



**Features**

- RoHS lead solder exemption compliant
- 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

**Description**

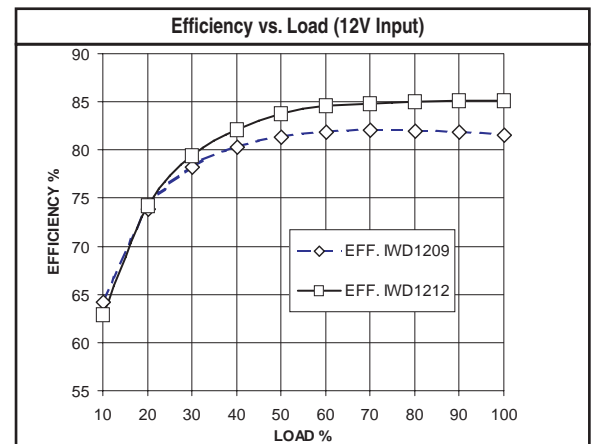
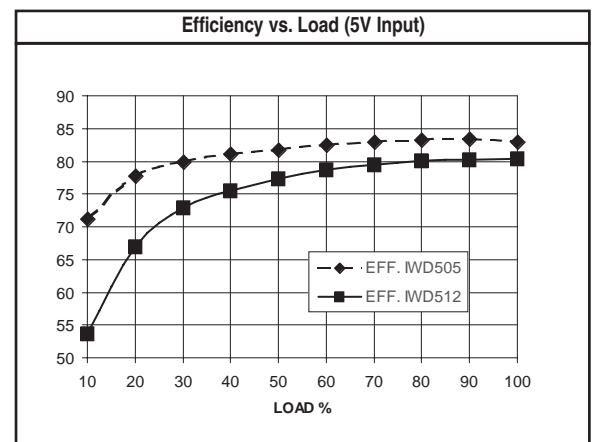
IWD dual-output DC-DC converters offer excellent regulation and isolation in an industry-standard package. Available in 5V and 12V input versions, the IWD is perfect for industrial, datacom, or telecom applications. The IWD features short-circuit protection and 500 VDC isolation. Please see the IWS and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

**Technical Specifications**

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

| 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 | $10^9$ 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.  |

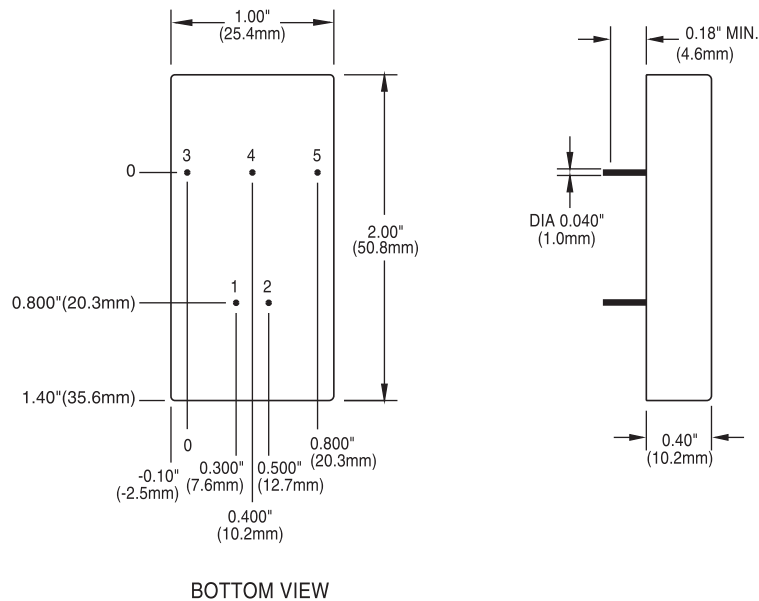
### Model Selection

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

Model numbers highlighted in yellow or shaded are not recommended for new designs.

### 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.) |               |

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