

BIAS 1 Watt Power Supply BPH 1 Series Data Sheet

Single (Vo) or Dual (Vo & Vr) output BPH 1-08-00, -08-33, -08-50 BPH 1-14-00, -14-33, -14-50

The BPH is a revolutionary, micro-sized, drop-in switching power supply module. It contains patented technology with unique features that provide solutions for a wide range of applications, including low power wireless and many other intelligent control devices. The patented SMPS topology is totally different from any other:

It's Quiet: Switching is synchronized and occurs only 10% of the time, so there is very little EMI / EMC interference with other circuits. This means no extra filtering or shielding is needed, helping to achieve longer transmission range with more reliable data communication in low power wireless applications.

It's Powerful: \underline{No} power de-rating across the full wide temperature range. \underline{No} current limit design margin needed when selecting a module. Charge large super caps faster than any regular SMPS with twice the power rating.

It's Green: High efficiency with ultra low standby power and very little self generated heat make it ideal for intelligent devices such as smart-sensors, smart-meters, smart-lighting, smart-grid, M2M or IoT, and any other control applications.

Operating Specifications

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

Electrical		
Input Voltage Range	100 - 375 VAC (50/60Hz)	
Input Surge Withstand	420V, < 30 sec	
Output Power (Pmax)	1.0 W (60Hz) 0.83 W (50Hz)	
Efficiency	70% nom.	
Output Vo (Peak @ 100% load)	+/- 10% across operational voltage range	
Line / Load Regulation Vo (Peak)	+/- 1% Po < Pmax	
Temperature Regulation Vo (Peak)	+/- 2% Po < Pmax	
Ripple Vo	1.00 V p:p @120 Hz; 0.25 V p:p @ 100 kHz	
Output Vr, 3.3 volt (+/- 5%)	For Vo = 8V, Ir out 53mA max, $lo+lr \le 125mA*$ For Vo = 14V, Ir out 23mA max, $lo+lr \le 71mA*$	
Output Vr, 5.0 volt (+/- 5%)	For Vo = 8V, Ir out 83mA max, $lo+lr \le 125mA*$ For Vo = 14V, Ir out 28mA max, $lo+lr \le 71mA*$	
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 ≤ 0.6 w @ Vin = 120 VAC	
Reliability @ 25° C, MIL HDBK-217F	> 500 Khr MTBF	
Thermal		
Operating Temperature	-30 to +70° C	
Operating Relative Humidity	0 – 95%, non-condensing	
Storage Temperature	-40 to +105° C	
Mechanical		
Package Size	1.10 x 0.92 x 0.55 inches	
(L x W x H)	[27.94 x 23.24 x 13.97 mm]	
Safety		
Safety Compliance	UL/EN 60950-1 2 nd Edition (CB Report Available)	
EMI Emissions	EN 55022, Class B, FCC Part 15, Class B	





Actual Size

Features

- Complies with CSA CAN3-C235-83
- NO DE-RATING across entire temperature range (-30 to +70°C)
- Universal Input (100-375 VAC, 50/60Hz)
- Small Size—0.55in³ [9.0cm³]
- 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)

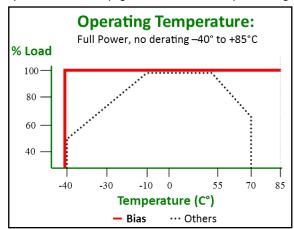
Bias Power AC/DC power supplies are available with two different types of outputs to fit your applications...

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-yourown, 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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Part Number Designation

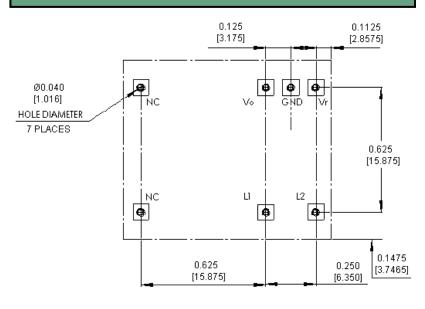
Part Number	Output Configuration	Vo	Vr
BPH 1-08-00	Single output	8 VDC	N/A
BPH 1-14-00	Single output	14 VDC	N/A
BPH 1-08-33	Dual Output	8 VDC	3.3 VDC
BPH 1-08-50	Dual Output	8 VDC	5 VDC
BPH 1-14-33	Dual Output	14 VDC	3.3 VDC
BPH 1-14-50	Dual Output	14 VDC	5 VDC

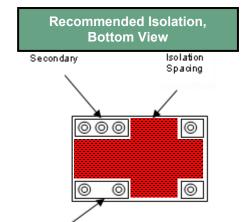
DESCRIPTION PIN L1 Input High L2 Input Low N/C No Connection Vo Output **GND** Ground Vr Vr Output N/C No Connection

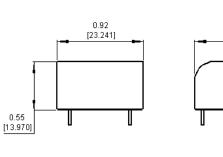
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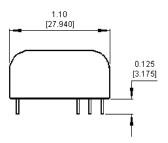
- 1. Pins 0.031" [0.787 mm] round
- 2. Pins extend 0.125" [3.175 mm] below stand-offs

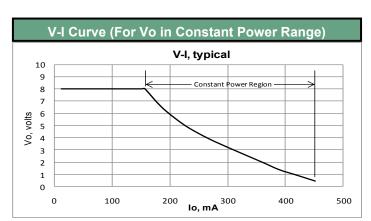
Recommended Land Pattern, top view











Primary



