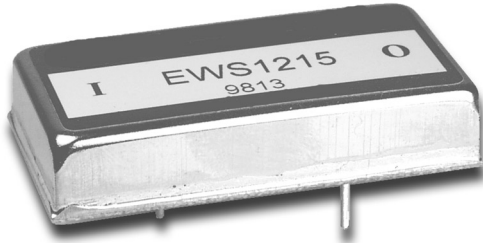




EWS SERIES 5 WATT



DESCRIPTION

EWS DC/DC converters offer excellent regulation and isolation in an industry standard package. Available in 5V or 12V input versions, the EWS is ideal for industrial, datacom, or telecom applications. The EWS features short circuit protection, six-sided shielding, and 500 VDC isolation. Please see the EWD series for dual output applications.

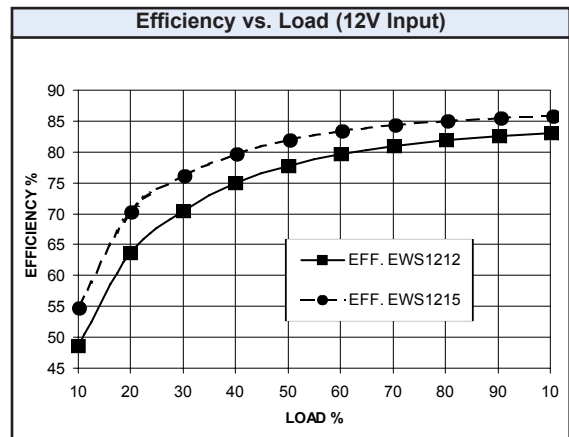
FEATURES

- Industry Standard Package
- Industry Standard Pinout
- 85°C Case Operation
- Short Circuit Protection
- 5V and 12V Inputs
- Input Pi Filter and 6-Sided Shielding
- Regulated Outputs
- 500V Isolation

TECHNICAL SPECIFICATIONS

| Input | |
|-----------------------|--------------------|
| Voltage Range | |
| 5 VDC Nominal | 4.5 - 9 VDC |
| 12 VDC Nominal | 9 - 18 VDC |
| Reflected Ripple | 20% I_{in} Max. |
| Reverse Input Current | 100% I_{in} Max. |

| Output | |
|--|-----------------|
| Setpoint Accuracy | ±5% |
| Line Regulation V_{in} Min. - V_{in} Max., I_{out} Rated | ±1.5% V_{out} |
| Load Regulation I_{out} Min. - I_{out} Max., V_{in} Nom. | ±2.5% V_{out} |
| Minimum Output Current | 10% |
| Dynamic Regulation, Loadstep | 25% I_{out} |
| Pk Deviation | 1% V_{out} |
| Settling Time | 500 μ s |
| Temperature Coefficient | 0.02%/°C |
| Ripple And Noise, 20 MHz BW | 150 mV |
| Short Circuit Protection ¹ | Continuous |
| Current Limit | 130% |



| General | |
|--|----------------------|
| Switching Frequency | 200 kHz |
| Isolation | |
| Input - Output | 500 VDC |
| Isolation Resistance - Input to Output | 10 ⁹ Ohms |
| Standard Case Operating Range | -25 to +85°C |
| Storage range | -40 to +125°C |
| Humidity Max., Non-Condensing | 95% |
| Vibration, 3 Axes, 5 Min Each | 5 g, 10 - 55 Hz |
| Safety | UL, cUL, TUV |
| Weight (approx.) | 1.4 oz. |

| Notes | |
|--|--|
| ¹ Converter will auto-restart once fault has been removed. | |
| 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. | |



EWS SERIES 5 WATT

Powering Communications and Technology

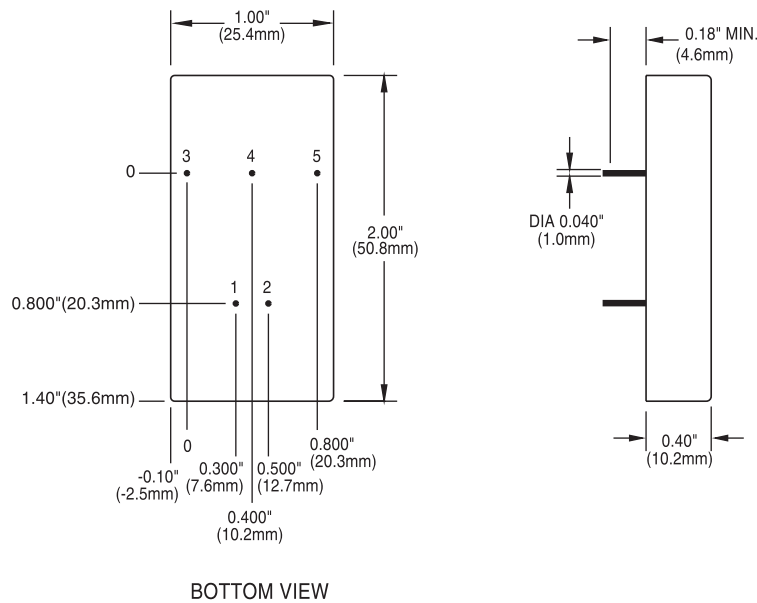
MODELS - (See the last page of Section for options.)

| Selection Chart | | | | | | | |
|-----------------|-------------------------|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|--------------------|
| Model | V _{in} (Volts) | V _{in} Range (Volts) | I _{in} Max.* (Amps) | V _{out} (Volts) | I _{out} Rated (Amps) | Ripple & Noise Pk-Pk (mV) | Efficiency Typ. ** |
| EWS0505 | 5 | 4.5 - 9.0 | 1.80 | 5 | 1.00 | 150 | 70% |
| EWS0512 | 5 | 4.5 - 9.0 | 2.10 | 12 | 0.50 | 150 | 73% |
| EWS1205 | 12 | 9.0 - 18.0 | 0.85 | 5 | 1.00 | 150 | 73% |
| EWS1212 | 12 | 9.0 - 18.0 | 0.95 | 12 | 0.50 | 150 | 80% |
| EWS1215 | 12 | 9.0 - 18.0 | 0.91 | 15 | 0.40 | 150 | 82% |

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

** At nominal V_{in}, rated output.

MECHANICAL DRAWING



| Thermal Impedance | |
|--------------------|-----------|
| Natural Convection | 15.4 °C/W |
| 100 LFM | 12.2 °C/W |
| 200 LFM | 9.3 °C/W |
| 300 LFM | 7.4 °C/W |
| 400 LFM | 6.4 °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 | +V _{out} |
| 4 | -V _{out} |

| 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, -0.0 |

(Dimensions as listed unless otherwise specified.)

High Density - Board Mounted Power Division



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.