

# W2530 SERIES DC/DC MODULES

## Applications

- Servers, Switches and Data Storage
- Wireless Communications
- Distributed Power Architecture
- Semiconductor Test Equipment
- Networking Gear
- Data Communications
- Telecommunications
- Industrial / Medical

The W2530 Family of high efficiency DC/DC converters offer power levels of up to 30 Watt, which exceeds that of other bricks with the same Industry-Standard Pinouts, while providing smaller footprints. With a wide input voltage range and single and multi-outputs, these converters provide versatility without sacrificing the board space. All models feature an input Pi filter and short circuit protection. The fully enclosed, encapsulated construction achieves very efficient heat transfer with no hot spots. All converters combine creative design practices with highly derated power devices to achieve very high reliability, high performance and low cost solution to systems designers.

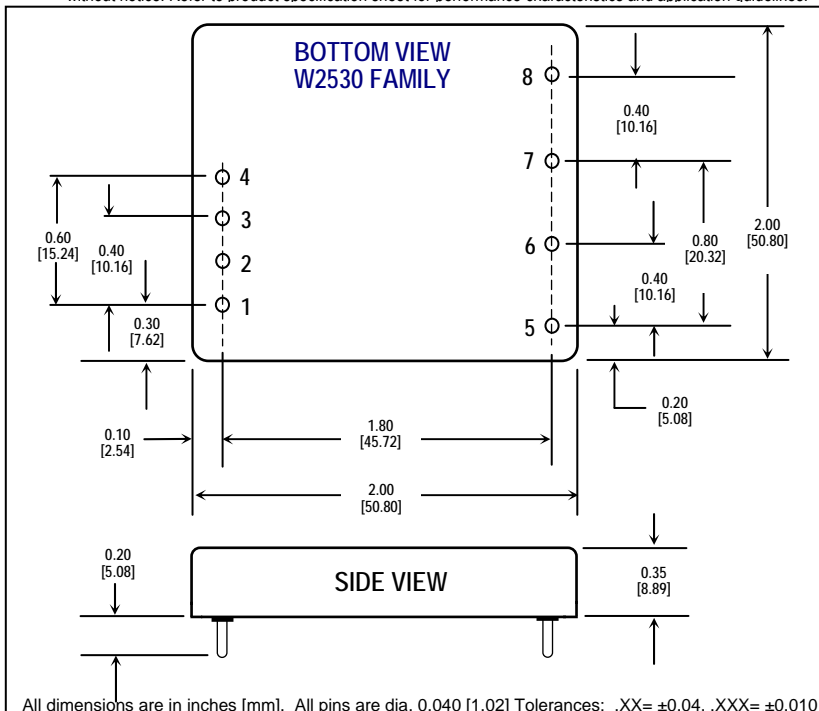
## Specifications & Features Summary

- 500V, 10MΩ input-to-output isolation
- No airflow or heatsink required
- Enclosed six-sided metal shield construction for low EMI/RFI
- Efficiency to 85%
- 2:1 Input Range
- PI Input Filter
- Continuous Short Circuit Protection
- Remote On/Off Control
- Delivers up to 30W in 2"x2" package with Industry-Standard Pinouts



| Model Num     | V <sub>in</sub> | V <sub>out</sub> | I <sub>out</sub> | I <sub>No Load</sub> | I <sub>Full Load</sub> | Eff | Case  |
|---------------|-----------------|------------------|------------------|----------------------|------------------------|-----|-------|
| W2530-12S5    | 9-18 VDC        | 5.0 VDC          | 5.0A             | 30.0 mA              | 2675.0 mA              | 78% | W2530 |
| W2530-12S12   | 9-18 VDC        | 12.0 VDC         | 2.5A             | 30.0 mA              | 3050.0 mA              | 82% | W2530 |
| W2530-12S15   | 9-18 VDC        | 15.0 VDC         | 2.0A             | 30.0 mA              | 3050.0 mA              | 82% | W2530 |
| W2530-12D5    | 9-18 VDC        | ±5.0 VDC         | ±2.5A            | 35.0 mA              | 2675.0 mA              | 78% | W2530 |
| W2530-12D12   | 9-18 VDC        | ±12.0 VDC        | ±1.25A           | 35.0 mA              | 3050.0 mA              | 82% | W2530 |
| W2530-12D15   | 9-18 VDC        | ±15.0 VDC        | ±1.0A            | 35.0 mA              | 3050.0 mA              | 82% | W2530 |
| W2530-12T5-12 | 9-18 VDC        | ±12.0/5.0 VDC    | ±0.31A/3.5A      | 35.0 mA              | 2640.0 mA              | 79% | W2530 |
| W2530-12T5-15 | 9-18 VDC        | ±15.0/5.0 VDC    | ±0.25A/3.5A      | 35.0 mA              | 2640.0 mA              | 79% | W2530 |
| W2530-12S3.3  | 9-18 VDC        | 3.3 VDC          | 5.0A             | 30.0 mA              | 1860.0 mA              | 74% | W2530 |
| W2530-24S5    | 18-36 VDC       | 5.0 VDC          | 5.0A             | 30.0 mA              | 1336.0 mA              | 79% | W2530 |
| W2530-24S12   | 18-36 VDC       | 12.0 VDC         | 2.5A             | 30.0 mA              | 1525.0 mA              | 82% | W2530 |
| W2530-24S15   | 18-36 VDC       | 15.0 VDC         | 2.0A             | 30.0 mA              | 1525.0 mA              | 82% | W2530 |
| W2530-24D5    | 18-36 VDC       | ±5.0 VDC         | ±2.5A            | 30.0 mA              | 1336.0 mA              | 79% | W2530 |
| W2530-24D12   | 18-36 VDC       | ±12.0 VDC        | ±1.25A           | 30.0 mA              | 1470.0 mA              | 85% | W2530 |
| W2530-24D15   | 18-36 VDC       | ±15.0 VDC        | ±1.0A            | 30.0 mA              | 1470.0 mA              | 85% | W2530 |
| W2530-24T5-12 | 18-36 VDC       | ±12.0/5.0 VDC    | ±0.31A/3.5A      | 30.0 mA              | 1320.0 mA              | 80% | W2530 |
| W2530-24T5-15 | 18-36 VDC       | ±15.0/5.0 VDC    | ±0.25A/3.5A      | 30.0 mA              | 1320.0 mA              | 80% | W2530 |
| W2530-24S3.3  | 18-36 VDC       | 3.3 VDC          | 5.0A             | 30.0 mA              | 920.0 mA               | 75% | W2530 |
| W2530-48S5    | 36-72 VDC       | 5.0 VDC          | 5.0A             | 20.0 mA              | 660.0 mA               | 79% | W2530 |
| W2530-48S12   | 36-72 VDC       | 12.0 VDC         | 2.5A             | 20.0 mA              | 765.0 mA               | 82% | W2530 |
| W2530-48S15   | 36-72 VDC       | 15.0 VDC         | 2.0A             | 20.0 mA              | 765.0 mA               | 82% | W2530 |
| W2530-48D5    | 36-72 VDC       | ±5.0 VDC         | ±2.5A            | 25.0 mA              | 660.0 mA               | 79% | W2530 |
| W2530-48D12   | 36-72 VDC       | ±12.0 VDC        | ±1.25A           | 25.0 mA              | 735.0 mA               | 85% | W2530 |
| W2530-48D15   | 36-72 VDC       | ±15.0 VDC        | ±1.0A            | 25.0 mA              | 735.0 mA               | 85% | W2530 |
| W2530-48T5-12 | 36-72 VDC       | ±12.0/5.0 VDC    | ±0.31A/3.5A      | 25.0 mA              | 655.0 mA               | 80% | W2530 |
| W2530-48T5-15 | 36-72 VDC       | ±15.0/5.0 VDC    | ±0.25A/3.5A      | 25.0 mA              | 655.0 mA               | 80% | W2530 |
| W2530-48S3.3  | 36-72 VDC       | 3.3 VDC          | 5.0A             | 20.0 mA              | 460.0 mA               | 75% | W2530 |

Typical at Ta= +25 °C under nominal line voltage and 75% load conditions, unless noted. The information and specifications contained in this brief are believed to be accurate and reliable at the time of publication. Specifications are subject to change without notice. Refer to product specification sheet for performance characteristics and application guidelines.



| SPECIFICATIONS                  |  |
|---------------------------------|--|
| Input Specifications            |  |
| Input Voltage Range             | 12V-----9-18V<br>24V-----18-36V<br>48V-----36-72V                                |
| Input Filter                    | PI Type  |
| Output Specifications           |  |
| Voltage Accuracy                |  |
| Single Output                   | +/-2.0% max.   |
| Dual+Output                     | +/-2.0% max.   |
| -Output                         | +/-3.0% max.   |
| Triple, 5V                      | +/-2.0% max.   |
| 12V / 15V                       | +/-5.0% max.   |
| Voltage Balance(Dual)           | +/-1.0% max.   |
| Transient Response:             |  |
| Single, 25% Step Load Change    | <500u sec.   |
| Dual, FL-1/2L +/- 1% Error Band | <500u sec.   |
| External Trim Adj. Range        | +/-10%   |
| Ripple and Noise, 20MHz BW      | 10mV RMS. Max.<br>75mV p-p max.  |
| Temperature Coefficient         | +/-0.02% / °C  |
| Short Circuit Protection        | Continuous   |
| Line Regulation, Single/Dual    | +/-0.5% max.   |
| Triple                          | +/-1.0% max.   |
| Load Regulation, Single/Dual    | +/-1.0% max.   |
| Triple                          | +/-5.0% max.   |
| General Specifications          |  |
| Efficiency                      | Up to 85%  |
| Isolation Voltage               | 500 VDC min  |
| Isolation Resistance            | 10 <sup>9</sup> ohms   |
| Switching Frequency             | 300KHz. min  |
| Case Grounding                  | Capacity Coupled to Input  |
| Operating Temperature Range     | -25°C to +71°C   |
| Case Temperature                | 100°C max.   |
| Cooling                         | Free-Air Convection  |
| Storage Temperature Range       | -55°C to +105°C  |
| EMI / RFI                       | Six Sided Continuous Shield  |
| Dimensions                      | 2X2X0.4 Inches<br>(50.8X50.8X10.2mm)   |
| Case Material                   | Black Coated Copper w/Non-Conductive Base  |
| Notes:                          | 1. Measured From High Line to Low Line<br>2. Measured From Full Load to 1/4 Load |

The output voltage can be trimmed (±10%) using an external resistor. To trim the output up (down) connect a resistor between pins 5 and 6 (7). A 10KΩ trim pot can also be used to make the output variable. Connect the wiper to pin 5 and make the other connections to pins 6 and 7.

### REMOTE ON/OFF CONTROL

|                       |                                |
|-----------------------|--------------------------------|
| Logic Compatibility   | CMOS or Open Collector TTL     |
| EC-On                 | >+5.5Vdc or Open Circuit       |
| EC-Off                | <1.8Vdc                        |
| Shutdown Idle Current | 10mA                           |
| Input Resistance      | 100K ohms (Ein 0 Vdc to 9 Vdc) |
| Control Common        | Referenced to Input Minus      |

Full output power is available at ambient temperatures of -25C to +60C with no airflow. Above +60C output power linearly derates to 0% at +100C.

Consult factory for hundreds of other input / output voltage configurations

| Pin # | S(ingle) | D(ual) | T(riple)   | Triple Output Loading Table (1) |          |            |
|-------|----------|--------|------------|---------------------------------|----------|------------|
|       |          |        |            | Voltage                         | Amperes  |            |
|       |          |        |            |                                 | Min. (2) | Nom.       |
| 1     | On/Off   | On/Off | On/Off     |                                 |          |            |
| 2     | No Pin   | No Pin | No Pin     |                                 |          |            |
| 3     | Vin -    | Vin -  | Vin -      |                                 |          |            |
| 4     | Vin +    | Vin +  | Vin +      |                                 |          |            |
| 5     | Trim     | Trim   | - Aux. Out | +12(15) or -12(15)              | 0.10     | 0.31(0.25) |
| 6     | Vout -   | Vout - | Common     |                                 |          |            |
| 7     | Vout +   | Common | +5Vout     | +5                              | 0.50     |            |
| 8     | No Pin   | Vout + | + Aux. Out | +12(15) or -12(15)              | 0.10     | 0.31(0.25) |