



TEST DATA OF YS1505A  
(100V INPUT)

Regulated DC Power Supply

Date : Mar. 25. 1999

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Design Manager

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Design Engineer

**コーセル株式会社**

**COSEL CO., LTD.**



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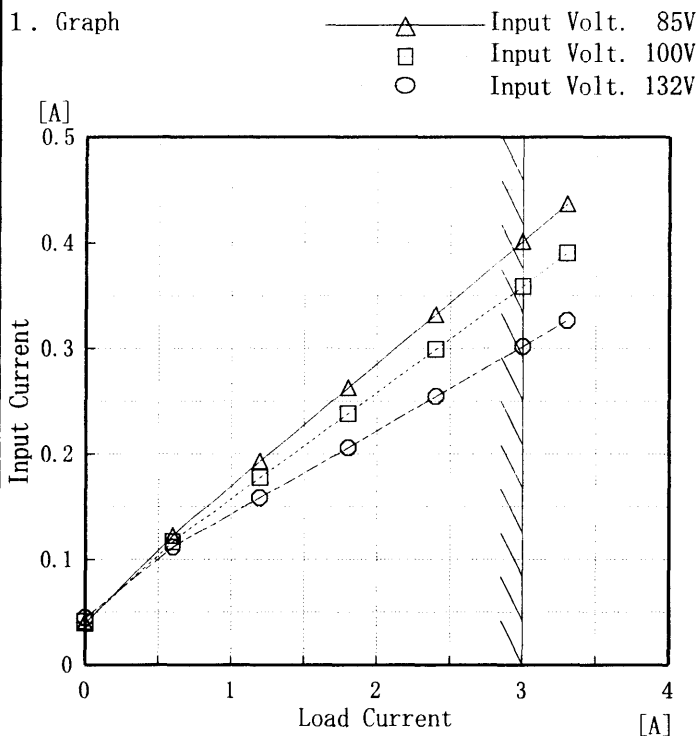


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Item	Line Regulation 静の入力変動	Testing Circuitry	Figure A																																
Object	+5.0V3.00A																																		
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Model	YS1505A	Temperature	25°C
Item	Input Current (by Load Current) 入力電流 (負荷特性)	Testing Circuitry	Figure A
Output	_____		

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]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	0.039	0.041	0.044
0.6	0.123	0.117	0.112
1.2	0.193	0.178	0.158
1.8	0.263	0.239	0.206
2.4	0.332	0.299	0.255
3.0	0.401	0.359	0.302
3.3	0.437	0.390	0.327
—	—	—	—
—	—	—	—
—	—	—	—
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<p> <span style="display: inline-block; width: 10px; border-bottom: 1px solid black; margin-right: 5px;"></span> △ Input Volt. 85V  <span style="display: inline-block; width: 10px; border-bottom: 1px dashed black; margin-right: 5px;"></span> □ Input Volt. 100V  <span style="display: inline-block; width: 10px; border-bottom: 1px dotted black; margin-right: 5px;"></span> ○ Input Volt. 132V                 </p> <p>Efficiency [%]</p> <p>Load Current [A]</p>				<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> </thead> <tbody> <tr><td>0.6</td><td>61.4</td><td>57.2</td><td>48.8</td></tr> <tr><td>1.2</td><td>71.4</td><td>69.3</td><td>64.0</td></tr> <tr><td>1.8</td><td>74.0</td><td>73.1</td><td>69.8</td></tr> <tr><td>2.4</td><td>74.6</td><td>74.3</td><td>72.5</td></tr> <tr><td>3.0</td><td>74.2</td><td>74.5</td><td>73.6</td></tr> <tr><td>3.3</td><td>73.9</td><td>74.3</td><td>73.8</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> <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 Current [A]	Efficiency [%]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.6	61.4	57.2	48.8	1.2	71.4	69.3	64.0	1.8	74.0	73.1	69.8	2.4	74.6	74.3	72.5	3.0	74.2	74.5	73.6	3.3	73.9	74.3	73.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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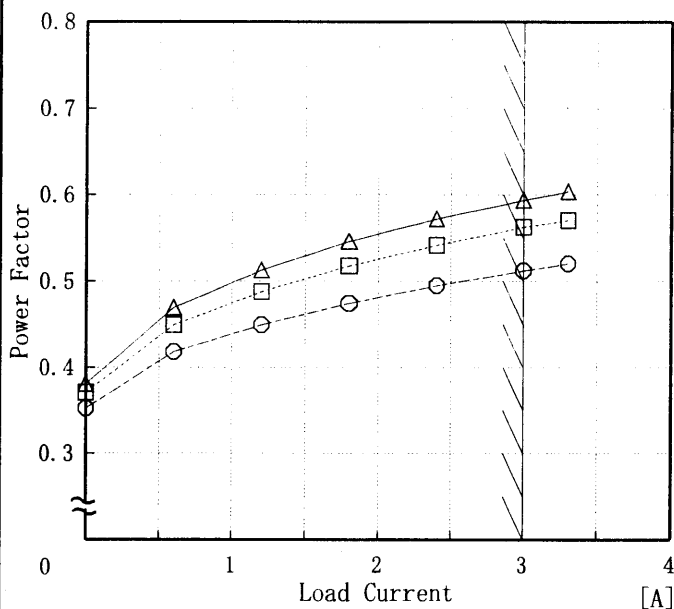


Model	YS1505A
Item	Power Factor (by Load Current) 力率 (負荷電流特性)
Output	_____

Temperature 25°C  
Testing Circuitry Figure A

1. Graph

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



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]	Power Factor		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	0.38	0.37	0.35
0.6	0.47	0.45	0.42
1.2	0.51	0.49	0.45
1.8	0.55	0.52	0.47
2.4	0.57	0.54	0.49
3.0	0.59	0.56	0.51
3.3	0.60	0.57	0.52
—	—	—	—
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<p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated input voltage.</p> <p>出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。 (注)斜線は定格入力電圧範囲を示す。</p>																																							



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Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																							
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<p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																																										
<p>瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。</p> <p>(注)斜線は定格負荷電流範囲を示す。</p>																																																										



Model		YS1505A		Temperature		25°C																																																
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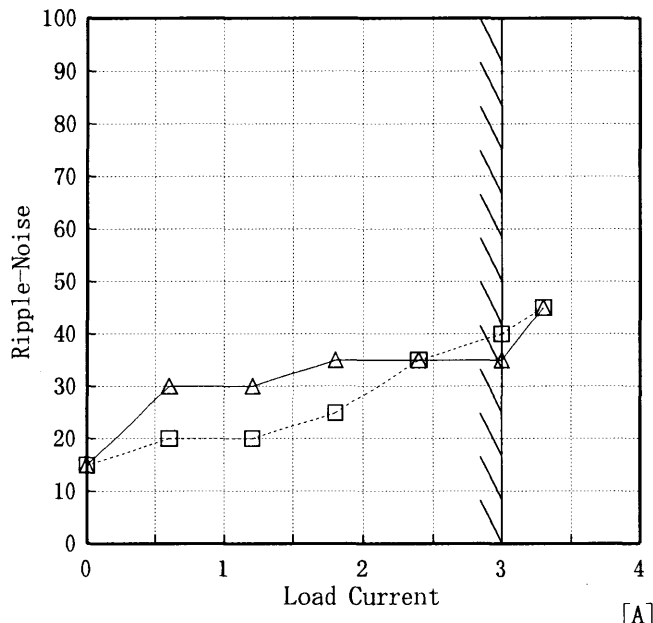
Model		YS1505A		Temperature		25°C																																							
Item		Ripple Voltage (by Load Current) リップル電圧 (負荷電流特性)		Testing Circuitry		Figure A																																							
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<p>1. Graph</p> <p>-----□----- Input Volt. 85V                  -----△----- Input Volt. 132V</p>				<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 85 [V]</th> <th>Input Volt. 132 [V]</th> </tr> <tr> <th>Ripple Output Volt. [mV]</th> <th>Ripple Output Volt. [mV]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>10</td><td>10</td></tr> <tr><td>0.6</td><td>10</td><td>10</td></tr> <tr><td>1.2</td><td>10</td><td>10</td></tr> <tr><td>1.8</td><td>10</td><td>10</td></tr> <tr><td>2.4</td><td>20</td><td>10</td></tr> <tr><td>3.0</td><td>25</td><td>15</td></tr> <tr><td>3.3</td><td>35</td><td>20</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>				Load Current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]	0.0	10	10	0.6	10	10	1.2	10	10	1.8	10	10	2.4	20	10	3.0	25	15	3.3	35	20	—	—	—	—	—	—	—	—	—	—	—	—
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<p>Fig. Complex Ripple Wave Form                  図 リップル波形詳細図</p>																																													



Model	YS1505A	Temperature	25°C
Item	Ripple-Noise リップルノイズ	Testing Circuitry	Figure A

Object +5.0V3.00A

1. Graph  
 [mV]  
 -----□----- Input Volt. 85V  
 -----△----- Input Volt. 132V



2. Values

Load current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]
	Ripple-Noise [mV]	Ripple-Noise [mV]
0.0	15	15
0.6	20	30
1.2	20	30
1.8	25	35
2.4	35	35
3.0	40	35
3.3	45	45
—	—	—
—	—	—
—	—	—
—	—	—

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witching 周期

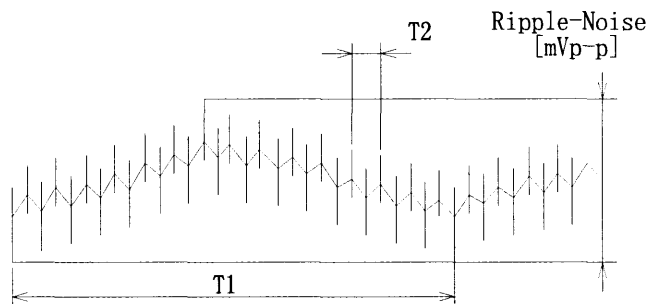


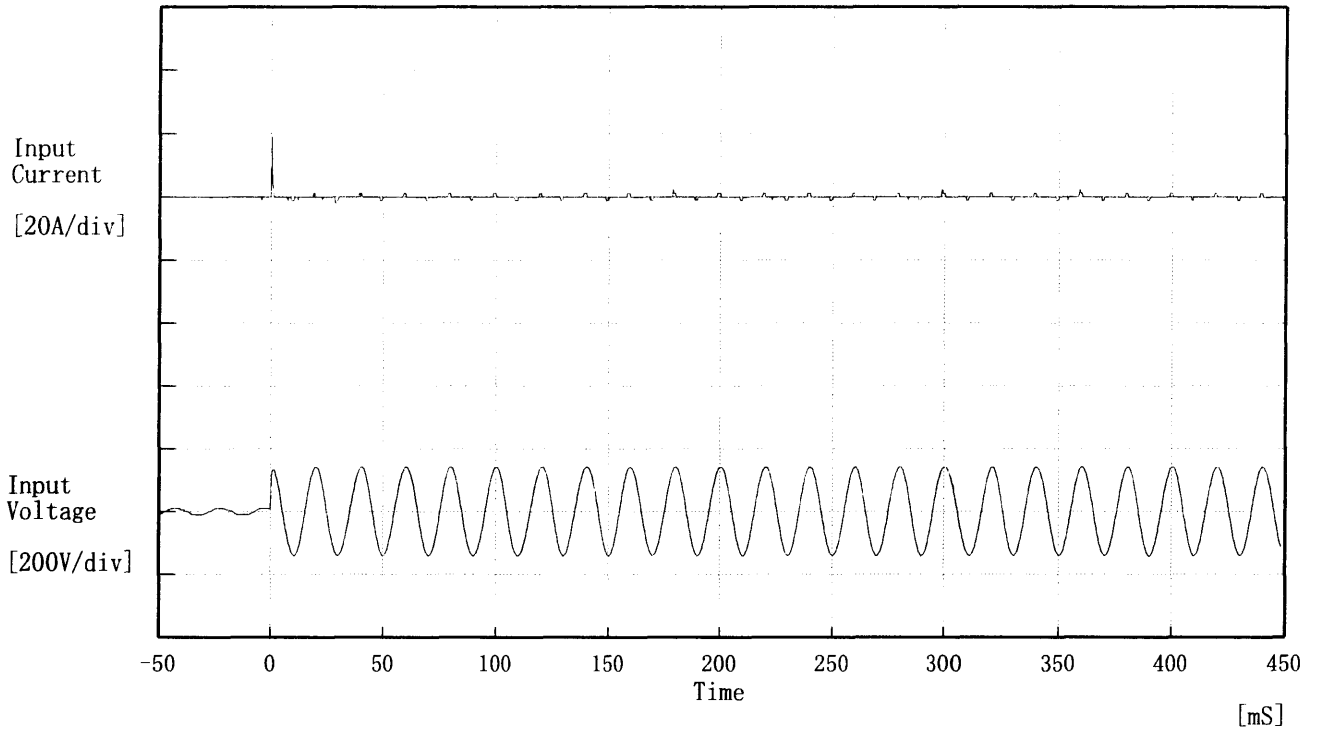
Fig. Complex Ripple Wave Form  
 図 リップル波形詳細図

# COSEL

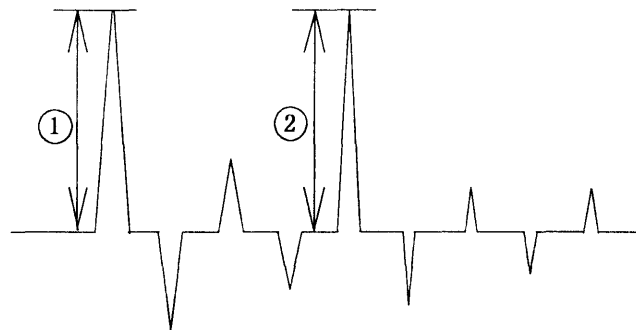
<p>Model YS1505A</p> <p>Item Overcurrent Protection 過電流保護</p> <p>Object +5.0V3.00A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure A</p>																																																							
<p>1. Graph</p> <p>[V]</p> <p>----- Input Volt. 85 V</p> <p>————— Input Volt. 100 V</p> <p>————— Input Volt. 132 V</p> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>(注)斜線は定格負荷電流範囲を示す。</p>		<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> <tr> <th>Load Current [A]</th> <th>Load Current [A]</th> <th>Load Current [A]</th> </tr> </thead> <tbody> <tr><td>5.00</td><td>3.64</td><td>4.18</td><td>3.87</td></tr> <tr><td>4.75</td><td>3.81</td><td>4.17</td><td>3.83</td></tr> <tr><td>4.50</td><td>3.78</td><td>4.14</td><td>3.79</td></tr> <tr><td>4.00</td><td>3.73</td><td>4.06</td><td>3.69</td></tr> <tr><td>3.50</td><td>3.63</td><td>3.95</td><td>3.56</td></tr> <tr><td>3.00</td><td>3.51</td><td>3.81</td><td>3.41</td></tr> <tr><td>2.50</td><td>3.32</td><td>3.62</td><td>3.24</td></tr> <tr><td>2.00</td><td>3.12</td><td>3.36</td><td>3.05</td></tr> <tr><td>1.50</td><td>2.85</td><td>3.05</td><td>2.82</td></tr> <tr><td>1.00</td><td>2.54</td><td>2.70</td><td>2.60</td></tr> <tr><td>0.50</td><td>2.22</td><td>2.34</td><td>2.33</td></tr> <tr><td>0.00</td><td>2.17</td><td>2.56</td><td>2.58</td></tr> </tbody> </table>	Output Voltage [V]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Load Current [A]	Load Current [A]	Load Current [A]	5.00	3.64	4.18	3.87	4.75	3.81	4.17	3.83	4.50	3.78	4.14	3.79	4.00	3.73	4.06	3.69	3.50	3.63	3.95	3.56	3.00	3.51	3.81	3.41	2.50	3.32	3.62	3.24	2.00	3.12	3.36	3.05	1.50	2.85	3.05	2.82	1.00	2.54	2.70	2.60	0.50	2.22	2.34	2.33	0.00	2.17	2.56	2.58
Output Voltage [V]	Input Volt. 85[V]	Input Volt. 100[V]		Input Volt. 132[V]																																																					
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Model		YS1505A	Temperature 25°C Testing Circuitry Figure A
Item		Inrush Current 突入電流	
Object		_____	



Input Voltage 100 V  
 Frequency 50 Hz  
 Load 100 %  
 Inrush Current  
 ① 19.00 [A]  
 ② 2.18 [A]



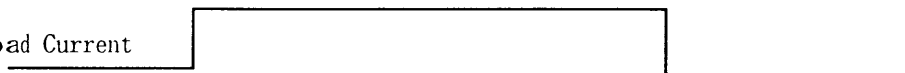




Model	YS1505A	Temperature	25°C
Item	Dynamic Load Responce 動的負荷変動	Testing Circuitry	Figure A
Object	+5.0V3.00A		

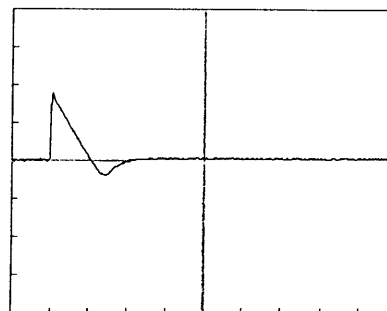
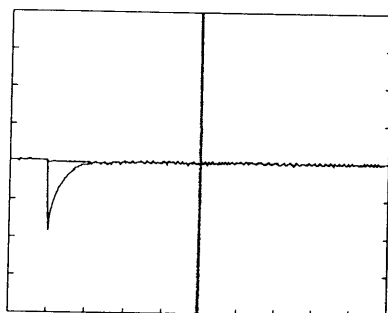
Input Volt. 100 V  
Cycle 200 mS

Load Current



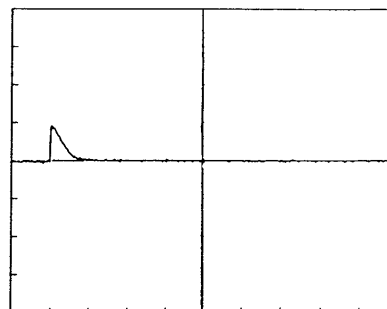
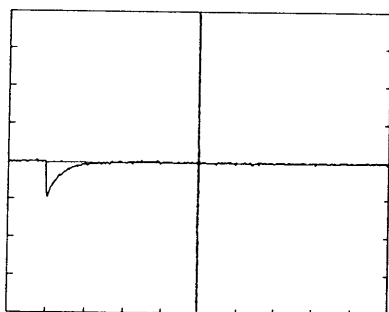
Load 0% ↔

Load 100 %



Load 0% ↔

Load 50 %



500 mV/div

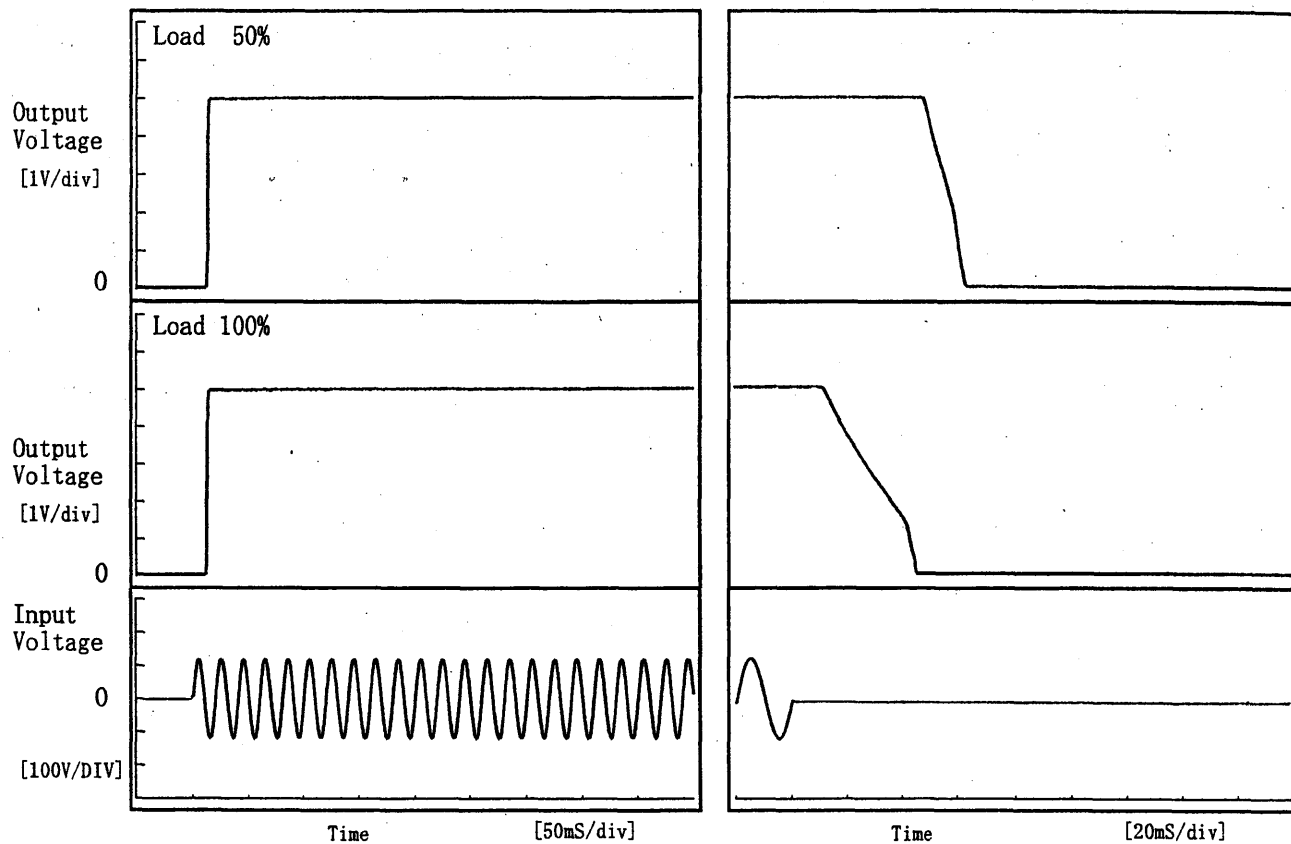
1 mS/div

# COSEL

Model	YS1505A	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+5.0V3.00A		

1. Graph

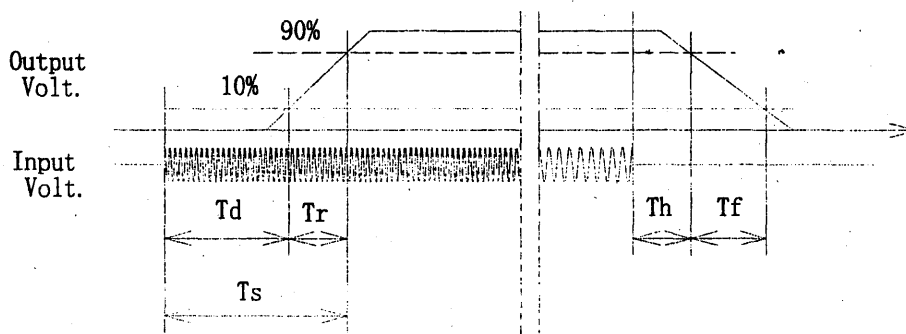
Input Volt. 85 V



2. Values

[mS]

Load \ Time	T <sub>d</sub>	T <sub>r</sub>	T <sub>s</sub>	T <sub>h</sub>	T <sub>f</sub>
50 %	12.0	1.3	13.3	49.8	12.6
100 %	11.8	1.5	13.3	15.1	29.7



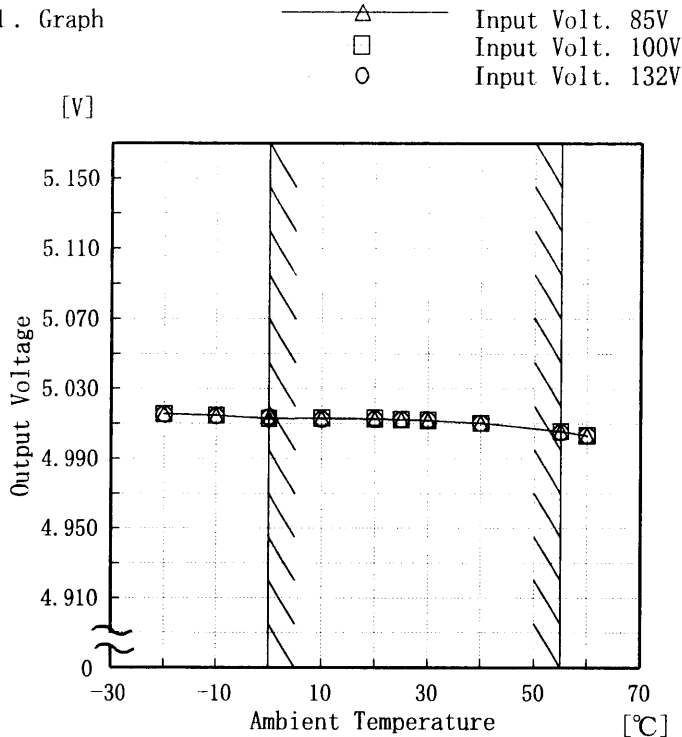


Model		YS1505A
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Item	Ambient Temperature Drift 周囲温度変動	Testing Circuitry Figure A
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Object	+5.0V3.00A	
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1. Graph



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

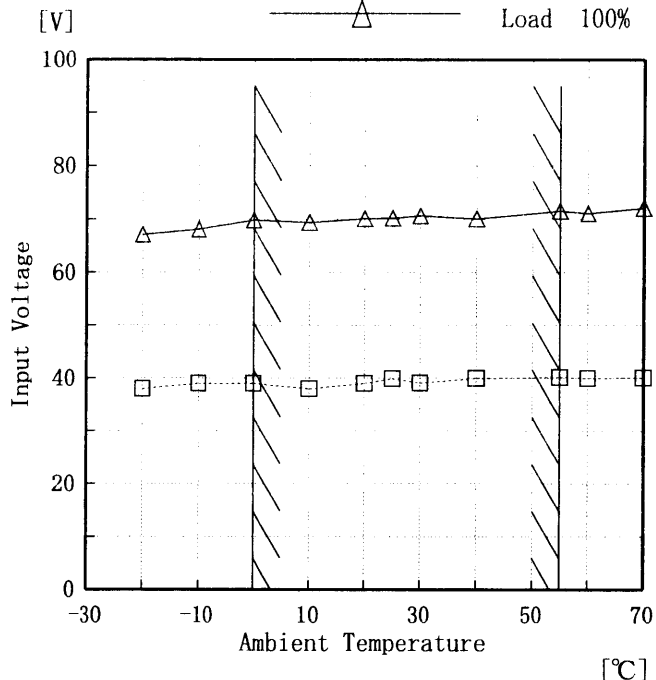
Temperature [°C]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
-20	5.016	5.015	5.015
-10	5.015	5.015	5.014
0	5.013	5.013	5.014
10	5.013	5.013	5.012
20	5.013	5.013	5.012
25	5.012	5.012	5.012
30	5.012	5.012	5.012
40	5.010	5.010	5.010
55	5.005	5.006	5.005
60	5.003	5.003	5.003
70	4.999	4.999	4.999



Model	YS1505A
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+5.0V3.00A

Testing Circuitry Figure A

1. Graph □ Load 50%  
—△— 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

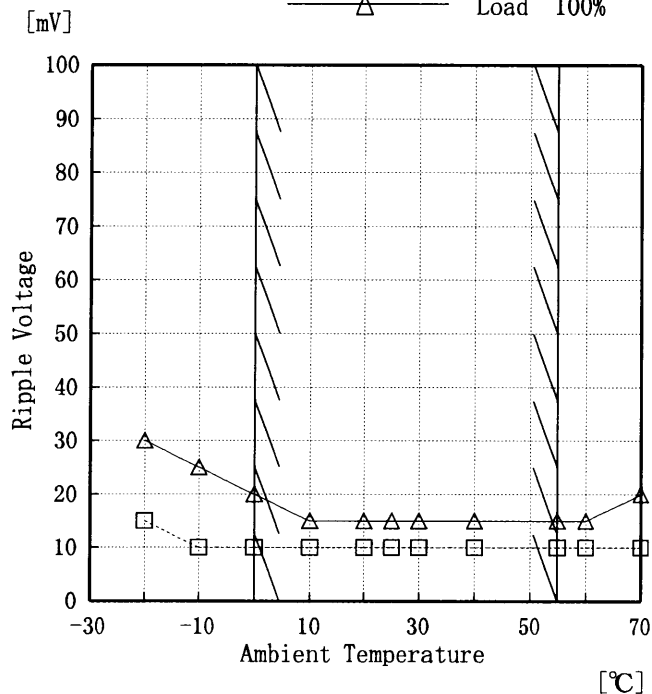
Ambient Temp. [°C]	Load 50%	Load 100%
	Input Volt. [V]	Input Volt. [V]
-20	38	67
-10	39	68
0	39	70
10	38	69
20	39	70
25	40	70
30	39	71
40	40	70
55	40	71
60	40	71
70	40	72



Model	YS1505A
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	+5.0V3.00A

Testing Circuitry Figure A

1. Graph  
 -----□----- Load 50%  
 -----△----- Load 100%



Input Volt. 100 V

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 Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-20	15	30
-10	10	25
0	10	20
10	10	15
20	10	15
25	10	15
30	10	15
40	10	15
55	10	15
60	10	15
70	10	20



<b>COSEL</b>																								
Model	YS1505A																							
Item	Time Lapse Drift 経時ドリフト	Temperature 25 °C Testing Circuitry Figure A																						
Object	+5.0V3.00A																							
<p>1. Graph</p> <p style="text-align: center;">Input Volt. 100V Load 100%</p>		<p>2. Values</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>5.014</td></tr> <tr><td>0.5</td><td>5.013</td></tr> <tr><td>1.0</td><td>5.013</td></tr> <tr><td>2.0</td><td>5.013</td></tr> <tr><td>3.0</td><td>5.013</td></tr> <tr><td>4.0</td><td>5.013</td></tr> <tr><td>5.0</td><td>5.013</td></tr> <tr><td>6.0</td><td>5.013</td></tr> <tr><td>7.0</td><td>5.013</td></tr> <tr><td>8.0</td><td>5.013</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	5.014	0.5	5.013	1.0	5.013	2.0	5.013	3.0	5.013	4.0	5.013	5.0	5.013	6.0	5.013	7.0	5.013	8.0	5.013
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<b>COSEL</b>		
Model	YS1505A	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	+5.0V3.00A	

**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 : 0~55 °C

Input Voltage : 85~132 V

Load Current : 0.00~3.00 A

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

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

**定電圧精度**

周囲温度、入力電圧、負荷を下記仕様内で、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 0~55 °C

入力電圧 85~132 V

負荷電流 0.00~3.00 A

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

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

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	0	100	0.00	5.017	±6	±0.2
Minimum Voltage	55	100	3.00	5.005		



Model		YS1505A		Temperature		25°C																																																				
Item		Oscillator Frequency 発振周波数		Testing Circuitry		Figure A																																																				
Object		+5.0V3.00A																																																								
<p>1. Graph</p> <p>—△— Input Volt. 85 V          - - -□- - Input Volt. 100 V          - - -○- - Input Volt. 132 V</p> <p>Oscillator Frequency [KHz]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>(注)斜線は定格負荷電流範囲を示す。</p>				<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> <tr> <th colspan="3">Oscillator Frequency [KHz]</th> </tr> </thead> <tbody> <tr> <td>0.0</td> <td>1080</td> <td>1090</td> <td>1130</td> </tr> <tr> <td>0.6</td> <td>627</td> <td>678</td> <td>735</td> </tr> <tr> <td>1.2</td> <td>438</td> <td>482</td> <td>545</td> </tr> <tr> <td>1.8</td> <td>338</td> <td>371</td> <td>426</td> </tr> <tr> <td>2.4</td> <td>271</td> <td>300</td> <td>347</td> </tr> <tr> <td>3.0</td> <td>230</td> <td>255</td> <td>295</td> </tr> <tr> <td>3.3</td> <td>214</td> <td>231</td> <td>275</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 Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Oscillator Frequency [KHz]			0.0	1080	1090	1130	0.6	627	678	735	1.2	438	482	545	1.8	338	371	426	2.4	271	300	347	3.0	230	255	295	3.3	214	231	275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<b>COSEL</b>		
Model	YS1505A	
Item	Condensation 結露特性	Testing Circuitry Figure A
Object	+ 5V3.00A	

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at  $-10^{\circ}\text{C}$  for an hour with the input off.
- ② Taking it out of the tank and dewing itself in a room where the temperature is  $25^{\circ}\text{C}$  and the humidity is 40%RH.
- ③ Testing electrical characteristics of the unit to confirm there be no fault.

1. 結露特性試験

入力を切った状態で、恒温槽で $-10^{\circ}\text{C}$ に冷却しておき、約1時間後に恒温槽から取り出し、室温 $25^{\circ}\text{C}$ 、湿度40%RHの状態におき結露させ、その電気的特性の測定を行い、異常のないことを確認する。

2. Values

Item	Data	Testing Conditions
Output Voltage [V]	5.014	Input Volt. : 100V, Load Current:3.00A
Line Regulation [mV]	1	Input Volt. : 85~132V, Load Current:3.00A
Load Regulation [mV]	3	Input Volt. : 100V, Load Current:0~3.00A



Model		YS1505A	Temperature 25°C Testing Circuitry Figure B
Item		Leakage Current 漏洩電流	
Object		_____	

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	0.11	0.13	0.18
(B) IEC60950	0.12	0.13	0.17

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

2. Condition

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

交流入力 of 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		YS1505A	Temperature Testing Circuitry	25°C Figure C
Item		Line Noise Tolerance 入力雑音耐量		
Object		+5.0V3.00A		

1. Results

Pulse Width [n S]	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
	NORMAL	OK	no fluctuation
1000	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation

Conditions

Input Voltage :100 V  
 Pulse Voltage :2000 V  
 Pulse Cycle :10 mS  
 Pulse Input Duration:1 min. or more  
 Load :100 %

# COSEL

Model		YS1505A	Testing Circuitry Figure D
Item		Conducted Emission 雑音端子電圧	
Object		_____	

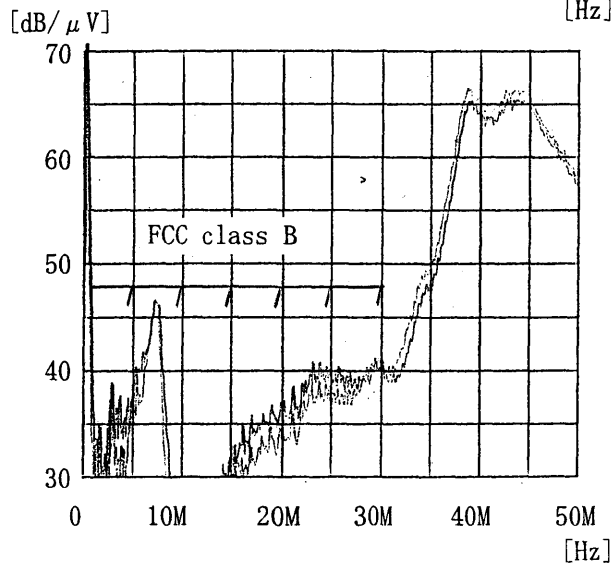
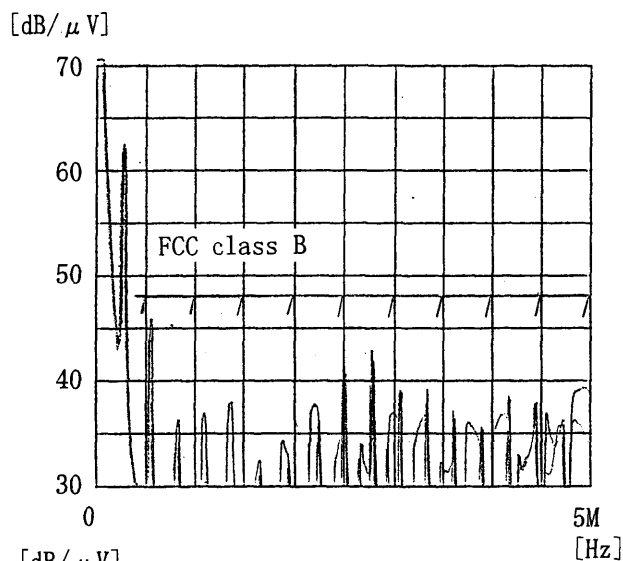
1. Graph

Remarks

Input Volt. 120 V  
Load 100 %

Note: Slanted line shows the range of Tolerance.  
(注)斜線は許容値を示す。

NO	Standards	Standards Complied	Frequency [MHz]	Tolerance [dB/μV]
1	FCC class A		0.45~1.6	60
			1.6~30	69.5
2	FCC class B	○	0.45~30	48
3	VCCI class A		0.15~0.5	79
			0.5~30	73
4	VCCI class B		0.15~0.5	66-56
			0.5~5	56
			5~30	60
5	CISPR Pub. 22 class A (EN55022)		0.15~0.5	79
			0.5~30	73
6	CISPR Pub. 22 class B (EN55022)		0.15~0.5	66-56
			0.5~5	56
			5~30	60



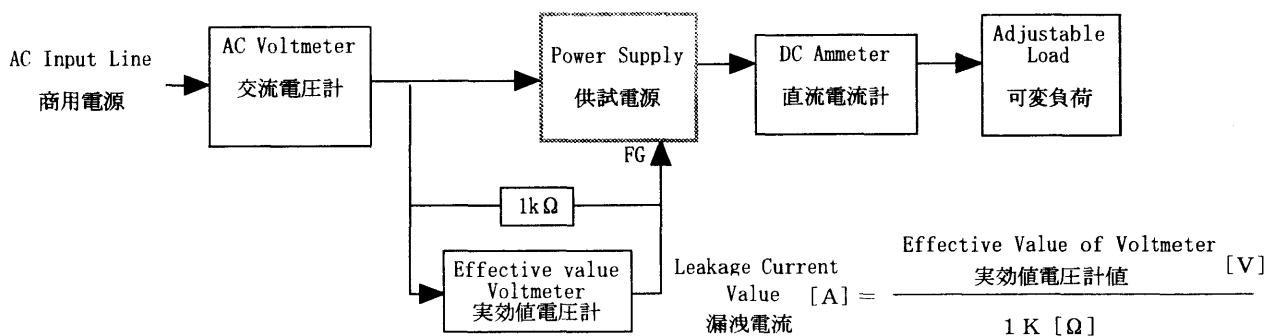
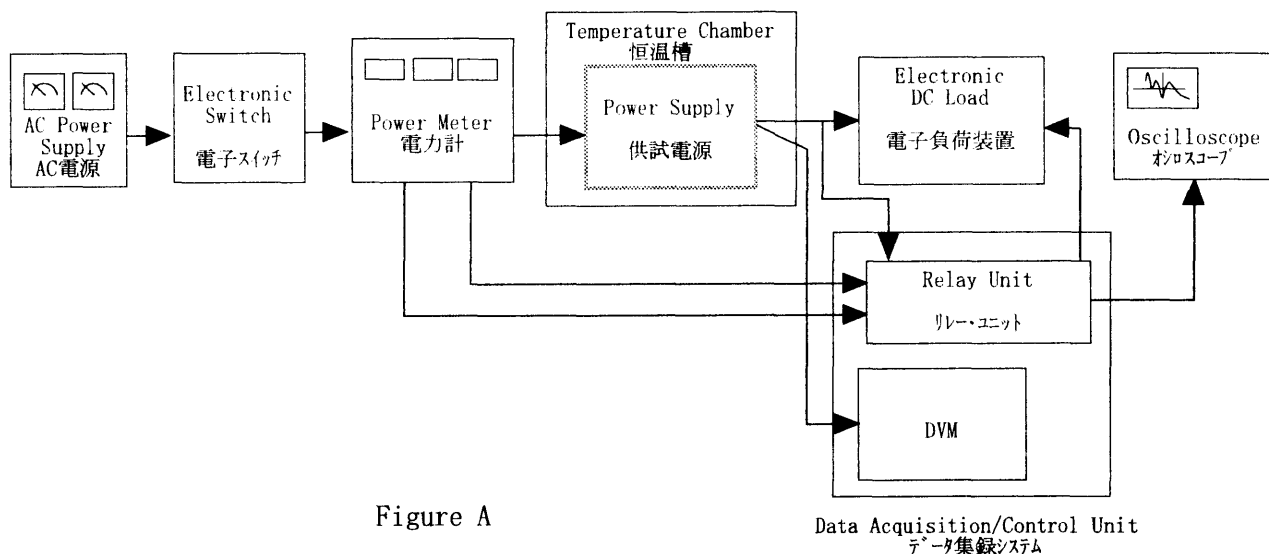


Figure B (DENTORI)

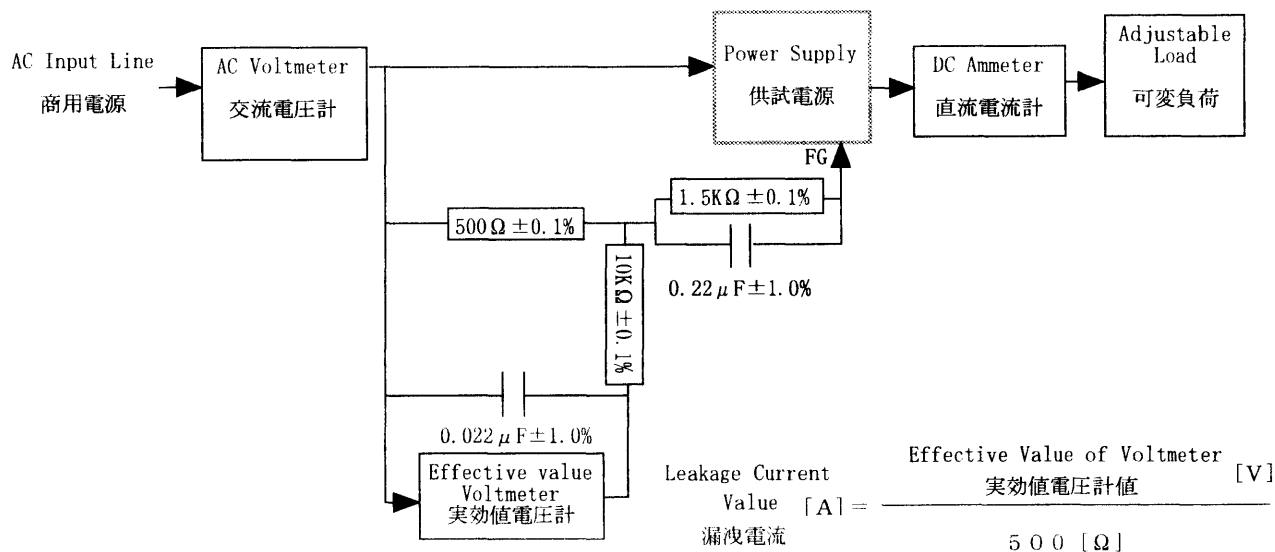


Figure B (IEC 60950)

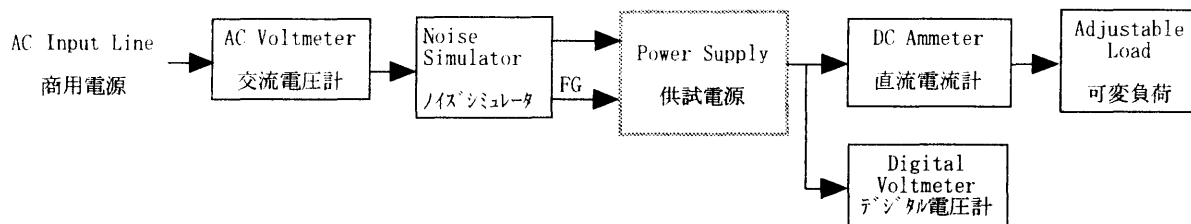


Figure C

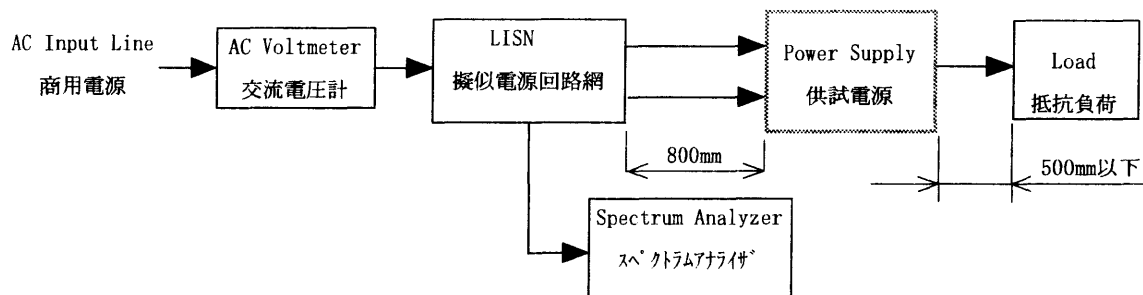


Figure D

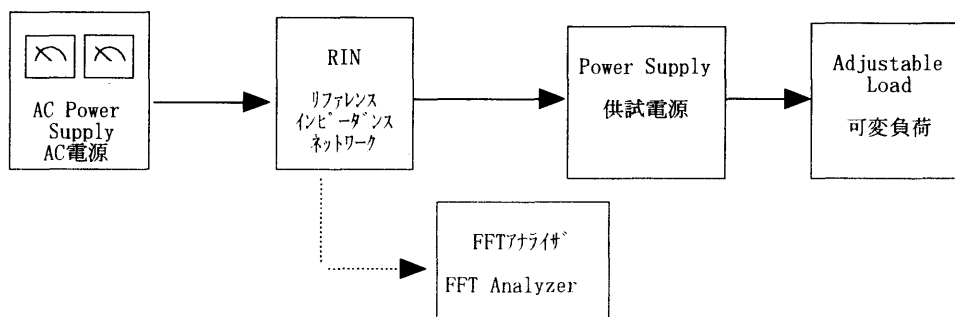


Figure E