

OBS SERIES - 25 WATT

DESCRIPTION

OBS single output DC/DC converters provide up to 25 Watts of output power in an industry standard package and footprint. The OBS units feature excellent efficiency, six-sided shielding, and fixed switching frequency. With 100°C case operation, the OBS converters are especially suited to telecom, networking, and industrial applications. These units are 100% surface-mount construction and fully compatible with production board washing processes.

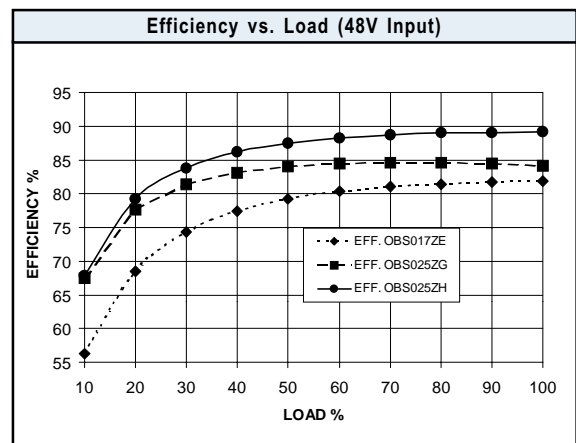
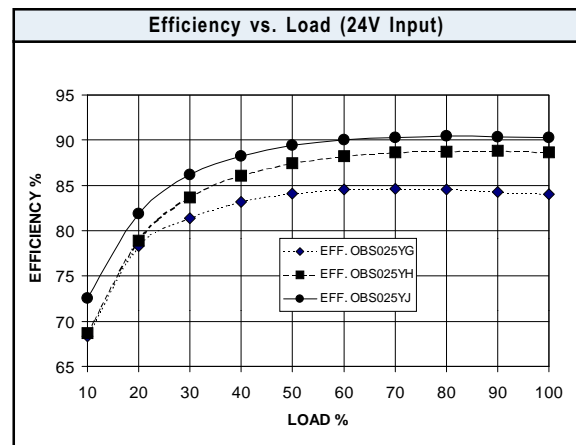


TECHNICAL SPECIFICATIONS

| Input | |
|--|---------------------------|
| Voltage Range | 18 - 36 VDC |
| 24 VDC Nominal | 34 - 75 VDC |
| 48 VDC Nominal | 25 mA |
| Reflected Ripple | Shunt Diode |
| Input Reverse Voltage Protection | |
| 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. | 0.5% V_{out} |
| Minimum Output Current | 10 % I_{out} Rated |
| Dynamic Regulation, Loadstep | 25% I_{out} |
| PK Deviation | 4% V_{out} |
| Settling Time | 500 μ s |
| Voltage Trim Range | ±10% I_{out} Rated |
| 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 |
| General | |
| Turn-On Time: 24 & 48V _{in} | 10 ms |
| Remote Shutdown | Positive |
| Remote Shutdown Reference | V_{in} Negative |
| Switching Frequency | 400 kHz |
| Isolation | |
| Input - Output | 1500 VDC |
| Input - Case (24 V _{in} units) | 500 VDC |
| Output - Case (48 V _{in} units) | 500 VDC |
| Temperature Coefficient | 0.03%/°C |
| Case Temperature | |
| Operating Range | -40 to +100°C |
| Storage Range | -40 to +125°C |
| Humidity Max., Non-Condensing | 95% |
| Vibration, 3 Axes, 5 Min Each | 5 g, 10 - 55 Hz |
| MTBF† (Bellcore TR-NWT-000332) | 1.8 x 10 ⁶ hrs |
| Safety | UL, cUL, TUV |
| Weight (Approx.) | 1.9 oz |

FEATURES

- Industry Standard Package
- 24 and 48V Input Versions
- 25W Output Power
- 100°C Baseplate Operation
- Trim And Enable Pins
- Fixed Frequency
- 1500V Isolation
- 6-Sided Shielding



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.

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

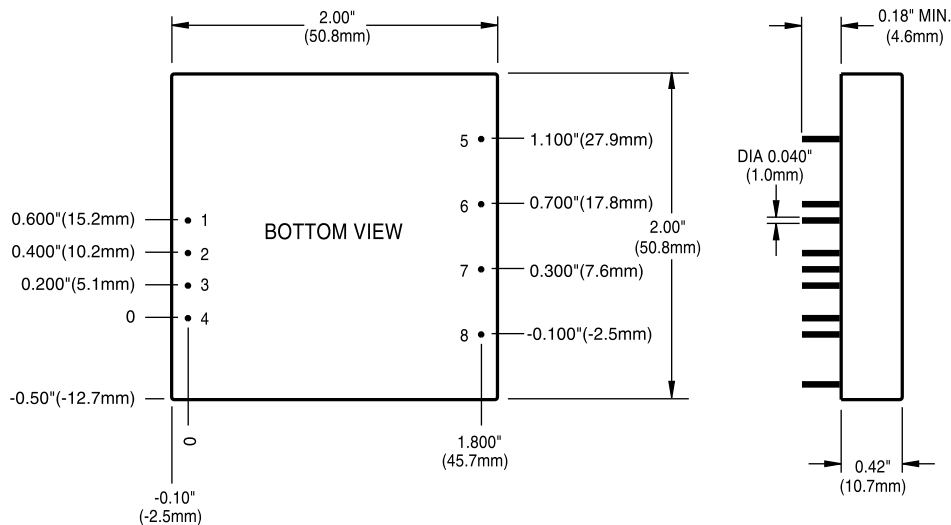
| Vin (Volts) | Vin Range (Volts) | Iin Max* (Amps) | Vout (Volts) | Iout Rated (Amps) | Ripple & Noise Pk-Pk (mV) | Efficiency Typ. ** | Model |
|-------------|-------------------|-----------------|--------------|-------------------|---------------------------|--------------------|------------|
| 24 | 18 - 36 | 1.15 | 3.3 | 5.0 | 75 | 80% | OBS017YE † |
| 24 | 18 - 36 | 1.95 | 5 | 5.0 | 75 | 84% | OBS025YG † |
| 24 | 18 - 36 | 1.90 | 12 | 2.1 | 120 | 88% | OBS025YH |
| 24 | 18 - 36 | 1.90 | 15 | 1.7 | 150 | 87% | OBS025YJ |
| 48 | 34 - 75 | 0.60 | 3.3 | 5.0 | 75 | 81% | OBS017ZE |
| 48 | 34 - 75 | 0.94 | 5 | 5.0 | 75 | 83% | OBS025ZG |
| 48 | 34 - 75 | 0.92 | 12 | 2.1 | 120 | 88% | OBS025ZH |
| 48 | 34 - 75 | 0.92 | 15 | 1.7 | 150 | 88% | OBS025ZJ † |

† Denotes advanced product release. Consult factory for product availability.

* Maximum input current at minimum input voltage, maximum rated output power.

** At nominal Vin, rated output.

MECHANICAL DRAWING



| Thermal Impedance | |
|--------------------|-----------|
| Natural Convection | 10.3 °C/W |
| 100 LFM | 7.7 °C/W |
| 200 LFM | 6.3 °C/W |
| 300 LFM | 5.1 °C/W |
| 400 LFM | 4.0 °C/W |

Note:
Thermal impedance data is dependent on many environmental factors. The exact thermal performance should be validated for specific application.

| Pin | Function |
|-----|-------------------|
| 1 | +V _{in} |
| 2 | -V _{in} |
| 3 | No Conn. |
| 4 | Enable |
| 5 | No Pin |
| 6 | +V _{out} |
| 7 | -V _{out} |
| 8 | Trim |

| Tolerances | |
|----------------|---------------|
| Inches: | (Millimeters) |
| .XX ± 0.020 | .X ± 0.5 |
| .XXX ± 0.010 | .XX ± 0.25 |
| Pin: | |
| ± 0.002 | ± 0.05 |
| Case: | |
| + 0.04, - 0.00 | + 1.0, - 0.00 |

(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, LES, QBS, QES, TES, TQD | TTL "Low" Turns Module ON TTL "High" Turns Module OFF |
| Lucent Compatible Trim | T | HAS, HBD, HBS, HES, QBS, QES | |
| 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 | Y | Encapsulated EWS, IWS, OWS | |
| PIN LENGTH AND HEATSINK OPTIONS | | | Standard Pin Length is 0.180" (4.6mm) |
| 0.110" (2.8mm) Pin Length | 8 | All Units (Except SMS) | |
| 0.150" (3.8mm) Pin Length | 9 | All Units (Except SMS) | |
| 0.24" (6.1mm) Horizontal Heatsink | 1H | All Units (Except DIP, SIP, and SM Packages) | Includes Thermal Pad |
| 0.24" (6.1mm) Vertical Heatsink | 1V | All Units (Except DIP, SIP, and SM Packages) | Includes Thermal Pad |
| 0.45" (11.4mm) Horizontal Heatsink | 2H | All Units (Except DIP, SIP, and SM Packages) | Includes Thermal Pad |
| 0.45" (11.4mm) Vertical Heatsink | 2V | All Units (Except DIP, SIP, and SM Packages) | Includes Thermal Pad |
| 0.95" (24.1mm) Horizontal Heatsink | 3H | All Units (Except DIP, SIP, and SM Packages) | Includes Thermal Pad |
| 0.95" (24.1mm) Vertical Heatsink | 3V | All Units (Except DIP, SIP, and SM 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.