

OWS SERIES - 25 WATT

DESCRIPTION

OWS single output DC/DC converters provide up to 25 Watts of output power in an industry standard package and footprint. The OWS features excellent efficiency, six-sided shielding, and a fixed switching frequency. With 85°C case operation, the OWS is especially suited to telecom, networking, and industrial applications.



FEATURES

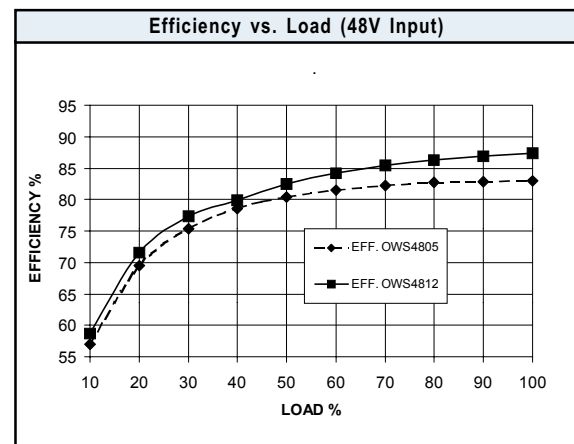
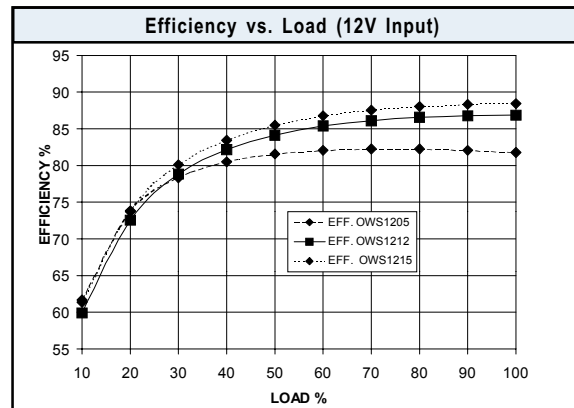
- Industry Standard Package
- 12V and 48V Input Versions
- 25W Output
- 85°C Case Operation
- Trim and Enable Pins
- Fixed Frequency
- 500V Isolation
- Wide Input Range

TECHNICAL SPECIFICATIONS

| Input | |
|----------------------------------|--------------------|
| Voltage Range | 10 - 20 VDC |
| 12 VDC Nominal | 20 - 60 VDC |
| 48 VDC Nominal | Shunt Diode |
| Input Reverse Voltage Protection | 20% I_{in} Max. |
| Input Ripple Current | 100% I_{in} Max. |
| Reverse Input Current | |

| Output | |
|--|---------------|
| Setpoint Accuracy | ±1% |
| Line Regulation V_{in} Min. - V_{in} Max., I_{out} Rated | ±1% V_{out} |
| Load Regulation I_{out} Min. - I_{out} Max., V_{in} Nom. | ±1% V_{out} |
| Minimum Output Current | 10 % |
| Dynamic Regulation, Loadstep | 25% I_{out} |
| Pk Deviation | 1% V_{out} |
| Settling Time | 500 μ s |
| Voltage Trim Range | ±10% |
| Short Circuit / Overcurrent Protection | Continuous |
| Current Limit Threshold Range, % of I_{out} Rated | 110% - 130% |

| General | |
|--------------------------------|-------------------------------|
| Remote Shutdown | Positive |
| Remote Shutdown Reference | V_{in} Negative |
| Switching Frequency | 300 kHz |
| Isolation | |
| Input - Output | 500 VDC |
| Temperature Coefficient | 0.02%/°C |
| Case Temperature | |
| Operating Range | -25 To +85°C ¹ |
| 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 | UL1950, CSA 22.2-950, EN60950 |
| Weight (Approx.) | 1.9 oz |



| Notes |
|--|
| ¹ Industrial temperature range of -40 to +85°C available; add suffix -I to P/N. |
| † 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. |
| Safety: Agency approvals may vary from model to model. Please consult factory for specific model information. |

OVS SERIES - 25 WATT

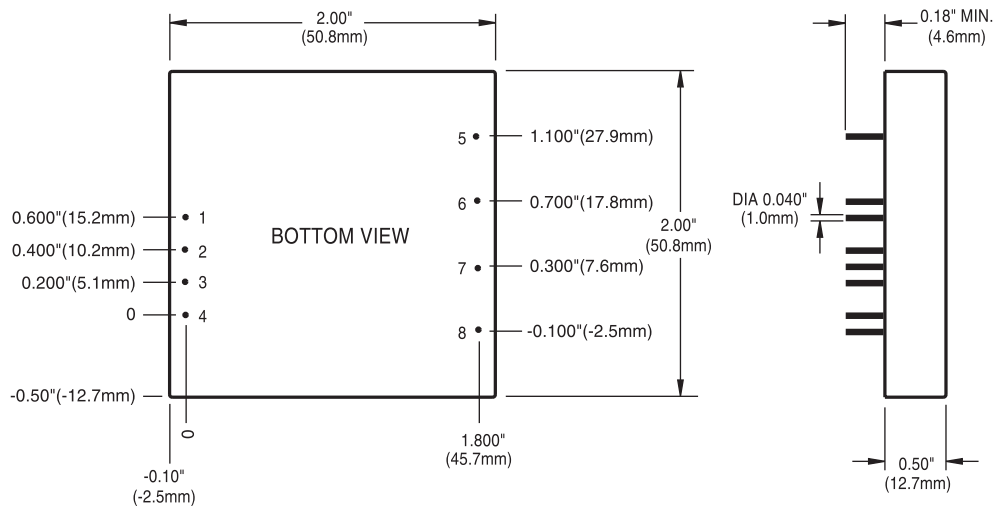
MODELS - (See the last page of Section for options.)

| Vin (Volts) | Vin Range (Volts) | Iin Max.* (Amps) | Vout (Volts) | Iout Rated (Amps) | Ripple & Noise Pk-Pk (mV) | Efficiency Typ. ** | Model |
|-------------|-------------------|------------------|--------------|-------------------|---------------------------|--------------------|---------|
| 12 | 10 - 20 | 3.50 | 5 | 5.00 | 50 | 80% | OVS1205 |
| 12 | 10 - 20 | 3.50 | 12 | 2.10 | 120 | 83% | OVS1212 |
| 12 | 10 - 20 | 3.50 | 15 | 1.65 | 150 | 84% | OVS1215 |
| 48 | 20 - 60 | 1.80 | 5 | 5.0 | 50 | 80% | OVS4805 |
| 48 | 20 - 60 | 1.80 | 12 | 2.10 | 120 | 86% | OVS4812 |

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

** At nominal Vin, rated output.

MECHANICAL DRAWING



| Thermal Impedance | |
|--------------------|----------|
| Natural Convection | 9.7 °C/W |
| 100 LFM | 7.3 °C/W |
| 200 LFM | 5.9 °C/W |
| 300 LFM | 4.8 °C/W |
| 400 LFM | 3.8 °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 ± 0.040 | .X ± 1.0 |
| .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

Powering Communications and Technology

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.

| OPTIONS | SUFFIX | APPLICABLE SERIES | REMARKS |
|--|--------|--|--|
| Negative Logic | N | HAS, HBD, HBS, HES, HLS, LES, QBS, QES, QLS, TES, TQD | TTL "Low" Turns Module ON TTL "High" Turns Module OFF |
| Lucent Compatible Trim | T | 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 | 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, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages) | Includes Thermal Pad |
| 0.24" (6.1mm) Vertical Heatsink | 1V | 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 (Except DIP, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages) | Includes Thermal Pad |
| 0.45" (11.4mm) Vertical Heatsink | 2V | 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 (Except DIP, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages) | Includes Thermal Pad |
| 0.95" (24.1mm) Vertical Heatsink | 3V | 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.