

HBS SERIES - 150 WATT

DESCRIPTION

HBS single output DC/DC converters provide up to 150 Watts of output power in an industry standard, half-brick package and footprint. The HBS series features excellent efficiency, Class A conducted noise specifications, and fixed switching frequency. The HBS features open-frame packaging, along with planar magnetics to provide maximum useable power with minimal thermal constraints. The HBS series is well suited for telecom, networking, and industrial applications, and is fully compatible with production board washing processes

TECHNICAL SPECIFICATIONS

Input	
Voltage range	
24 VDC nominal	18 - 36 VDC
48 VDC nominal	34 - 75 VDC
Reflected ripple	25 mA
Input Reverse Voltage Protection	Shunt Diode

Output	
Setpoint Accuracy	±1%
Line Regulation V _{in} Min V _{in} Max., I _{out} Rated	±0.2% V _{out}
Load Regulation I _{out} Min I _{out} Max., V _{in} Nom.	±0.2% V _{out}
Remote Sense Headroom	0.5 VDC
Minimum Output Current	10%, I _{out} Rated
Dynamic Regulation, Loadstep	25% l _{out}
Pk Deviation	4% V _{out}
Settling Time	500 ms
Voltage Trim Range	±10%
Short Circuit / Overcurrent Protection	Hiccup
Current Limit Threshold Range, % of I _{out} Rated	110 - 140%
OVP Trip Range	115 - 140% V _{out} Nom.
OVP	Hiccup

Notes

† MTBF predictions may vary slightly from model to model.

Specifications typically at 25°C, normal line, and full load, unless otherwise stated.

Soldering Conditions: I/O pins, 260°C, ten seconds; fully compatible with commercial wave-soldering equipment.

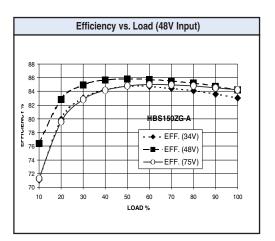
Units are water-washable and fully compatible with commercial spray or immersion post wave-solder washing equipment.

REV. 12/01

FEATURES

- Industry Standard Half-
- Open-Frame Packaging
- 100°C Baseplate Operation Positive Or Negative
- Water Washable
- "True-Trim" Option
- 1500V Isolation
 - Logic





General			
Turn-On Time	10 ms		
Remote Shutdown	Positive or Negative Logic		
Remote Shutdown Reference	V _{in} Negative		
Switching Frequency	500 kHz		
Isolation			
Input - Output	1500 VDC		
Input - Case	1050 VDC		
Output - Case	500 VDC		
Temperature Coefficient	0.2%/°C		
Case Temperature			
Operating Range	-40 to +100°C		
Storage Range	-40 to +125°C		
Thermal Shutdown Range	105 to 115°C		
Vibration, 3 Axes, 5 Min Each	5 g, 10 - 55 Hz		
MTBF [†] (Bellcore TR-NWT-000332)	2.1 x 10 ⁶ hrs		
Safety	UL, cUL, VDE		
Weight (approx.)	2.5 oz		



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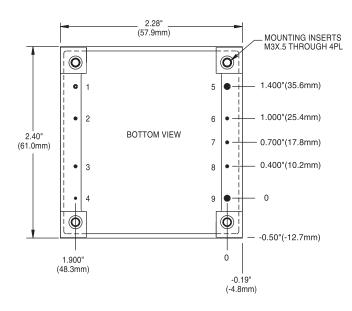
MODELS - (See the last page of section for options.)

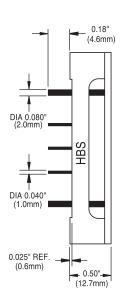
MODEL	INPUT VOLTAGE (VOLTS)	INPUT VOLTAGE Range (Volts)	MAXIMUM INPUT CURRENT (AMPS)*	OUTPUT Voltage (volts)	RATED OUTPUT Current (AMPS)	RIPPLE & NOISE pk-pk (mV)	TYPICAL Efficiency**
HBS150YG-A	24	18-36	11.7	5	30	100	80%
HBS150YH-A	24	18-36	10.5	12	12.5	150	85%
HBS150ZG-A	48	34-75	5.84	5	30	100	83%
HBS150ZH-A	48	34-75	5.2	12	12.5	150	86%
HBS150ZJ-ANT	48	34-75	5.2	15	10	150	84%

NOTES:

- * Maximum input current at minimum input voltage, maximum rated output power.
- ** At nominal ${\rm V}_{\rm in},$ rated output.

MECHANICAL DRAWING





Thermal Impedance		
Natural Convection	3.4 °C/W	
100 LFM	2.7 °C/W	
200 LFM	2.2 °C/W	
300 LFM	1.8 °C/W	
400 LFM	1.6 °C/W	
Note:		
Thermal impedance data is		
dependent on many environmental		
factors. The exact thermal		
performance should be validated		
for specific application.		
7.7		

Pin	Function	
1	-V _{in}	
2	Case	
3	On/Off	
4	+V _{in}	
5	-V _{out}	
6	-Sense	
7	Trim	
8	+Sense	
9	+V _{out}	

Tolerances		
Inches: .XX ± 0.020 .XXX ± 0.010	(Millimeters) .X ± 0.5 .XX ± 0.25	
Pin: ± 0.002	± 0.05	
(Dimensions as listed unless otherwise specified.)		



OPTIONS

When ordering equipment options, use the following suffix information. Select the option(s) that you prefer and add them to the model number. Example ordering options are located below the options table.

OPTION	SUFFIX	APPLICABLE SERIES	REMARKS	
Negative Logic	N	HAS, HBD, HBS, HES, HLS, HLD, LES, QBS, QES, QLS, TES, TQD	TTL "Low" Turns Module ON TTL "High" Turns Module OFF	
Lucent-Compatible	Т	HAS, HBD, HBS, HES, HLS, QBS, QES, QLS		
Terminal Strip	TS	XWS, XWD, XWT		
Trim	1	IAS, LES		
Enable	2	IAD, IAS, LES, SMS		
Trim and Enable	3	IAS, LES		
Current Share	4	SMS		
Headerless	Υ	Encapsulated EWS, IWS, OWS		
Pin Length and Heatsink Options 0.110" (2.8mm) Pin Length	8	All Units (Except SMS)	Standard Pin Length is 0.180" (4.6mm)	
0.150" (3.8mm) Pin Length	9	All Units (Except SMS)		
0.24" (6.1mm) Horizontal Heatsink	1H	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad	
0.24" (6.1mm) Vertical Heatsink	1V	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad	
0.45" (11.4mm) Horizontal Heatsink	2H	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad	
0.45" (11.4mm) Vertical Heatsink	2V	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad	
0.95" (24.1mm) Horizontal Heatsink	3H	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)		
0.95" (24.1mm) Vertical Heatsink	3V	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad	

Example Options:

HBS050ZG-ANT3V = HBS050ZG-A with negative logic, Lucent-compatible trim, and 0.95" vertical heatsink. LES015YJ-3N = LES015YJ with optional trim and enable, negative logic.

QBS066ZG-AT8 = QBS066ZG-A with Lucent-compatible trim and 0.110" pin length.

NUCLEAR AND MEDICAL APPLICATIONS - Power-One products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the President of Power-One, Inc.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

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