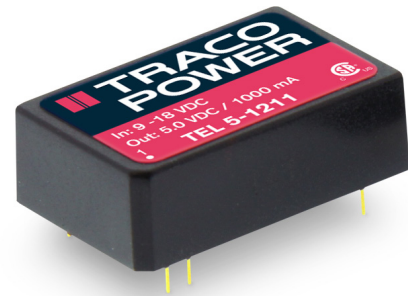


#### Features

- ◆ Wide 2:1 input range
- ◆ Cost efficient SMD-design
- ◆ High power density
- ◆ High efficiency up to 86%
- ◆ Regulated outputs
- ◆ I/O isolation 1'500 VDC
- ◆ Input filter to meet EN 55022, Class A and FCC, level A without external components
- ◆ Indefinite short-circuit protection
- ◆ 24-pin DIP with industry standard pinout
- ◆ High reliability, MTBF >1 Mio. h
- ◆ Lead free design, RoHS compliant
- ◆ 3-year product warranty



The TEL 5 Series is a range of DC/DC-converter modules with wide input range of 2:1. State of the art SMD-technology guarantees a product with very high reliability and excellent cost /performance ratio. High efficiency allows an operating temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  at full load. This product series provides an economical solution for many cost critical applications in industrial and consumer electronics.

#### Models

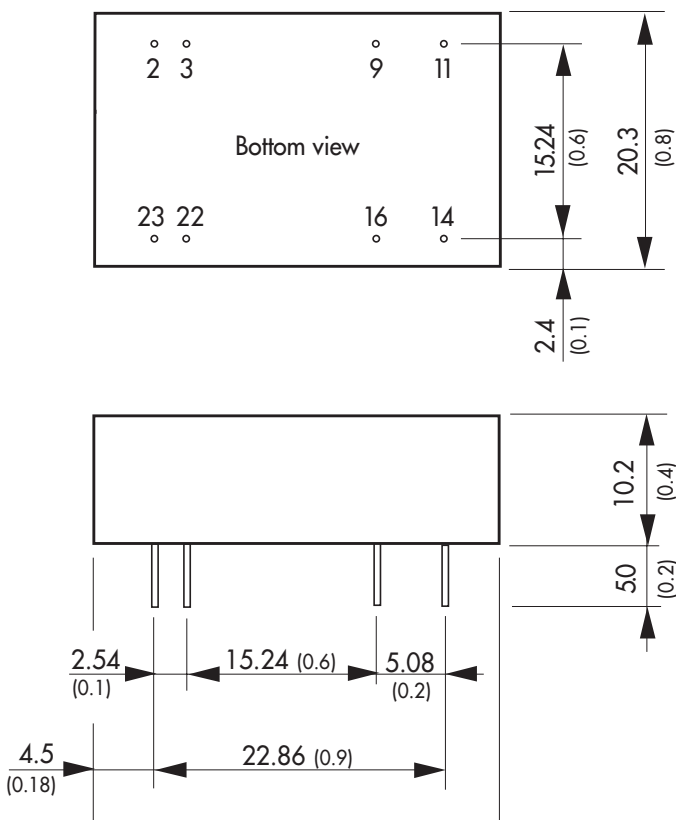
| Ordercode  | Input voltage range             | Output voltage | Output current max. | Efficiency typ. |
|------------|---------------------------------|----------------|---------------------|-----------------|
| TEL 5-1210 | 9 – 18 VDC<br>(nominal 12 VDC)  | 3.3 VDC        | 1200 mA             | 77 %            |
| TEL 5-1211 |                                 | 5 VDC          | 1000 mA             | 81 %            |
| TEL 5-1212 |                                 | 12 VDC         | 500 mA              | 84 %            |
| TEL 5-1222 |                                 | $\pm 12$ VDC   | $\pm 250$ mA        | 84 %            |
| TEL 5-1223 |                                 | $\pm 15$ VDC   | $\pm 200$ mA        | 84 %            |
| TEL 5-2410 | 18 – 36 VDC<br>(nominal 24 VDC) | 3.3 VDC        | 1200 mA             | 79 %            |
| TEL 5-2411 |                                 | 5 VDC          | 1000 mA             | 83 %            |
| TEL 5-2412 |                                 | 12 VDC         | 500 mA              | 86 %            |
| TEL 5-2422 |                                 | $\pm 12$ VDC   | $\pm 250$ mA        | 86 %            |
| TEL 5-2423 |                                 | $\pm 15$ VDC   | $\pm 200$ mA        | 86 %            |



**Physical Specifications**

|                       |   |
|-----------------------|---|
| Casing material       | non conductive plastic (UL 94V-0 rated) |
| Weight                | 17 g (0.60 oz)                          |
| Soldering temperature | max. 265°C / 10 sec.                    |

**Outline Dimensions**



| Pin-Out |            |            |
|---------|------------|------------|
| Pin     | Single     | Dual       |
| 2       | -Vin (GND) | -Vin (GND) |
| 3       | -Vin (GND) | -Vin (GND) |
| 9       | No pin     | Common     |
| 11      | No con.    | -Vout      |
| 14      | +Vout      | +Vout      |
| 16      | -Vout      | Common     |
| 22      | +Vin (Vcc) | +Vin (Vcc) |
| 23      | +Vin (Vcc) | +Vin (Vcc) |

Dimensions in [mm], ( ) = Inch  
 Pin diameter  $\varnothing 0.5 \pm 0.05$  (0.02  $\pm$  0.002)  
 Tolerances  $\pm 0.25$  ( $\pm 0.01$ )  
 Pin pitch tolerances  $\pm 0.13$  ( $\pm 0.005$ )

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at [www.tracopower.com](http://www.tracopower.com)