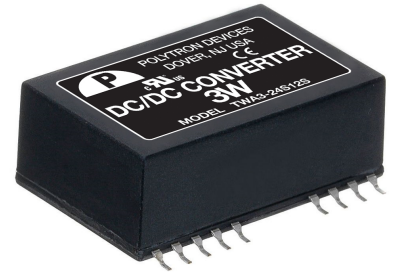




3 WATT SINGLE OUTPUT

Regulated 24-Pin DIP Package DC/DC Converters



FEATURES

- **2:1 Wide Input Range**
- **DIP And Surface Mount Package Available**
- **500 Vdc Input/ Output Isolation**
- **Efficiency to 76% @ FL**
- **Short Circuit Protection**
- **No External Components**
- **New 3.3 Vdc Outputs**

TWA3 Series

Specifications

Typical at 25°C under full load and nominal input voltage, unless otherwise specified

INPUT

| | |
|---------------------|---------------|
| Input Voltages..... | Voltage Range |
| 5 Vdc..... | 4.5-6.0 Vdc |
| 12 Vdc..... | 9 -18 Vdc |
| | 9 -36 Vdc |
| 24 Vdc..... | 18 - 36 Vdc |
| | 18 - 72 Vdc |
| 48 Vdc..... | 36 - 72 Vdc |

OUTPUT

| | |
|--------------------------------------|-------------------|
| Voltage Accuracy..... | ±3% max. |
| Voltage Stability..... | ±0.5% max. |
| Line Regulation..... | ±1% max. |
| Load Regulation..... | ±1% max. |
| Ripple Noise (20MHz Bw)..... | 0.5 - 1% p-p max. |
| Temperature Coefficient (at FL)..... | ±0.02%/°C max. |
| Short Circuit Protection..... | Continuous |

GENERAL

| | |
|---------------------------|---------------|
| Efficiency..... | 76% max. @ FL |
| Isolation Voltage..... | 500 Vdc min. |
| Isolation Resistance..... | 1000MOhms |
| Switching Frequency..... | 25KHz min. |

ENVIRONMENTAL

| | |
|----------------------------------|--------------------------|
| Operating Temperature Range..... | -25° to +71°C |
| Storage Temperature Range..... | -55° to +105°C |
| Derating | None |
| Cooling..... | Free Air Convection |
| Humidity..... | 25-95% RH Non-Condensing |

PHYSICAL

| | |
|--------------------|------------------------------|
| Case Material..... | Non-Conductive Black Plastic |
| Weight | 0.5 oz. (14.3 grams) |
| Dimensions..... | 1.25" x 0.80" x 0.50" |

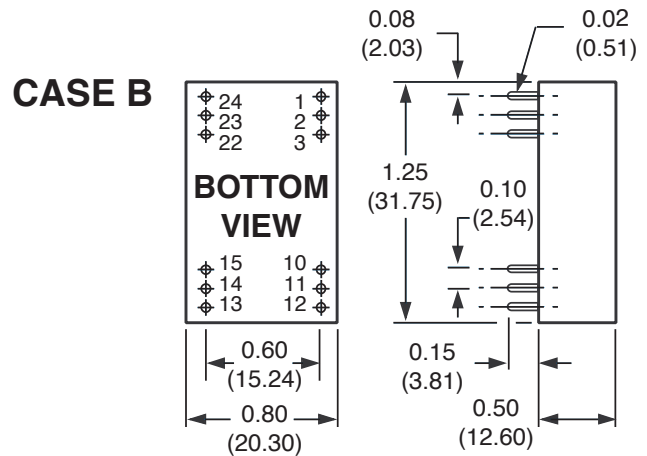
Selection Guide

| | Input Voltage Nominal (Vdc) | Output Voltage (Vdc) | Output Current (mA) | Input Current (mA) | | Model Number* | Case |
|------------------------------|-----------------------------|----------------------|---------------------|--------------------|------------|---------------|------|
| | | | | No Load | Full Load | | |
| SINGLE OUTPUT VOLTAGE | 5 | 3.3 | 600 | 14.1 | 649 | TWA3-5S33 | B |
| | | 5 | 500 | 60 | 720 | TWA3-5S5 | B |
| | | 12 | 250 | 170 | 930 | TWA3-5S12 | B |
| | | 15 | 200 | 140 | 880 | TWA3-5S15 | B |
| | 12 | 3.3 | 600 | 15.9 | 266 | TWA3-12S33 | B |
| | | 5 | 500 | 30 | 300 | TWA3-12S5 | B |
| | | 12 | 250 | 30 | 340 | TWA3-12S12 | B |
| | | 15 | 200 | 35 | 375 | TWA3-12S15 | B |
| | 24 | 3.3 | 600 | 10 | 126 | TWA3-24S33 | B |
| | | 5 | 500 | 15 | 165 | TWA3-24S5 | B |
| | | 12 | 250 | 15 | 165 | TWA3-24S12 | B |
| | 48 | 15 | 200 | 20 | 170 | TWA3-24S15 | B |
| 3.3 | | 600 | 3.2 | 61 | TWA3-48S33 | B | |
| 5 | | 500 | 15 | 80 | TWA3-48S5 | B | |
| 12 | | 250 | 15 | 85 | TWA3-48S12 | B | |
| | | | | | | | |
| DUAL OUTPUT VOLTAGE | 5 | ±5 | ±250 | 140 | 810 | TWA3-5-5 | B |
| | | ±12 | ±125 | 180 | 900 | TWA3-5-12 | B |
| | | ±15 | ±100 | 180 | 1000 | TWA3-S-15 | B |
| | 12 | ±5 | ±250 | 100 | 300 | TWA3-12-5 | B |
| | | ±12 | ±125 | 75 | 360 | TWA3-12-12 | B |
| | | ±15 | ±100 | 60 | 350 | TWA3-12-15 | B |
| | 24 | ±5 | ±250 | 30 | 150 | TWA3-24-5 | B |
| | | ±12 | ±125 | 30 | 180 | TWA3-24-12 | B |
| | | ±15 | ±100 | 30 | 120 | TWA3-24-15 | B |
| | 48 | ±5 | ±250 | 20 | 80 | TWA3-48-5 | B |
| | | ±12 | ±125 | 20 | 85 | TWA3-48-12 | B |
| | | ±15 | ±100 | 20 | 90 | TWA3-48-15 | B |

* For SMD package, use suffix "S" after model number.
 For Dual Positive Output, use suffix "P" after model number.

Mechanical Specifications

| I/O Connections | | |
|-----------------|--------|--------|
| Pin | SINGLE | DUAL |
| 1 | +Vin | +Vin |
| 2 | NC | -Vout |
| 3 | NC | Common |
| 10 | -Vout | Common |
| 11 | +Vout | +Vout |
| 12 | -Vin | -Vin |
| 13 | -Vin | -Vin |
| 14 | +Vout | +Vout |
| 15 | -Vout | Common |
| 22 | NC | Common |
| 23 | NC | -Vout |
| 24 | +Vin | +Vin |



All Dimensions are in inches (mm)

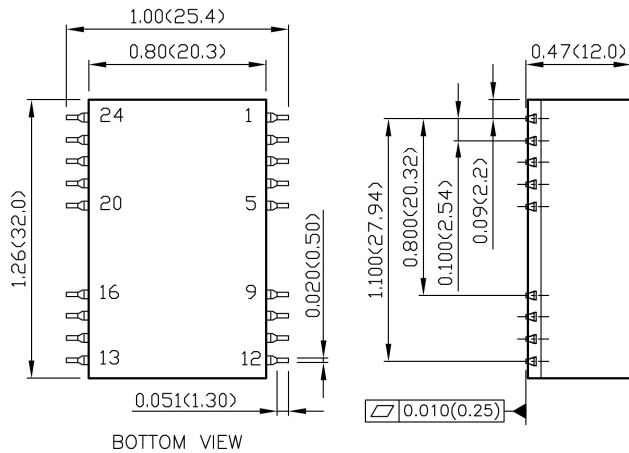


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Mechanical Specifications (continued)

SMD TYPE



SMD PIN CONNECTION

| PIN | SINGLE | DUAL | DS | PIN | SINGLE | DUAL | DS |
|--------|--------|--------|--------|-----|--------|--------|--------|
| 1 | +Vin | +Vin | +Vin | 24 | +Vin | +Vin | +Vin |
| 2 | NC | -Vout | -V1out | 23 | NC | -Vout | -V1out |
| 3 | NC | Common | +V1out | 22 | NC | Common | +V1out |
| 10 | -Vout | Common | -V2out | 15 | -Vout | Common | -V2out |
| 11 | +Vout | +Vout | +V2out | 14 | +Vout | +Vout | +V2out |
| 12 | -Vin | -Vin | -Vin | 13 | -Vin | -Vin | -Vin |
| Others | NC | NC | NC | | | | |

* NC : No Connection

1. All dimensions in inch (mm)
2. Tolerance : $x.xx \pm 0.02$ ($x.x \pm 0.5$)
 $x.xxx \pm 0.01$ ($x.xx \pm 0.25$)
3. Pin pitch tolerance ± 0.01 (0.25)
4. Pin dimension tolerance ± 0.004 (0.1)



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