



# TEST DATA OF YS1005A (100V INPUT)

Regulated DC Power Supply

Date : Apr. 10. 1999

Approved by : M. Takashima  
Design Manager

Prepared by : Y. Shimizu  
Design Engineer

**コーセル株式会社**  
**COSEL CO., LTD.**

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Model		YS1005A		Temperature Testing Circuitry	25°C Figure A																																
Item		Line Regulation  静的入力変動																																			
Object		+5.0V2.00A																																			
1. Graph				2. Values																																	
<div><div><div>-----□-----</div><div>Load 50%</div></div><div><div>-----△-----</div><div>Load 100%</div></div></div> <div><div>Output Voltage</div><div>[V]</div><div><div><div>5.090</div><div>5.070</div><div>5.050</div><div>5.030</div><div>5.010</div><div>4.990</div><div>4.970</div><div>0</div></div><div><div>0</div><div>80</div><div>90</div><div>100</div><div>110</div><div>120</div><div>130</div><div>140</div><div>150</div></div><div><div>Input Voltage</div><div>[V]</div></div></div></div> <div><div>Note: Slanted line shows the range of the</div><div>rated input voltage.</div></div> <div><div>(注)斜線は定格入力電圧範囲を示す。</div></div>				<table><tr><th rowspan="2">Input Voltage [V]</th><th>Load 50%</th><th>Load 100%</th></tr><tr><th>Output Volt. [V]</th><th>Output Volt. [V]</th></tr><tr><td>75</td><td>5.015</td><td>5.015</td></tr><tr><td>80</td><td>5.016</td><td>5.014</td></tr><tr><td>85</td><td>5.015</td><td>5.015</td></tr><tr><td>90</td><td>5.015</td><td>5.015</td></tr><tr><td>100</td><td>5.015</td><td>5.015</td></tr><tr><td>110</td><td>5.015</td><td>5.015</td></tr><tr><td>120</td><td>5.016</td><td>5.014</td></tr><tr><td>132</td><td>5.016</td><td>5.015</td></tr><tr><td>140</td><td>5.015</td><td>5.015</td></tr></table>		Input Voltage [V]	Load 50%	Load 100%	Output Volt. [V]	Output Volt. [V]	75	5.015	5.015	80	5.016	5.014	85	5.015	5.015	90	5.015	5.015	100	5.015	5.015	110	5.015	5.015	120	5.016	5.014	132	5.016	5.015	140	5.015	5.015
Input Voltage [V]	Load 50%	Load 100%																																			
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Model	YS1005A	Temperature	25°C
Item	Input Current (by Load Current) 入力電流 (負荷特性)	Testing Circuitry	Figure A
Output	—————		

1. Graph

—△— Input Volt. 85V

---□--- Input Volt. 100V

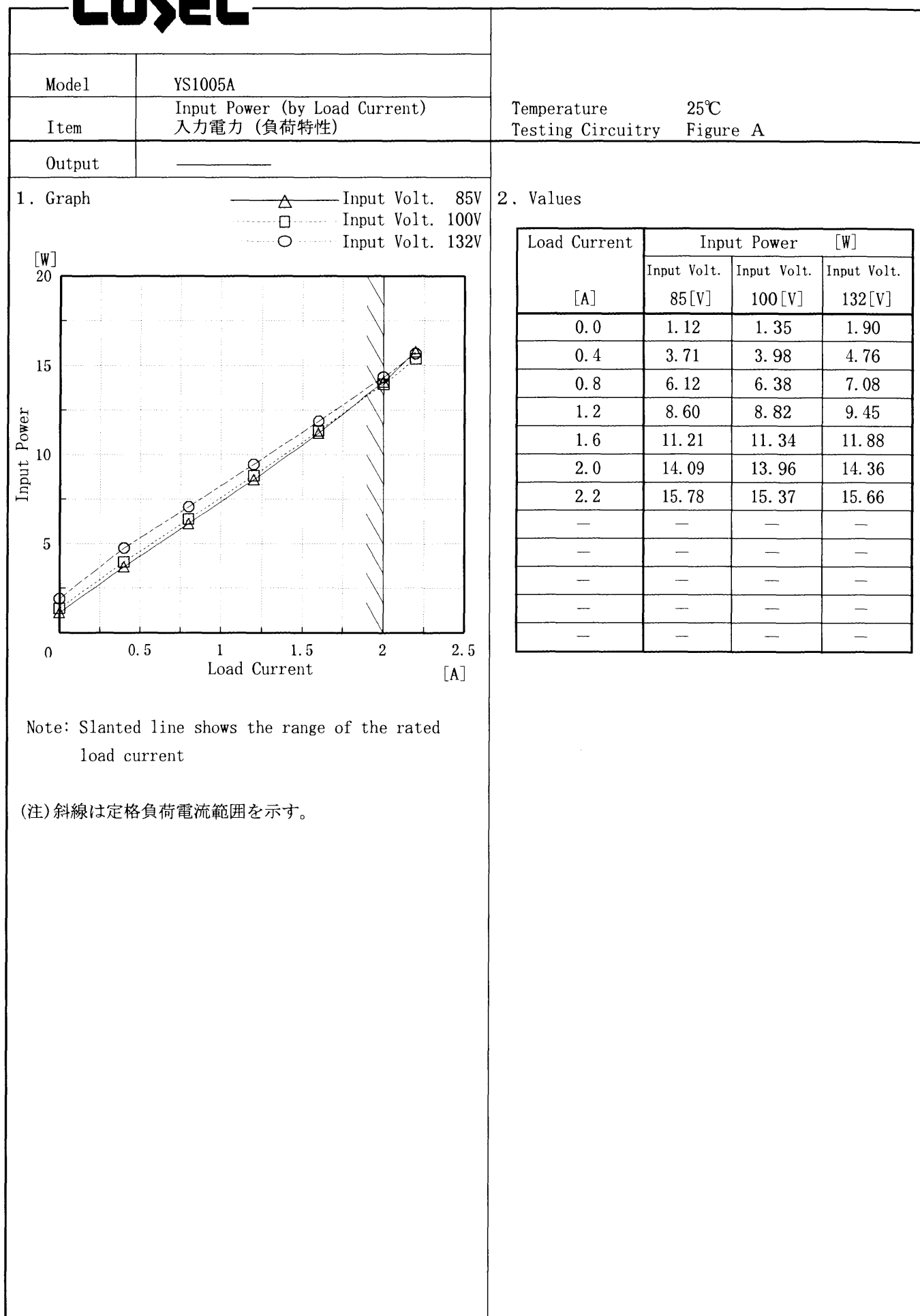
---○--- Input Volt. 132V

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]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	0.033	0.035	0.038
0.4	0.090	0.086	0.084
0.8	0.137	0.128	0.116
1.2	0.182	0.167	0.148
1.6	0.227	0.206	0.179
2.0	0.276	0.245	0.209
2.2	0.303	0.266	0.225
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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Model		YS1005A		Temperature25℃ Testing CircuitryFigure A																														
Item		Efficiency (by Input Voltage) 効率 (入力電圧特性)																																
Object																																		
1. Graph																																		
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Model	YS1005A																																																													
Item	Efficiency (by Load Current) 効率 (負荷電流特性)	Temperature	25℃																																																											
Output	_____	Testing Circuitry	Figure A																																																											
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<div><div>—△— Input Volt. 85V - - -□- - - Input Volt. 100V - - -○- - - Input Volt. 132V</div><div>Efficiency [%]</div><div>Load Current [A]</div></div> <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>		<table><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><tr><td>0.4</td><td>54.4</td><td>50.7</td><td>42.3</td></tr><tr><td>0.8</td><td>65.6</td><td>62.9</td><td>56.7</td></tr><tr><td>1.2</td><td>70.1</td><td>68.4</td><td>63.8</td></tr><tr><td>1.6</td><td>71.8</td><td>71.0</td><td>67.8</td></tr><tr><td>2.0</td><td>71.3</td><td>72.0</td><td>70.0</td></tr><tr><td>2.2</td><td>70.1</td><td>71.9</td><td>70.6</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></table>		Load Current [A]	Efficiency [%]			Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]	0.4	54.4	50.7	42.3	0.8	65.6	62.9	56.7	1.2	70.1	68.4	63.8	1.6	71.8	71.0	67.8	2.0	71.3	72.0	70.0	2.2	70.1	71.9	70.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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# COSEL

Model	YS1005A	Temperature	25°C
Item	Power Factor (by Input Voltage) 力率 (入力電圧特性)	Testing Circuitry	Figure A
Object			

1. Graph

□

load 50%

△

load 100%

Power Factor

Input Voltage [V]

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]	load 50% Power Factor	load 100% Power Factor
75	0.56	0.63
80	0.55	0.61
85	0.54	0.60
90	0.53	0.59
100	0.51	0.57
110	0.50	0.55
120	0.49	0.54
132	0.47	0.52
140	0.47	0.51



# COSEL

Model

YS1005A

Item

Power Factor (by Load Current)  
力率（負荷電流特性）

Output

1. Graph

—△—

Input Volt. 85V

- - -□- - -

Input Volt. 100V

- - -○- - -

Input Volt. 132V

Power Factor

0.8

0.7

0.6

0.5

0.4

0.3

0.2

0.1

0

0

0.5

1

1.5

2

2.5

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。

2. Values

Load Current	Power Factor		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	0.40	0.39	0.38
0.4	0.48	0.46	0.43
0.8	0.52	0.50	0.46
1.2	0.56	0.53	0.48
1.6	0.58	0.55	0.50
2.0	0.60	0.57	0.52
2.2	0.61	0.58	0.53
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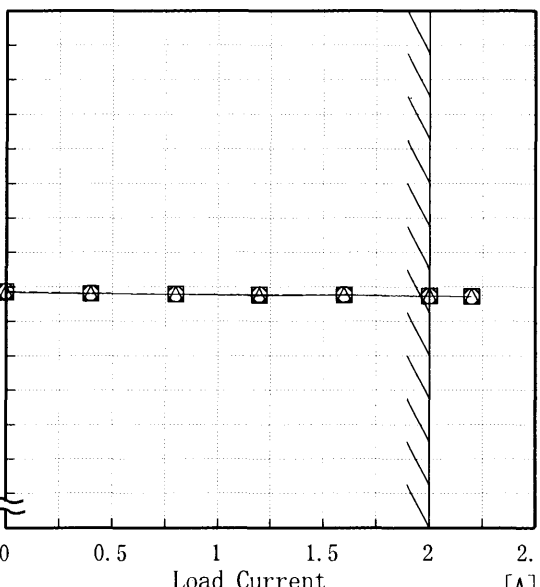
Model		YS1005A	
Item		Hold-Up Time 出力保持時間	
Object		+5.0V2.00A	
1. Graph		2. Values	

</

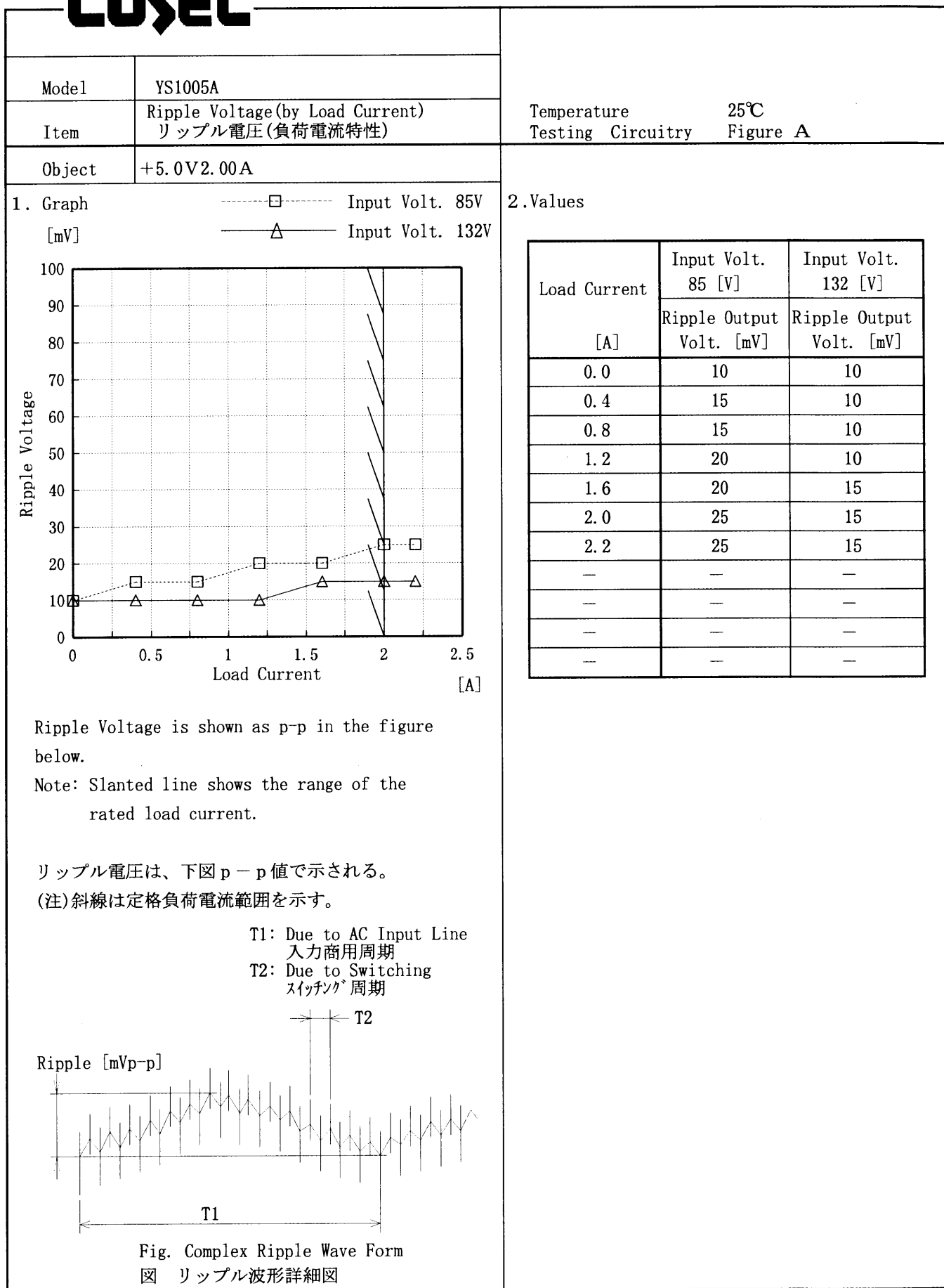
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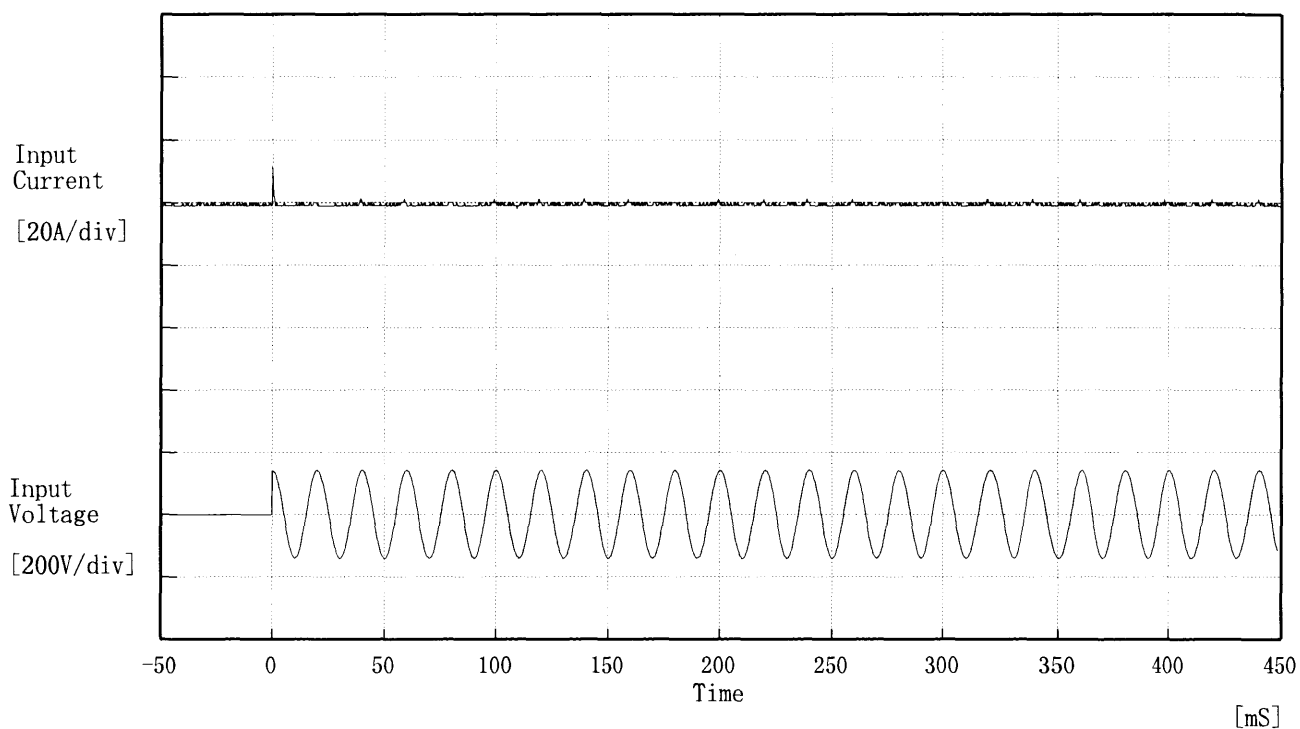
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Item		Overcurrent Protection 過電流保護		Testing Circuitry Figure A																																																					
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1. Graph				2. Values																																																					
<div><div>[V]</div><div><div>----- Input Volt. 85 V</div><div>----- Input Volt. 100 V</div><div>----- Input Volt. 132 V</div></div></div> <div><div>Output Voltage</div><div>[V]</div><div>8.0</div><div>6.0</div><div>4.0</div><div>2.0</div><div>0.0</div></div> <div><div>Load Current</div><div>[A]</div><div>0</div><div>1</div><div>2</div><div>3</div></div>				<table><tr><th>Output Voltage [V]</th><th>Input Volt. 85[V] Load Curr-ent [A]</th><th>Input Volt. 100[V] Load Curr-ent [A]</th><th>Input Volt. 132[V] Load Curr-ent [A]</th></tr><tr><td>5.00</td><td>2.51</td><td>2.74</td><td>2.69</td></tr><tr><td>4.75</td><td>2.52</td><td>2.70</td><td>2.65</td></tr><tr><td>4.50</td><td>2.49</td><td>2.65</td><td>2.59</td></tr><tr><td>4.00</td><td>2.42</td><td>2.56</td><td>2.48</td></tr><tr><td>3.50</td><td>2.31</td><td>2.42</td><td>2.34</td></tr><tr><td>3.00</td><td>2.15</td><td>2.26</td><td>2.20</td></tr><tr><td>2.50</td><td>1.97</td><td>2.08</td><td>2.04</td></tr><tr><td>2.00</td><td>1.77</td><td>1.87</td><td>1.86</td></tr><tr><td>1.50</td><td>1.55</td><td>1.66</td><td>1.66</td></tr><tr><td>1.00</td><td>1.28</td><td>1.39</td><td>1.42</td></tr><tr><td>0.50</td><td>1.05</td><td>1.15</td><td>1.22</td></tr><tr><td>0.00</td><td>0.83</td><td>0.90</td><td>1.21</td></tr></table>		Output Voltage [V]	Input Volt. 85[V] Load Curr-ent [A]	Input Volt. 100[V] Load Curr-ent [A]	Input Volt. 132[V] Load Curr-ent [A]	5.00	2.51	2.74	2.69	4.75	2.52	2.70	2.65	4.50	2.49	2.65	2.59	4.00	2.42	2.56	2.48	3.50	2.31	2.42	2.34	3.00	2.15	2.26	2.20	2.50	1.97	2.08	2.04	2.00	1.77	1.87	1.86	1.50	1.55	1.66	1.66	1.00	1.28	1.39	1.42	0.50	1.05	1.15	1.22	0.00	0.83	0.90	1.21
Output Voltage [V]	Input Volt. 85[V] Load Curr-ent [A]	Input Volt. 100[V] Load Curr-ent [A]	Input Volt. 132[V] Load Curr-ent [A]																																																						
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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	YS1005A	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current 突入電流	
Object	_____	



Input Voltage 100 V

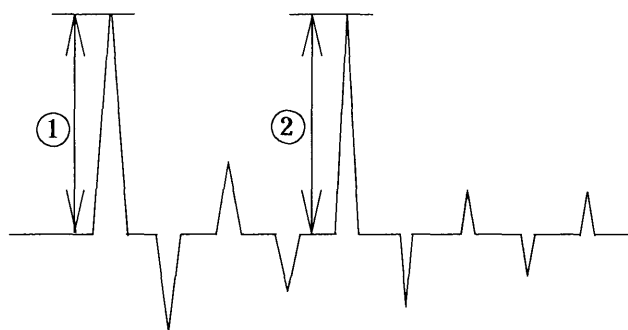
Frequency 50 Hz

Load 100 %

Inrush Current

① 11.31 [A]

② 1.10 [A]





**COSEL**

Model	YS1005A	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Responce 動的負荷変動	
Object	+5.0V 2.00A	

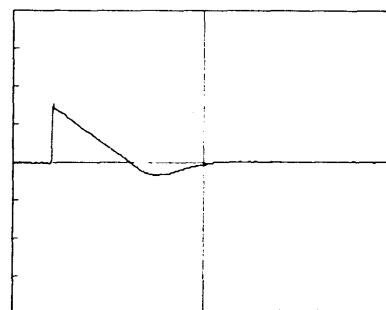
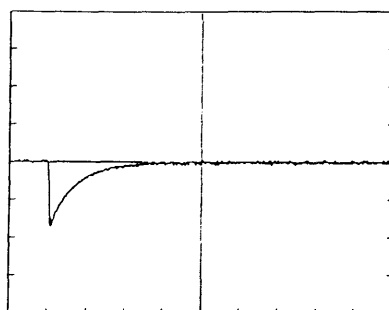
Input Volt. 100 V

Cycle 200 mS

Load Current

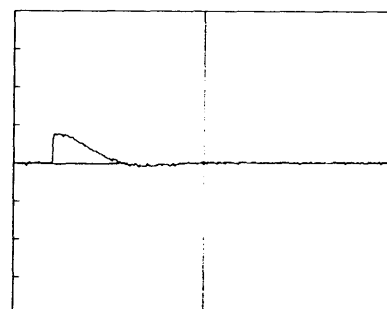
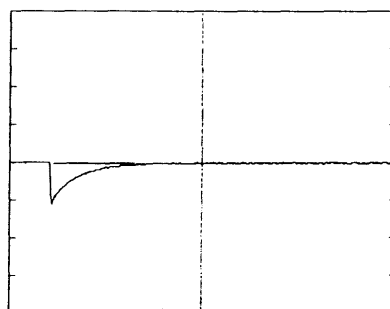
Load 0% ←→

Load 100 %



Load 0% ←→

Load 50 %



200 mV/div

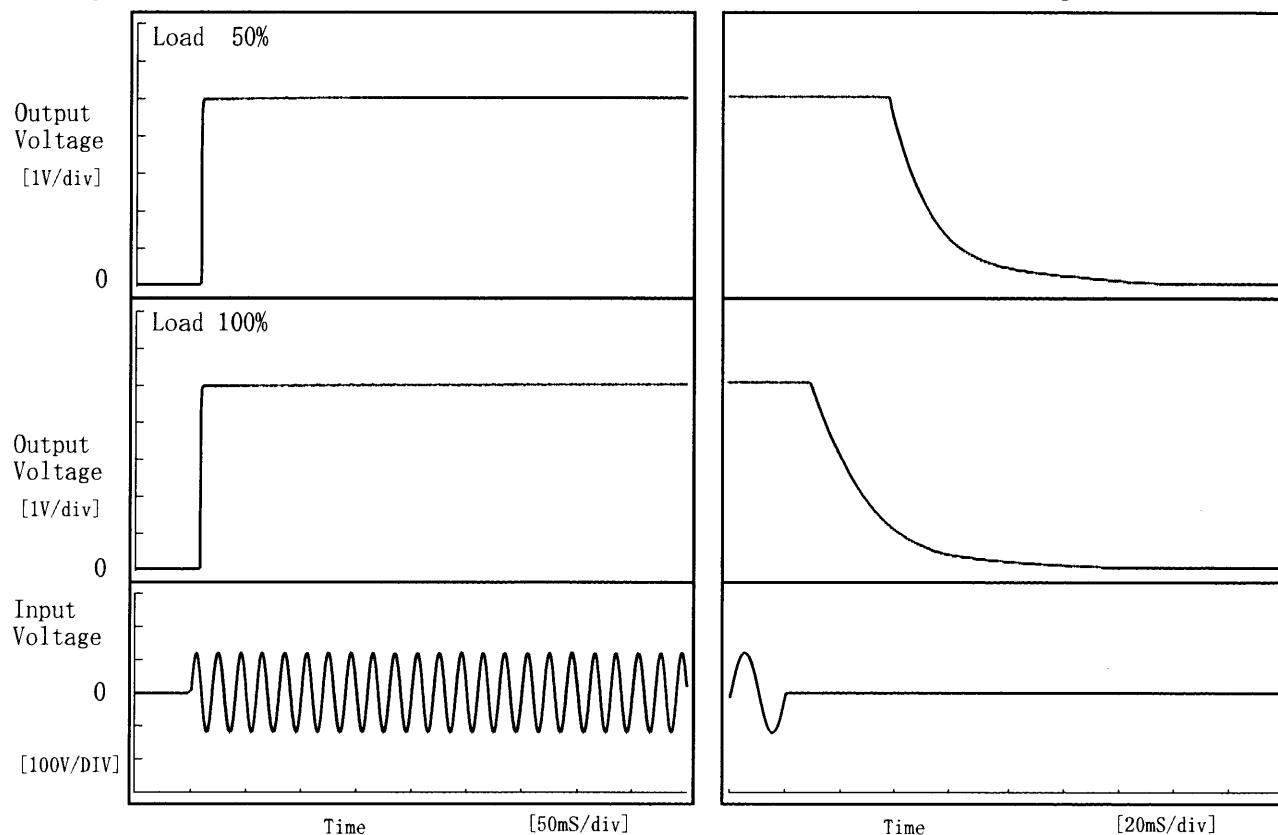
0.5 mS/div

# COSEL

Model	YS1005A	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+5.0V2.00A		

## 1. Graph

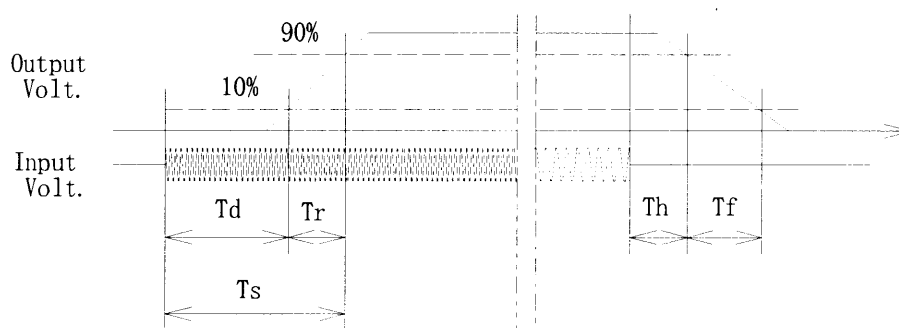
Input Volt. 85 V



## 2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	8.5	0.8	9.3	39.9	37.4
100 %	8.5	1.0	9.5	12.2	42.6



**COSEL**

Model		YS1005A
Item		Ambient Temperature Drift 周囲温度変動
Object		+5.0V2.00A

1. Graph

△

Input Volt. 85V

□

Input Volt. 100V

○

Input Volt. 132V

[V]

5.150

5.110

5.070

5.030

4.990

4.950

4.910

0

Output Voltage

-30

-10

10

30

50

70

Ambient Temperature

[°C]

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

Temperature [°C]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
-20	5.013	5.014	5.014
-10	5.014	5.014	5.014
0	5.014	5.014	5.014
10	5.013	5.013	5.013
20	5.013	5.014	5.014
25	5.014	5.014	5.014
30	5.014	5.014	5.015
40	5.014	5.014	5.014
55	5.011	5.011	5.010
60	5.009	5.009	5.009
70	5.005	5.005	5.005

**COSEL**

Model		YS1005A	
Item		Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧	
Object		+5.0V2.00A	
1. Graph		2. Values	

□

Load 50%

△

Load 100%

Input Voltage

[V]

100

80

60

40

20

0

-30

-10

10

30

50

70

Ambient Temperature

[°C]

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。

Ambient Temp.	Load 50%	Load 100%
[°C]	Input Volt.	Input Volt.
	[V]	[V]
-20	48	74
-10	47	74
0	47	74
10	45	72
20	45	72
25	45	72
30	45	72
40	45	72
55	45	74
60	46	73
70	47	74

**COSEL**

Model		YS1005A	
Item		Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	
Object		+5.0V2.00A	

1. Graph

-----□----- Load 50%

-----△----- Load 100%

[mV]

100

90

80

70

60

50

40

30

20

10

0

Ambient Temperature

[°C]

Input Volt. 100 V

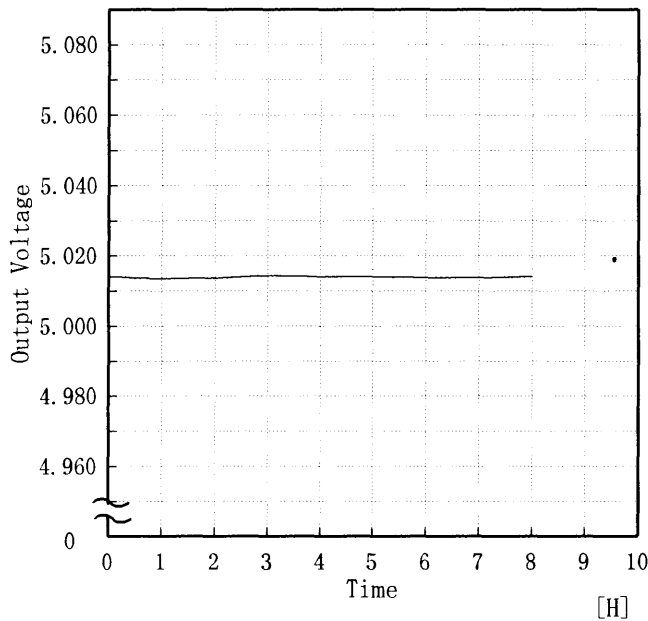
Note: Slanted line shows the range of the rated ambient temperature.

(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	35
-10	15	30
0	15	30
10	15	25
20	15	25
25	15	25
30	15	25
40	15	25
55	15	20
60	15	20
70	15	25

**COSEL**

COSEL																									
Model	YS1005A																								
Item	Time Lapse Drift 経時ドリフト	Temperature	25 ℃																						
Object	+5.0V2.00A	Testing Circuitry	Figure A																						
1. Graph		2.Values																							
<div>[V]</div> <div></div> <div>Output Voltage</div> <div>Time</div> <div>[H]</div> <div>Input Volt. 100V</div> <div>Load 100%</div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>5.014</td></tr><tr><td>0.5</td><td>5.014</td></tr><tr><td>1.0</td><td>5.014</td></tr><tr><td>2.0</td><td>5.014</td></tr><tr><td>3.0</td><td>5.014</td></tr><tr><td>4.0</td><td>5.014</td></tr><tr><td>5.0</td><td>5.014</td></tr><tr><td>6.0</td><td>5.014</td></tr><tr><td>7.0</td><td>5.014</td></tr><tr><td>8.0</td><td>5.014</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	5.014	0.5	5.014	1.0	5.014	2.0	5.014	3.0	5.014	4.0	5.014	5.0	5.014	6.0	5.014	7.0	5.014	8.0	5.014
Time since start [H]	Output Voltage [V]																								
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5.0	5.014																								
6.0	5.014																								
7.0	5.014																								
8.0	5.014																								

# COSEL

Model		YS1005A	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+5.0V2.00A	

## 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 : 0.00~2.00 A

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

\* 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 : 0.00~2.00 A

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

\* 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	25	100	0.00	5.018	±4	±0.1
Minimum Voltage	55	85	2.00	5.010		

# COSEL

Model		YS1005A		Temperature 25℃																																																				
Item		Oscillator Frequency 発振周波数		Testing Circuitry Figure A																																																				
Object		+5.0V2.00A																																																						
1. Graph				2. Values																																																				
<div><div><div>△</div><div>—</div><div>Input Volt. 85 V</div></div><div><div>□</div><div>- - -</div><div>Input Volt. 100 V</div></div><div><div>○</div><div>· · ·</div><div>Input Volt. 132 V</div></div></div> <div><div>[KHz]</div><div>10000</div><div>1000</div><div>100</div><div>Oscillator Frequency</div><div>0 0.5 1 1.5 2 2.5</div><div>Load Current [A]</div></div> <div><div>Note:Slanted line shows the range of the rated load current.</div><div><div>(注)斜線は定格負荷電流範囲を示す。</div></div></div>				<table><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><tr><td>0.0</td><td>995</td><td>1000</td><td>1005</td></tr><tr><td>0.4</td><td>606</td><td>651</td><td>714</td></tr><tr><td>0.8</td><td>429</td><td>466</td><td>520</td></tr><tr><td>1.2</td><td>328</td><td>363</td><td>413</td></tr><tr><td>1.6</td><td>269</td><td>295</td><td>339</td></tr><tr><td>2.0</td><td>223</td><td>248</td><td>286</td></tr><tr><td>2.2</td><td>206</td><td>232</td><td>266</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></table>		Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Oscillator Frequency [KHz]			0.0	995	1000	1005	0.4	606	651	714	0.8	429	466	520	1.2	328	363	413	1.6	269	295	339	2.0	223	248	286	2.2	206	232	266	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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—	—	—	—																																																					



**COSEL**

LOVEL		Testing Circuitry      Figure A
Model	YS1005A	
Item	Condensation    結露特性	
Object	+5.0V2.00A	

1. Condensation test

Testing procedure is as follows.

① Keeping and cooling the unit in a tank at -10℃ 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℃ 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℃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℃、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]	5.015	Input Volt.: 100V, Load Current:2.00A
Line Regulation [mV]	1	Input Volt.: 85~132V, Load Current:2.00A
Load Regulation [mV]	2	Input Volt.: 100V, Load Current:0~2.00A

-23-

BC-3199

**COSEL**

Model	YS1005A																												
Item	Leakage Current 漏洩電流	Temperature	25℃																										
Object	_____	Testing Circuitry	Figure B																										
<p>1. Results</p> <table border="1"> <thead> <tr> <th rowspan="2">Standards</th><th colspan="3">Leakage Current [mA]</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>(A) DENTORI</td><td>0.15</td><td>0.18</td><td>0.24</td></tr> <tr> <td>(B) IEC60950</td><td>0.15</td><td>0.17</td><td>0.23</td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">Standards</th><th colspan="3">Leakage Current [mA]</th></tr> <tr> <th>Input Volt. 170 [V]</th><th>Input Volt. 230 [V]</th><th>Input Volt. 264 [V]</th></tr> </thead> <tbody> <tr> <td>(B) IEC60950</td><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>				Standards	Leakage Current [mA]			Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]	(A) DENTORI	0.15	0.18	0.24	(B) IEC60950	0.15	0.17	0.23	Standards	Leakage Current [mA]			Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]	(B) IEC60950	—	—	—
Standards	Leakage Current [mA]																												
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	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]																										
(B) IEC60950	—	—	—																										
		<p>2. Condition</p> <p>Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.</p> <p>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。</p>																											

**COSEL**

Model		YS1005A	Temperature 25℃ Testing Circuitry Figure C
Item		Line Noise Tolerance 入力雑音耐量	
Object		+5.0V2.00A	

## 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	YS1005A	Testing Circuitry Figure D
Item	Conducted Emission 雑音端子電圧	
Object	_____	

## 1. Graph

## Remarks

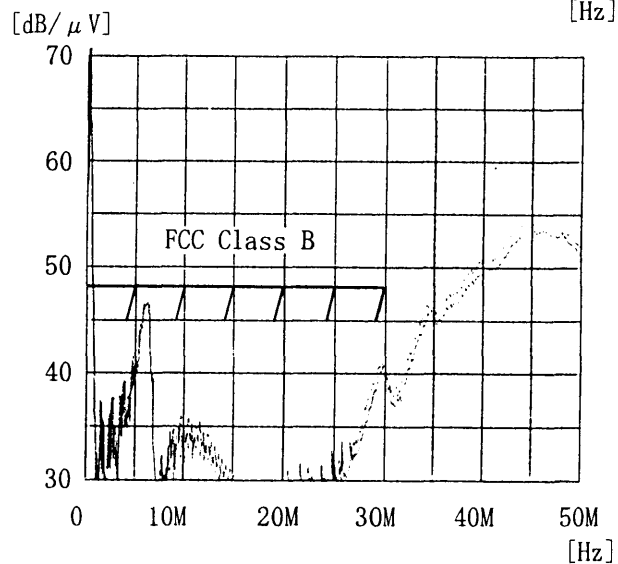
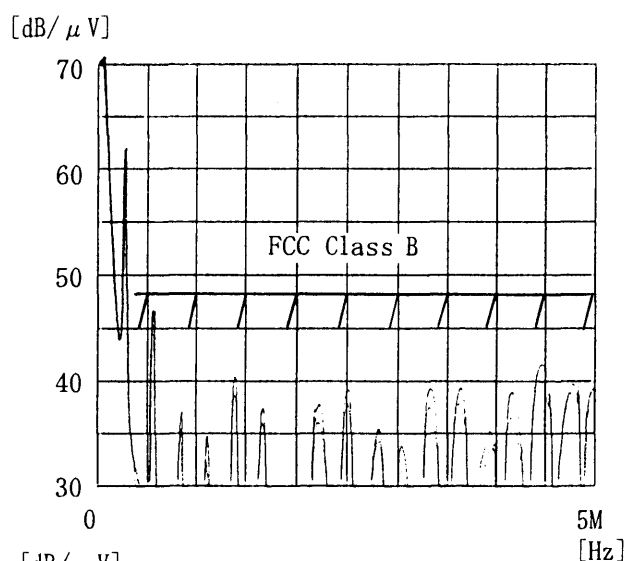
Input Volt. 120 V

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/ $\mu$ V]
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



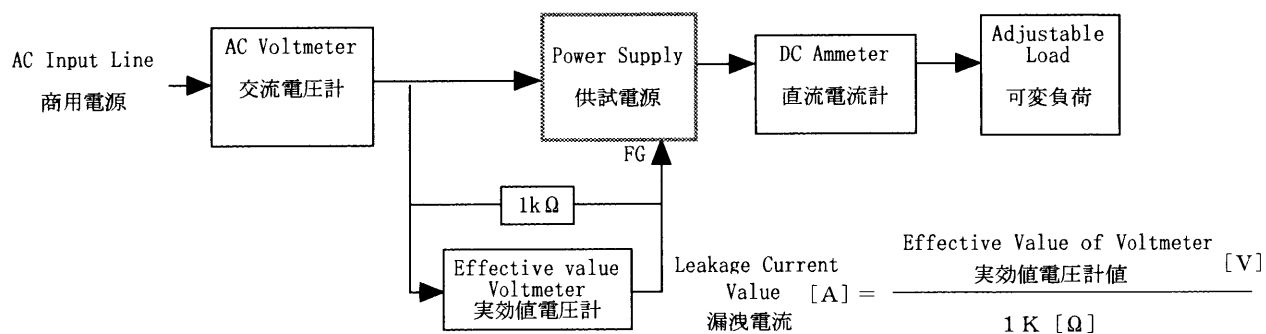
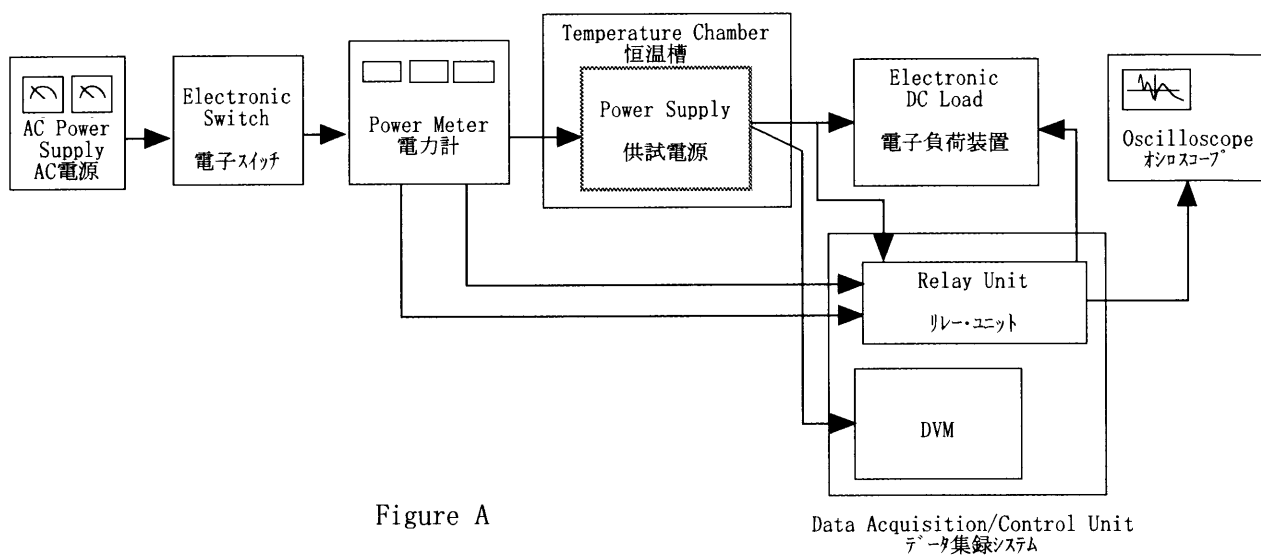


Figure B (DENTORI)

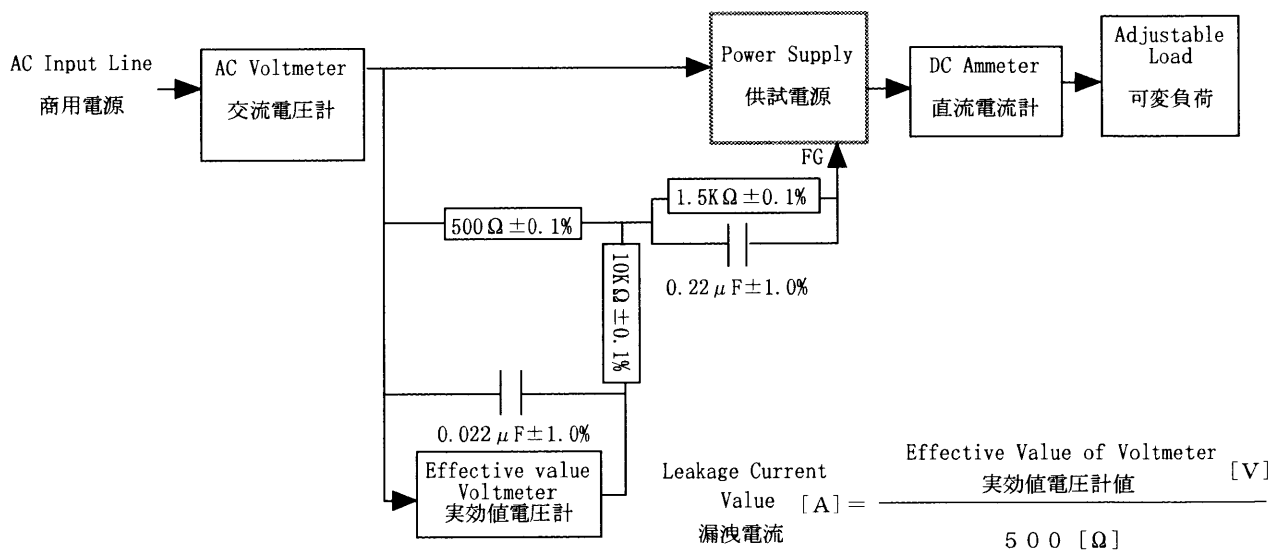


Figure B (IEC 60950)

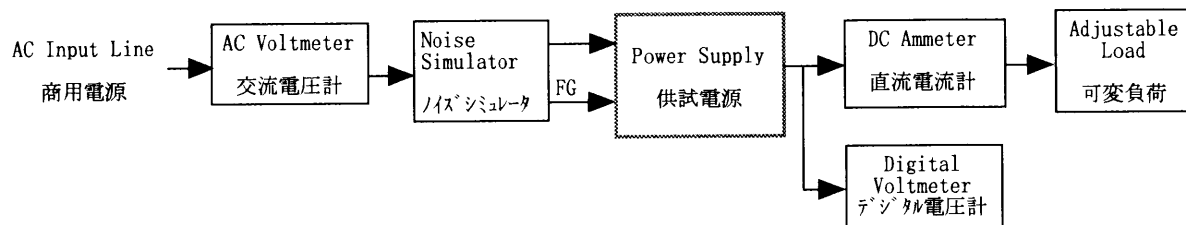


Figure C

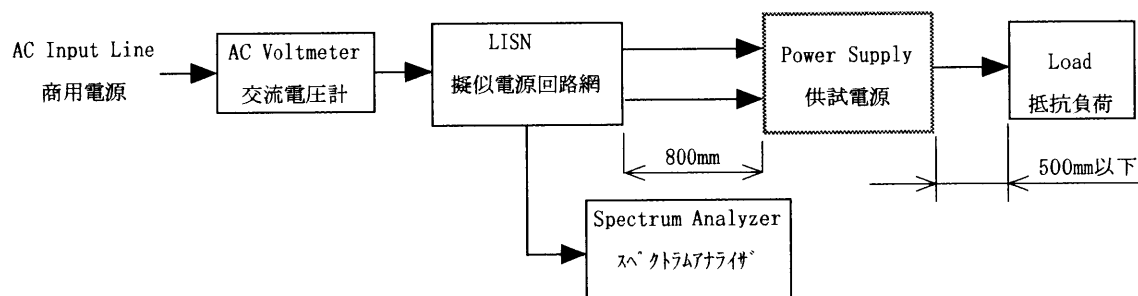


Figure D

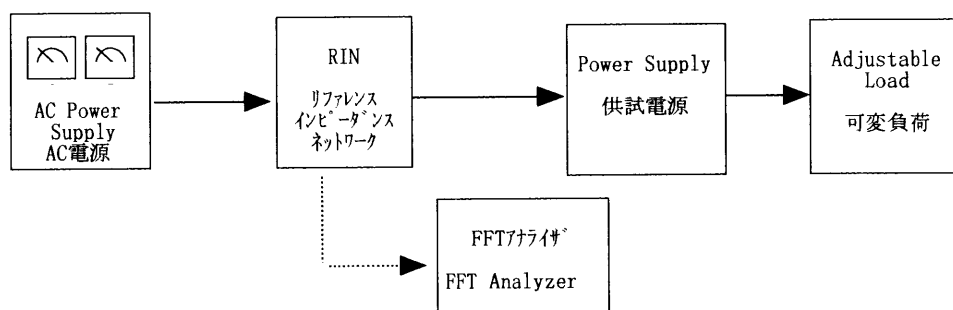


Figure E