



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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Model	ADA600F (ADA600F-36)																																
Item	Line Regulation 静的の入力変動	Temperature 25°C Testing Circuitry Figure A																															
Object	V1:+36V14A																																
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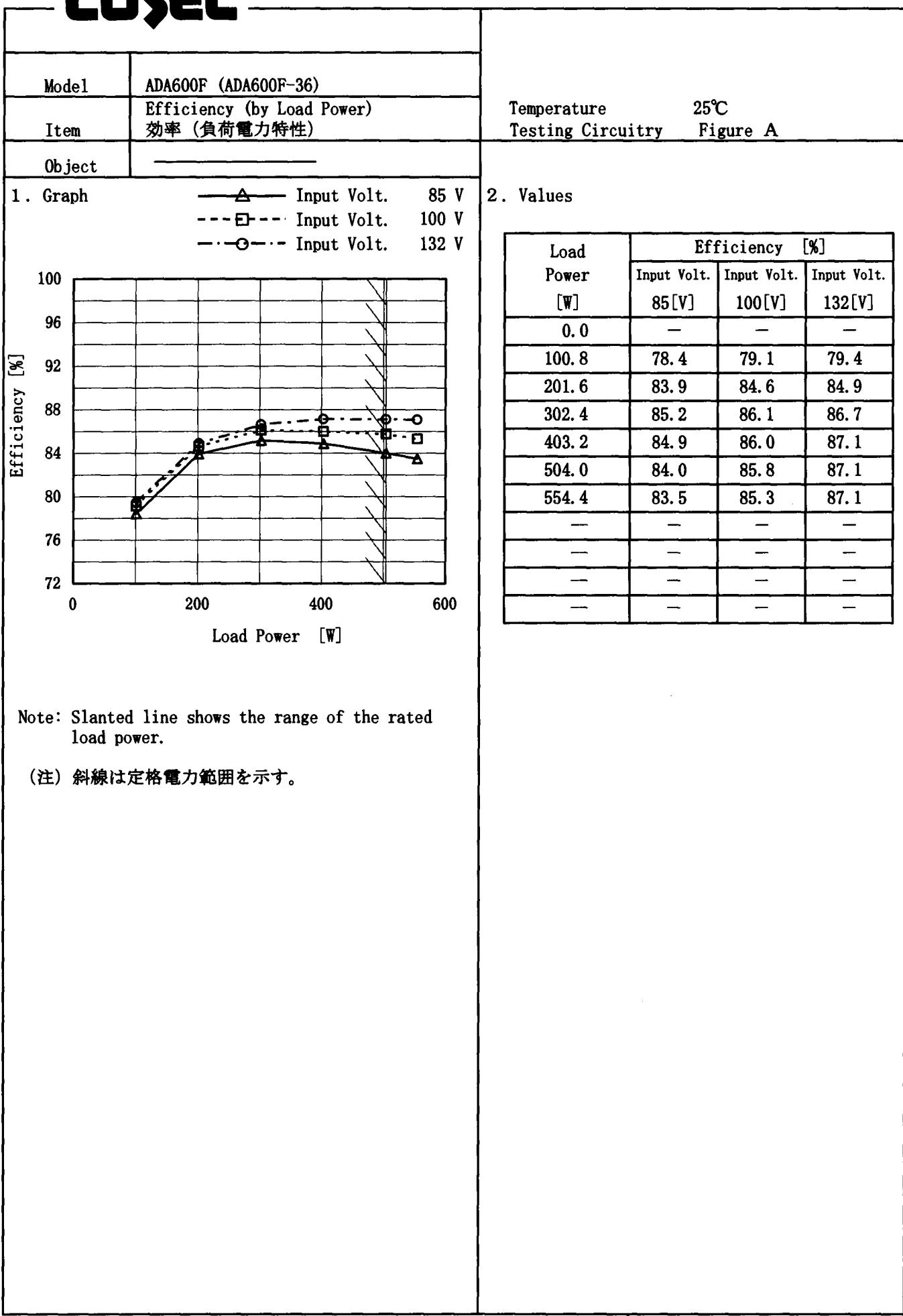
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(注) 斜線は定格電力範囲を示す。

COSEL

Model	ADA600F (ADA600F-36)																																																					
Item	Hold-Up Time (by Load Power) 出力保持時間 (負荷電力特性)	Temperature 25°C	Testing Circuitry Figure A																																																			
Object	<hr/>																																																					
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COSEL

Model	ADA600F (ADA600F-36)																																																						
Item	Instantaneous Interruption Compensation (by Load Power) 瞬時停電保障 (負荷電力特性)	Temperature 25°C	Testing Circuitry Figure A																																																				
Object	—																																																						
1. Graph	<p>—△— Input Volt. 85V - - -□- Input Volt. 100V - - -○- Input Volt. 132V</p> <table border="1"> <caption>Data points estimated from Graph 1</caption> <thead> <tr> <th>Load Power [W]</th> <th>85V [mS]</th> <th>100V [mS]</th> <th>132V [mS]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>100.8</td><td>128</td><td>147</td><td>177</td></tr> <tr><td>201.6</td><td>73</td><td>78</td><td>81</td></tr> <tr><td>302.4</td><td>55</td><td>62</td><td>64</td></tr> <tr><td>403.2</td><td>39</td><td>44</td><td>49</td></tr> <tr><td>504.0</td><td>28</td><td>31</td><td>37</td></tr> <tr><td>554.4</td><td>22</td><td>28</td><td>31</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>	Load Power [W]	85V [mS]	100V [mS]	132V [mS]	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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COSEL

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

1. Graph

—△— Input Volt. 85 V
---□--- Input Volt. 100 V
—○— Input Volt. 132 V

Load Current [A]	85[V]	100[V]	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
—	—	—	—
—	—	—	—

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。

Temperature 25°C
Testing Circuitry Figure A

2. Values

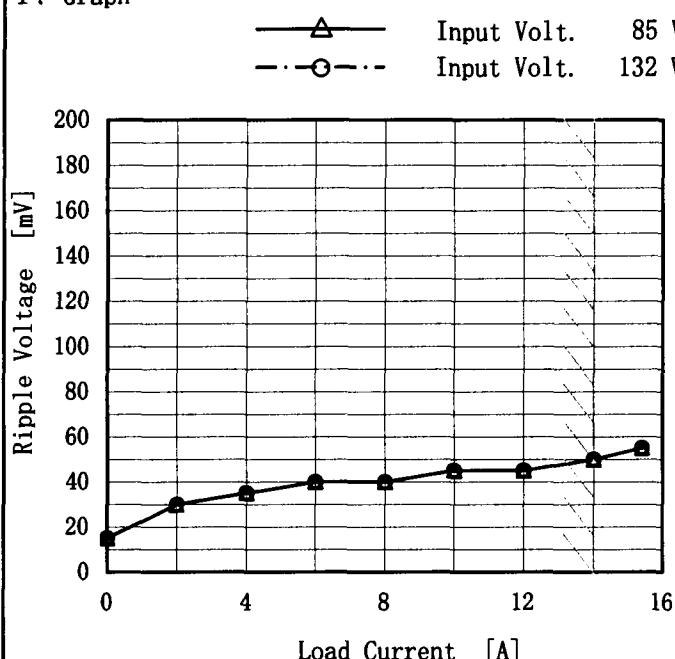
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14.0	35.809	35.809	35.810
15.4	35.808	35.808	35.809
—	—	—	—
—	—	—	—

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°C
Testing Circuitry Figure A

1. Graph



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
—	—	—
—	—	—

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

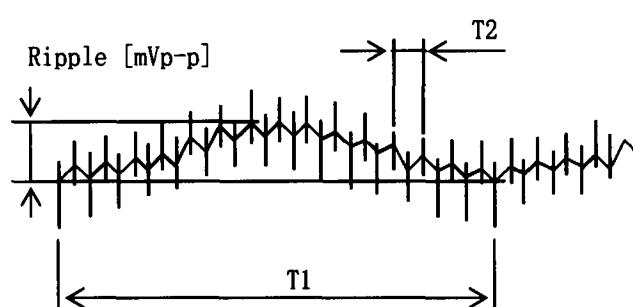
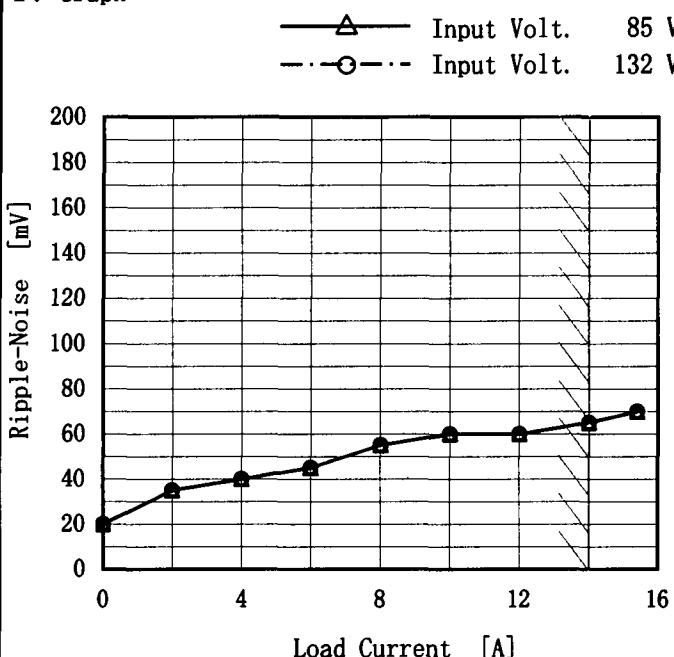


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

COSEL

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

1. Graph


 Temperature 25°C
 Testing Circuitry Figure A

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
—	—	—
—	—	—

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
 スイッチング周期

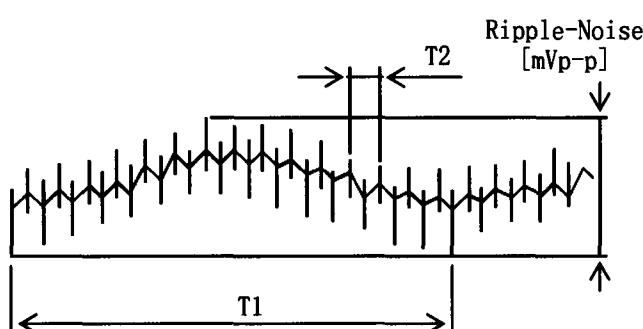


Fig. Complex Ripple Wave Form
 図 リップル波形詳細図

COSEL

Model	ADA600F (ADA600F-36)																																																									
Item	Overcurrent Protection 過電流保護																																																									
Object	V1:+36V14A																																																									
1. Graph	<p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>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。</p>																																																									
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COSEL

Model	ADA600F (ADA600F-36)		
Item	Overvoltage Protection 過電圧保護		
Object	V1:+36V14A		
1. Graph	Input Volt. 85 V	Input Volt. 100 V	Input Volt. 132 V
<p>Operating Point [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 0%</p>			
<p>Note: Slanted line shows the range of the rated ambient temperature.</p> <p>(注) 斜線は定格周囲温度範囲を示す。</p>			
Testing Circuitry	Figure A		
2. Values			
Ambient Temperature [°C]	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°C
Testing Circuitry Figure AInput Current
[20A/div]Input Voltage
[100V/div]

Time

[50mS/div]

Input Voltage 100 V

Frequency 60 Hz

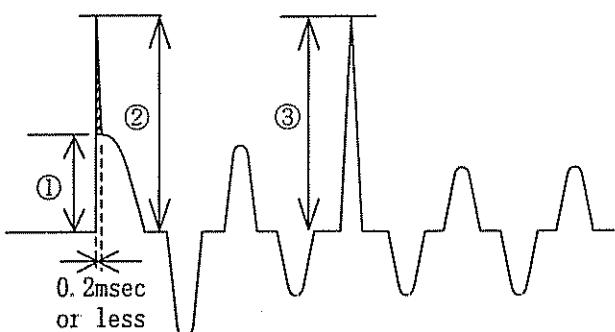
Load 100 %

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

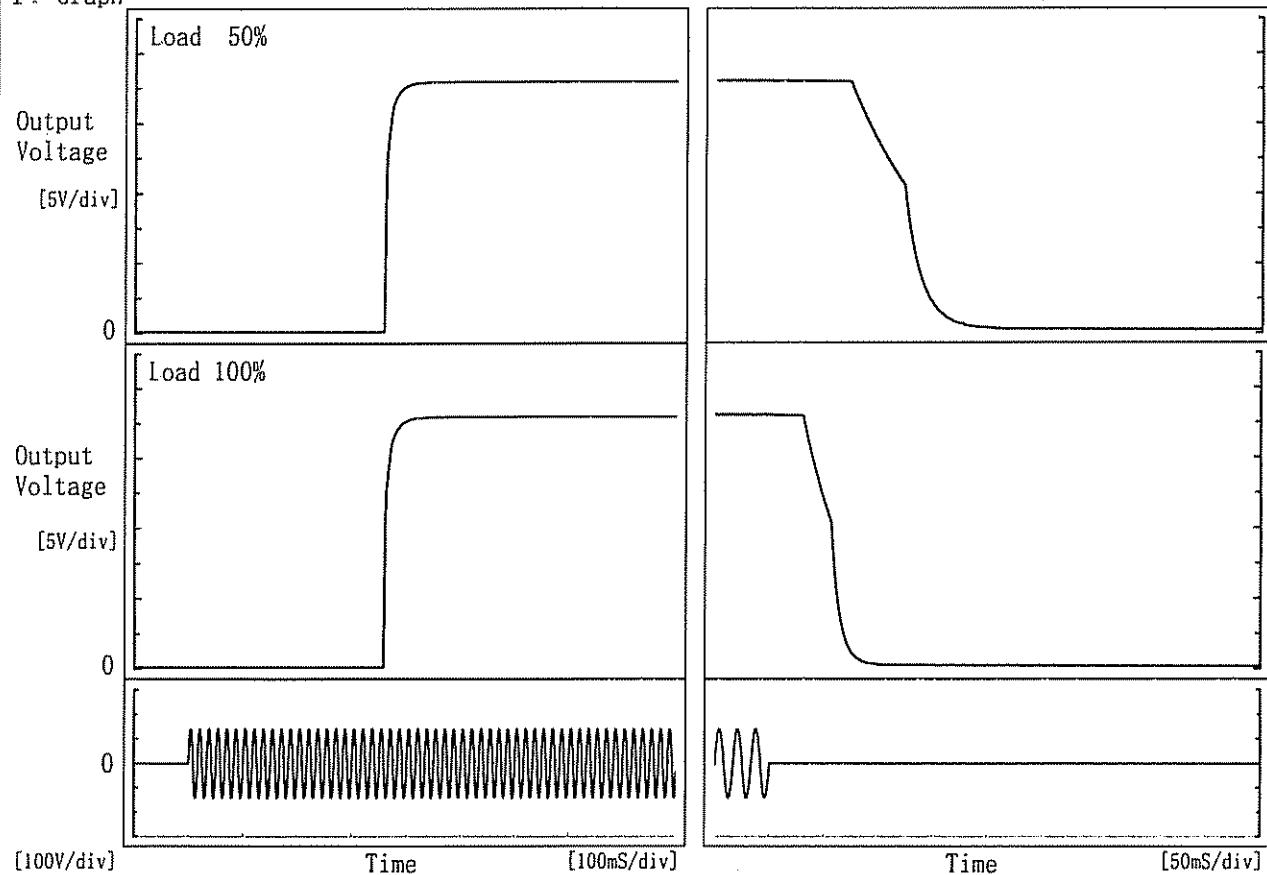
Model ADA600F (ADA600F-36)

Item Rise and Fall Time
立上り、立下り時間

Object V1:+36V14A

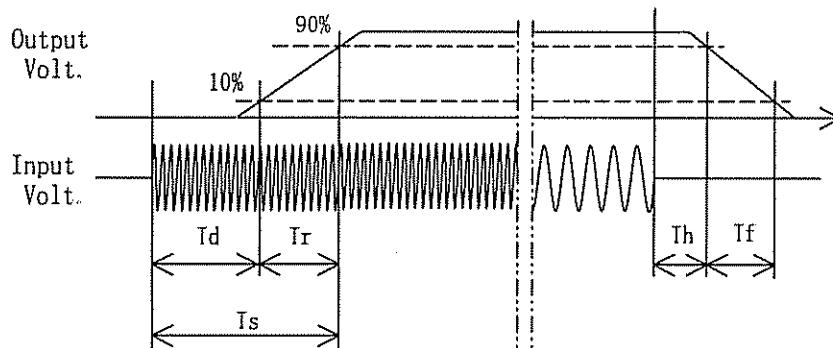
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Load	Time	T _d	T _r	T _s	T _h	T _f	[mS]
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

1. Graph

Output Voltage [V]

Ambient Temperature [°C]

Load 100%

Legend:

- Input Volt. 85 V
- Input Volt. 100 V
- Input Volt. 132 V

Ambient Temperature [°C]	Output Voltage [V]
-20	35.855
-10	35.850
0	35.845
10	35.848
20	35.850
25	35.856
30	35.861
40	35.856
50	35.845
60	35.832
—	—

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	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
—	—	—	—

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。

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Model	ADA600F (ADA600F-36)																																							
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧	Testing Circuitry Figure A																																						
Object	V1:+36V14A																																							
1. Graph																																								
<p>--- □ --- Load 50%</p> <p>— △ — Load 100%</p> <p>Ambient Temperature [°C]</p> <p>Input Voltage [V]</p>																																								
<p>Note: Slanted line shows the range of the rated ambient temperature.</p> <p>(注) 斜線は定格周囲温度範囲を示す。</p>																																								
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<table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="2">Input Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr> <td>-20</td> <td>67</td> <td>67</td> </tr> <tr> <td>-10</td> <td>67</td> <td>67</td> </tr> <tr> <td>0</td> <td>67</td> <td>67</td> </tr> <tr> <td>10</td> <td>67</td> <td>67</td> </tr> <tr> <td>20</td> <td>67</td> <td>67</td> </tr> <tr> <td>25</td> <td>67</td> <td>68</td> </tr> <tr> <td>30</td> <td>67</td> <td>68</td> </tr> <tr> <td>40</td> <td>67</td> <td>68</td> </tr> <tr> <td>50</td> <td>67</td> <td>68</td> </tr> <tr> <td>60</td> <td>67</td> <td>68</td> </tr> <tr> <td>--</td> <td>—</td> <td>—</td> </tr> </tbody> </table>			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	68	30	67	68	40	67	68	50	67	68	60	67	68	--	—	—
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Model	ADA600F (ADA600F-36)																									
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	Testing Circuitry Figure A																								
Object	V1:+36V14A																									
1. Graph			2. Values																							
<p>Graph showing Ripple Voltage [mV] vs Ambient Temperature [°C]. The graph shows a decreasing trend of ripple voltage as ambient temperature increases from -10°C to 50°C. The input voltage is 100V and load is 100%.</p> <table border="1"> <thead> <tr> <th>Ambient Temperature [°C]</th> <th>Ripple Voltage [mV]</th> </tr> </thead> <tbody> <tr><td>-10</td><td>80</td></tr> <tr><td>0</td><td>60</td></tr> <tr><td>25</td><td>50</td></tr> <tr><td>50</td><td>40</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td></tr> </tbody> </table>			Ambient Temperature [°C]	Ripple Voltage [mV]	-10	80	0	60	25	50	50	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ambient Temperature [°C]	Ripple Voltage [mV]																									
-10	80																									
0	60																									
25	50																									
50	40																									
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<p>Note: Slanted line shows the range of the rated ambient temperature.</p> <p>(注) 斜線は定格周囲温度範囲を示す。</p>																										

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Model	ADA600F (ADA600F-36)	Temperature Testing Circuitry 25°C Figure A																						
Item	Time Lapse Drift 経時ドリフト																							
Object	V1:+36V14A																							
1. Graph		2. Values																						
<p>The graph plots Output Voltage [V] on the y-axis (ranging from 35.40 to 36.10) against Time [H] on the x-axis (ranging from 0 to 10). A single horizontal line is drawn at approximately 35.81 V, representing the output voltage over the 8-hour period shown.</p> <p>Input Volt. 100V Load 100%</p>		<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>35.829</td></tr> <tr><td>0.5</td><td>35.809</td></tr> <tr><td>1.0</td><td>35.808</td></tr> <tr><td>2.0</td><td>35.811</td></tr> <tr><td>3.0</td><td>35.811</td></tr> <tr><td>4.0</td><td>35.811</td></tr> <tr><td>5.0</td><td>35.811</td></tr> <tr><td>6.0</td><td>35.811</td></tr> <tr><td>7.0</td><td>35.811</td></tr> <tr><td>8.0</td><td>35.811</td></tr> </tbody> </table>	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
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Model	ADA600F (ADA600F-36)	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	V1:+36V14A	

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 : 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°C

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



Model	ADA600F (ADA600F-36)	Temperature	25°C
Item	Leakage Current 漏洩電流	Testing Circuitry	Figure B
Object	<hr/>		

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。

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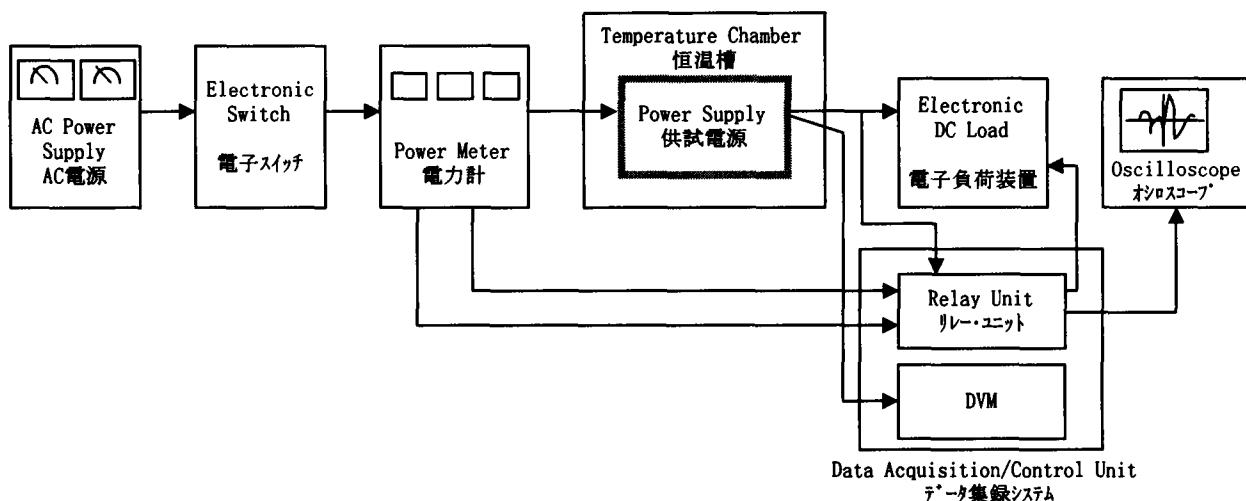


Figure A

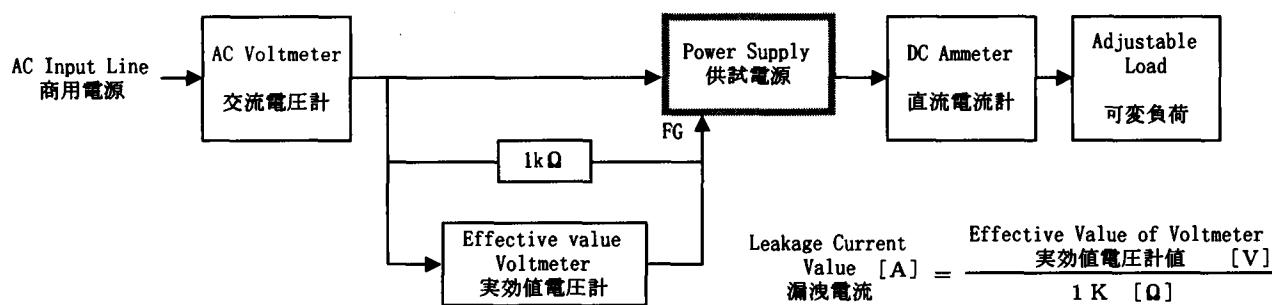


Figure B (DEN-AN)

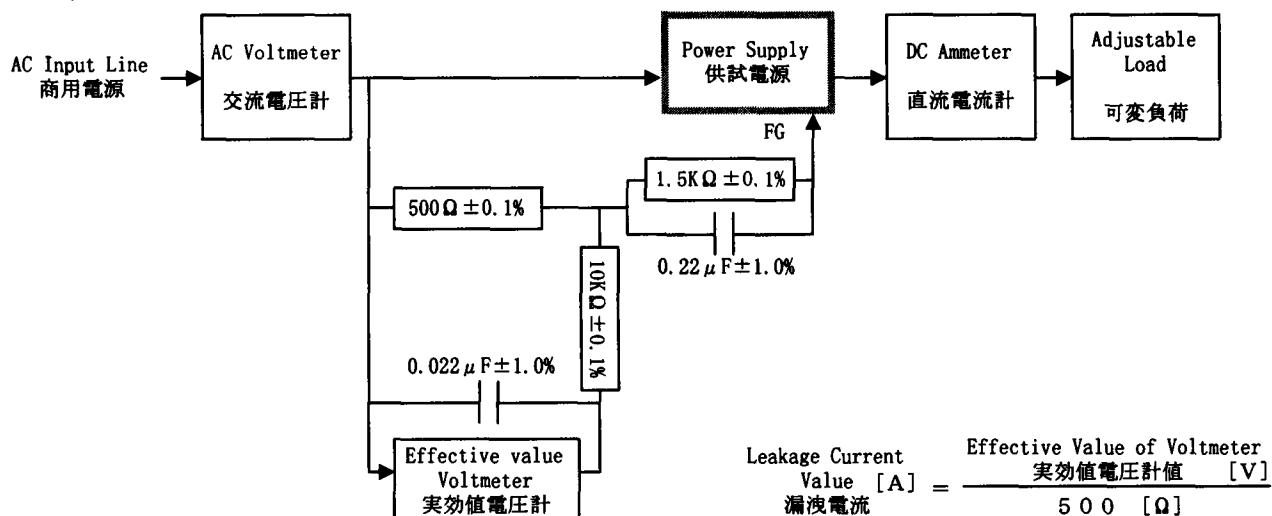


Figure B (IEC60950)