



# TEST DATA OF LDA75F-9

(200V INPUT)

Regulated DC Power Supply

May 22, 2002

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コーセル株式会社

COSEL CO., LTD.



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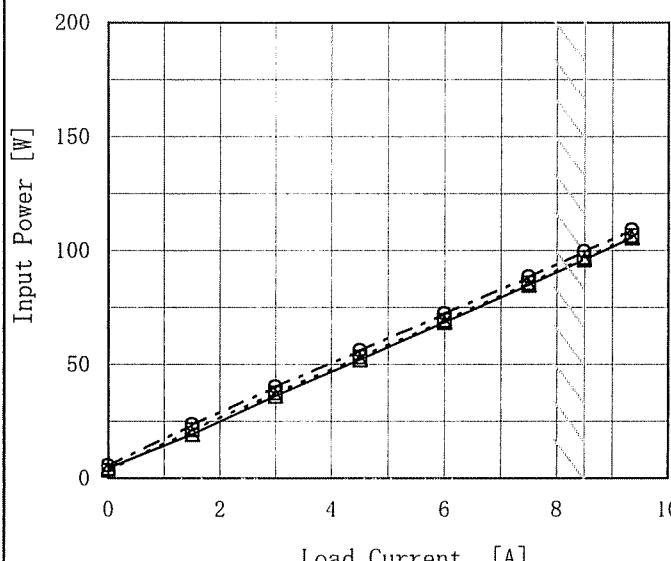
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Model	LDA75F-9	Temperature	25°C																																
Item	Line Regulation 静的入力変動	Testing Circuitry	Figure A																																
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<p>Output Voltage [V]</p> <p>Input Voltage [V]</p> <p>Legend: ---□--- Load 50% —△— Load 100%</p>			<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Output Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>150</td><td>9.070</td><td>9.066</td></tr> <tr><td>160</td><td>9.070</td><td>9.066</td></tr> <tr><td>170</td><td>9.071</td><td>9.066</td></tr> <tr><td>180</td><td>9.070</td><td>9.066</td></tr> <tr><td>200</td><td>9.070</td><td>9.066</td></tr> <tr><td>220</td><td>9.070</td><td>9.066</td></tr> <tr><td>240</td><td>9.071</td><td>9.066</td></tr> <tr><td>264</td><td>9.071</td><td>9.066</td></tr> <tr><td>280</td><td>9.070</td><td>9.066</td></tr> </tbody> </table>	Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	150	9.070	9.066	160	9.070	9.066	170	9.071	9.066	180	9.070	9.066	200	9.070	9.066	220	9.070	9.066	240	9.071	9.066	264	9.071	9.066	280	9.070	9.066
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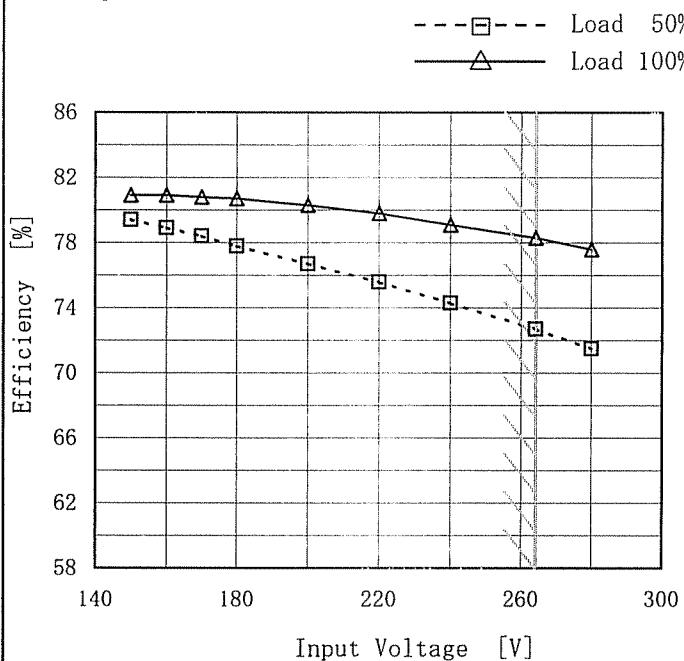
(注) 斜線は定格負荷電流範囲を示す。

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Model	LDA75F-9
Item	Efficiency (by Input Voltage) 効率(入力電圧特性)
Object	_____

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



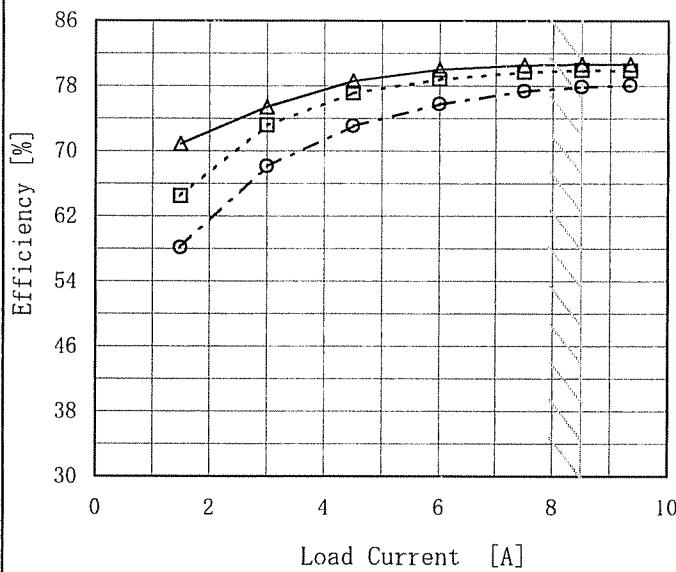
## 2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
150	79.4	80.9
160	78.9	80.9
170	78.4	80.8
180	77.8	80.7
200	76.7	80.3
220	75.6	79.8
240	74.3	79.1
264	72.7	78.3
280	71.5	77.6

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

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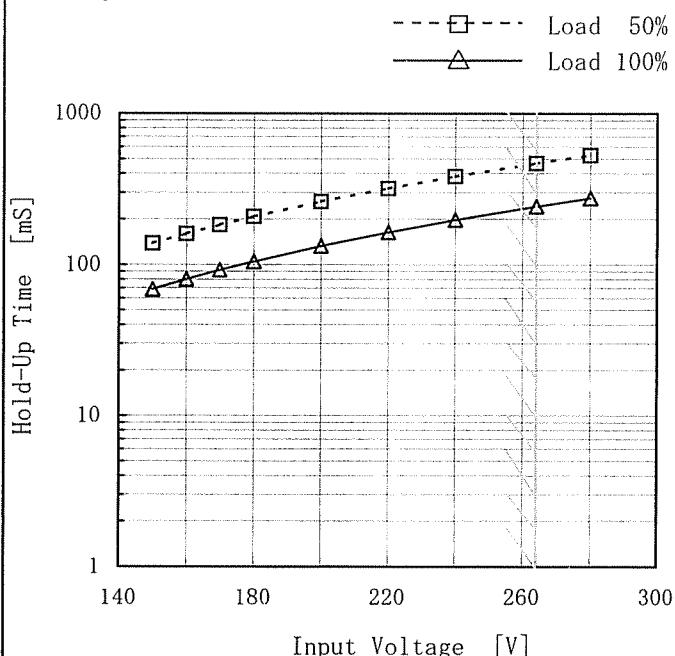
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Model	LDA75F-9
Item	Hold-Up Time 出力保持時間
Object	+9V8.5A

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
150	139	69
160	160	80
170	183	92
180	208	105
200	261	133
220	320	164
240	384	198
264	468	243
280	529	276

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 input voltage.

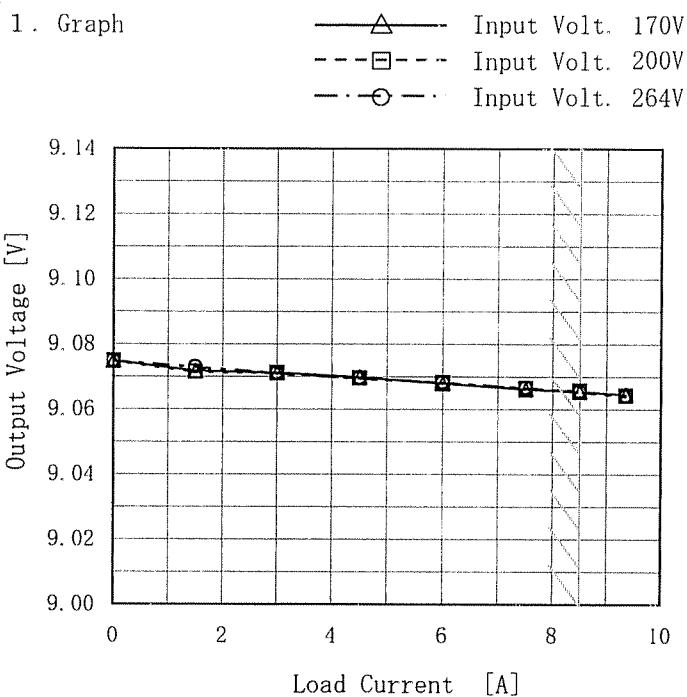
出力保持時間とは、入力電圧断から出力電圧が定電圧精度の範囲を保持しているところまでの時間。  
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(注) 斜線は定格負荷電流範囲を示す。																																																							

COSEL

Model	LDA75F-9
Item	Load Regulation 静的負荷変動
Object	+9V8.5A



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

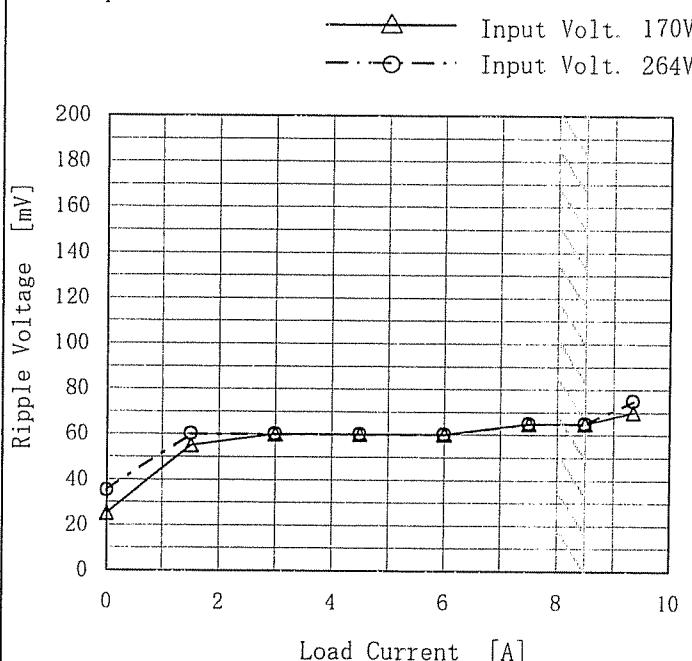
Load Current [A]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.00	9.075	9.075	9.075
1.50	9.072	9.072	9.073
3.00	9.071	9.071	9.071
4.50	9.070	9.070	9.070
6.00	9.068	9.068	9.068
7.50	9.066	9.067	9.067
8.50	9.066	9.066	9.065
9.35	9.065	9.064	9.064
--	--	--	--
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COSEL

Model	LDA75F-9
Item	Ripple Voltage (by Load Current) リップル電圧 (負荷特性)
Object	+9V8.5A

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 170 [V]	Input Volt. 264 [V]
0.00	25	35
1.50	55	60
3.00	60	60
4.50	60	60
6.00	60	60
7.50	65	65
8.50	65	65
9.35	70	75
--	—	—
--	—	—
--	—	—

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

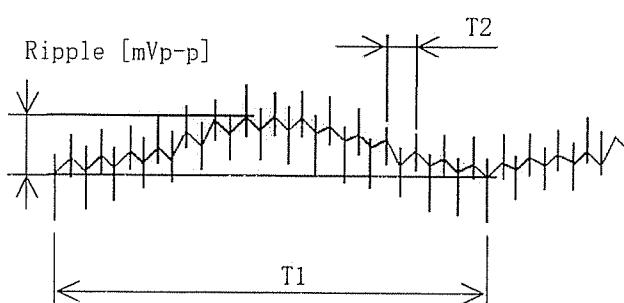
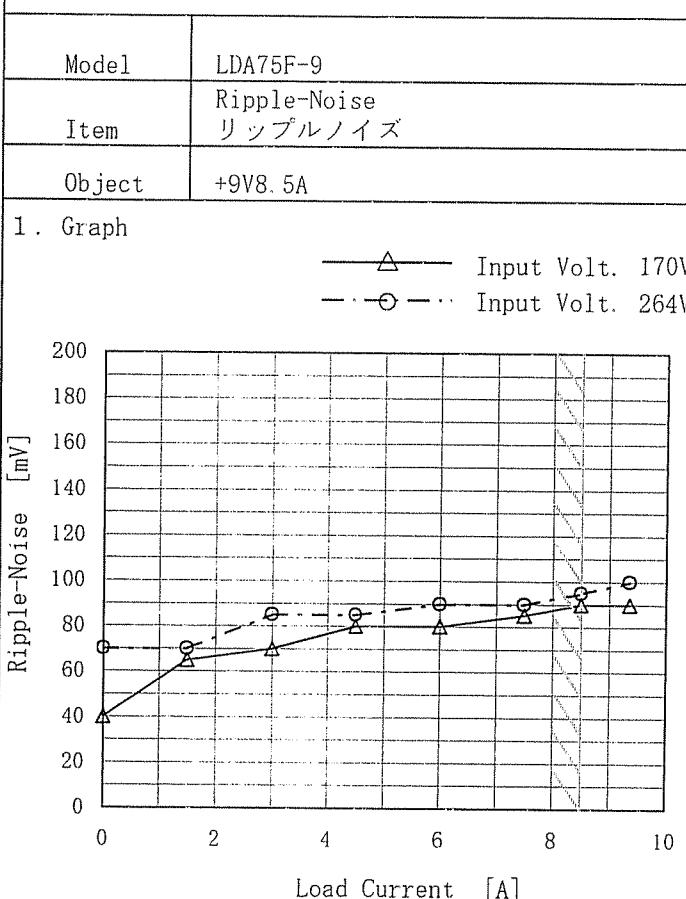


Fig. Complex Ripple Wave Form  
図 リップル波形詳細図

COSEL



Temperature 25°C  
Testing Circuitry Figure A

## 2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 170 [V]	Input Volt. 264 [V]
0.00	40	70
1.50	65	70
3.00	70	85
4.50	80	85
6.00	80	90
7.50	85	90
8.50	90	95
9.35	90	100
---	—	—
---	—	—
---	—	—

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

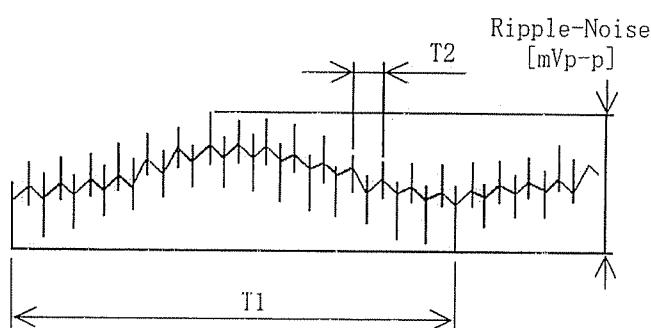


Fig. Complex Ripple Wave Form  
図 リップル波形詳細図

COSEL

Model	LDA75F-9
Item	Overcurrent Protection 過電流保護
Object	+9V8.5A

1. Graph

Output Voltage [V]

Load Current [A]

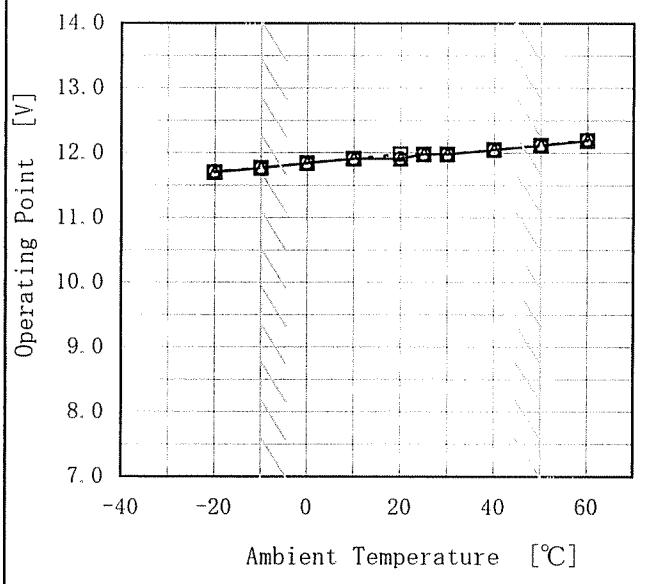
Note: Slanted line shows the range of the rated load current.  
(注) 斜線は定格負荷電流範囲を示す。

Temperature 25°C  
Testing Circuitry Figure A

## 2. Values

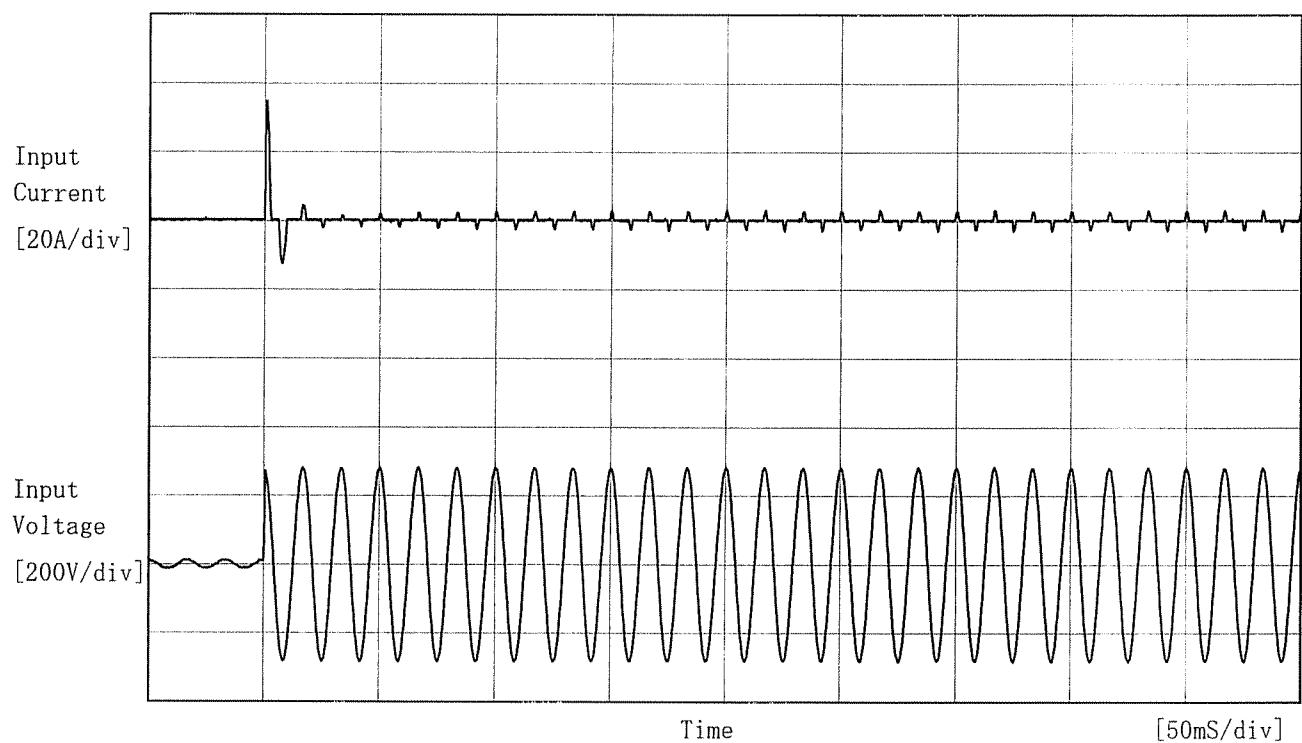
Output Voltage [V]	Load Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
9.000	10.20	10.34	10.63
8.550	10.26	10.39	10.70
8.100	10.32	10.50	10.75
7.200	10.49	10.57	10.87
6.300	10.57	10.69	11.00
5.400	10.68	10.79	11.13
4.500	10.78	10.90	11.25
3.600	10.87	10.99	11.34
2.700	10.94	11.04	11.35
1.800	10.92	10.96	11.08
0.900	10.55	10.41	10.17
0.000	9.69	9.57	9.53

COSEL

Model	LDA75F-9	Testing Circuitry      Figure A																																																					
Item	Overvoltage Protection 過電圧保護																																																						
Object	+9V8.5A																																																						
1. Graph	<p>—△— Input Volt. 170V        - - -□- - - Input Volt. 200V        - - -○- - - Input Volt. 264V</p> 																																																						
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COSEL

Model	LDA75F-9	Temperature	25°C
Item	Inrush Current 突入電流	Testing Circuitry	Figure A
Object	_____		



Input Voltage 200 V

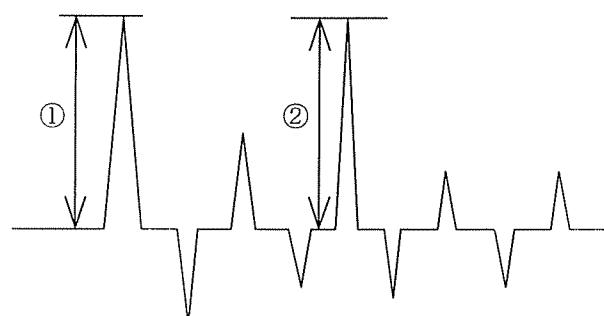
Frequency 60 Hz

Load 100 %

Inrush Current

① 34.8 [A]

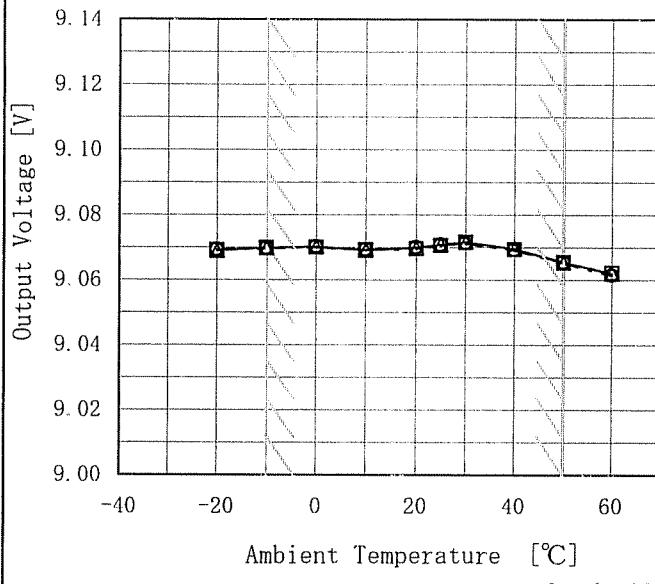
② 3.2 [A]



COSEL

Model	LDA75F-9	Testing Circuitry Figure A																																																						
Item	Overtoltage Protection 過電圧保護																																																							
Object	+9.0V 8.5A																																																							
1. Graph																																																								
	<p style="text-align: center;">△ Input Volt. 170 V □ Input Volt. 200 V ○ Input Volt. 264 V</p> <p style="text-align: center;">[V]</p> <p style="text-align: center;">Operating Point [V]</p> <p style="text-align: center;">Ambient Temperature [°C]</p> <p style="text-align: center;">Load 0%</p>	<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="3">Operating Point [V]</th> </tr> <tr> <th>Input Volt. 170[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 264[V]</th> </tr> </thead> <tbody> <tr> <td>-20</td> <td>11.70</td> <td>11.70</td> <td>11.71</td> </tr> <tr> <td>-10</td> <td>11.77</td> <td>11.77</td> <td>11.77</td> </tr> <tr> <td>0</td> <td>11.84</td> <td>11.84</td> <td>11.84</td> </tr> <tr> <td>10</td> <td>11.91</td> <td>11.91</td> <td>11.91</td> </tr> <tr> <td>20</td> <td>11.91</td> <td>11.98</td> <td>11.91</td> </tr> <tr> <td>25</td> <td>11.98</td> <td>11.98</td> <td>11.98</td> </tr> <tr> <td>30</td> <td>11.98</td> <td>11.98</td> <td>11.98</td> </tr> <tr> <td>40</td> <td>12.05</td> <td>12.05</td> <td>12.05</td> </tr> <tr> <td>50</td> <td>12.12</td> <td>12.12</td> <td>12.12</td> </tr> <tr> <td>60</td> <td>12.19</td> <td>12.19</td> <td>12.20</td> </tr> <tr> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> </tbody> </table>	Ambient Temperature [°C]	Operating Point [V]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	-20	11.70	11.70	11.71	-10	11.77	11.77	11.77	0	11.84	11.84	11.84	10	11.91	11.91	11.91	20	11.91	11.98	11.91	25	11.98	11.98	11.98	30	11.98	11.98	11.98	40	12.05	12.05	12.05	50	12.12	12.12	12.12	60	12.19	12.19	12.20	—	—	—	—			
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COSEL

Model	LDA75F-9	Testing Circuitry      Figure A																																																					
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Object	+9V8.5A																																																						
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Note: Slanted line shows the range of the rated ambient temperature.

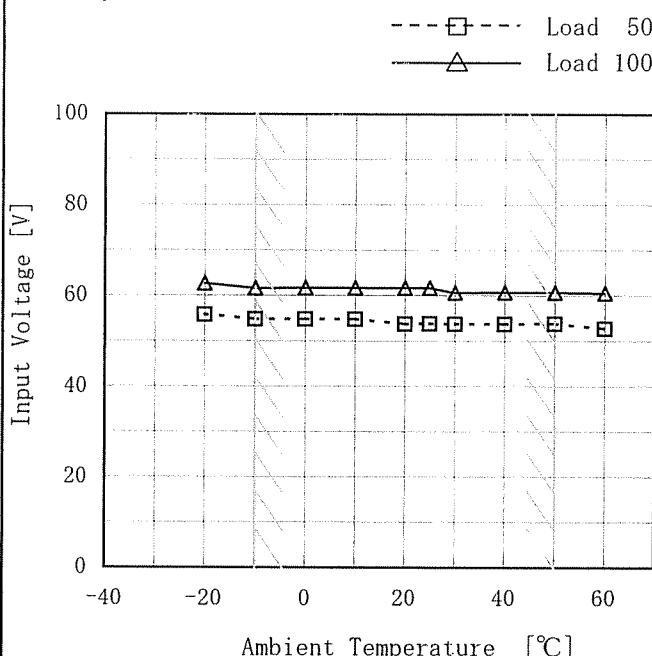
(注) 斜線は定格周囲温度範囲を示す。

COSEL

Model	LDA75F-9
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+9V8.5A

Testing Circuitry Figure A

## 1. Graph



## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	56	63
-10	55	62
0	55	62
10	55	62
20	54	62
25	54	62
30	54	61
40	54	61
50	54	61
60	53	61
--	--	--

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	LDA75F-9																																								
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	Testing Circuitry      Figure A																																							
Object	+9V8.5A																																								
1. Graph																																									
		2. Values																																							
<p>Ambient Temperature [°C]</p> <p>Input Volt. 200V</p>		<table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr> <td>-20</td> <td>140</td> <td>140</td> </tr> <tr> <td>-10</td> <td>125</td> <td>130</td> </tr> <tr> <td>0</td> <td>100</td> <td>100</td> </tr> <tr> <td>10</td> <td>90</td> <td>90</td> </tr> <tr> <td>20</td> <td>75</td> <td>75</td> </tr> <tr> <td>25</td> <td>60</td> <td>65</td> </tr> <tr> <td>30</td> <td>60</td> <td>65</td> </tr> <tr> <td>40</td> <td>60</td> <td>65</td> </tr> <tr> <td>50</td> <td>60</td> <td>65</td> </tr> <tr> <td>60</td> <td>60</td> <td>65</td> </tr> <tr> <td>--</td> <td>--</td> <td>--</td> </tr> </tbody> </table>		Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-20	140	140	-10	125	130	0	100	100	10	90	90	20	75	75	25	60	65	30	60	65	40	60	65	50	60	65	60	60	65	--	--	--
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Model	LDA75F-9	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	+9V 8.5A	

### 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 ~ 8.5A

\* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

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

### 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 ~ 8.5A

\* 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 [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	264	0	9.080		
Minimum Voltage	50	264	8.5	9.065	±8	±0.1



Model	LDA75F-9	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	0.34	0.41	0.45

### 2. Condition

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

交流入力の両相について測定し、その大きい方を漏洩電流測定値とする。



Model	LDA75F-9					
Item	Line Noise Tolerance 入力雑音耐量		Temperature Testing Circuitry	25°C Figure C		
Object	+9V8.5A					
1. Conditions						
<ul style="list-style-type: none"> <li>• Input Voltage : 200 V</li> <li>• Pulse Input Duration : 1 min. or more</li> <li>• Pulse Voltage : 2000 V</li> <li>• Load : 100 %</li> <li>• Pulse Cycle : 10 mS</li> </ul>						
2. Results						
Pulse Width [nS]		MODE	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動		
50	COMMON	+	OK	no fluctuation		
		-	OK	no fluctuation		
	NORMAL	+	OK	no fluctuation		
		-	OK	no fluctuation		
1000	COMMON	+	OK	no fluctuation		
		-	OK	no fluctuation		
	NORMAL	+	OK	no fluctuation		
		-	OK	no fluctuation		

COSEL

Model	LDA75F-9	Temperature	25°C
Item	Conducted Emission 雜音端子電圧	Testing Circuitry	Figure D
Object	_____		

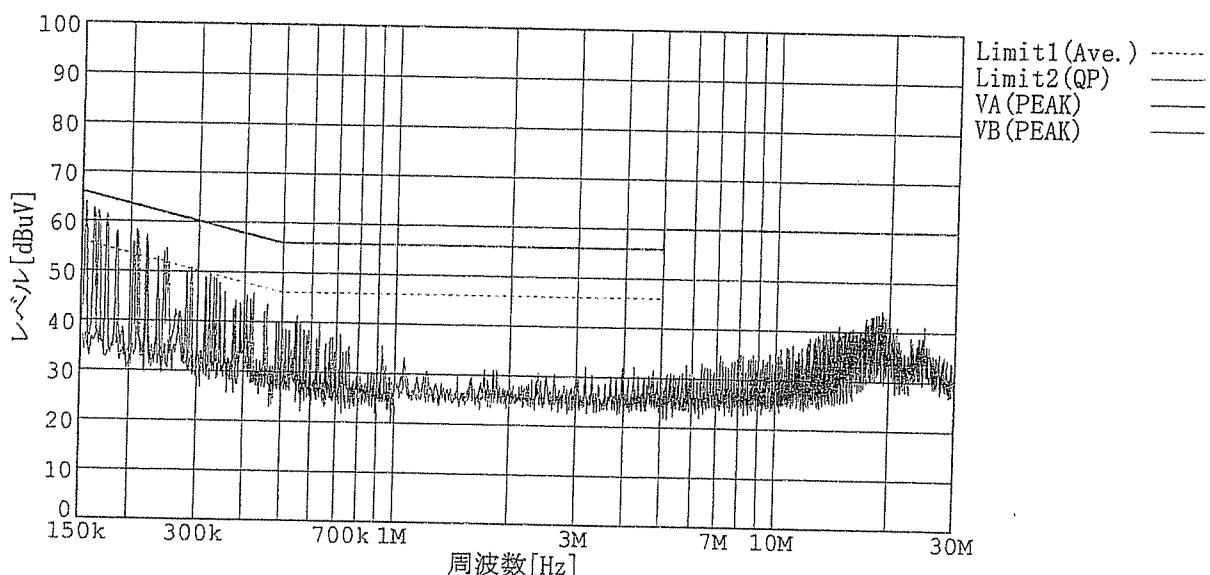
## 1. Graph

## Remarks

Input Volt. 230V ( CISPR Pub22 Class B )

Load 100%

規格1：[CISPR Pub22] Class B(平均値)  
 規格2：[CISPR Pub22] Class B(QP)



COSEL

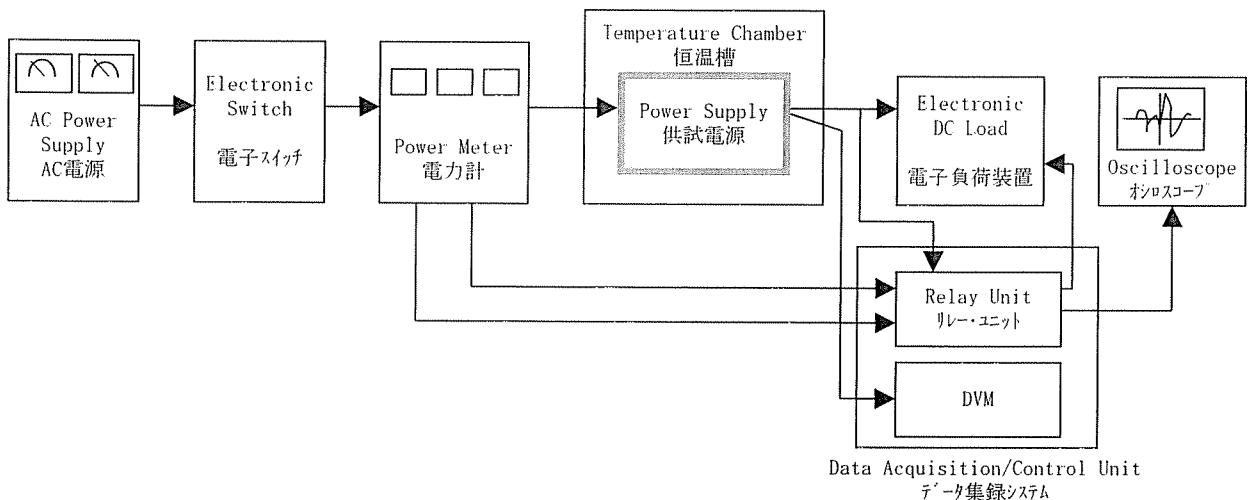


Figure A

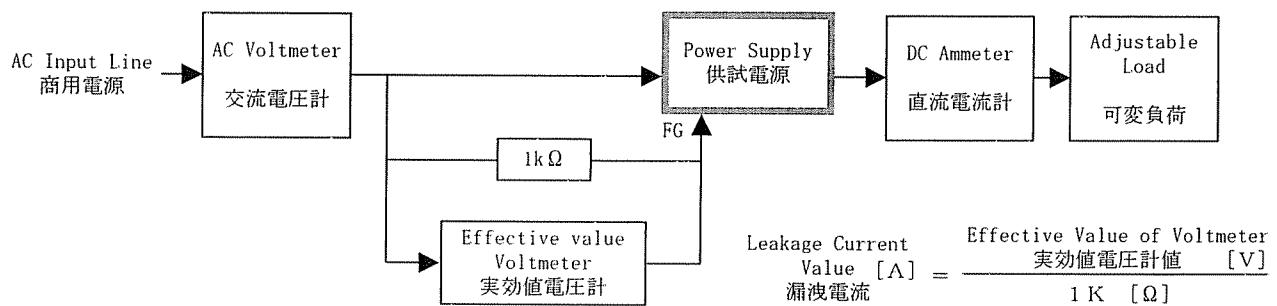


Figure B (DEN-AN)

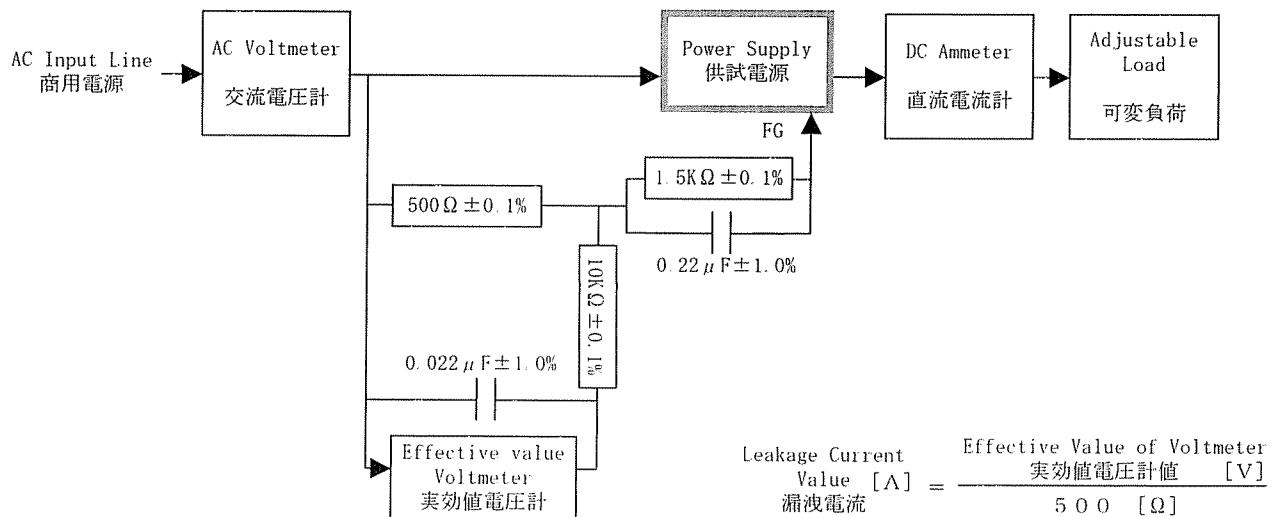


Figure B (IEC60950)

COSEL

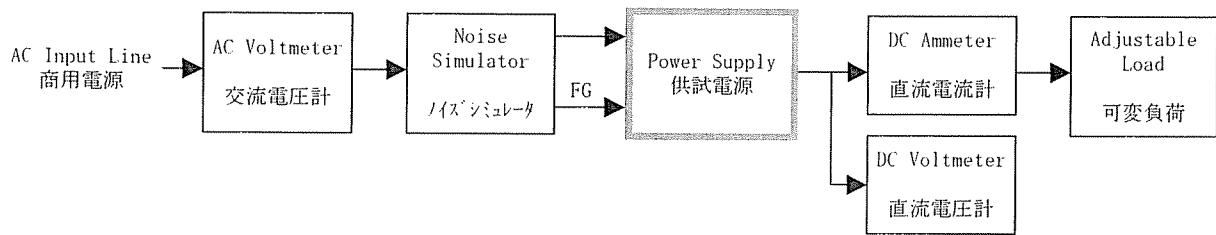


Figure C

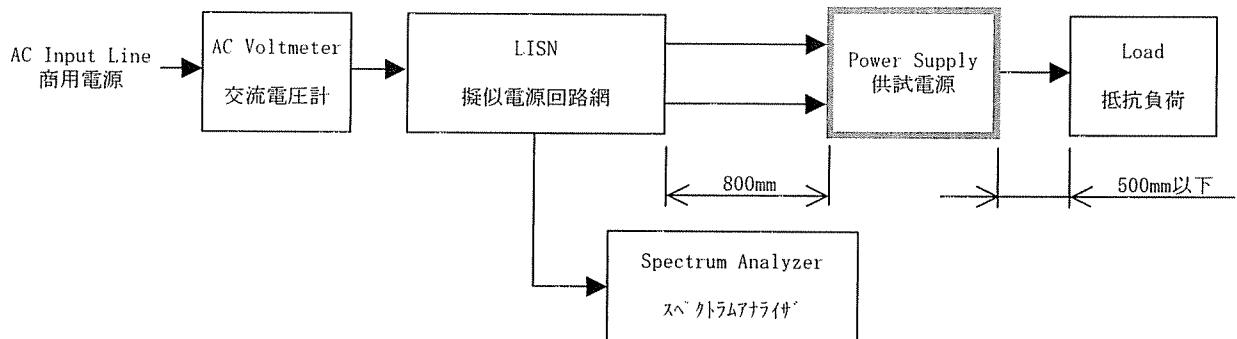


Figure D

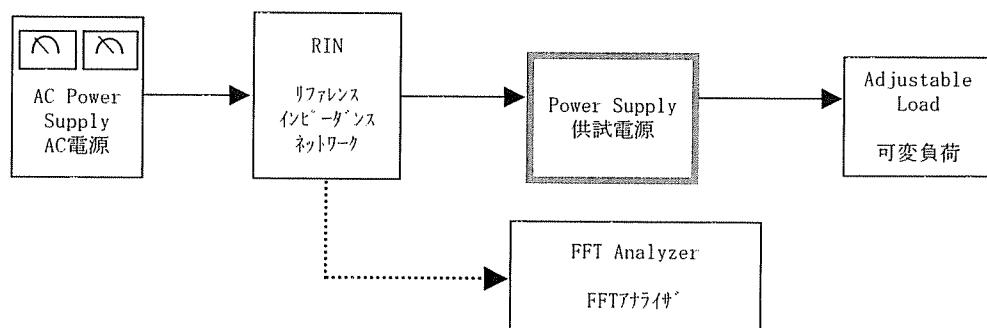


Figure E