

## IWD SERIES - DUAL OUTPUT, 10 WATT

### DESCRIPTION

IWD dual output DC/DC converters offer excellent regulation and isolation in an industry-standard package. Available in 5V and 12V input versions, the IWD is perfect for industrial, datacom, or telecom applications. The IWD features short-circuit protection and 500 VDC isolation. Please see the IWS and IAS series for single output applications.



### FEATURES

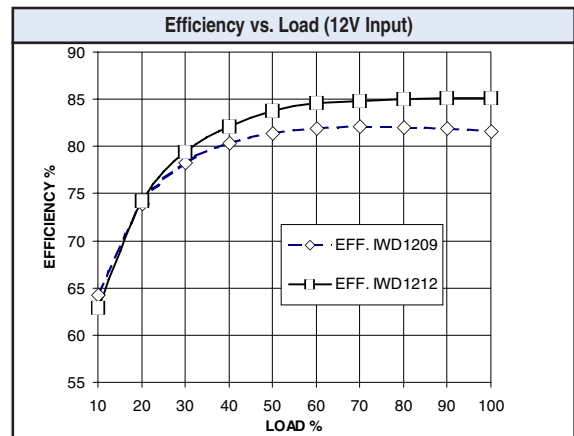
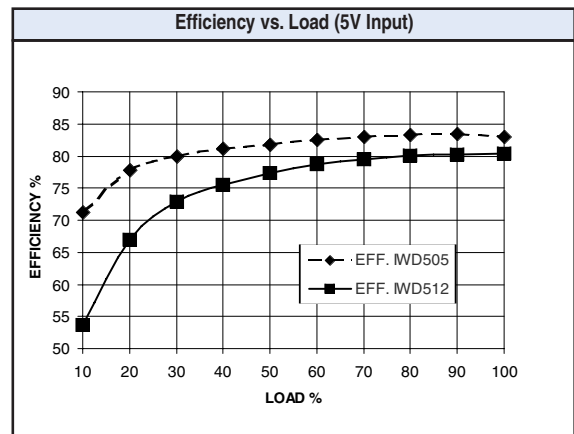
- Industry Standard Package
- Industry Standard Pinout
- 85°C Case Operation
- Short Circuit Protection
- 5V and 12V Inputs
- Input Pi Filter
- 6-Sided Shielding
- Wide Input Voltage
- 500V Isolation

### TECHNICAL SPECIFICATIONS

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

| Output   |                     |
|--|---------------------|
| Setpoint Accuracy  | ±1%                 |
| Line Regulation $V_{in}$ Min. - $V_{in}$ Max., $I_{out}$ Rated | ±1.0% $V_{out}$     |
| Load Regulation $I_{out}$ Min. - $I_{out}$ Max., $V_{in}$ Nom. | ±1.0% $V_{out}$     |
| Minimum Output Current   | 10% $I_{out}$ Rated |
| Dynamic Regulation, Loadstep                                   | 25% $I_{out}$       |
| Pk Deviation   | 1% $V_{out}$        |
| Settling Time  | 500 $\mu$ s         |
| Temperature Coefficient  | 0.02%/°C            |
| Ripple and Noise, 20 MHz BW                                    | 1% $V_{out}$ nom.   |
| Short Circuit Protection <sup>1</sup>                          | Hiccup              |
| Current Limit  | 130%                |

| General                                |                      |
|--|----------------------|
| Switching Frequency                    | 300 kHz              |
| Isolation                              |                      |
| Input - Output                         | 500 VDC              |
| Isolation Resistance - Input to Output | 10 <sup>9</sup> Ohms |
| Standard Case Operating Range          | -25 to +85°C         |
| Industrial Range (add -I to p/n)       | -40 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  |
|--|
| <sup>1</sup> 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.  |

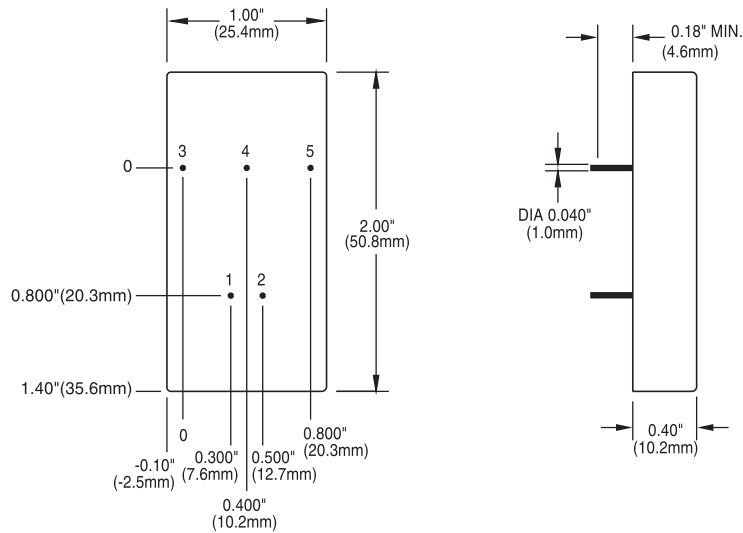
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MODELS - (See the last page of section for options.)

| 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** |
|---------|-----------------------|-----------------------------|-------------------------------|------------------------|-----------------------------|---------------------------|----------------------|
| IWD505  | 5                     | 4.65 - 5.50                 | 3.20                          | ±5                     | ±1.000                      | 50                        | 82%                  |
| IWD512  | 5                     | 4.65 - 5.50                 | 3.20                          | ±12                    | ±0.500                      | 120                       | 80%                  |
| IWD515  | 5                     | 4.65 - 5.50                 | 3.20                          | ±15                    | ±0.375                      | 150                       | 82%                  |
| IWD1205 | 12                    | 10.90 - 13.20               | 1.55                          | ±5                     | ±1.000                      | 50                        | 80%                  |
| IWD1212 | 12                    | 10.90 - 13.20               | 1.55                          | ±12                    | ±0.500                      | 120                       | 84%                  |

NOTES: \* Maximum input current at minimum input voltage, maximum rated output power.  
 \*\* At nominal  $V_{in}$ , rated output.

### MECHANICAL DRAWING



BOTTOM VIEW

| 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   | Common      |
| 5   | - $V_{out}$ |

| Tolerances   |               |
|--|---------------|
| Inches:  | (Millimeters) |
| .XX ± 0.040  | .X ± 1.0      |
| .XXX ± .010  | .XX ± 0.25    |
| Pin:   |               |
| ± 0.002  | ± 0.05        |
| Case:  |               |
| + 0.04, - 0.00                                     | + 1.0, - 0.0  |
| (Tolerances 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<br>TTL "High" Turns Module OFF |
| Lucent-Compatible                      | 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  |  |
| <b>Pin Length and Heatsink Options</b> |        |   | 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 (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) | Includes Thermal Pad                                     |
| 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.

**For the Most Up-To-Date Information**

**[www.power-one.com](http://www.power-one.com)**

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