> <tr><td>50</td><td>57.19</td><td>57.19</td><td>57.19</td></tr> <tr><td>60</td><td>57.60</td><td>57.60</td><td>57.60</td></tr> </tbody> </table>	Ambient Temperature [°C]	170[V]	200[V]	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	2. Values		
Ambient Temperature [°C]	170[V]	200[V]	264[V]																																													
-20	53.80	53.80	53.80																																													
-10	54.39	54.39	54.39																																													
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		Ambient Temperature [°C]	Operating Point [V]																																													
			Input Volt. 170[V]	Input Volt. 200[V]																																												
			Input Volt. 264[V]																																													
		-20	53.80	53.80	53.80																																											
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		60	57.60	57.60	57.60																																											
		--	--	--	--																																											

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。

COSEL

Model ADA750F (ADA750F-36)

Item Inrush Current
突入電流

Object

Temperature 25°C
Testing Circuitry Figure AInput
Current
[20A/div]Input
Voltage
[200V/div]

Time

[50mS/div]

Input Voltage 200 V

Frequency 60 Hz

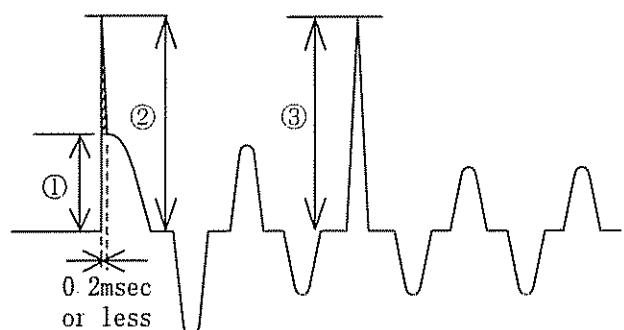
Load 100 %

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次サージ)の仕様は、内蔵ノイズフィルタへの
サージ電流(0.2msec以下:波形②)を除きます。

COSEL

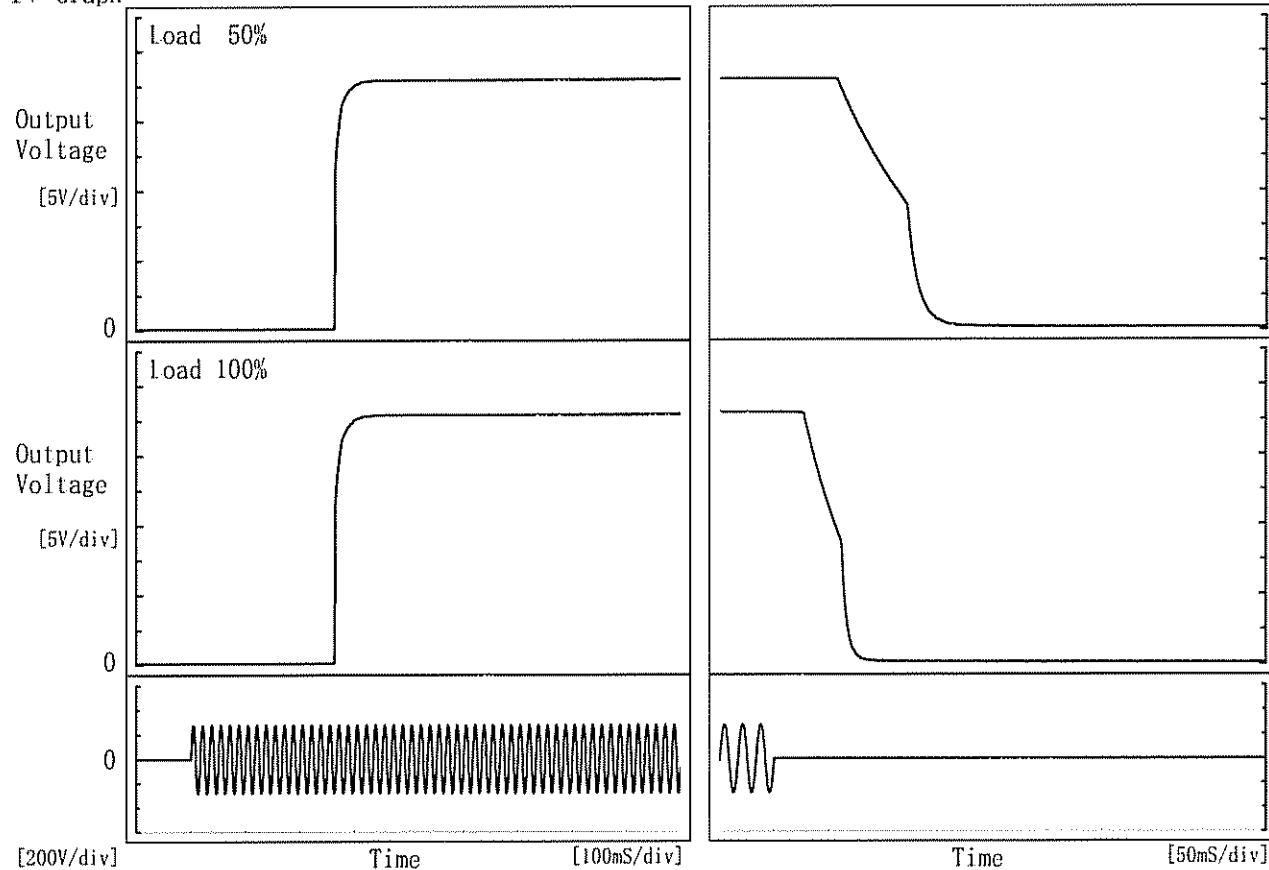
Model ADA750F (ADA750F-36)

Item Rise and Fall Time
立上り、立下り時間

Object V1:+36V20.5A

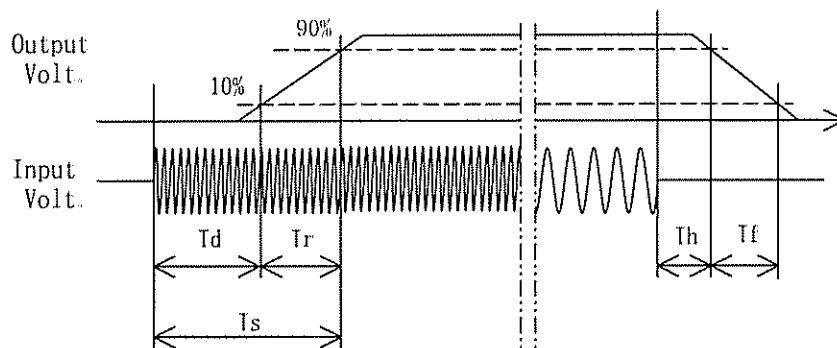
Temperature 25°C
Testing Circuitry Figure A

1. Graph

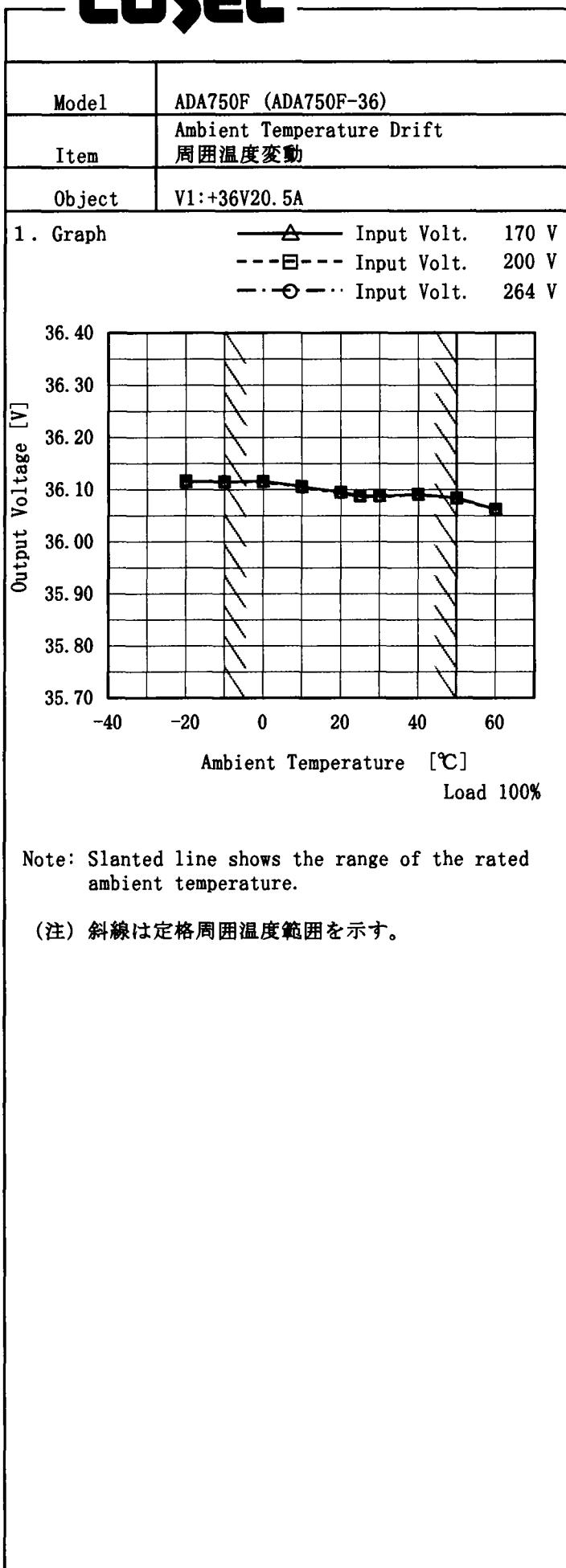


2. Values

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



Testing Circuitry Figure A

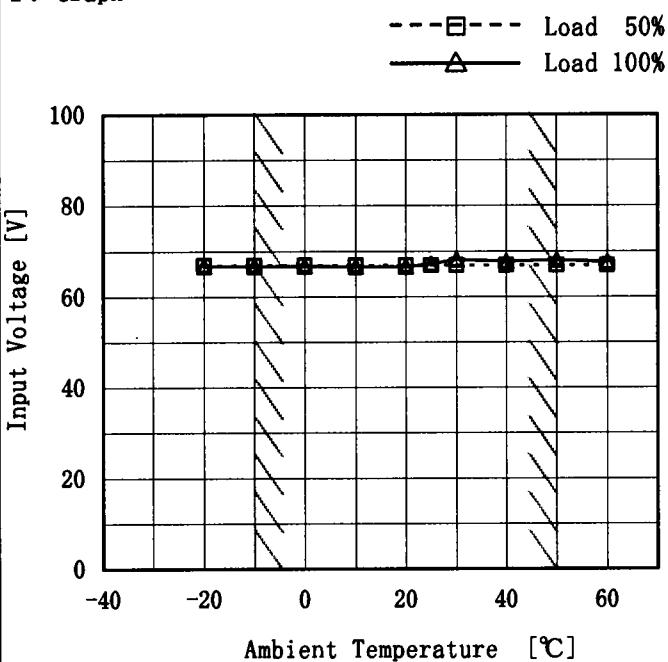
2. Values

Ambient Temperature [°C]	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
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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

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。

Testing Circuitry Figure A

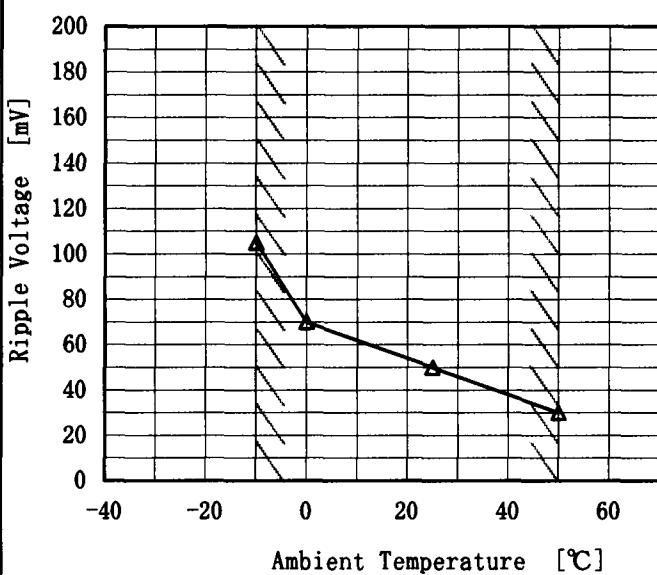
2. Values

Ambient Temperature [°C]	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
—	—	—

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

1. Graph



Input Volt. 100 V
Load 100 %

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

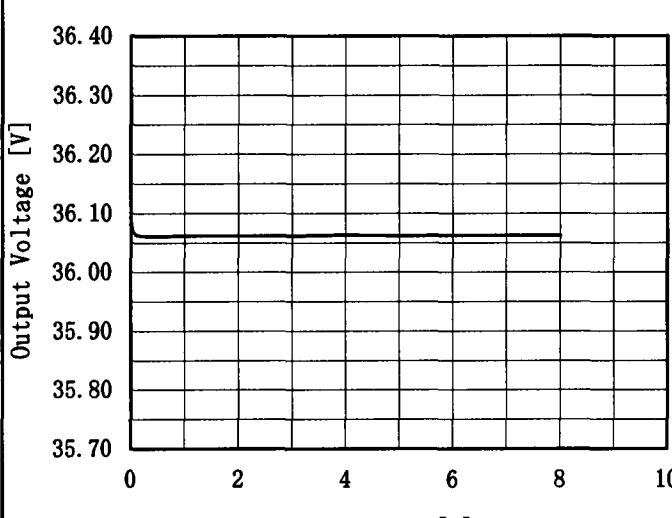
(注) 斜線は定格周囲温度範囲を示す。

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]
-10	105
0	70
25	50
50	30
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COSEL

Model	ADA750F (ADA750F-36)	Temperature	25°C																								
Item	Time Lapse Drift 経時ドリフト	Testing Circuitry	Figure A																								
Object	V1:+36V20.5A																										
1. Graph																											
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 200V Load 100%</p>			2. Values																								
			<table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>36.092</td></tr> <tr><td>0.5</td><td>36.061</td></tr> <tr><td>1.0</td><td>36.062</td></tr> <tr><td>2.0</td><td>36.062</td></tr> <tr><td>3.0</td><td>36.062</td></tr> <tr><td>4.0</td><td>36.063</td></tr> <tr><td>5.0</td><td>36.062</td></tr> <tr><td>6.0</td><td>36.062</td></tr> <tr><td>7.0</td><td>36.062</td></tr> <tr><td>8.0</td><td>36.062</td></tr> </tbody> </table>	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		
Time since start [H]	Output Voltage [V]																										
0.0	36.092																										
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5.0	36.062																										
6.0	36.062																										
7.0	36.062																										
8.0	36.062																										



Model	ADA750F (ADA750F-36)	Testing Circuitry Figure A
Item	Output Voltage Accuracy 定電圧精度	
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°C

Input Voltage : 170 ~ 264V

Load Current : 0 ~ 20.5A

* Output Voltage Accuracy = $\pm (\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

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°C

入力電圧 : 170 ~ 264V

負荷電流 : 0 ~ 20.5A

* 定電圧精度(変動値) = $\pm (\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

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

2. Values

Item	Temperature [°C]	Input Voltage [V]	Output		Output Voltage Accuracy	
			Current [A]	Voltage [V]	Value [mV]	Ration [%]
Maximum Voltage	-10	200	0	36.135		
Minimum Voltage	50	170	20.5	36.078	±29	±0.1



Model	ADA750F (ADA750F-36)	Temperature	25°C
Item	Leakage Current 漏洩電流	Testing Circuitry	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。

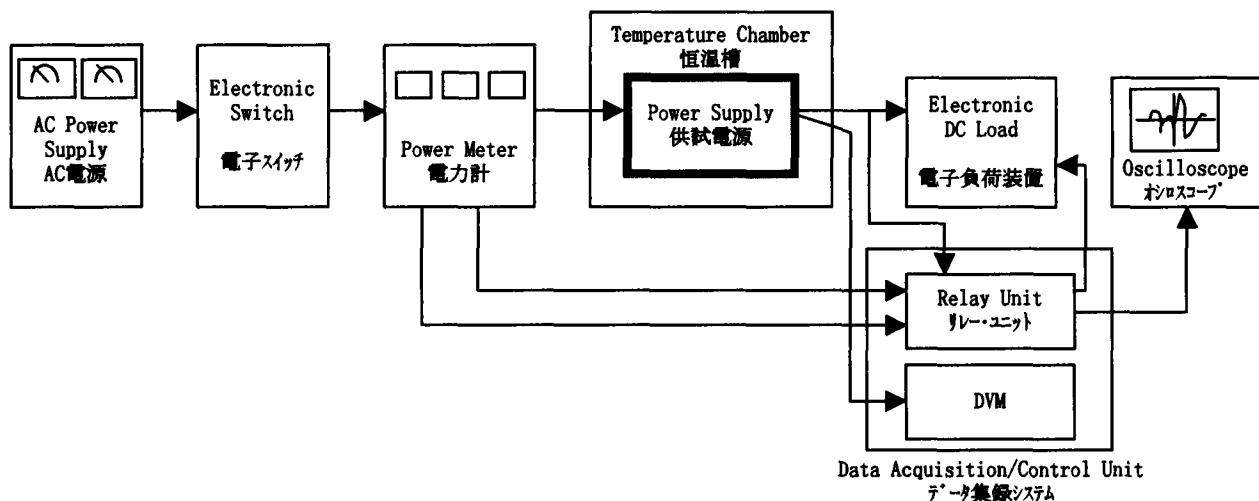


Figure A

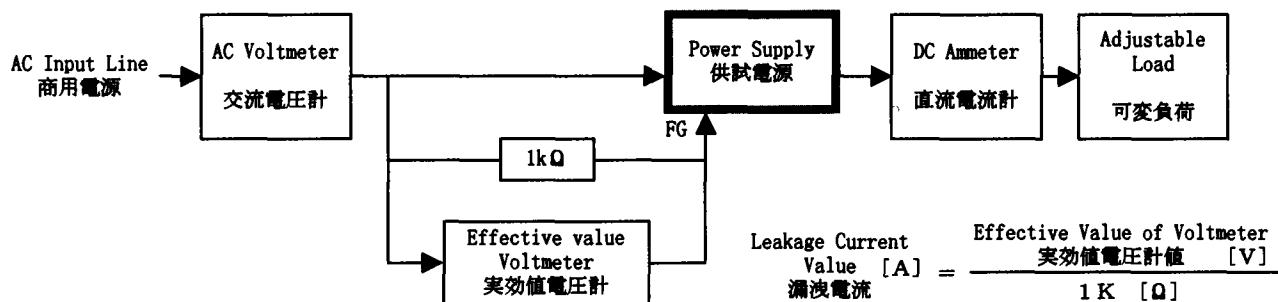


Figure B (DEN-AN)

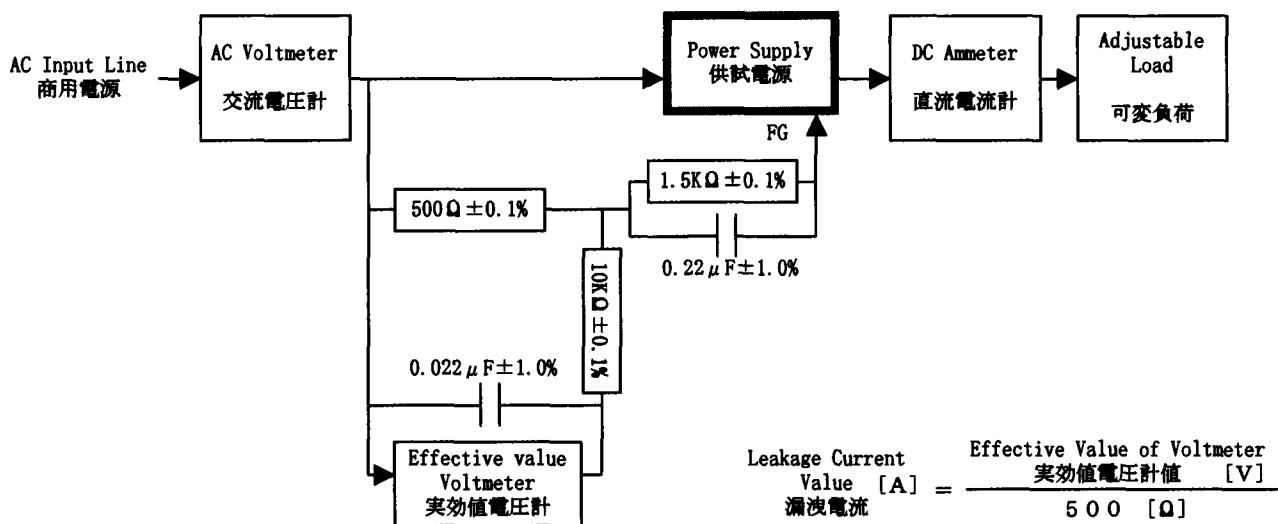


Figure B (IEC60950)