参考資料

COSEL

# TEST DATA OF VAF524
(100V INPUT)

Regulated DC Power Supply

Date : Aug. 6. 1999

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コーセル株式会社

COSEL CO.,LTD.

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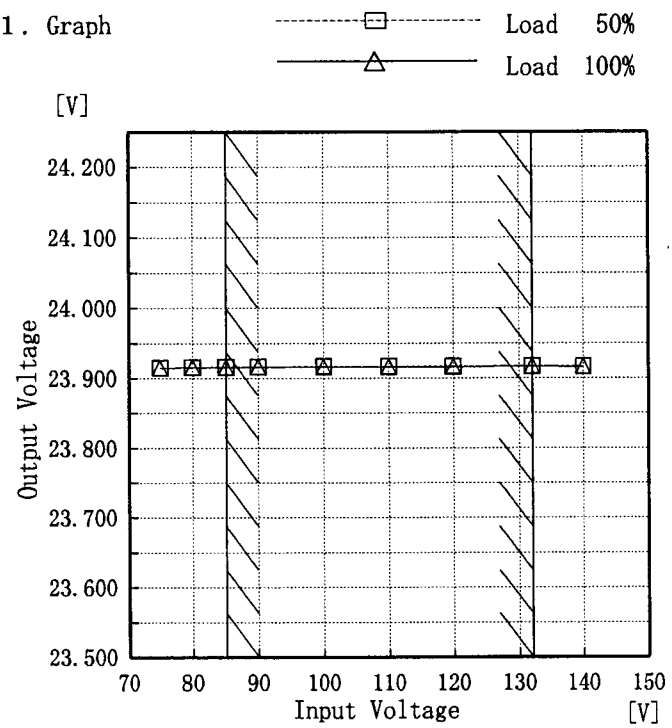
| | |
|---|---|
| Model | VAF524 |
| Item | Line Regulation<br>静的入力変動 |
| Object | +24.0V0.22A |

Temperature 25℃
Testing Circuitry Figure A

1. Graph




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] | Output Voltage [V] | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 23.915 | 23.915 |
| 80 | 23.916 | 23.916 |
| 85 | 23.916 | 23.916 |
| 90 | 23.916 | 23.916 |
| 100 | 23.917 | 23.916 |
| 110 | 23.917 | 23.917 |
| 120 | 23.917 | 23.917 |
| 132 | 23.917 | 23.917 |
| 140 | 23.917 | 23.917 |



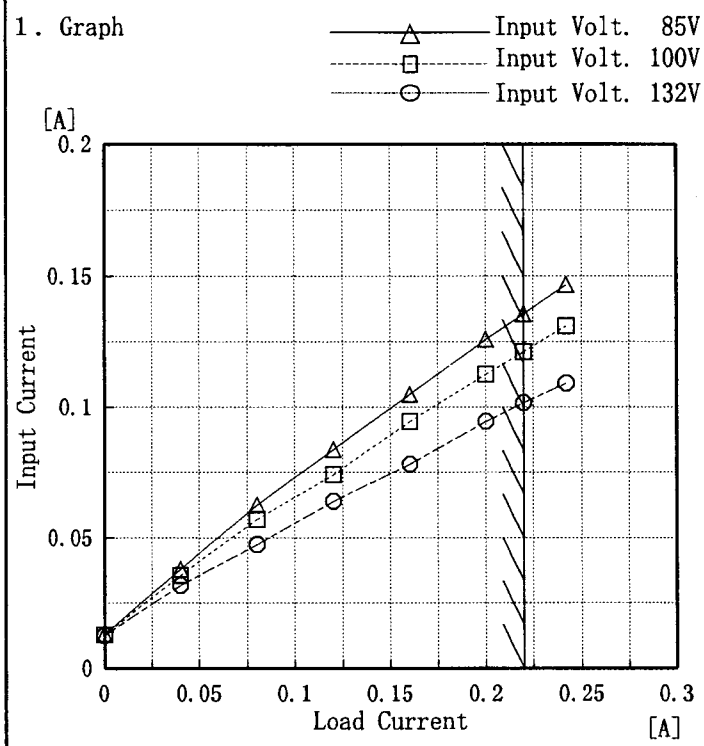
BC − 0754

COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Input Current (by Load Current)<br>入力電流（負荷特性） |
| Object | ———— |

Temperature 25℃
Testing Circuitry Figure A

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] |
| 0.000 | 0.013 | 0.013 | 0.013 |
| 0.040 | 0.038 | 0.036 | 0.032 |
| 0.080 | 0.063 | 0.057 | 0.048 |
| 0.120 | 0.084 | 0.074 | 0.064 |
| 0.160 | 0.105 | 0.095 | 0.078 |
| 0.200 | 0.126 | 0.113 | 0.095 |
| 0.220 | 0.136 | 0.121 | 0.102 |
| 0.242 | 0.147 | 0.131 | 0.109 |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |



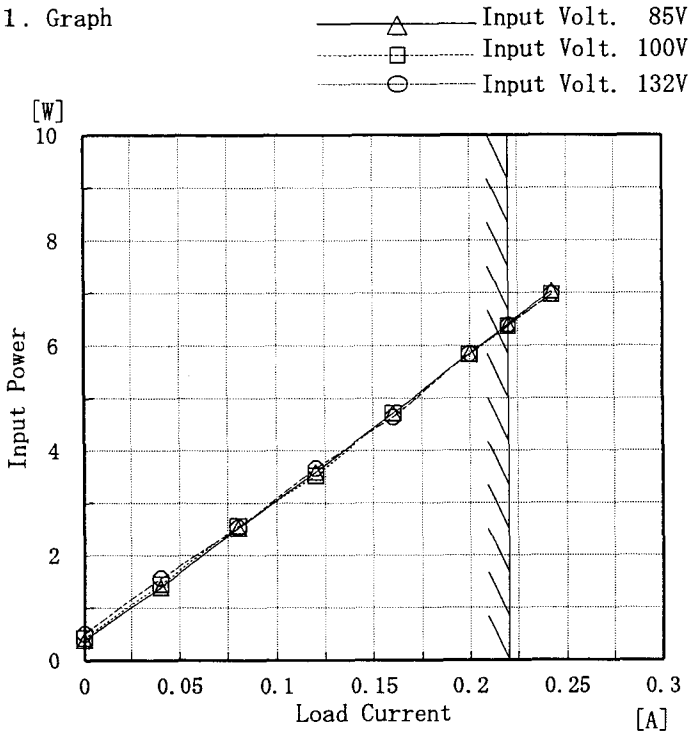
BC − 0754

COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Input Power (by Load Current)<br>入力電力 (負荷特性) |
| Object | ———— |

Temperature 25℃
Testing Circuitry Figure A

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

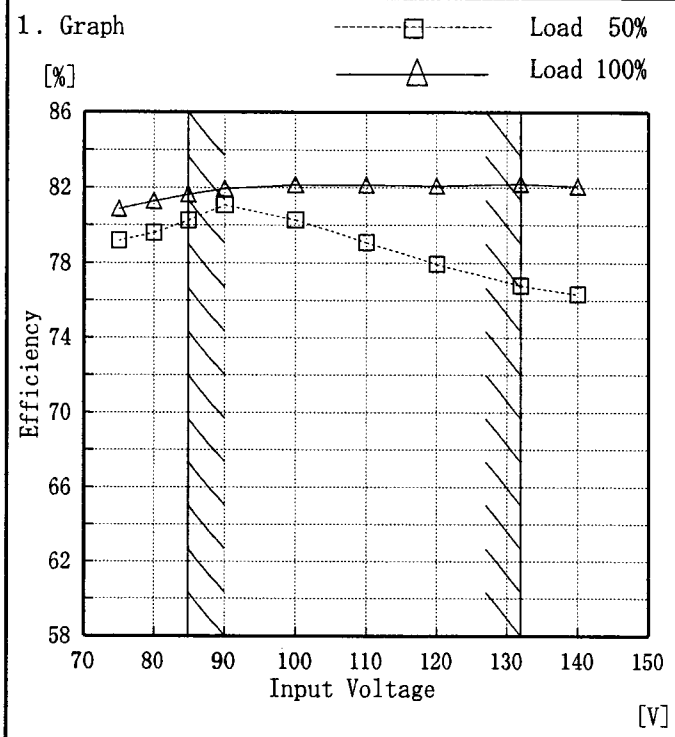
| Load Current [A] | Input Power [W] | | |
|---|---|---|---|
| | Input Volt. 85[V] | Input Volt. 100[V] | Input Volt. 132[V] |
| 0.000 | 0.39 | 0.43 | 0.51 |
| 0.040 | 1.39 | 1.45 | 1.57 |
| 0.080 | 2.52 | 2.56 | 2.53 |
| 0.120 | 3.59 | 3.52 | 3.66 |
| 0.160 | 4.71 | 4.71 | 4.64 |
| 0.200 | 5.85 | 5.83 | 5.85 |
| 0.220 | 6.41 | 6.37 | 6.38 |
| 0.242 | 7.04 | 6.98 | 6.97 |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |

COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Efficiency (by Input Voltage)<br>効率 (入力電圧特性) |
| Object | ——————————— |

Temperature 25℃
Testing Circuitry Figure A

1. Graph




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] | Efficiency [%] | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 79.2 | 80.9 |
| 80 | 79.6 | 81.3 |
| 85 | 80.3 | 81.6 |
| 90 | 81.1 | 82.0 |
| 100 | 80.3 | 82.2 |
| 110 | 79.1 | 82.2 |
| 120 | 77.9 | 82.1 |
| 132 | 76.8 | 82.2 |
| 140 | 76.3 | 82.1 |

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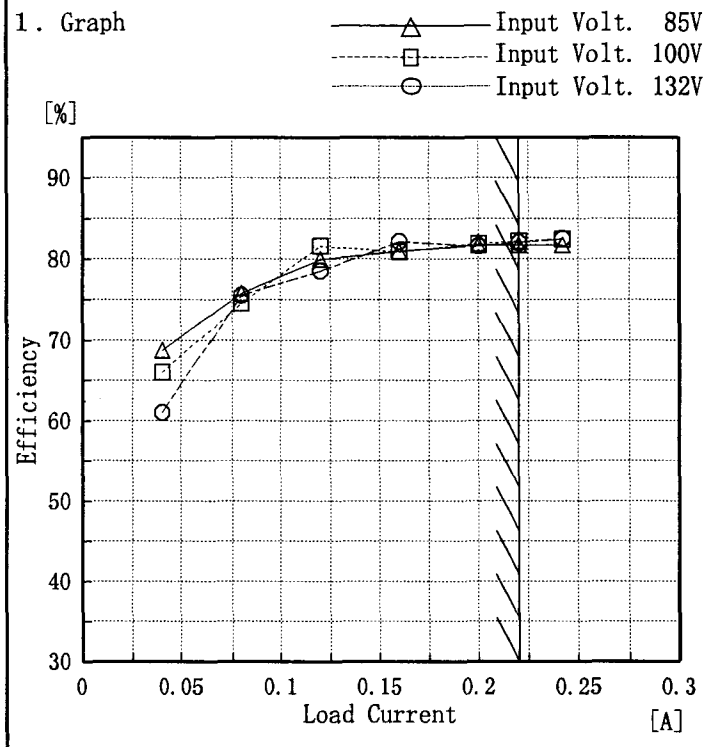
| | |
|---|---|
| Model | VAF524 |
| Item | Efficiency (by Load Current)<br>効率 (負荷特性) |
| Object | ———— |

Temperature 25℃
Testing Circuitry Figure A

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

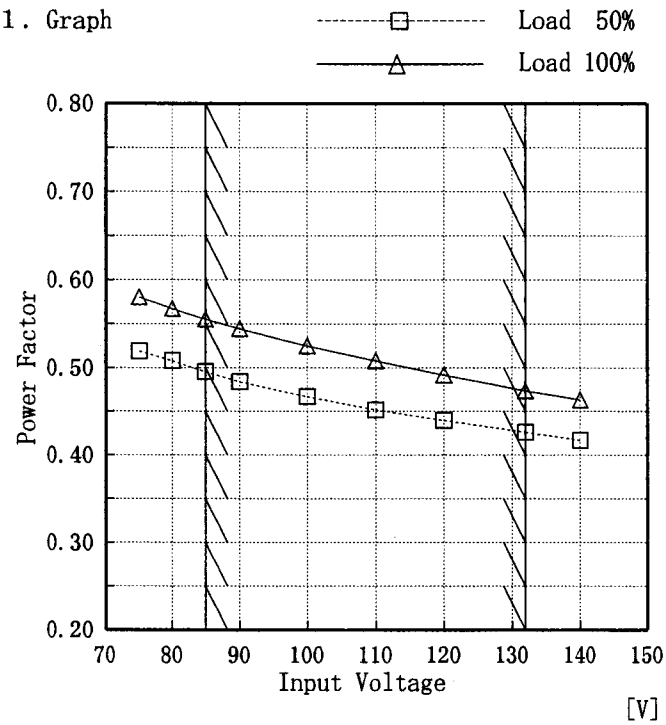
| Load Current [A] | Efficiency [%] | | |
|---|---|---|---|
| | Input Volt. 85[V] | Input Volt. 100[V] | Input Volt. 132[V] |
| 0.040 | 68.7 | 66.0 | 61.0 |
| 0.080 | 75.8 | 74.5 | 75.5 |
| 0.120 | 80.0 | 81.6 | 78.5 |
| 0.160 | 81.0 | 80.9 | 82.2 |
| 0.200 | 81.7 | 81.9 | 81.6 |
| 0.220 | 81.7 | 82.2 | 82.0 |
| 0.242 | 81.7 | 82.4 | 82.5 |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |

COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Power Factor (by Input Voltage)<br>力率（入力電圧特性） |
| Object | |

Temperature 25℃
Testing Circuitry Figure A

1. Graph




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] | Power Factor | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 0.52 | 0.58 |
| 80 | 0.51 | 0.57 |
| 85 | 0.50 | 0.56 |
| 90 | 0.48 | 0.54 |
| 100 | 0.47 | 0.52 |
| 110 | 0.45 | 0.51 |
| 120 | 0.44 | 0.49 |
| 132 | 0.43 | 0.47 |
| 140 | 0.42 | 0.46 |

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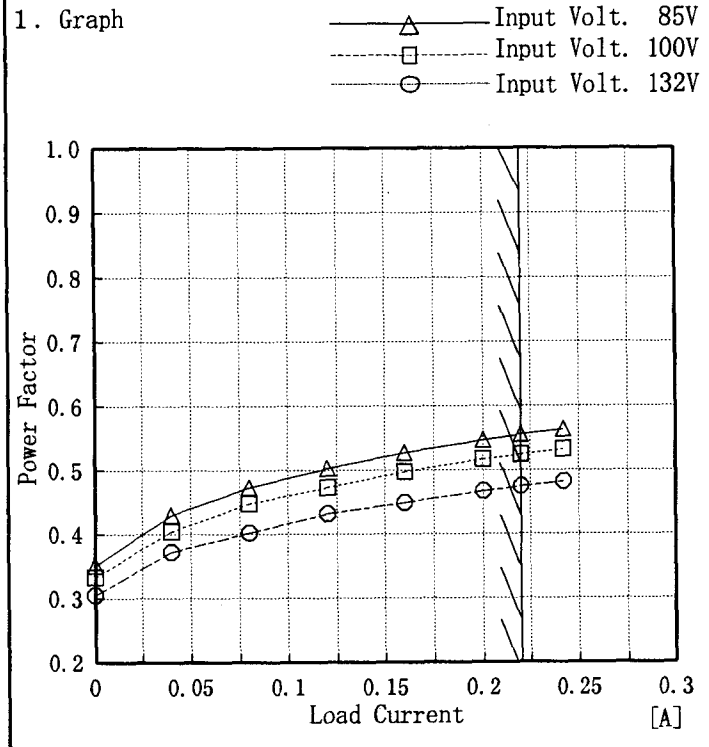
| | |
|---|---|
| Model | VAF524 |
| Item | Power Factor (by Load Current)<br>力率 (負荷特性) |
| Object | ———— |

Temperature 25℃
Testing Circuitry Figure A

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] | Power Factor | | |
|---|---|---|---|
| | Input Volt. 85[V] | Input Volt. 100[V] | Input Volt. 132[V] |
| 0.000 | 0.35 | 0.33 | 0.31 |
| 0.040 | 0.43 | 0.41 | 0.37 |
| 0.080 | 0.47 | 0.45 | 0.40 |
| 0.120 | 0.50 | 0.47 | 0.43 |
| 0.160 | 0.53 | 0.50 | 0.45 |
| 0.200 | 0.55 | 0.52 | 0.47 |
| 0.220 | 0.56 | 0.52 | 0.47 |
| 0.242 | 0.56 | 0.53 | 0.48 |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |

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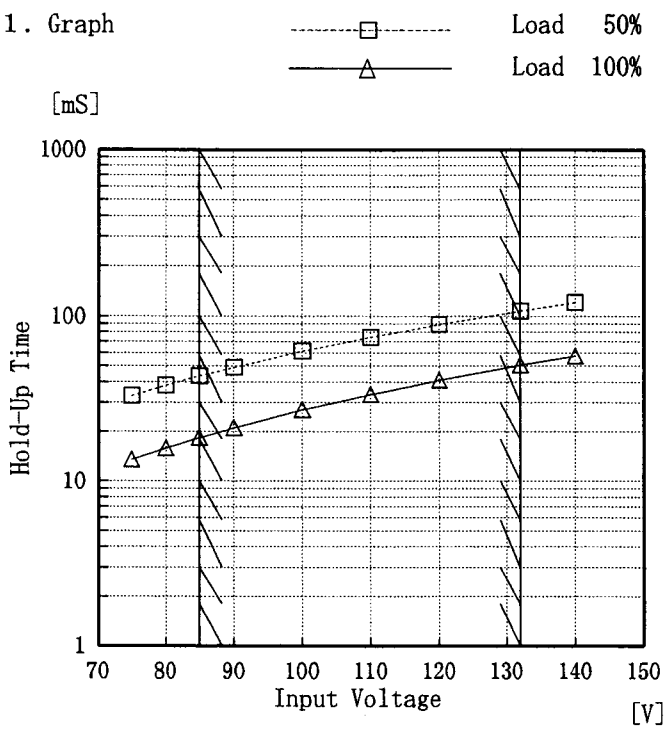
| | |
|---|---|
| Model | VAF524 |
| Item | Hold-Up Time<br>出力保持時間 |
| Object | +24.0V0.22A |

Temperature 25℃
Testing Circuitry Figure A

1. Graph




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。

2. Values

| Input Voltage [V] | Hold-Up Time [mS] | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 33 | 14 |
| 80 | 38 | 16 |
| 85 | 43 | 18 |
| 90 | 49 | 21 |
| 100 | 61 | 27 |
| 110 | 74 | 34 |
| 120 | 89 | 41 |
| 132 | 107 | 51 |
| 140 | 121 | 58 |

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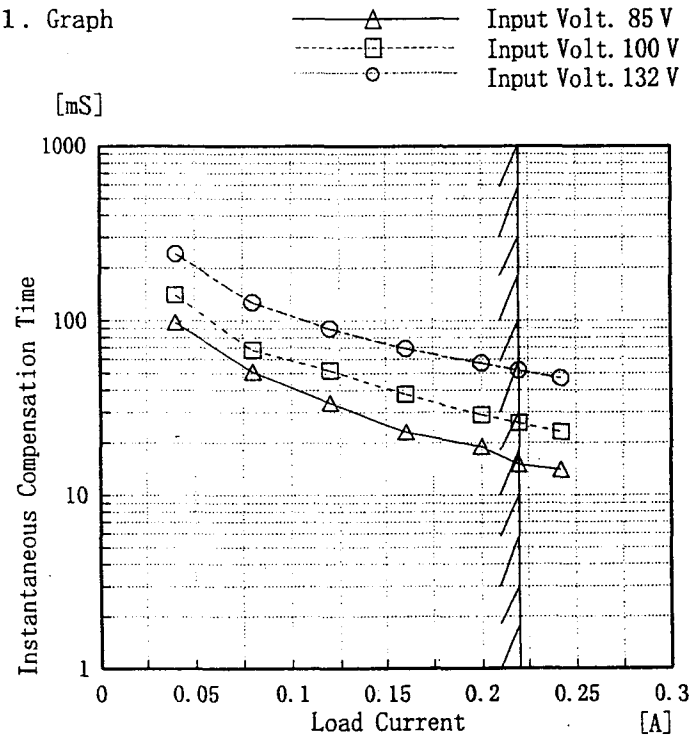
| Model | VAF524 | |
|---|---|---|
| Item | Instantaneous Interruption Compensation<br>瞬時停電保障 | Temperature 25℃<br>Testing Circuitry Figure A |
| Object | +24.0V0.22A | |

1. Graph




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 load current.

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。
(注)斜線は定格負荷電流範囲を示す。

2. Values

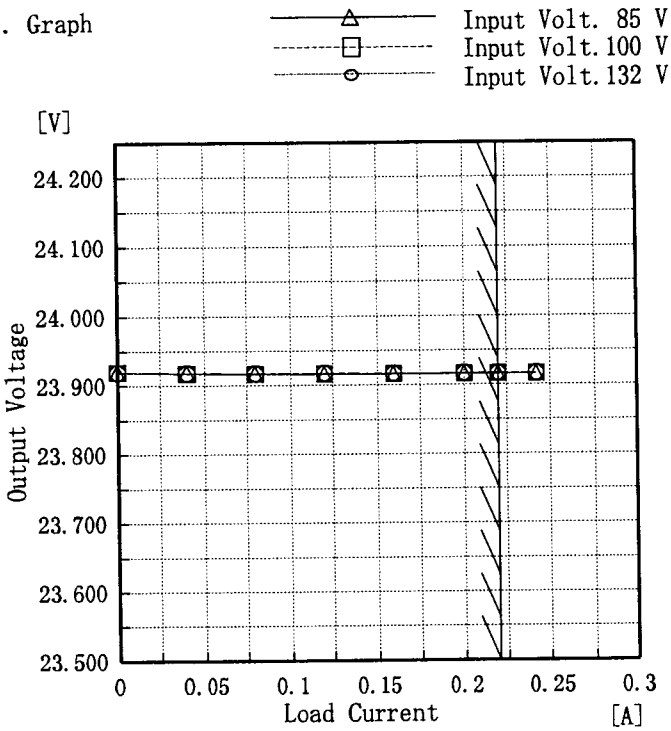
| Load Current [A] | Time [mS] | | |
|---|---|---|---|
| | Input Volt. 85[V] | Input Volt. 100[V] | Input Volt. 132[V] |
| 0.000 | — | — | — |
| 0.040 | 98 | 140 | 243 |
| 0.080 | 51 | 68 | 127 |
| 0.120 | 34 | 52 | 90 |
| 0.160 | 23 | 38 | 69 |
| 0.200 | 19 | 29 | 57 |
| 0.220 | 15 | 26 | 52 |
| 0.242 | 14 | 23 | 47 |
| — | — | — | — |
| — | — | — | — |
| — | — | — | — |

COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Load Regulation<br>静的負荷変動 |
| Object | +24.0V0.22A |

Temperature 25℃
Testing Circuitry Figure A

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

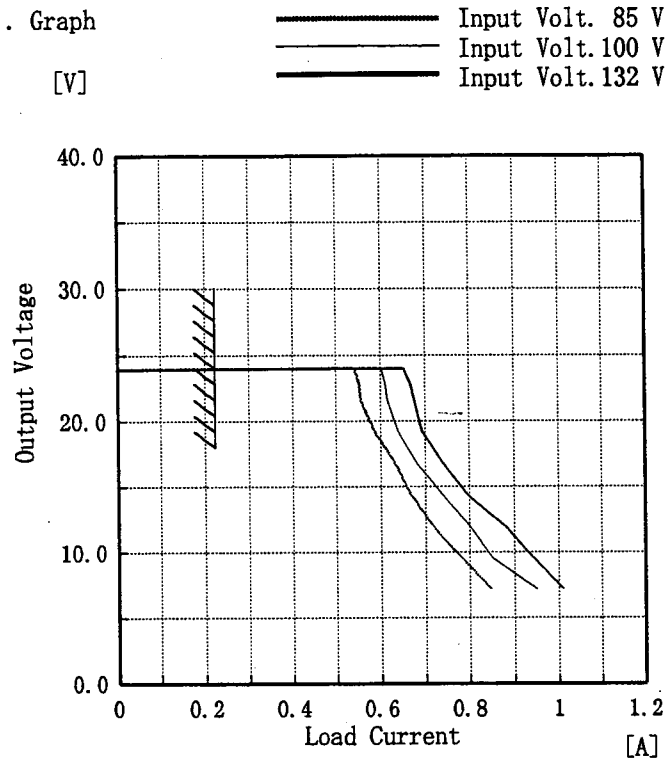
| Load Current [A] | Output Voltage [V] | | |
|---|---|---|---|
| | Input Volt. 85[V] | Input Volt. 100[V] | Input Volt. 132[V] |
| 0.000 | 23.919 | 23.920 | 23.919 |
| 0.040 | 23.918 | 23.918 | 23.918 |
| 0.080 | 23.917 | 23.917 | 23.917 |
| 0.120 | 23.916 | 23.917 | 23.917 |
| 0.160 | 23.916 | 23.916 | 23.917 |
| 0.200 | 23.916 | 23.916 | 23.916 |
| 0.220 | 23.916 | 23.916 | 23.917 |
| 0.242 | 23.916 | 23.916 | 23.917 |
| — | — | — | — |
| — | — | — | — |

COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Overcurrent Protection<br>過電流保護 |
| Object | +24.0V0.22A |

Temperature 25℃
Testing Circuitry Figure A

1. Graph




Note1: Slanted line shows the range of the rated load current.

Note2: The lines shows peak current of intermittent operation of power supply when output voltage drops less than rated voltage value at overcurrent.

(注1)斜線は定格負荷電流範囲を示す。

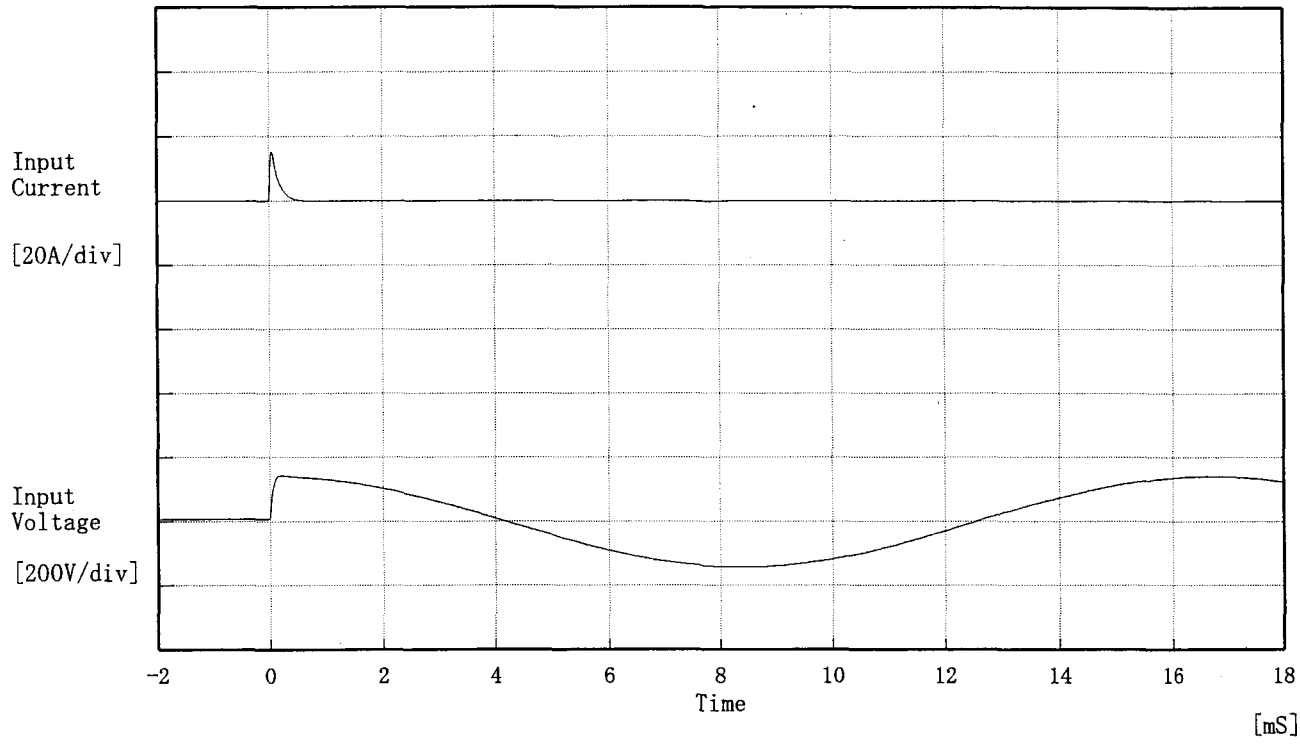
(注2)垂下部分は間欠モード時のピーク電流を示す。

2. Values

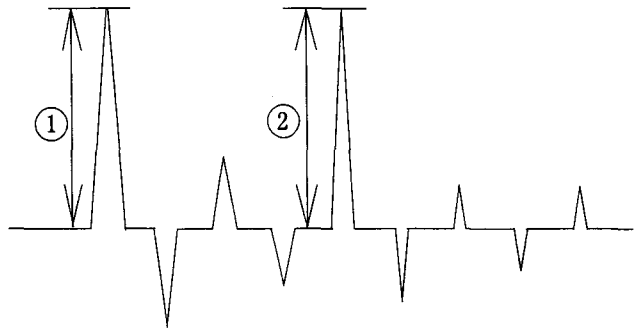
| Output Voltage [V] | Load Current [A] | | |
|---|---|---|---|
| | Input Volt. 85[V] | Input Volt. 100[V] | Input Volt. 132[V] |
| 24.00 | 0.540 | 0.601 | 0.650 |
| 22.80 | 0.552 | 0.614 | 0.666 |
| 21.60 | 0.555 | 0.614 | 0.675 |
| 19.20 | 0.587 | 0.638 | 0.675 |
| 16.80 | 0.630 | 0.680 | 0.740 |
| 14.40 | 0.668 | 0.738 | 0.795 |
| 12.00 | 0.717 | 0.800 | 0.880 |
| 9.60 | 0.780 | 0.850 | 0.940 |
| 7.20 | 0.850 | 0.950 | 1.010 |
| 4.80 | — | — | — |
| 2.40 | — | — | — |
| 0.00 | — | — | — |

COSEL

| | | | |
|---|---|---|---|
| Model | VAF524 | | |
| Item | Inrush Current<br>突入電流 | Temperature<br>Testing Circuitry | 25℃<br>Figure A |
| Object | ―――――――― | | |




Input Voltage 100 V
Frequency 60 Hz
Load 100 %
Inrush Current
① 15.33 [A]
② 0.39 [A]

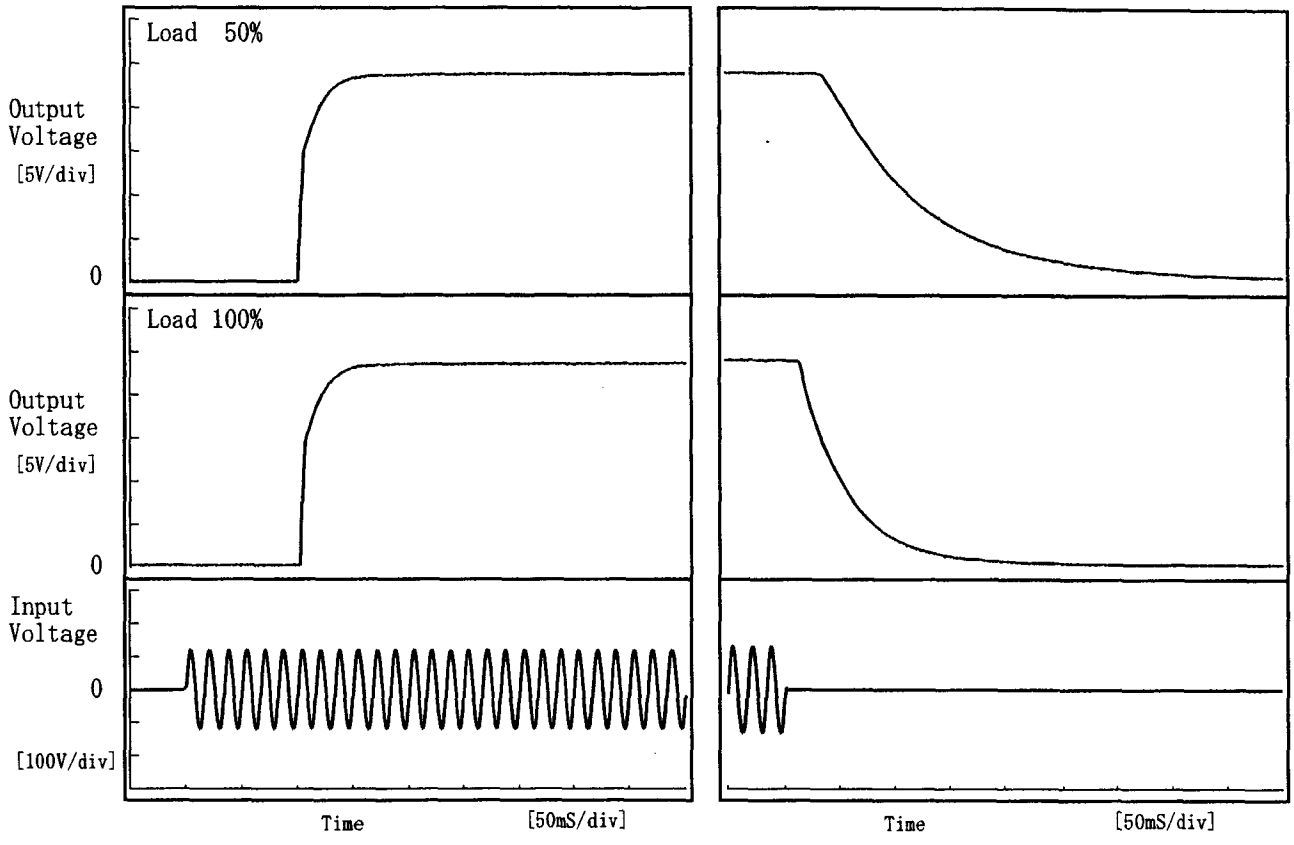


COSEL

| | | | |
|---|---|---|---|
| Model | VAF524 | | |
| Item | Rise and Fall Time<br>立上り、立下り時間 | Temperature<br>Testing Circuitry | 25℃<br>Figure A |
| Object | +24.0V0.22A | | |

1. Graph

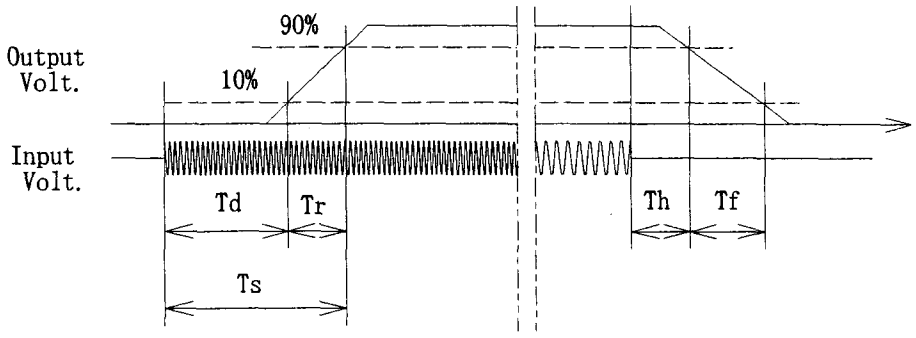
Input Volt. 85 V




2. Values

[mS]

| Load \ Time | T d | T r | T s | T h | T f |
|---|---|---|---|---|---|
| 50 % | 100.8 | 28.3 | 129.0 | 45.8 | 195.3 |
| 100 % | 102.5 | 30.3 | 132.8 | 18.8 | 95.0 |

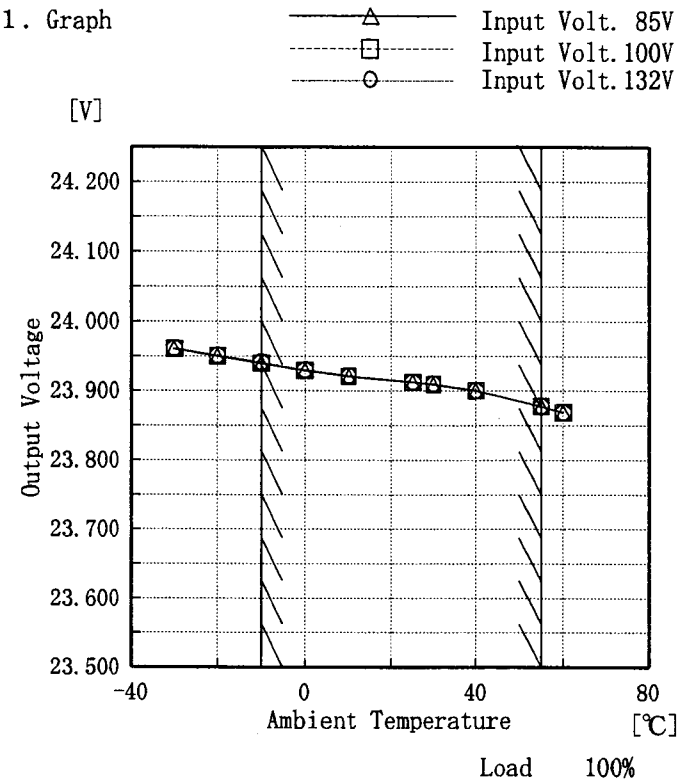


COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Ambient Temperature Drift<br>周囲温度変動 |
| Object | +24.0V0.22A |

Testing Circuitry Figure A

1. Graph




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

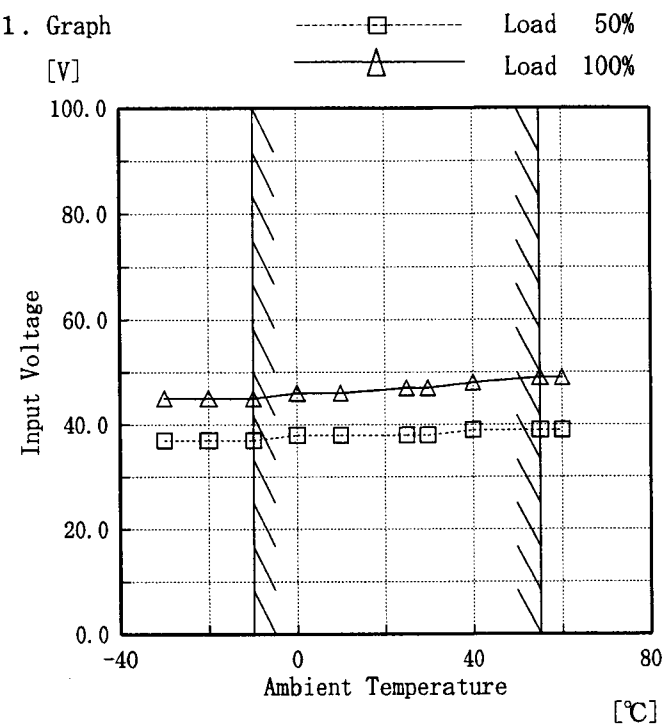
| Ambient Temperature [℃] | Output Voltage [V] | | |
|---|---|---|---|
| | Input Volt. 85[V] | Input Volt. 100[V] | Input Volt. 132[V] |
| -30 | 23.960 | 23.960 | 23.961 |
| -20 | 23.950 | 23.950 | 23.951 |
| -10 | 23.940 | 23.940 | 23.941 |
| 0 | 23.929 | 23.930 | 23.931 |
| 10 | 23.921 | 23.921 | 23.922 |
| 25 | 23.912 | 23.913 | 23.913 |
| 30 | 23.909 | 23.910 | 23.910 |
| 40 | 23.900 | 23.901 | 23.901 |
| 55 | 23.877 | 23.878 | 23.878 |
| 60 | 23.868 | 23.869 | 23.870 |
| — | — | — | — |

COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Minimum Input Voltage for Regulated Output Voltage<br>最低レギュレーション電圧 |
| Object | +24.0V0.22A |

Testing Circuitry Figure A

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

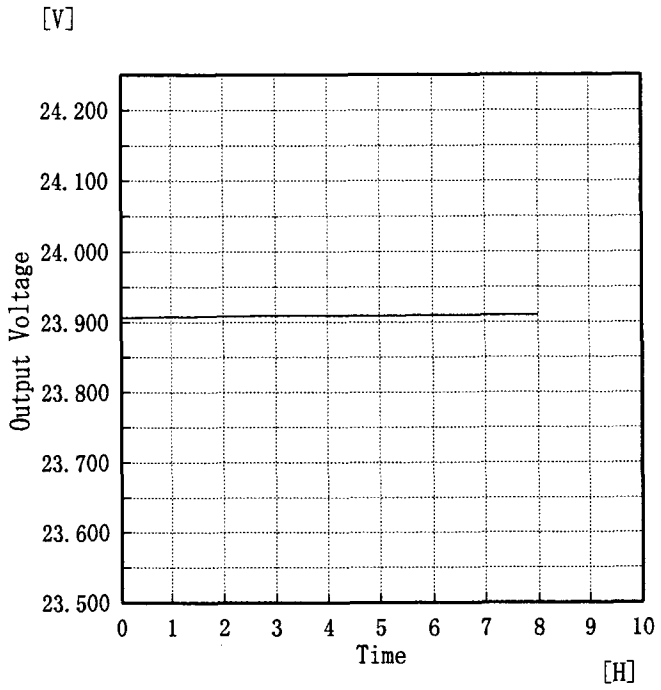
| Ambient Temperature [℃] | Input Voltage [V] | |
|---|---|---|
| | Load 50% | Load 100% |
| -30 | 37 | 45 |
| -20 | 37 | 45 |
| -10 | 37 | 45 |
| 0 | 38 | 46 |
| 10 | 38 | 46 |
| 25 | 38 | 47 |
| 30 | 38 | 47 |
| 40 | 39 | 48 |
| 55 | 39 | 49 |
| 60 | 39 | 49 |
| — | — | — |

COSEL

| | |
|---|---|
| Model | VAF524 |
| Item | Time Lapse Drift<br>経時ドリフト |
| Object | +24.0V0.22A |

Temperature 25℃
Testing Circuitry Figure A

1. Graph




Input Volt. 100V
Load 100%

2. Values

| Time since start [H] | Output Voltage [V] |
|---|---|
| 0.0 | 23.910 |
| 0.5 | 23.907 |
| 1.0 | 23.908 |
| 2.0 | 23.908 |
| 3.0 | 23.909 |
| 4.0 | 23.909 |
| 5.0 | 23.909 |
| 6.0 | 23.910 |
| 7.0 | 23.910 |
| 8.0 | 23.910 |

COSEL

| | | |
|---|---|---|
| Model | VAF524 | |
| Item | Output Voltage Accuracy<br>定電圧精度 | Testing Circuitry Figure A |
| Object | +24.0V0.22A | |

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 : -10～55 ℃
Input Voltage : 85～132 V
Load Current : 0～0.22 A

* 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 -10～55 ℃
入力電圧 85～132 V
負荷電流 0～0.22 A

* 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 [℃] | Input Voltage [V] | Output Current [A] | Output Voltage [V] | Output Voltage Accuracy [mV] | Output Voltage Accuracy(Ration)[%] |
|---|---|---|---|---|---|---|
| Maximum Voltage | -10 | 132 | 0.00 | 23.950 | ±40 | ±0.2 |
| Minimum Voltage | 55 | 132 | 0.22 | 23.870 | | |

COSEL

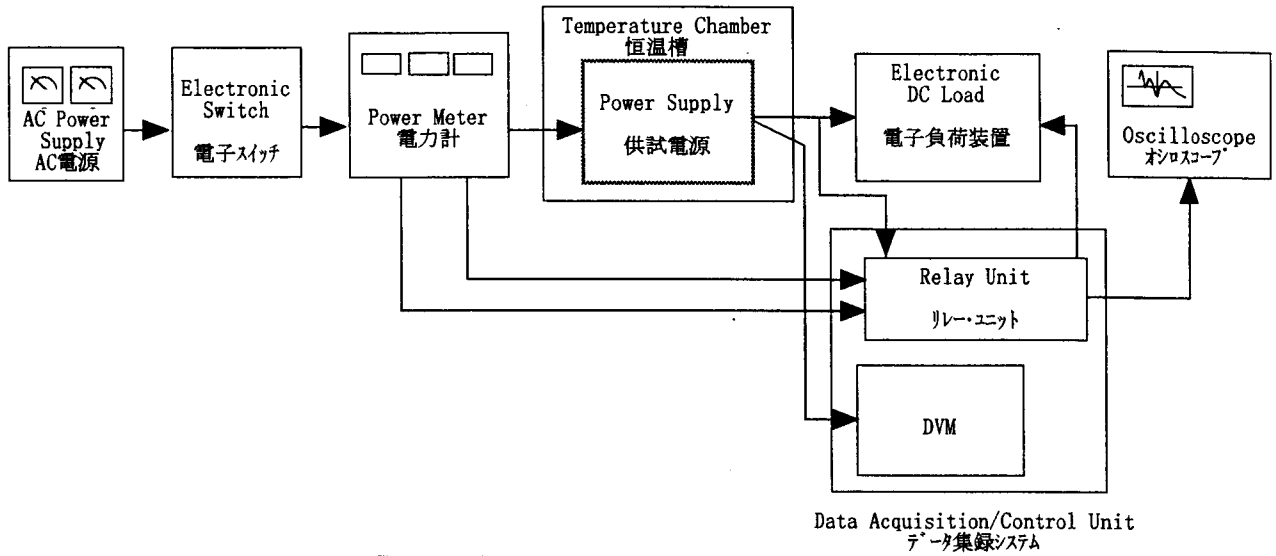



Figure A

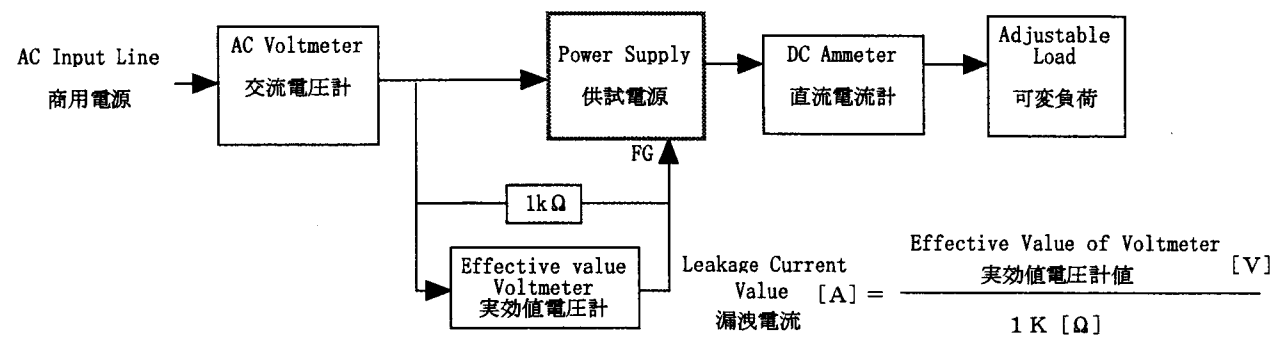



Figure B(DENTORI)

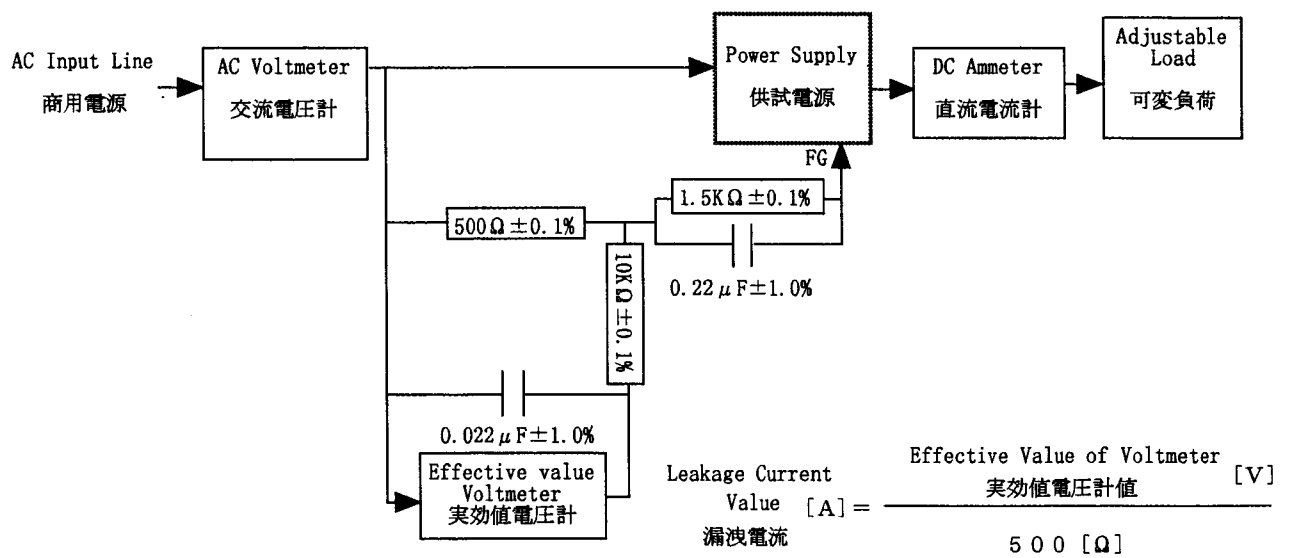



Figure B(IEC60950)

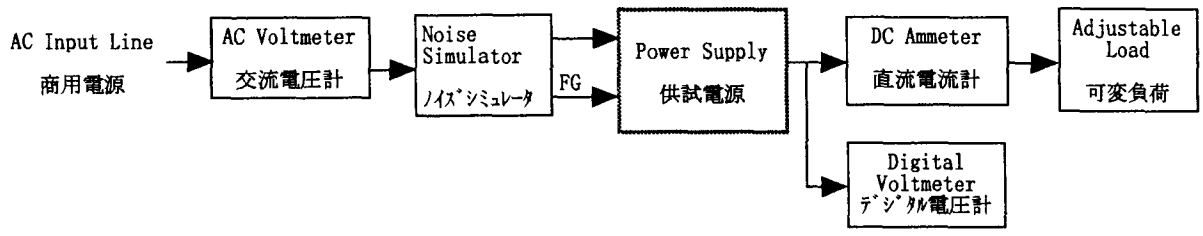



Figure C

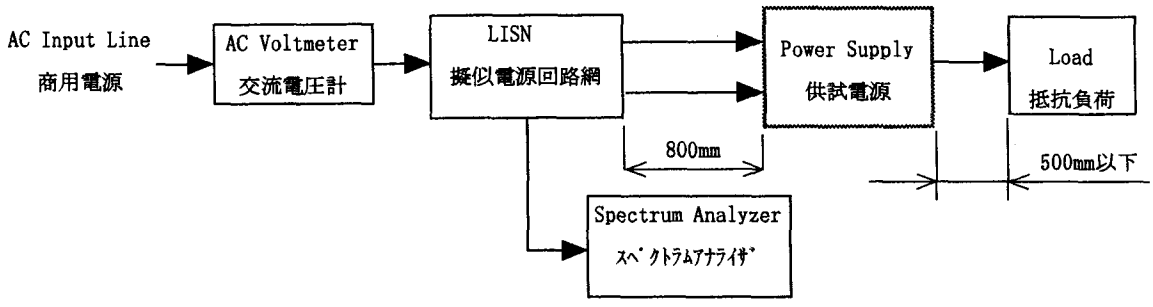



Figure D

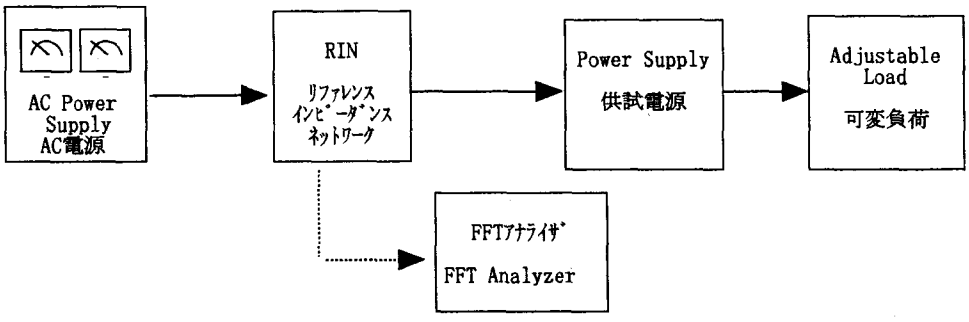



Figure E