



POLYTRON DEVICES, Inc.

# 2.5-3 WATT SINGLE & DUAL OUTPUT

Isolated (1500Vdc), Wide Input (2:1 + 4:1)  
DC/DC Converters



## FEATURES

- 2:1 + 4:1 Input Voltage
- 1500 Vrms Input/  
Output Isolation
- Input Pi Filter
- Short Circuit  
Protection
- Epoxy Encapsulated
- Wide Input Voltage
- Single & Dual Output

TWA2.5/CB, TWB2.5/CB, TWA3/CB,  
TWB3/CB Series

## Specifications

All specifications are typical at nominal input, full load, and 25°C ,  
unless otherwise noted.

### INPUT

Voltages Range.....See Chart

### OUTPUT

Voltage Accuracy.....±4% max.  
Line Regulation (At FL)..... ±1% max.  
Load Regulation (FL to 1/4 Load)..... ±1% max.  
Ripple Noise (20MHz Bw).....1% P-P max.  
Temperature Coefficient (at FL).....±0.2%/°C  
Short Circuit Protection.....Power Foldback

### GENERAL

Efficiency (at FL)..... 55-65% Typical  
Isolation Voltage.....1500 Vrms min.  
Isolation Resistance.....1000MOhms  
Switching Frequency.....25KHz min.

### ENVIRONMENTAL

Operating Temperature Range.....-20° to +71°C  
Storage Temperature Range.....-40° to +105°C  
Derating ..... None  
Cooling.....Free Air Convection  
Relative Humidity.....Up to 95%

### PHYSICAL

Case Material.....Non-Conductive Black Plastic  
Weight.....0.5 oz. (14.2 grams)  
Dimensions.....1.25" x 0.80" x 0.50"  
.....(31.75 x 20.3 x 12.7 mm)

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## 2:1 INPUT + 4:1 INPUT

## Selection Guide

(Continued)

|           |                       | Input Voltage<br>Nominal (Range)<br>(Vdc) | Output<br>Voltage<br>(Vdc) | Output<br>Current<br>(mA, Max) | Input Current (mA) |           | Model Number   | Case |  |
|-----------|-----------------------|-------------------------------------------|----------------------------|--------------------------------|--------------------|-----------|----------------|------|--|
|           |                       |                                           |                            |                                | No Load            | Full Load |                |      |  |
| 2:1 INPUT | SINGLE OUTPUT VOLTAGE | 5 (4.5-6)                                 | 5                          | 500                            | 75                 | 860       | TWA2.5-5S5-CB  | CB   |  |
|           |                       |                                           | 12                         | 250                            | 75                 | 1000      | TWA3-5S12-CB   | CB   |  |
|           |                       |                                           | 15                         | 200                            | 75                 | 970       | TWA3-5S15-CB   | CB   |  |
|           |                       | 12 (9-18)                                 | 5                          | 500                            | 25                 | 347       | TWA2.5-12S5-CB | CB   |  |
|           |                       |                                           | 12                         | 250                            | 25                 | 385       | TWA3-12S12-CB  | CB   |  |
|           |                       |                                           | 15                         | 200                            | 25                 | 373       | TWA3-12S15-CB  | CB   |  |
|           |                       | 24 (18-36)                                | 5                          | 500                            | 15                 | 180       | TWA2.5-24S5-CB | CB   |  |
|           |                       |                                           | 12                         | 250                            | 15                 | 202       | TWA3-24S12-CB  | CB   |  |
|           |                       |                                           | 15                         | 200                            | 15                 | 192       | TWA3-24S15-CB  | CB   |  |
|           |                       | 48 (36-72)                                | 5                          | 500                            | 15                 | 90        | TWA2.5-48S5-CB | CB   |  |
|           |                       |                                           | 12                         | 250                            | 15                 | 104       | TWA3-48S12-CB  | CB   |  |
|           |                       |                                           | 15                         | 200                            | 15                 | 96        | TWA3-48S15-CB  | CB   |  |
| 2:1 INPUT | DUAL OUTPUT VOLTAGE   | 5 (4.5-6)                                 | ±5                         | ±250                           | 90                 | 780       | TWA3-5-5-CB    | CB   |  |
|           |                       |                                           | ±12                        | ±125                           | 80                 | 890       | TWA3-5-12-CB   | CB   |  |
|           |                       |                                           | ±15                        | ±100                           | 80                 | 880       | TWA3-5-15-CB   | CB   |  |
|           |                       | 12 (9-18)                                 | ±5                         | ±250                           | 40                 | 315       | TWA2.5-12-5-CB | CB   |  |
|           |                       |                                           | ±12                        | ±125                           | 40                 | 355       | TWA3-12-12-CB  | CB   |  |
|           |                       |                                           | ±15                        | ±100                           | 40                 | 350       | TWA3-12S15-CB  | CB   |  |
|           |                       | 24 (18-36)                                | ±5                         | ±250                           | 20                 | 150       | TWA2.5-24-5-CB | CB   |  |
|           |                       |                                           | ±12                        | ±125                           | 20                 | 170       | TWA3-24-12-CB  | CB   |  |
|           |                       |                                           | ±15                        | ±100                           | 20                 | 160       | TWA3-24-15-CB  | CB   |  |
|           |                       | 48 (36-72)                                | ±5                         | ±250                           | 15                 | 75        | TWA2.5-48-5-CB | CB   |  |
|           |                       |                                           | ±12                        | ±125                           | 15                 | 85        | TWA3-48-12-CB  | CB   |  |
|           |                       |                                           | ±15                        | ±100                           | 15                 | 85        | TWA3-48-15-CB  | CB   |  |
| 4:1 INPUT | SINGLE OUTPUT         | 24 (9-36)                                 | 5                          | 500                            | 80                 | 340       | TWB2.5-24S5-CB | CB   |  |
|           |                       |                                           | 12                         | 250                            | 90                 | 385       | TWB3-24S12-CB  | CB   |  |
|           |                       |                                           | 15                         | 200                            | 90                 | 385       | TWB3-24S15-CB  | CB   |  |
|           |                       | 48 (20-72)                                | 5                          | 500                            | 50                 | 160       | TWB2.5-48S5-CB | CB   |  |
|           |                       |                                           | 12                         | 250                            | 50                 | 180       | TWB3-48S12-CB  | CB   |  |
|           |                       |                                           | 15                         | 200                            | 50                 | 180       | TWB3-48S15-CB  | CB   |  |
| 4:1 INPUT | DUAL OUTPUT           | 24 (9-36)                                 | ±5                         | ±250                           | 80                 | 330       | TWB2.5-24-5-CB | CB   |  |
|           |                       |                                           | ±12                        | ±125                           | 90                 | 385       | TWB3-24-12-CB  | CB   |  |
|           |                       |                                           | ±15                        | ±100                           | 90                 | 385       | TWB3-24-15-CB  | CB   |  |
|           |                       | 48 (20-72)                                | ±5                         | ±250                           | 50                 | 170       | TWB2.5-48S5-CB | CB   |  |
|           |                       |                                           | ±12                        | ±125                           | 50                 | 180       | TWB3-48-12-CB  | CB   |  |
|           |                       |                                           | ±15                        | ±100                           | 50                 | 180       | TWB3-48-15-CB  | CB   |  |



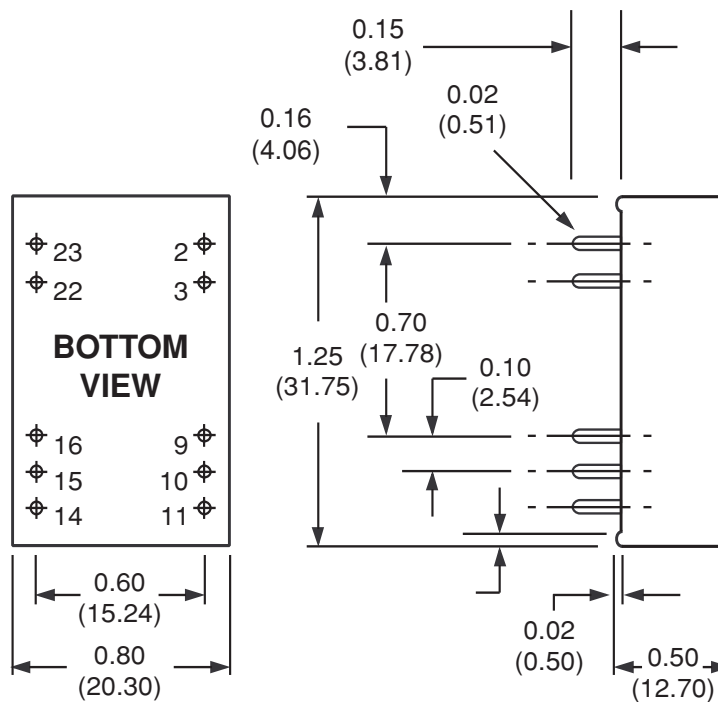
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## Mechanical Specifications

| I/O Connections |         |         |
|-----------------|---------|---------|
| FUNCTION        | SINGLE  | DUAL    |
| + Vin           | 22 & 23 | 22 & 23 |
| - Vin           | 2 & 3   | 2 & 3   |
| + Vout          | 14      | 14      |
| Common          | NC      | 9 & 16  |
| -Vout           | 16      | 11      |



All Dimensions are in inches (mm)



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