参考資料

COSEL

# TEST DATA OF PBW30F-12

Regulated DC Power Supply
Sep 29, 2005

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Kuniaki Nagahara Design Manager

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Akito Joboji Design Engineer

**COSEL CO.,LTD.**

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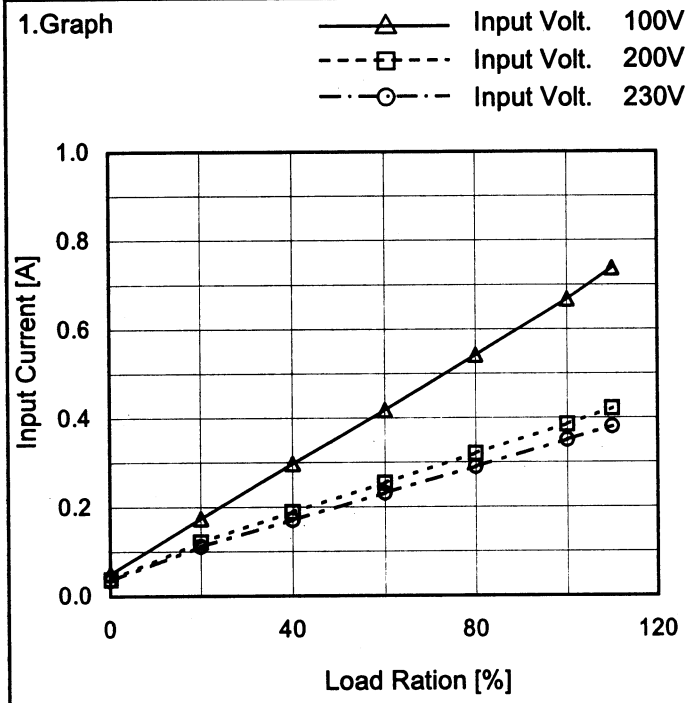
| | |
|---|---|
| Model | PBW30F-12 |
| Item | Input Current (by Load Current) |
| Object | ———————— |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




2.Values

| Load Ration [%] | Input Current [A] | | |
|---|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0 | 0.050 | 0.037 | 0.035 |
| 20 | 0.174 | 0.122 | 0.111 |
| 40 | 0.298 | 0.189 | 0.171 |
| 60 | 0.418 | 0.255 | 0.231 |
| 80 | 0.542 | 0.320 | 0.290 |
| 100 | 0.668 | 0.386 | 0.351 |
| 110 | 0.737 | 0.422 | 0.381 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |



BC-10017

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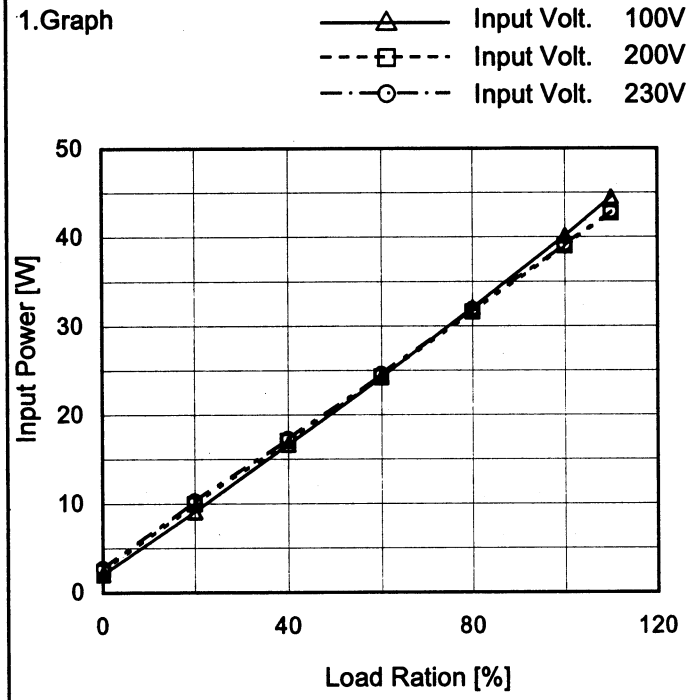
| | |
|---|---|
| Model | PBW30F-12 |
| Item | Input Power (by Load Current) |
| Object | ———————— |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




2.Values

| Load Ration [%] | Input Power [W] | | |
|---|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0 | 2.05 | 2.45 | 2.73 |
| 20 | 9.07 | 10.00 | 10.31 |
| 40 | 16.68 | 17.10 | 17.30 |
| 60 | 24.25 | 24.30 | 24.60 |
| 80 | 32.06 | 31.60 | 31.90 |
| 100 | 40.16 | 39.00 | 39.20 |
| 110 | 44.50 | 42.70 | 42.90 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |



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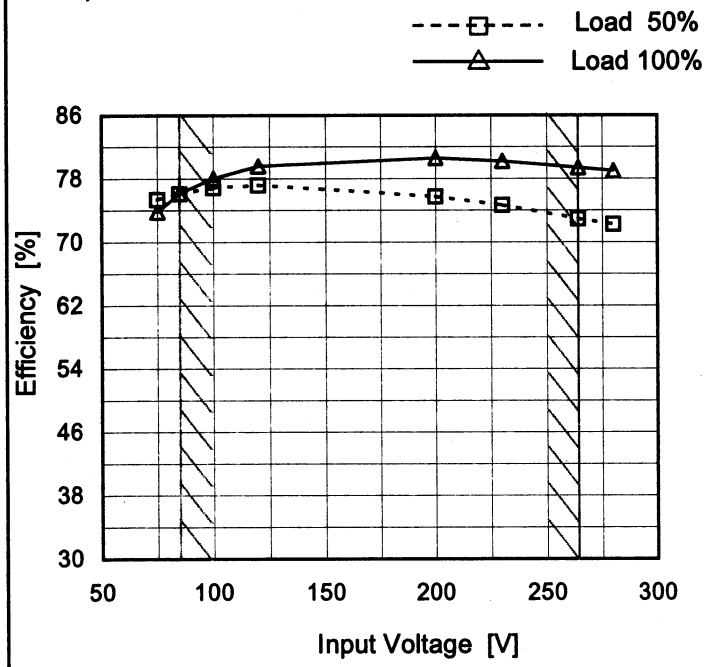
COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Efficiency (by Input Voltage) |
| Object | ——————————— |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




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

2.Values

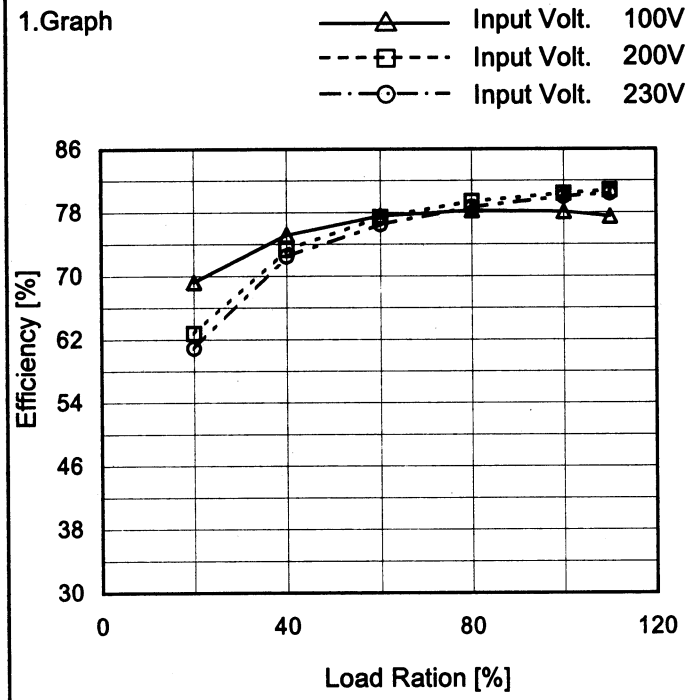
| Input Voltage [V] | Efficiency [%] | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 75.4 | 73.8 |
| 85 | 76.1 | 76.1 |
| 100 | 76.9 | 78.0 |
| 120 | 77.2 | 79.6 |
| 200 | 75.7 | 80.6 |
| 230 | 74.7 | 80.2 |
| 264 | 72.9 | 79.4 |
| 280 | 72.2 | 79.0 |
| -- | - | - |

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Efficiency (by Load Current) |
| Object | ———————— |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




2.Values

| Load Ration [%] | Efficiency [%] | | |
|---|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0 | - | - | - |
| 20 | 69.2 | 62.8 | 60.9 |
| 40 | 75.2 | 73.3 | 72.5 |
| 60 | 77.6 | 77.4 | 76.5 |
| 80 | 78.3 | 79.4 | 78.7 |
| 100 | 78.1 | 80.4 | 80.0 |
| 110 | 77.5 | 80.8 | 80.4 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |



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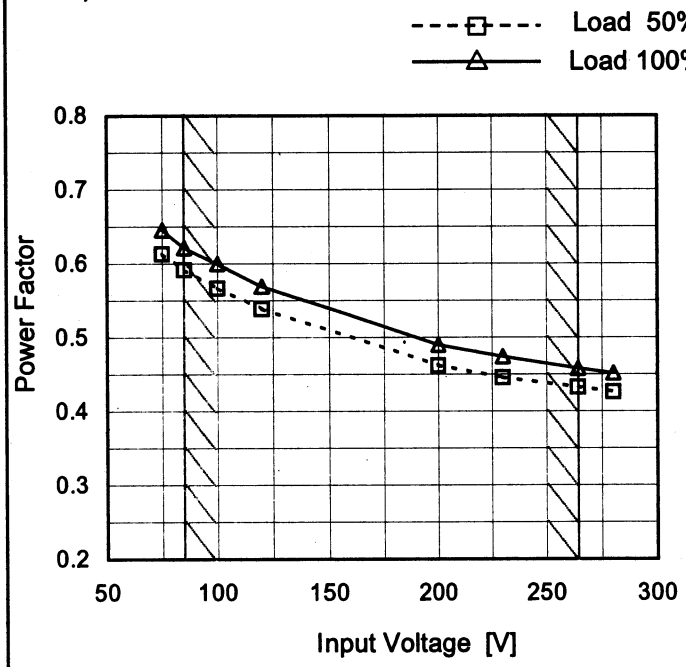
| | |
|---|---|
| Model | PBW30F-12 |
| Item | Power Factor (by Input Voltage) |
| Object | ——— |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




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

2.Values

| Input Voltage [V] | Power Factor | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 0.614 | 0.646 |
| 85 | 0.592 | 0.621 |
| 100 | 0.567 | 0.600 |
| 120 | 0.539 | 0.569 |
| 200 | 0.462 | 0.490 |
| 230 | 0.446 | 0.474 |
| 264 | 0.433 | 0.458 |
| 280 | 0.426 | 0.452 |
| -- | - | - |

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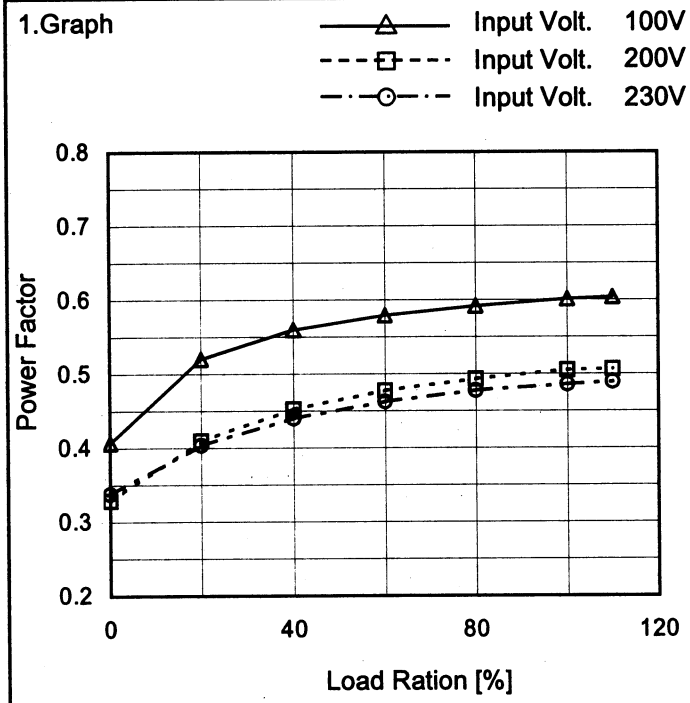
| | |
|---|---|
| Model | PBW30F-12 |
| Item | Power Factor (by Load Current) |
| Object | ———————— |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




2.Values

| Load Ration [%] | Power Factor | | |
|---|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0 | 0.407 | 0.329 | 0.338 |
| 20 | 0.520 | 0.410 | 0.404 |
| 40 | 0.560 | 0.452 | 0.440 |
| 60 | 0.579 | 0.477 | 0.462 |
| 80 | 0.592 | 0.493 | 0.478 |
| 100 | 0.601 | 0.505 | 0.486 |
| 110 | 0.604 | 0.507 | 0.489 |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |
| -- | - | - | - |



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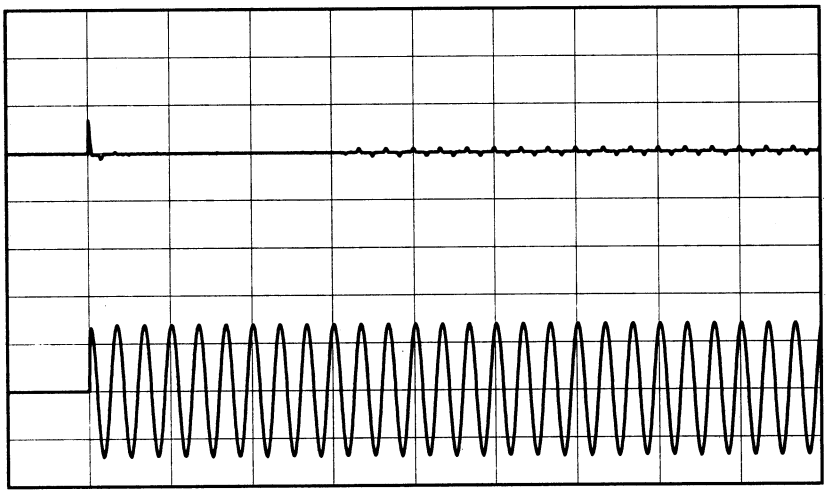
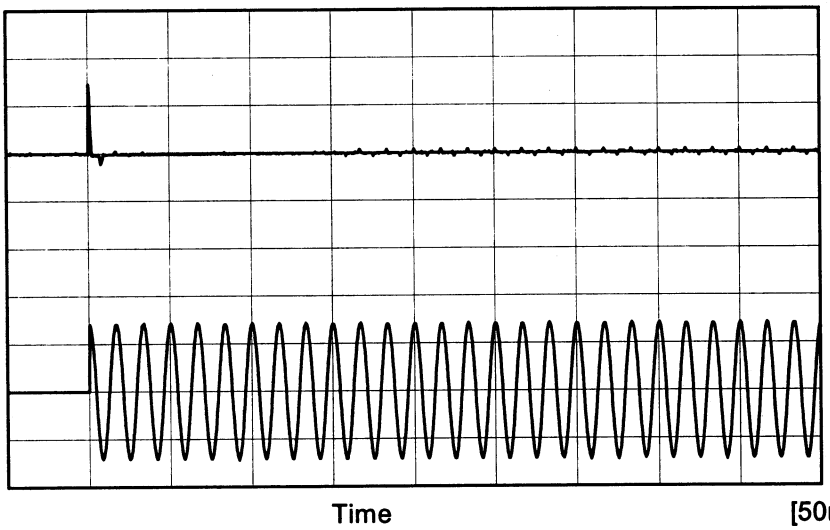
| | |
|---|---|
| Model | PBW30F-12 |
| Item | Inrush Current |
| Object | ———————— |

Temperature 25°C
Testing Circuitry Figure A



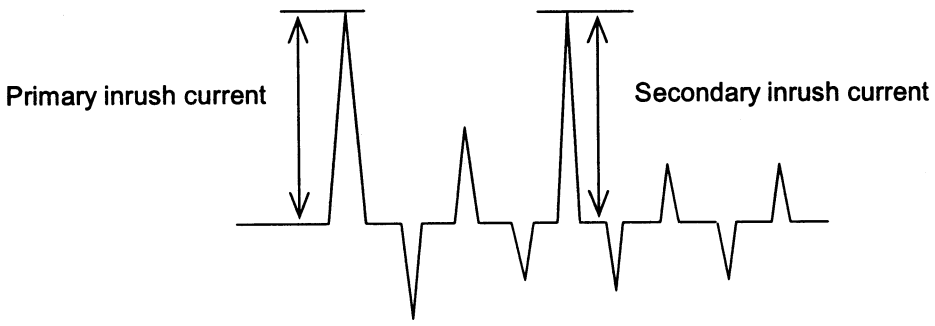

Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
14.1 A
Secondary inrush current :
1.8 A




Input Voltage 200 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
29.2 A
Secondary inrush current :
1.4 A



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| | | |
|---|---|---|
| Model | PBW30F-12 | |
| Item | Leakage Current | Temperature 25°C<br>Testing Circuitry Figure B |
| Object | ——————————— | |

1.Results

[mA]

| Standards | | Input Volt. | | | Note |
|---|---|---|---|---|---|
| | | 100 [V] | 200 [V] | 240 [V] | |
| DEN-AN | Both phases | 0.15 | 0.32 | 0.39 | Operation |
| | One of phase | 0.30 | 0.64 | 0.79 | stand by |
| IEC60950 | Both phases | 0.19 | 0.44 | 0.52 | Operation |
| | One of phase | 0.29 | 0.64 | 0.79 | stand by |

The value for "One of phase" is the reference value only.

2.Condition

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

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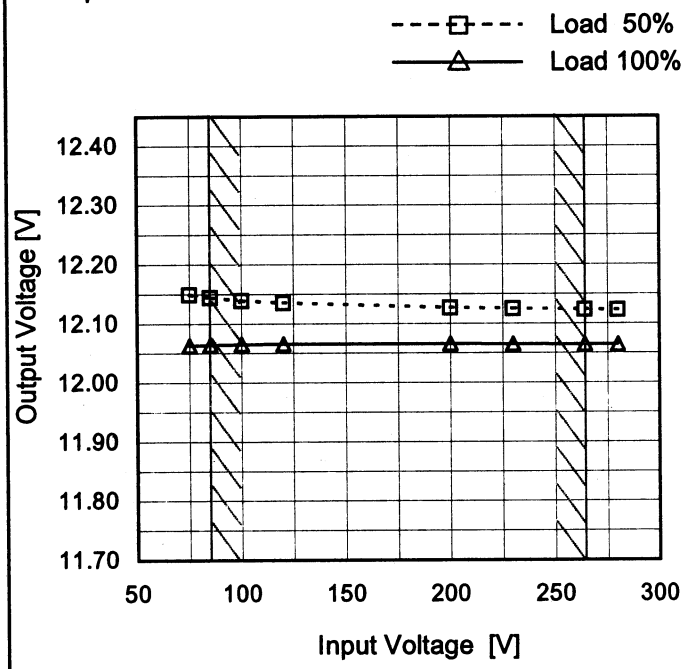
|---|---|
| Model | PBW30F-12 |
| Item | Line Regulation |
| Object | +12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph

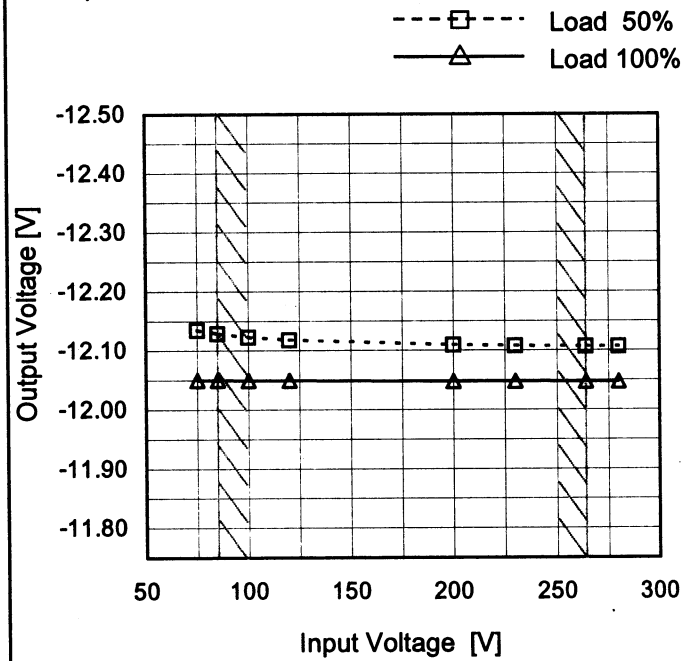



2.Values

| Input Voltage [V] | Output Voltage [V] | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 12.149 | 12.063 |
| 85 | 12.144 | 12.064 |
| 100 | 12.139 | 12.065 |
| 120 | 12.135 | 12.066 |
| 200 | 12.127 | 12.066 |
| 230 | 12.125 | 12.065 |
| 264 | 12.124 | 12.065 |
| 280 | 12.123 | 12.065 |
| -- | - | - |

| | |
|---|---|
| Object | -12V1.3A |

1.Graph




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

2.Values

| Input Voltage [V] | Output Voltage [V] | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | -12.135 | -12.050 |
| 85 | -12.129 | -12.050 |
| 100 | -12.123 | -12.050 |
| 120 | -12.118 | -12.049 |
| 200 | -12.109 | -12.048 |
| 230 | -12.108 | -12.048 |
| 264 | -12.107 | -12.048 |
| 280 | -12.107 | -12.048 |
| -- | - | - |

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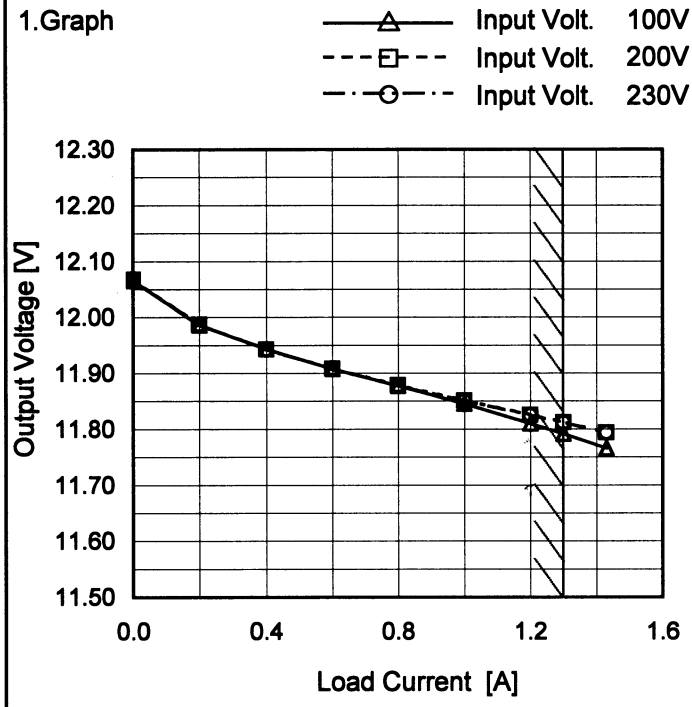
| Model | PBW30F-12 |
|---|---|
| Item | Load Regulation |
| Object | +12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph



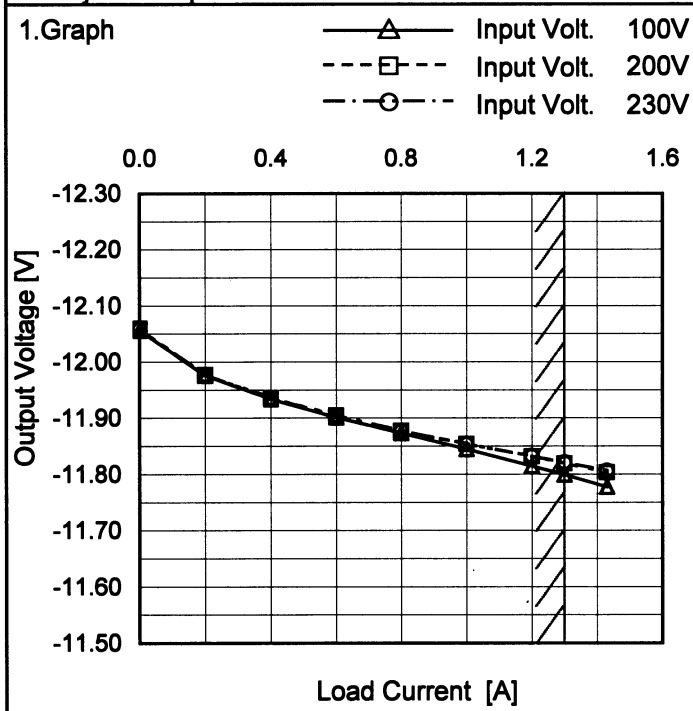

2.Values

| Load Current [A] | Output Voltage [V] Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
|---|---|---|---|
| 0.00 | 12.066 | 12.068 | 12.067 |
| 0.20 | 11.986 | 11.987 | 11.987 |
| 0.40 | 11.943 | 11.943 | 11.943 |
| 0.60 | 11.908 | 11.909 | 11.907 |
| 0.80 | 11.878 | 11.879 | 11.878 |
| 1.00 | 11.846 | 11.852 | 11.851 |
| 1.20 | 11.810 | 11.826 | 11.825 |
| 1.30 | 11.792 | 11.812 | 11.812 |
| 1.43 | 11.766 | 11.794 | 11.794 |
| -- | - | - | - |
| -- | - | - | - |

-12V: Rated output current 1

| Object | -12V1.3A |
|---|---|

1.Graph




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

2.Values

| Load Current [A] | Output Voltage [V] Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
|---|---|---|---|
| 0.00 | -12.057 | -12.060 | -12.060 |
| 0.20 | -11.976 | -11.977 | -11.977 |
| 0.40 | -11.934 | -11.936 | -11.936 |
| 0.60 | -11.902 | -11.905 | -11.905 |
| 0.80 | -11.873 | -11.878 | -11.878 |
| 1.00 | -11.845 | -11.854 | -11.854 |
| 1.20 | -11.815 | -11.832 | -11.832 |
| 1.30 | -11.799 | -11.820 | -11.821 |
| 1.43 | -11.778 | -11.804 | -11.806 |
| -- | - | - | - |
| -- | - | - | - |

+12V: Rated output current 1



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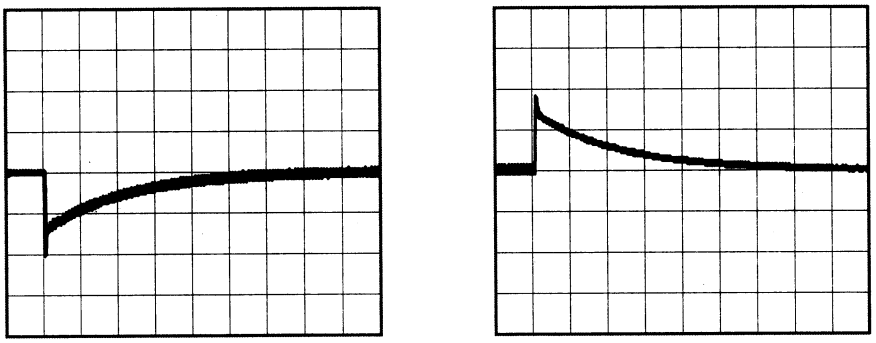
| | | | |
|---|---|---|---|
| Model | PBW30F-12 | | |
| Item | Dynamic Load Response | Temperature<br>Testing Circuitry | 25℃<br>Figure A |
| Object | +12V1.3A | | |

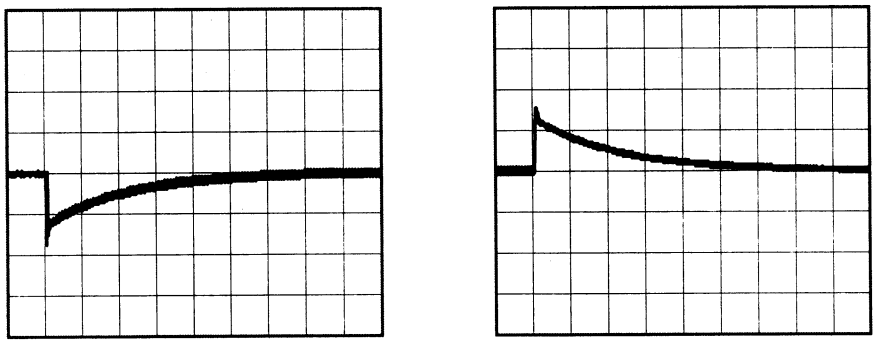
Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Output current 2 (1.7A)
* -12V: 0.9A




Min. Load (0A) ⟷
Output current 1 (1.3A)
* -12V: 1.3A




* The characteristic of AC200V is equal.

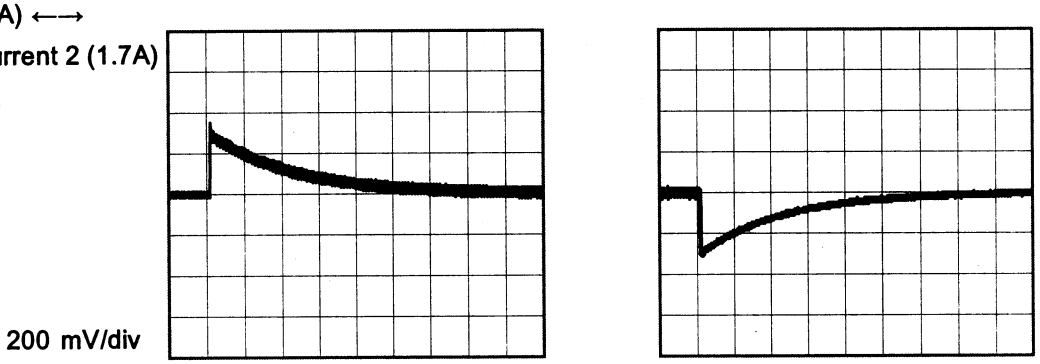
COSEL

| | | | |
|---|---|---|---|
| Model | PBW30F-12 | | |
| Item | Dynamic Load Response | Temperature | 25℃ |
| | | Testing Circuitry | Figure A |
| Object | -12V1.3A | | |

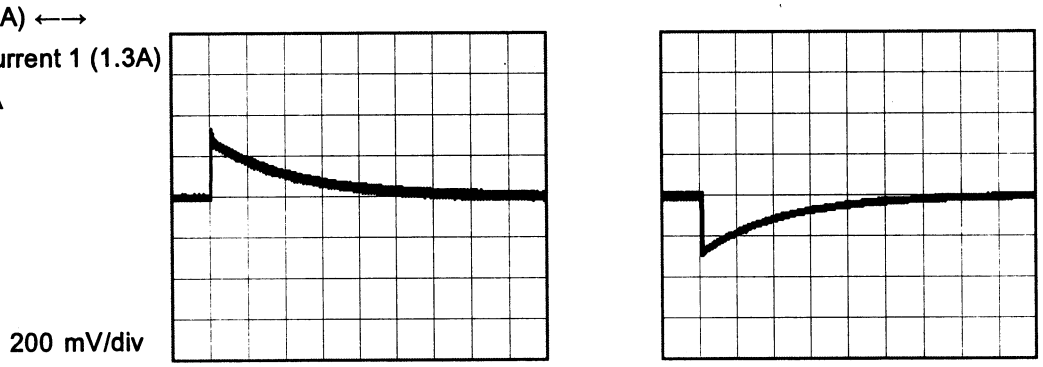
Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Output current 2 (1.7A)
* +12V: 0.9A




Min. Load (0A) ⟷
Output current 1 (1.3A)
* +12V: 1.3A



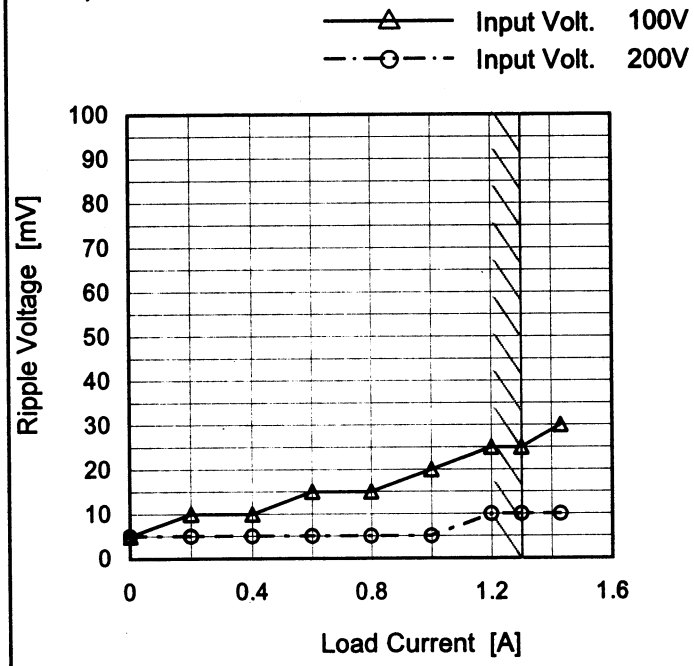

* The characteristic of AC200V is equal.

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Ripple Voltage (by Load Current) |
| Object | +12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

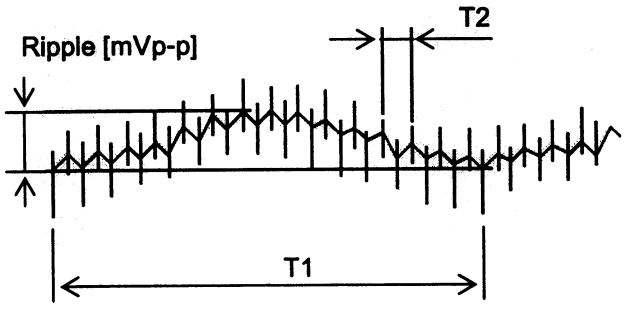



Fig. Complex Ripple Wave Form

2.Values

| Load Current [A] | Ripple Voltage [mV] | |
|---|---|---|
| | Input Volt. 100 [V] | Input Volt. 200 [V] |
| 0.00 | 5 | 5 |
| 0.20 | 10 | 5 |
| 0.40 | 10 | 5 |
| 0.60 | 15 | 5 |
| 0.80 | 15 | 5 |
| 1.00 | 20 | 5 |
| 1.20 | 25 | 10 |
| 1.30 | 25 | 10 |
| 1.43 | 30 | 10 |
| -- | - | - |
| -- | - | - |

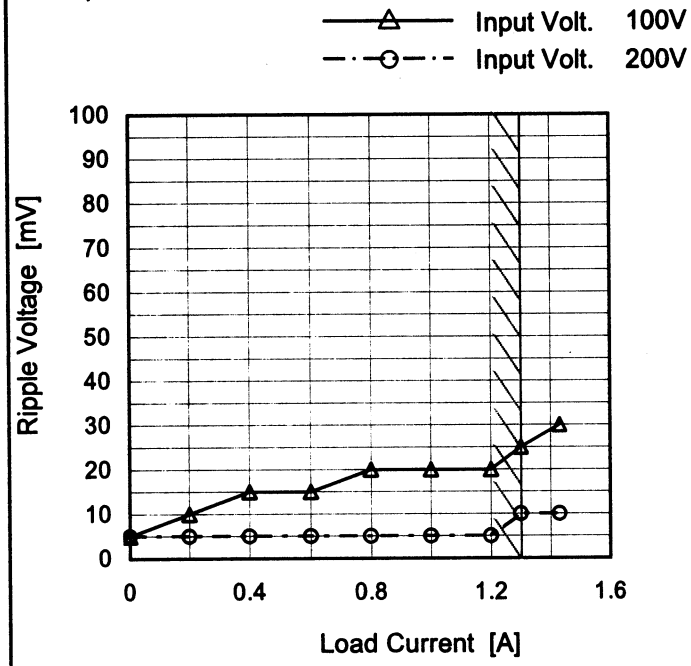
-12V: Rated output current 1

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Ripple Voltage (by Load Current) |
| Object | -12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

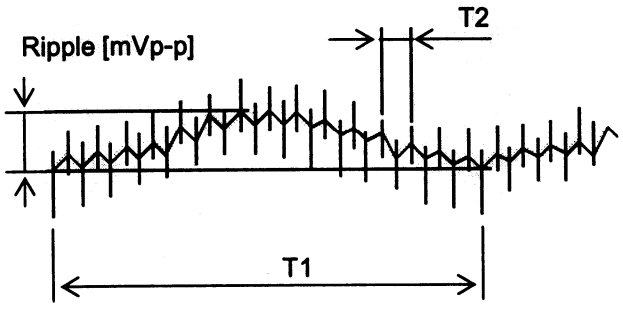



Fig. Complex Ripple Wave Form

2.Values

| Load Current [A] | Ripple Voltage [mV] | |
|---|---|---|
| | Input Volt. 100 [V] | Input Volt. 200 [V] |
| 0.00 | 5 | 5 |
| 0.20 | 10 | 5 |
| 0.40 | 15 | 5 |
| 0.60 | 15 | 5 |
| 0.80 | 20 | 5 |
| 1.00 | 20 | 5 |
| 1.20 | 20 | 5 |
| 1.30 | 25 | 10 |
| 1.43 | 30 | 10 |
| -- | - | - |
| -- | - | - |

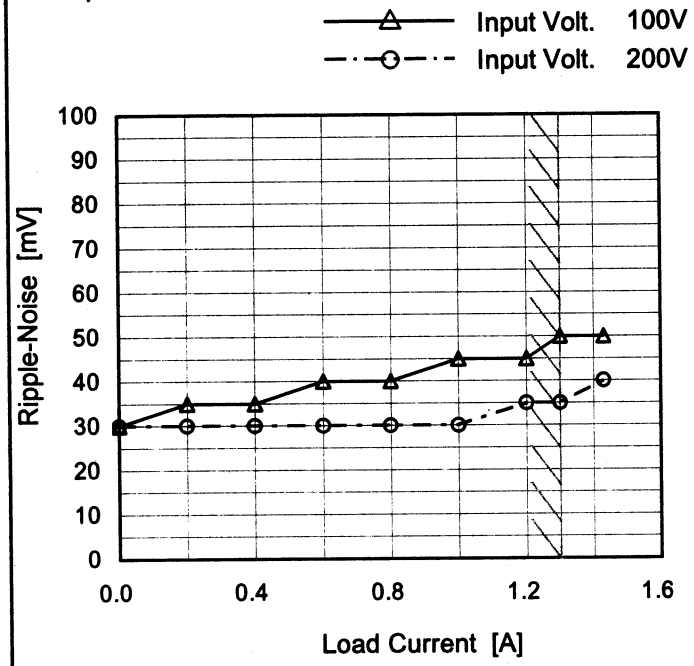
+12V: Rated output current 1

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Ripple-Noise |
| Object | +12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




Measured by 20 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

2.Values

| Load Current [A] | Ripple-Noise [mV] | |
|---|---|---|
| | Input Volt. 100 [V] | Input Volt. 200 [V] |
| 0.00 | 30 | 30 |
| 0.20 | 35 | 30 |
| 0.40 | 35 | 30 |
| 0.60 | 40 | 30 |
| 0.80 | 40 | 30 |
| 1.00 | 45 | 30 |
| 1.20 | 45 | 35 |
| 1.30 | 50 | 35 |
| 1.43 | 50 | 40 |
| -- | - | - |
| -- | - | - |

-12V: Rated output current 1

T1: Due to AC Input Line
T2: Due to Switching

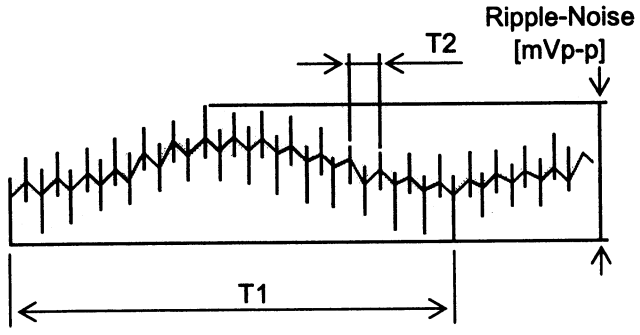



Fig. Complex Ripple Wave Form

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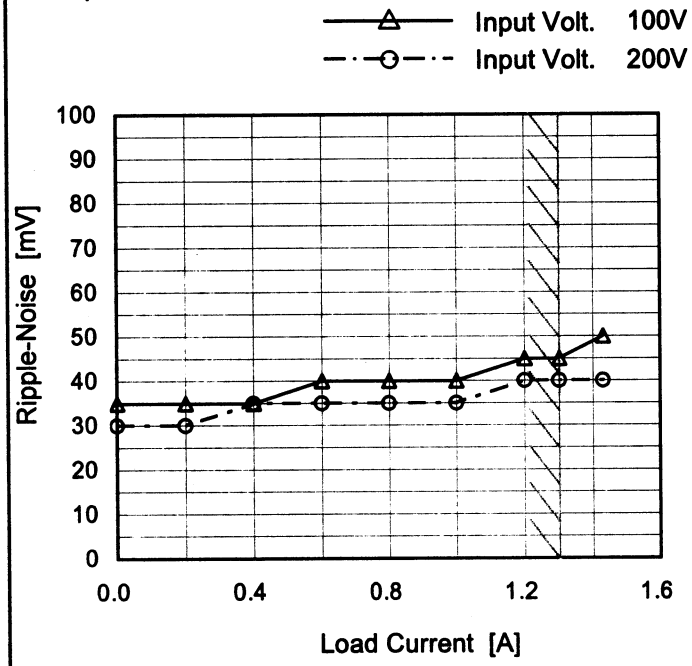
| | |
|---|---|
| Model | PBW30F-12 |
| Item | Ripple-Noise |
| Object | -12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




Measured by 20 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

2.Values

| Load Current [A] | Ripple-Noise [mV] | |
|---|---|---|
| | Input Volt. 100 [V] | Input Volt. 200 [V] |
| 0.00 | 35 | 30 |
| 0.20 | 35 | 30 |
| 0.40 | 35 | 35 |
| 0.60 | 40 | 35 |
| 0.80 | 40 | 35 |
| 1.00 | 40 | 35 |
| 1.20 | 45 | 40 |
| 1.30 | 45 | 40 |
| 1.43 | 50 | 40 |
| -- | - | - |
| -- | - | - |

+12V: Rated output current 1

T1: Due to AC Input Line
T2: Due to Switching

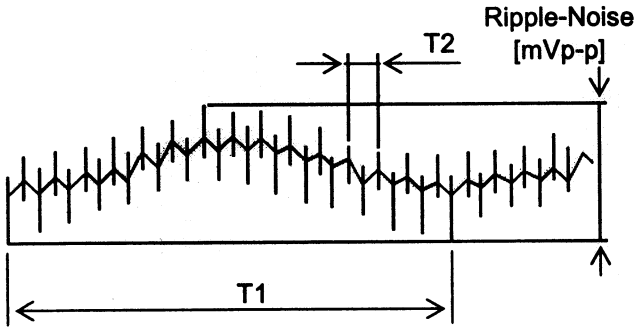


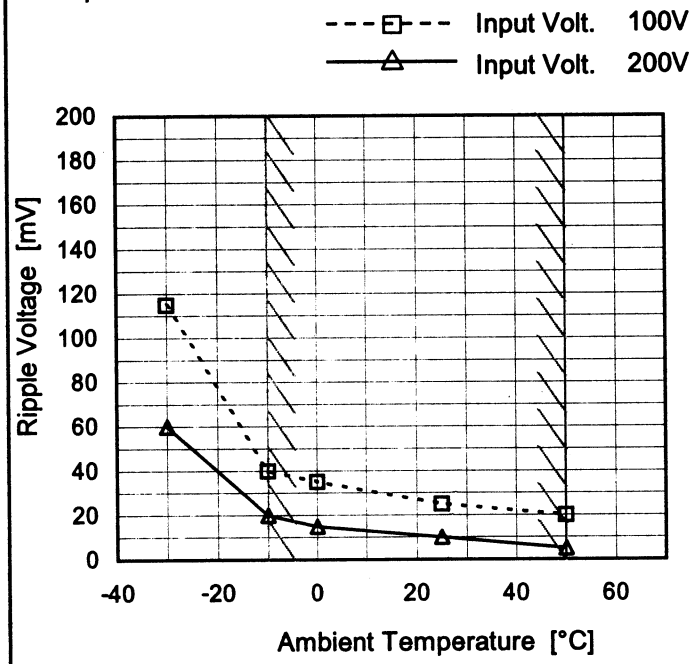

Fig. Complex Ripple Wave Form

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Ripple Voltage (by Ambient Temp.) |
| Object | +12V1.3A |

Testing Circuitry Figure A

1.Graph




Load 100 %

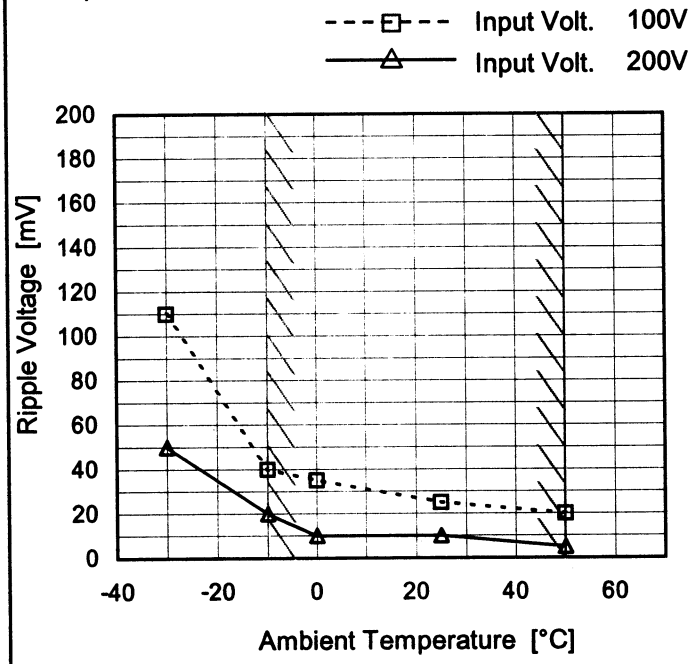
2.Values

| Ambient Temperature [°C] | Ripple Voltage [mV] | |
|---|---|---|
| | Input Volt. 100 [V] | Input Volt. 200 [V] |
| -30 | 115 | 60 |
| -10 | 40 | 20 |
| 0 | 35 | 15 |
| 25 | 25 | 10 |
| 50 | 20 | 5 |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |

-12V: Rated output current 1

| | |
|---|---|
| Object | -12V1.3A |

1.Graph




Load 100 %

Measured by 20 MHz Oscilloscope.

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

2.Values

| Ambient Temperature [°C] | Ripple Voltage [mV] | |
|---|---|---|
| | Input Volt. 100 [V] | Input Volt. 200 [V] |
| -30 | 110 | 50 |
| -10 | 40 | 20 |
| 0 | 35 | 10 |
| 25 | 25 | 10 |
| 50 | 20 | 5 |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |

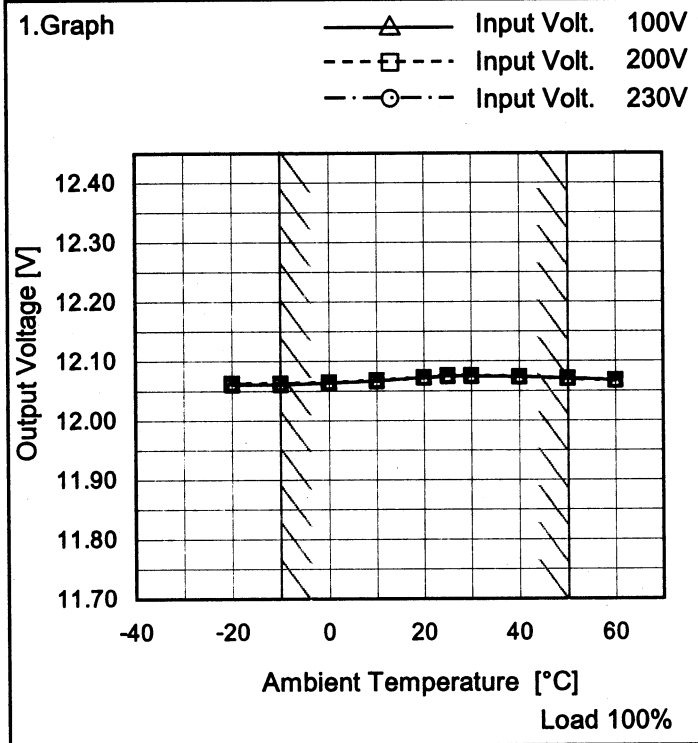
+12V: Rated output current 1

COSEL

| Model | PBW30F-12 |
|---|---|
| Item | Ambient Temperature Drift |
| Object | +12V1.3A |

Testing Circuitry Figure A

1.Graph

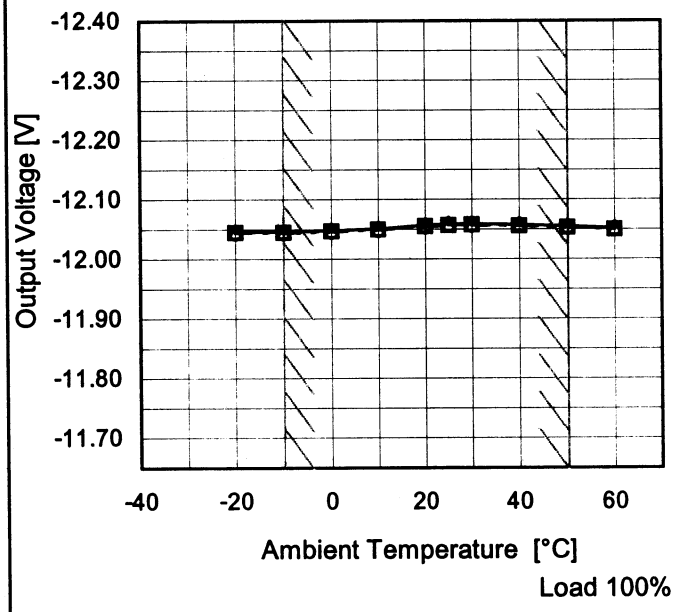



2.Values

| Ambient Temperature [°C] | Output Voltage [V] | | |
|---|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| -20 | 12.061 | 12.063 | 12.062 |
| -10 | 12.061 | 12.063 | 12.062 |
| 0 | 12.064 | 12.065 | 12.064 |
| 10 | 12.067 | 12.068 | 12.067 |
| 20 | 12.073 | 12.073 | 12.072 |
| 25 | 12.075 | 12.076 | 12.075 |
| 30 | 12.075 | 12.076 | 12.075 |
| 40 | 12.074 | 12.074 | 12.074 |
| 50 | 12.071 | 12.071 | 12.070 |
| 60 | 12.068 | 12.068 | 12.067 |
| -- | - | - | - |

| Object | -12V1.3A |
|---|---|

1.Graph




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

2.Values

| Ambient Temperature [°C] | Output Voltage [V] | | |
|---|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| -20 | -12.046 | -12.045 | -12.044 |
| -10 | -12.046 | -12.045 | -12.044 |
| 0 | -12.048 | -12.047 | -12.046 |
| 10 | -12.051 | -12.050 | -12.049 |
| 20 | -12.057 | -12.055 | -12.054 |
| 25 | -12.059 | -12.057 | -12.057 |
| 30 | -12.059 | -12.058 | -12.057 |
| 40 | -12.058 | -12.056 | -12.056 |
| 50 | -12.055 | -12.053 | -12.053 |
| 60 | -12.052 | -12.050 | -12.050 |
| -- | - | - | - |

COSEL

| Model | PBW30F-12 | |
|---|---|---|
| Item | Output Voltage Accuracy | Testing Circuitry Figure A |

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 - 264V
Load Current (AVR 1) : 0 - 1.3A (AVR 2) : 0 - 1.3A

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

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

2.Values

| Object | +12V1.3A | | | | | |
|---|---|---|---|---|---|---|
| Item | Temperature [°C] | Input Voltage[V] | Output | | Output Voltage Accuracy | |
| | | | Current[A] | Voltage[V] | Value [mV] | Ration [%] |
| Maximum Voltage | 50 | 85 | 0 | 12.344 | ±142 | ±1.2 |
| Minimum Voltage | -10 | 85 | 1.3 | 12.061 | | |

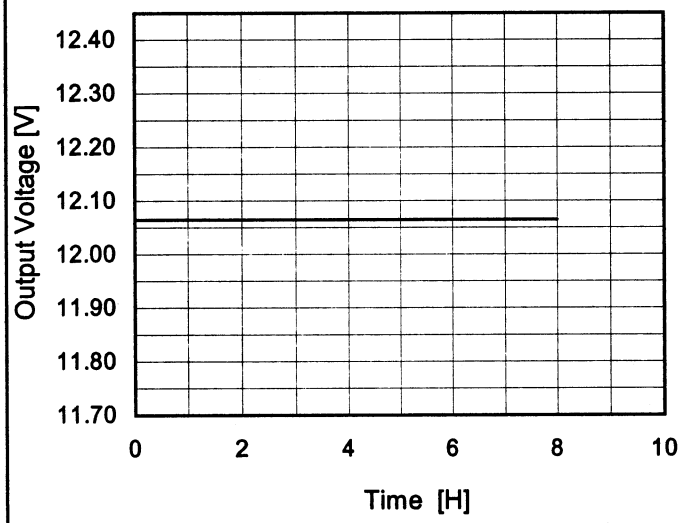
| Object | -12V1.3A | | | | | |
|---|---|---|---|---|---|---|
| Item | Temperature [°C] | Input Voltage[V] | Output | | Output Voltage Accuracy | |
| | | | Current[A] | Voltage[V] | Value [mV] | Ration [%] |
| Maximum Voltage | 50 | 85 | 0 | -12.355 | ±156 | ±1.3 |
| Minimum Voltage | -10 | 264 | 1.3 | -12.044 | | |

COSEL

| Model | PBW30F-12 |
|---|---|
| Item | Time Lapse Drift |
| Object | +12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph



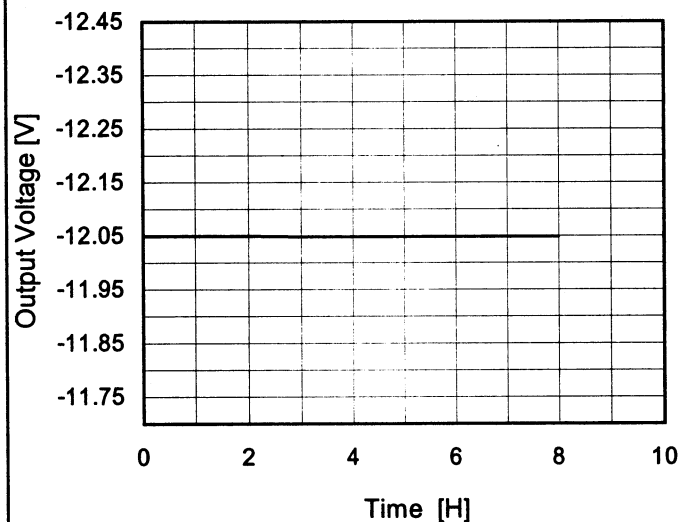

Input Volt. 100V
Load 100%

2.Values

| Time since start [H] | Output Voltage [V] |
|---|---|
| 0.0 | 12.064 |
| 0.5 | 12.065 |
| 1.0 | 12.065 |
| 2.0 | 12.065 |
| 3.0 | 12.065 |
| 4.0 | 12.065 |
| 5.0 | 12.065 |
| 6.0 | 12.065 |
| 7.0 | 12.065 |
| 8.0 | 12.065 |

| Object | -12V1.3A |
|---|---|

1.Graph




Input Volt. 100V
Load 100%

* The characteristic of AC200V is equal.

2.Values

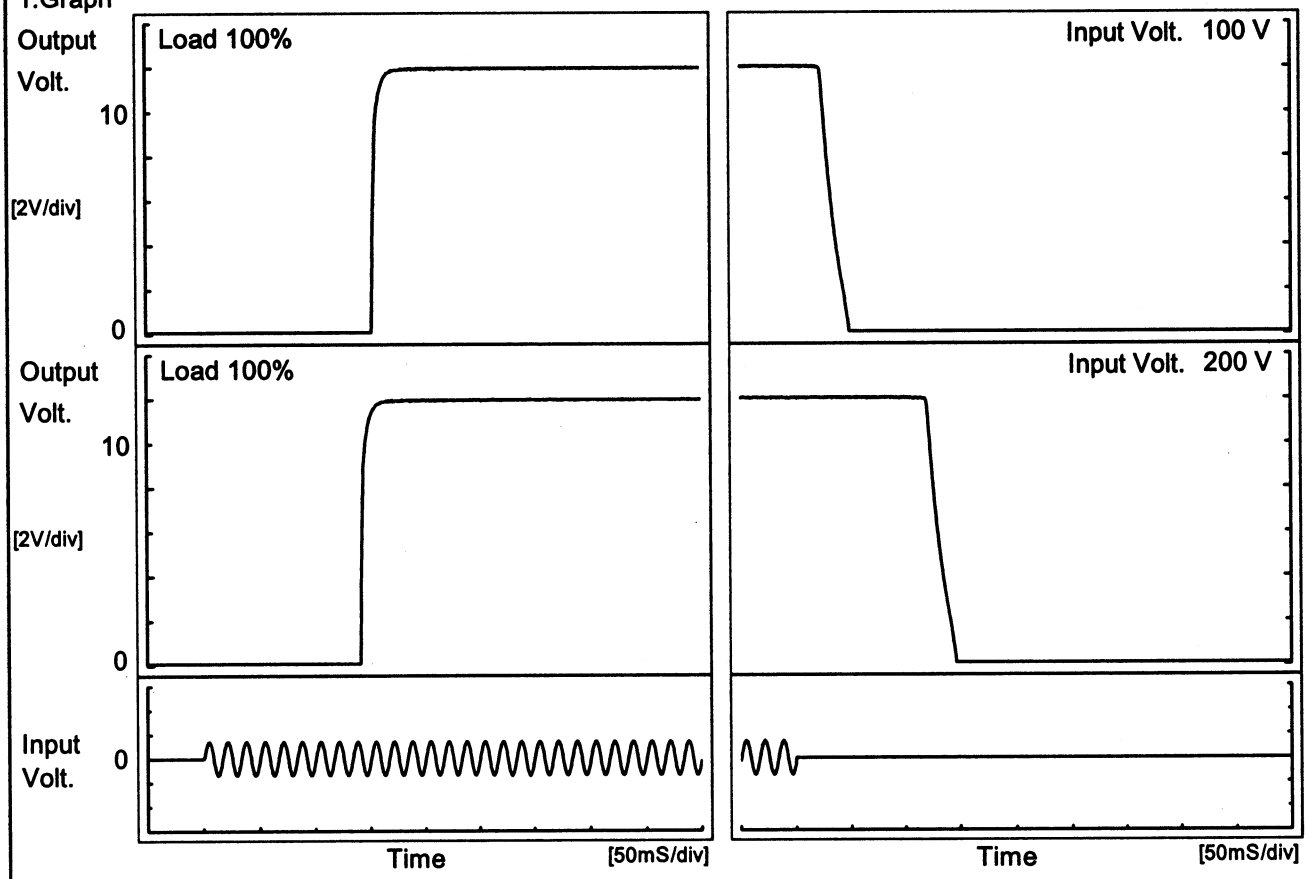
| Time since start [H] | Output Voltage [V] |
|---|---|
| 0.0 | -12.049 |
| 0.5 | -12.050 |
| 1.0 | -12.050 |
| 2.0 | -12.050 |
| 3.0 | -12.049 |
| 4.0 | -12.049 |
| 5.0 | -12.049 |
| 6.0 | -12.049 |
| 7.0 | -12.049 |
| 8.0 | -12.049 |

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Rise and Fall Time |
| Object | +12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

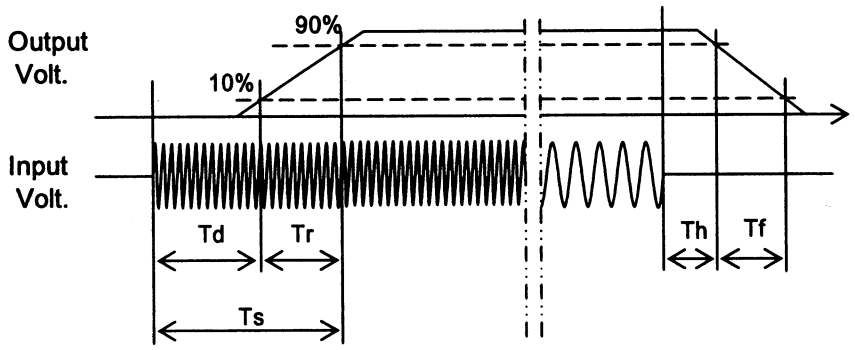
1.Graph




2.Values

[mS]

| Input Volt. \ Time | Td | Tr | Ts | Th | Tf |
|---|---|---|---|---|---|
| 100 V | 152.3 | 7.5 | 159.8 | 24.0 | 21.8 |
| 200 V | 141.3 | 7.3 | 148.6 | 121.3 | 22.5 |



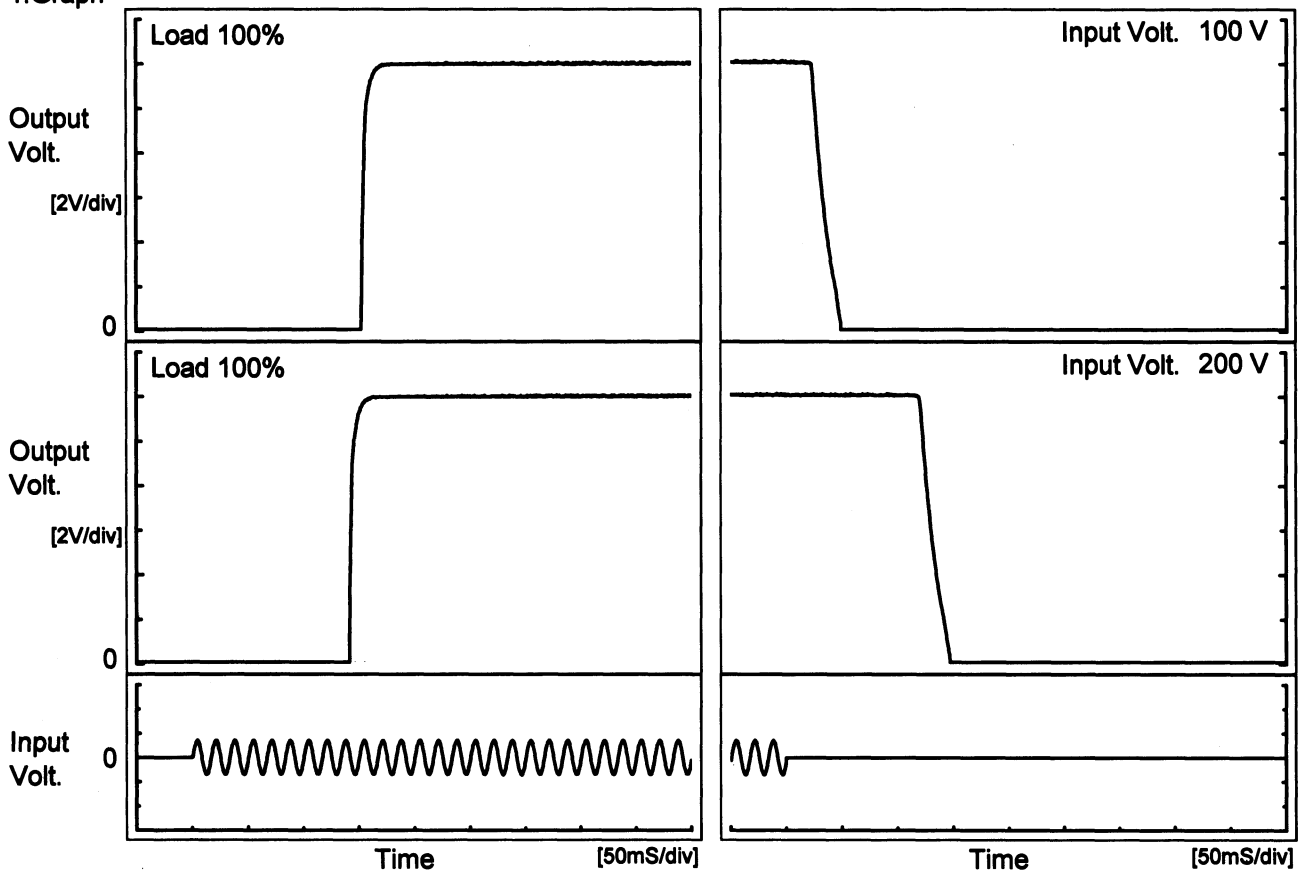



BC-10017

COSEL

| | | |
|---|---|---|
| Model | PBW30F-12 | |
| Item | Rise and Fall Time | Temperature 25°C<br>Testing Circuitry Figure A |
| Object | -12V1.3A | |

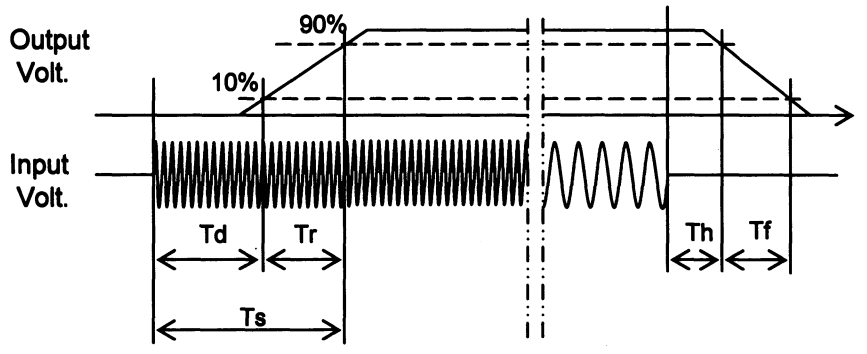
1.Graph




2.Values

[mS]

| Input Volt. \ Time | Td | Tr | Ts | Th | Tf |
|---|---|---|---|---|---|
| 100 V | 152.3 | 7.3 | 159.6 | 24.3 | 21.5 |
| 200 V | 141.5 | 7.0 | 148.5 | 121.8 | 22.0 |

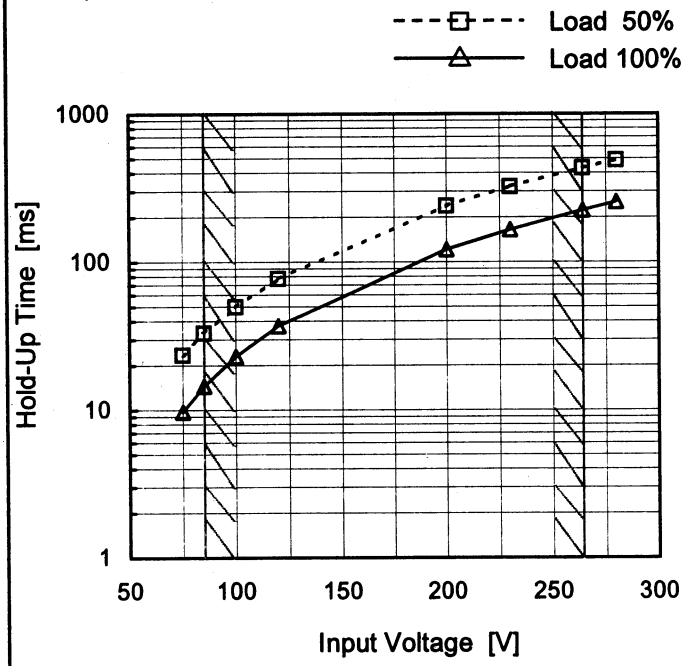


COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Hold-Up Time |
| Object | +12V1.3A |

Temperature 25°C
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.

2.Values

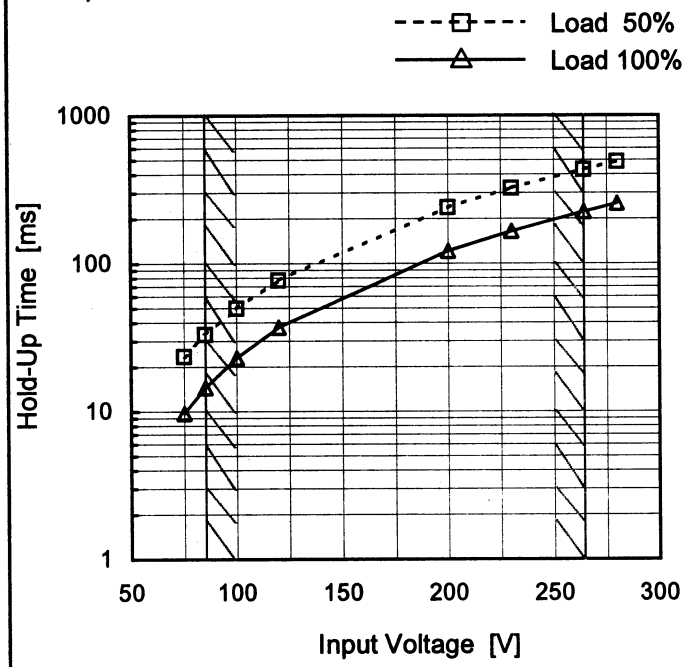
| Input Voltage [V] | Hold-Up Time [ms] | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 24 | 10 |
| 85 | 33 | 15 |
| 100 | 50 | 23 |
| 120 | 77 | 37 |
| 200 | 239 | 121 |
| 230 | 322 | 165 |
| 264 | 430 | 223 |
| 280 | 487 | 254 |
| -- | - | - |

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Hold-Up Time |
| Object | -12V1.3A |

Temperature 25°C
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.

2.Values

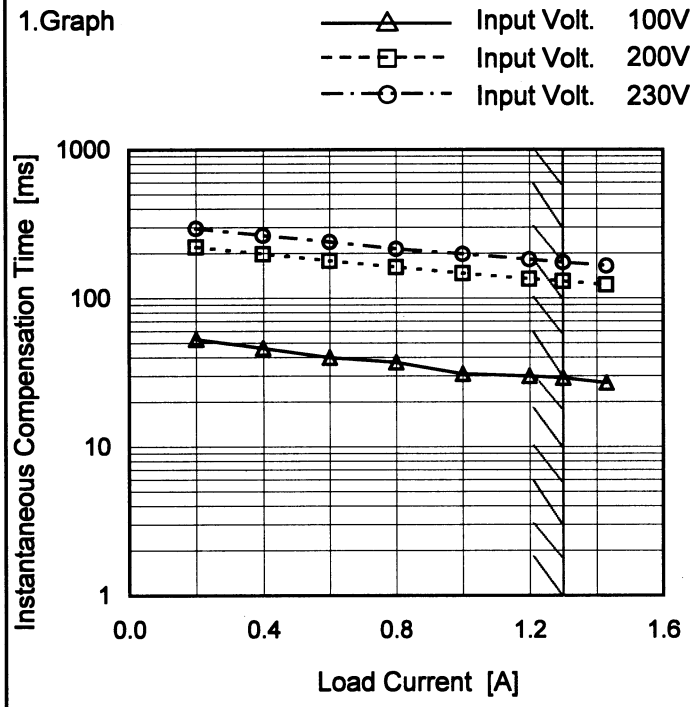
| Input Voltage [V] | Hold-Up Time [ms] | |
|---|---|---|
| | Load 50% | Load 100% |
| 75 | 24 | 10 |
| 85 | 33 | 15 |
| 100 | 50 | 23 |
| 120 | 77 | 37 |
| 200 | 239 | 121 |
| 230 | 322 | 165 |
| 264 | 430 | 223 |
| 280 | 487 | 254 |
| -- | - | - |

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Instantaneous Interruption Compensation |
| Object | +12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




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

2.Values

| Load Current [A] | Time [ms] Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
|---|---|---|---|
| 0.00 | - | - | - |
| 0.20 | 53 | 221 | 295 |
| 0.40 | 46 | 198 | 265 |
| 0.60 | 40 | 179 | 239 |
| 0.80 | 37 | 162 | 215 |
| 1.00 | 31 | 147 | 198 |
| 1.20 | 30 | 135 | 182 |
| 1.30 | 29 | 130 | 174 |
| 1.43 | 27 | 123 | 165 |
| -- | - | - | - |
| -- | - | - | - |

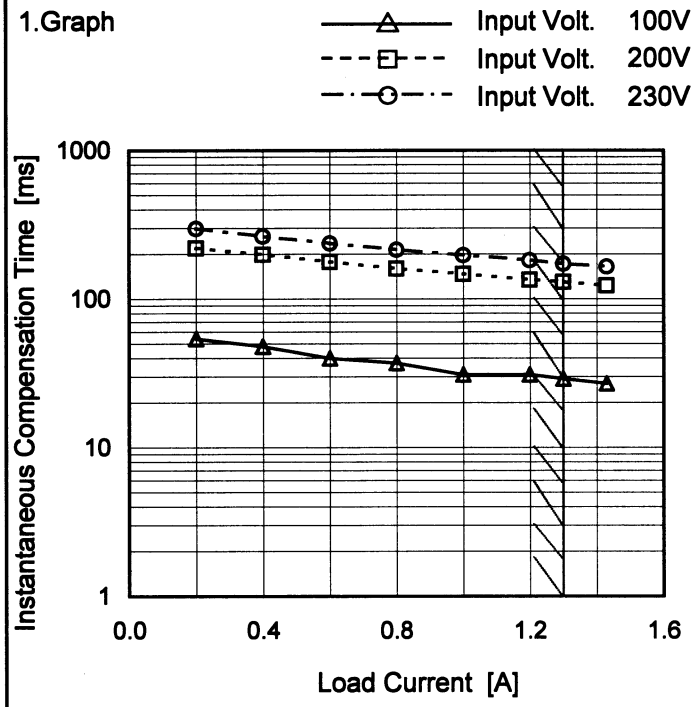
-12V: Rated output current 1

COSEL

| | |
|---|---|
| Model | PBW30F-12 |
| Item | Instantaneous Interruption Compensation |
| Object | -12V1.3A |

Temperature 25°C
Testing Circuitry Figure A

1.Graph




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

2.Values

| Load Current [A] | Time [ms] Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
|---|---|---|---|
| 0.00 | - | - | - |
| 0.20 | 54 | 220 | 298 |
| 0.40 | 48 | 199 | 265 |
| 0.60 | 40 | 178 | 237 |
| 0.80 | 37 | 160 | 215 |
| 1.00 | 31 | 147 | 197 |
| 1.20 | 31 | 135 | 182 |
| 1.30 | 29 | 130 | 173 |
| 1.43 | 27 | 123 | 165 |
| -- | - | - | - |
| -- | - | - | - |

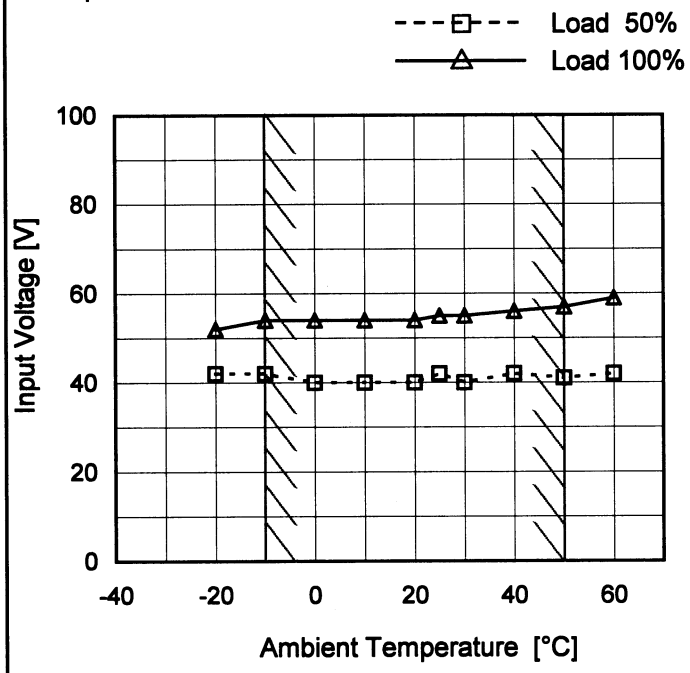
+12V: Rated output current 1

COSEL

| Model | PBW30F-12 |
|---|---|
| Item | Minimum Input Voltage for Regulated Output Voltage |
| Object | +12V1.3A |

Testing Circuitry Figure A

1.Graph

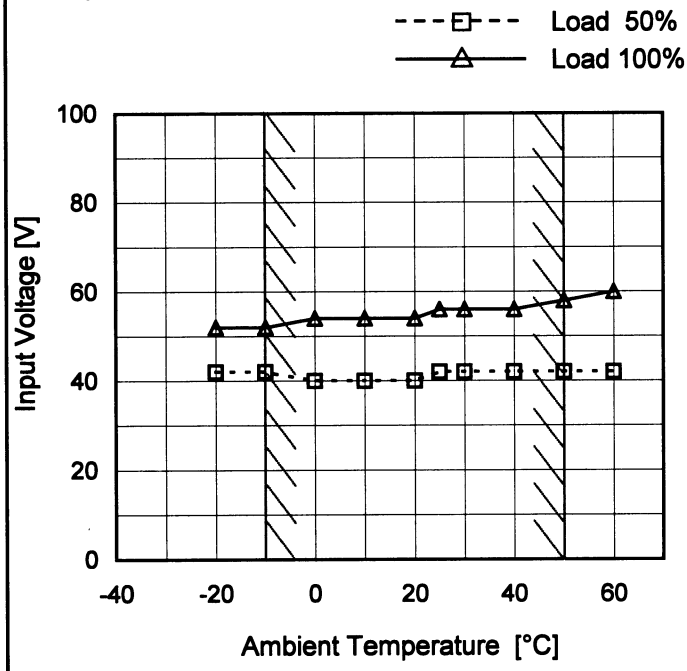



2.Values

| Ambient Temperature [°C] | Input Voltage [V] | |
|---|---|---|
| | Load 50% | Load 100% |
| -20 | 42 | 52 |
| -10 | 42 | 54 |
| 0 | 40 | 54 |
| 10 | 40 | 54 |
| 20 | 40 | 54 |
| 25 | 42 | 55 |
| 30 | 40 | 55 |
| 40 | 42 | 56 |
| 50 | 41 | 57 |
| 60 | 42 | 59 |
| -- | - | - |

| Object | -12V1.3A |
|---|---|

1.Graph




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

2.Values

| Ambient Temperature [°C] | Input Voltage [V] | |
|---|---|---|
| | Load 50% | Load 100% |
| -20 | 42 | 52 |
| -10 | 42 | 52 |
| 0 | 40 | 54 |
| 10 | 40 | 54 |
| 20 | 40 | 54 |
| 25 | 42 | 56 |
| 30 | 42 | 56 |
| 40 | 42 | 56 |
| 50 | 42 | 58 |
| 60 | 42 | 60 |
| -- | - | - |

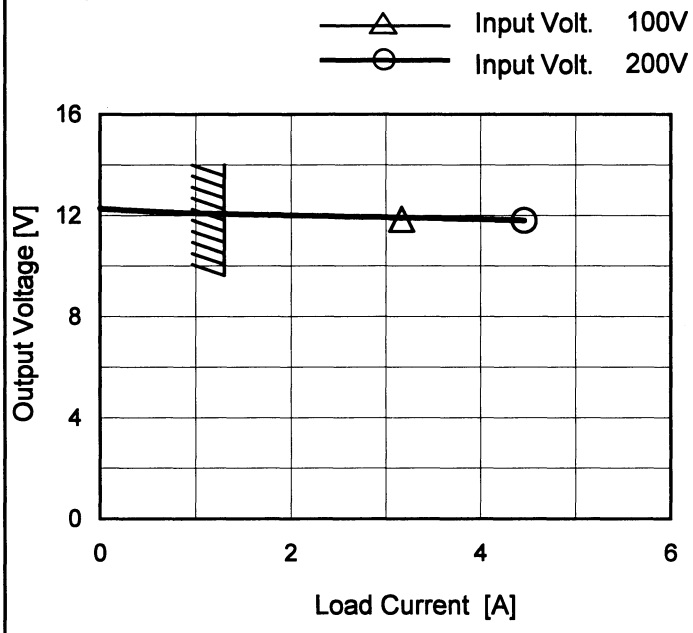
COSEL

| Model | PBW30F-12 |
|---|---|
| Item | Overcurrent Protection |

Temperature 25°C
Testing Circuitry Figure A

Object +12V1.3A

1.Graph




Intermittent operation occurs when the output voltage is less than rated output voltage.

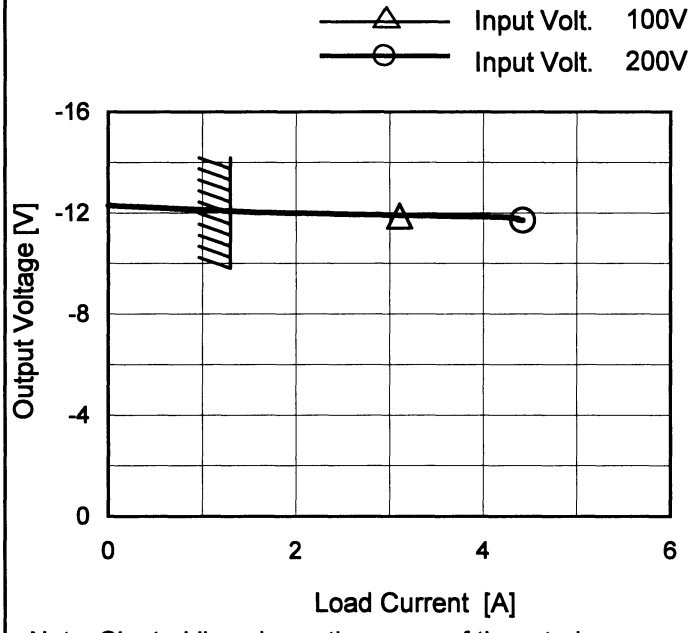
2.Values

| Output Voltage [V] | Load Current [A] | |
|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] |
| 12 | 3.19 | 4.46 |
| 11.4 | - | - |
| 10.8 | - | - |
| 9.6 | - | - |
| 8.4 | - | - |
| 7.2 | - | - |
| 6 | - | - |
| 4.8 | - | - |
| 3.6 | - | - |
| 2.4 | - | - |
| 1.2 | - | - |
| 0 | - | - |

-12V:Rated output current 1

Object -12V1.3A

1.Graph




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

Intermittent operation occurs when the output voltage is less than rated output voltage.

2.Values

| Output Voltage [V] | Load Current [A] | |
|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] |
| -12 | 3.11 | 4.42 |
| -11.4 | - | - |
| -10.8 | - | - |
| -9.6 | - | - |
| -8.4 | - | - |
| -7.2 | - | - |
| -6 | - | - |
| -4.8 | - | - |
| -3.6 | - | - |
| -2.4 | - | - |
| -1.2 | - | - |
| 0 | - | - |

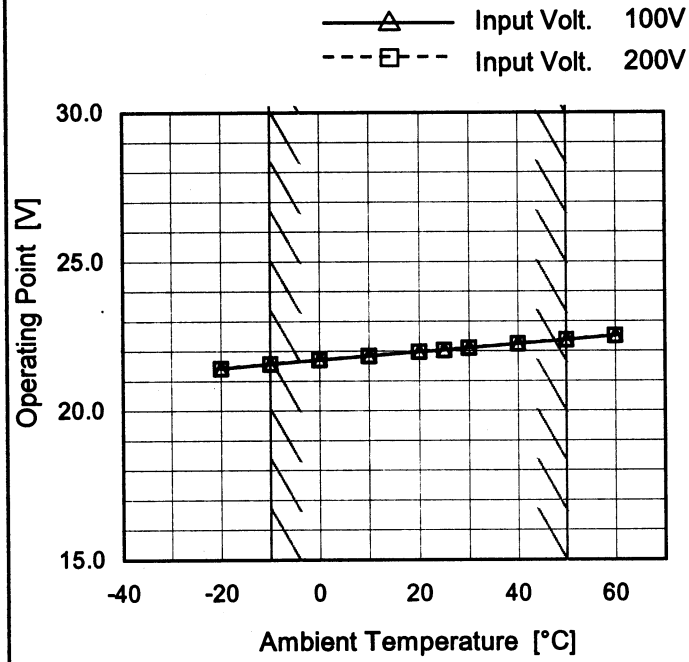
+12V:Rated output current 1

COSEL

| Model | PBW30F-12 |
|---|---|
| Item | Overvoltage Protection |
| Object | +12V1.3A |

Testing Circuitry Figure A

1.Graph



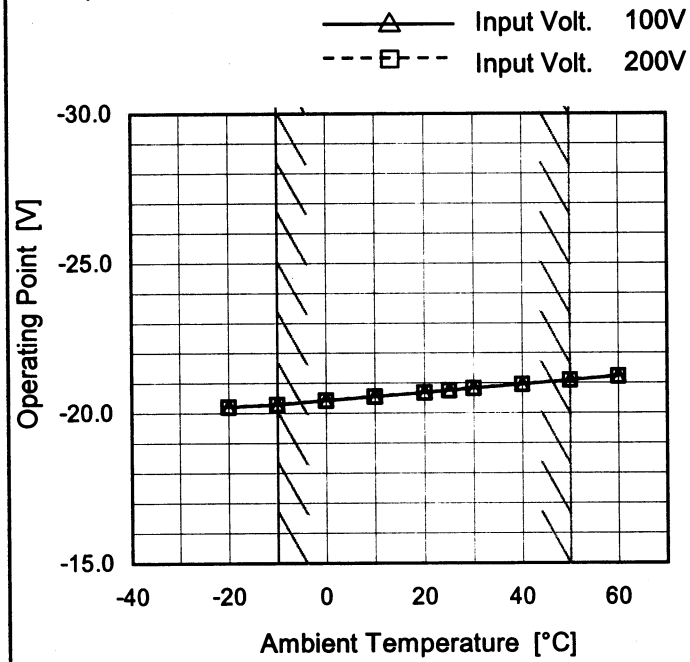

Load 0%

2.Values

| Ambient Temperature [°C] | Operating Point [V] | |
|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] |
| -20 | 21.43 | 21.43 |
| -10 | 21.57 | 21.57 |
| 0 | 21.71 | 21.71 |
| 10 | 21.84 | 21.84 |
| 20 | 21.98 | 21.98 |
| 25 | 22.04 | 22.04 |
| 30 | 22.11 | 22.11 |
| 40 | 22.25 | 22.25 |
| 50 | 22.38 | 22.38 |
| 60 | 22.52 | 22.52 |
| -- | - | - |

| Object | -12V1.3A |
|---|---|

1.Graph




Load 0%

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

2.Values

| Ambient Temperature [°C] | Operating Point [V] | |
|---|---|---|
| | Input Volt. 100[V] | Input Volt. 200[V] |
| -20 | -20.22 | -20.22 |
| -10 | -20.29 | -20.29 |
| 0 | -20.43 | -20.43 |
| 10 | -20.56 | -20.56 |
| 20 | -20.69 | -20.69 |
| 25 | -20.76 | -20.76 |
| 30 | -20.83 | -20.83 |
| 40 | -20.96 | -20.96 |
| 50 | -21.10 | -21.10 |
| 60 | -21.23 | -21.23 |
| -- | - | - |

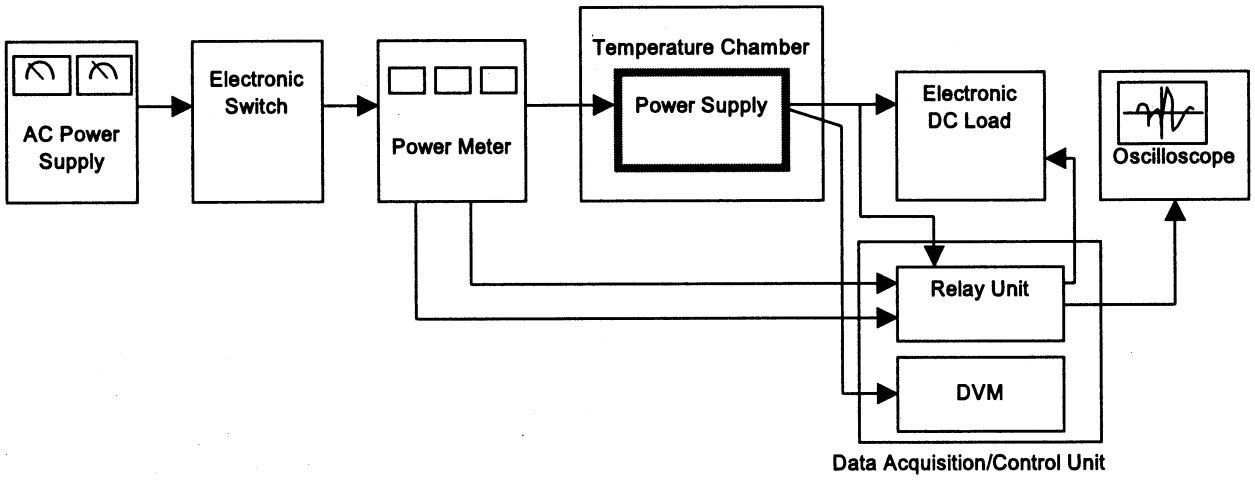



Figure A

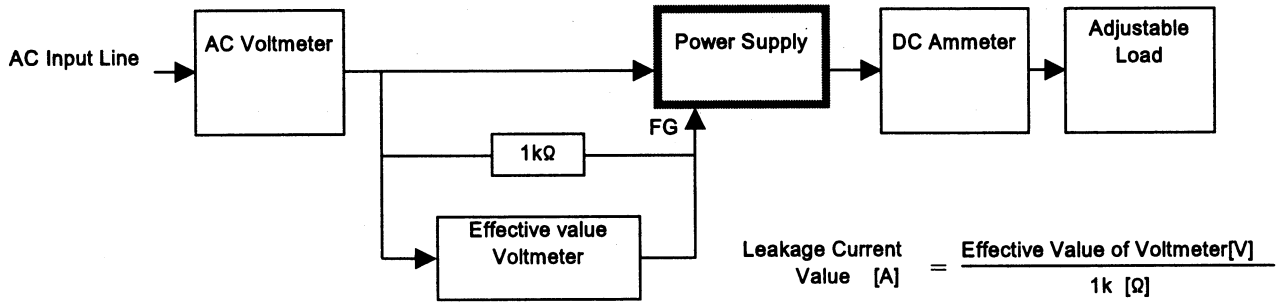



Figure B ( DEN-AN )

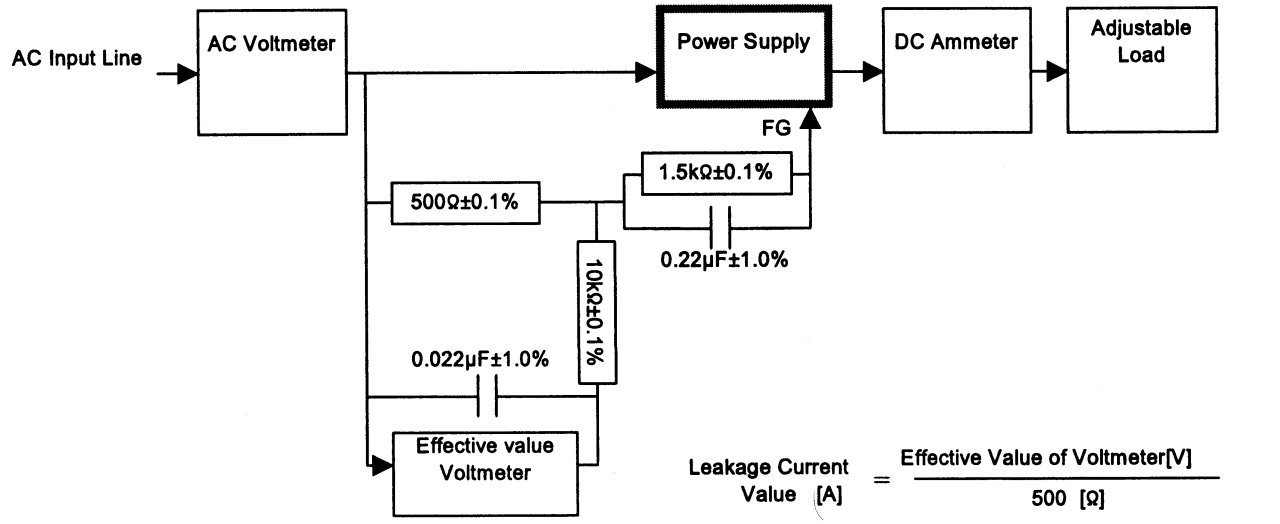



Figure B ( IEC60950 )