



# BIAS Power Supply Module BPWX 4 Series Data Sheet

Single (Vo) or Dual (Vo & Vr) output

BPWX 4-08-00, -08-33, -08-50

BPWX 4-14-00, -14-33, -14-50

BPWX 4-24-00



## Features:

- Extended Temperature with **NO DE-RATING!** (-40 to +85°C)
- Universal Input (90-308 VAC, 50/60Hz)
- Small Size—2.45 in<sup>3</sup> [40.1 cm<sup>3</sup>]
- Low no-load input power <30mW
- Constant power mode (not current limit)
- 3000 VAC Isolation
- EN 55022, Class B; FCC Part 15, Class B
- Meets UL/CSA and EN Product Safety (ITE)

The BPWX Power Supply Module is the ideal low EMI solution for worldwide deployment of control applications in wireless/M2M, lighting, sensing, smart building and power distribution, especially where long range wireless operation or extended temperature is required.

A patented design incorporating a custom integrated circuit into a small package (2.45 in<sup>3</sup> [40.1 cm<sup>3</sup>]) the BIAS Module provides an immediate “drop-in” solution, requiring no additional external components.

## Operating Specifications

(@120VAC / 60 Hz / 25°C unless otherwise specified)

| Electrical                         |                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Input Voltage Range                | 90 - 308 VAC (50/60Hz)                                                                                                         |
| Input Surge Withstand              | 345V, < 30 sec                                                                                                                 |
| Output Power (Pmax)                | 4 W min. (60Hz)<br>3.33 W min. (50Hz)                                                                                          |
| Efficiency                         | ≥ 70%                                                                                                                          |
| Output Vo (Peak)                   | 8, 14 or 24 VDC nom. +/- 5%                                                                                                    |
| Line / Load Regulation Vo (Peak)   | +/- 1% Po < Pmax                                                                                                               |
| Temperature Regulation Vo (Peak)   | +/- 2% Po < Pmax                                                                                                               |
| Ripple Vo (@120 Hz)<br>(@ 100 kHz) | 1.75 V p:p<br>0.25 V p:p                                                                                                       |
| Output Vr, 3.3 volt (+/- 5%)       | For Vo = 8V, Ir out 160mA max, Io+Ir ≤ 500mA<br>For Vo = 14V, Ir out 70mA max, Io+Ir ≤ 285mA<br>For Vo = 24V, Vr not available |
| Output Vr, 5.0 volt (+/- 5%)       | For Vo = 8V, Ir out 250mA max, Io+Ir ≤ 500mA<br>For Vo = 14V, Ir out 83mA max, Io+Ir ≤ 285mA<br>For Vo = 24V, Vr not available |
| No-load Consumption                | 30 mW typical @ Vin=120 VAC                                                                                                    |
| Isolation                          | 3000 VAC (meets UL / CSA & EN Product Safety)                                                                                  |
| Earth Leakage @ 120 VAC            | < 10 uA                                                                                                                        |
| Short Circuit Protection           | Continuous, Pin ≤ 0.7 w @ Vin = 120 VAC                                                                                        |
| Reliability @ 25° C, MIL HDBK-217F | > 500 Khr MTBF                                                                                                                 |
| Thermal                            |                                                                                                                                |
| Operating Temperature              | -40 to +85° C                                                                                                                  |
| Operating Relative Humidity        | 0 – 95%, non-condensing                                                                                                        |
| Storage Temperature                | -40 to +105° C                                                                                                                 |
| Mechanical                         |                                                                                                                                |
| Package Size (L x W x H)           | 1.91 x 1.31 x 0.98 inches [48.5 x 33.3 x 24.9 mm]                                                                              |
| Safety                             |                                                                                                                                |
| Safety Compliance                  | UL / EN 60950-1 2 <sup>nd</sup> Ed. (CB Report Available)                                                                      |
| EMI Emissions                      | EN 55022, Class B, FCC Part 15, Class B                                                                                        |

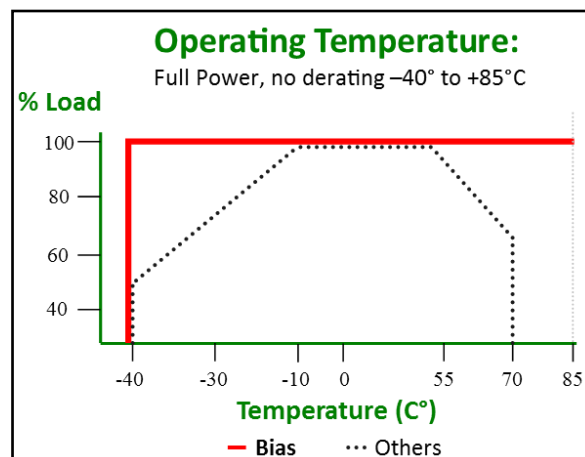
Bias Power AC/DC power supplies are available with two different types of outputs to fit your applications...

The characteristics of the main (Vo) and auxiliary (Vr) outputs are different and each has application-specific benefits which can provide high value to the system designer:

Vo is a voltage-regulated output which has a constant power mode instead of a conventional current limit. This output is best suited as a source for isolated DC utility power, which may be used directly or post-regulated with either a linear regulator or a DC/DC converter. **Vo is self protecting, cannot be overloaded and can be shorted indefinitely.** So unlike design-your-own, or partially complete modules where significant design margin is required to stay far away from current limit, **there is no need to oversize a Bias Power supply.** The graceful transition from voltage regulation to constant power along with the wide range of product ratings allows the designer to select a supply tightly matched to the design load.

Vr is also a voltage-regulated output and is thermally protected from overload. It has very low output ripple capable of driving elements which require a low-noise, tightly-regulated supply. In addition, Vr is supplied internally by Vo. This means that any capacitance added to Vo can increase the hold-up time of Vr as well.

\*Note: maximum currents specified for constant voltage range only. See V-I curve on page 2 for Vo in constant power range.





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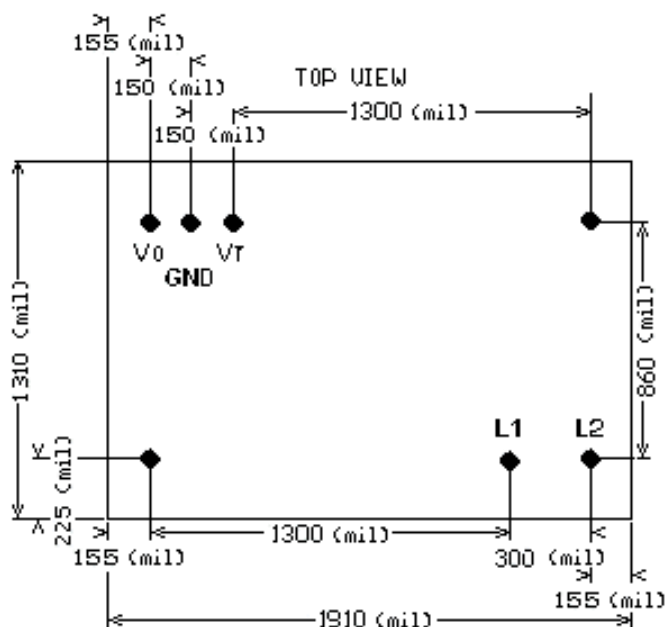
BPWX 4-14-00, -14-33, -14-50

BPWX 4-24-00

## Part Number Designation

| Part Number  | Output Configuration | Vo     | Vr      |
|--------------|----------------------|--------|---------|
| BPWX 4-08-00 | Single output        | 8 VDC  | N/A     |
| BPWX 4-08-33 | Dual Output          | 8 VDC  | 3.3 VDC |
| BPWX 4-08-50 | Dual Output          | 8 VDC  | 5.0 VDC |
| BPWX 4-14-00 | Single output        | 14 VDC | N/A     |
| BPWX 4-14-33 | Dual Output          | 14 VDC | 3.3 VDC |
| BPWX 4-14-50 | Dual Output          | 14 VDC | 5.0 VDC |
| BPWX 4-24-00 | Single Output        | 24 VDC | N/A     |

## Recommended Land Pattern, top view

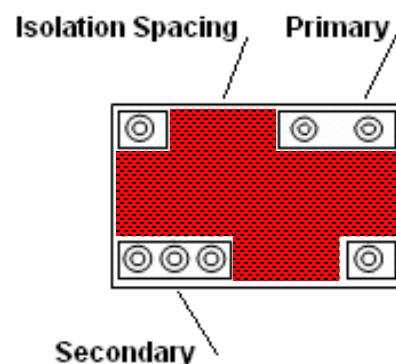


| PIN | DESCRIPTION   |
|-----|---------------|
| L1  | Input High    |
| L2  | Input Low     |
| N/C | No Connection |
| Vo  | Output        |
| GND | Ground        |
| Vr  | Vr Output     |
| N/C | No Connection |

**NOTES**

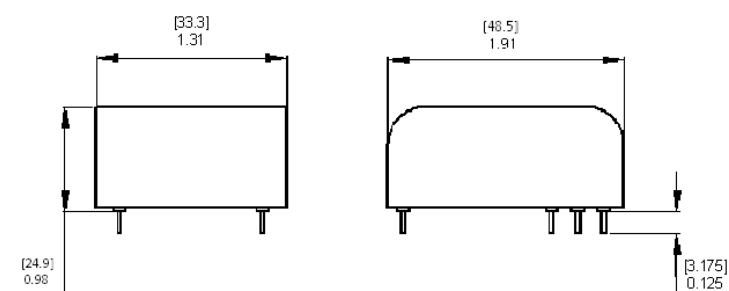
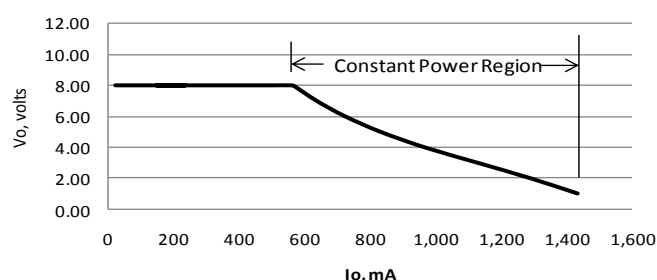
1. Pins 0.031" [0.787 mm] round
2. Pins extend 0.125" [3.175 mm] below stand-offs

## Recommended Isolation,



## V-I Curve (For Vo in Constant Power Range)

V - I, typical





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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