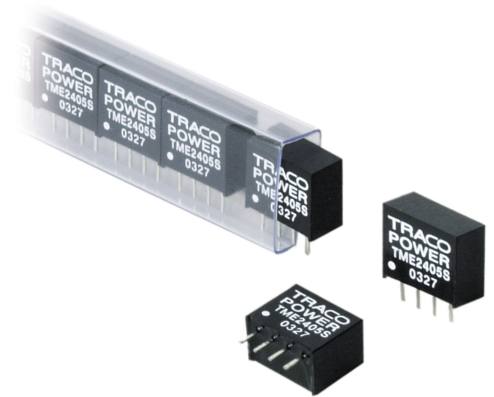




#### Features

- ◆ Single-in-Line Package (SIP)
- ◆ I/O-Isolation 1'000 VDC
- ◆ High Efficiency up to 80%
- ◆ Operating Temperature  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- ◆ Industry Standard Pinout
- ◆ 100% Burn-in (8 h)
- ◆ Lead free Design, RoHS compliant
- ◆ 3 Year Product Warranty



The TME series is a range of sub-miniature, isolated DC/DC-converters in a SIP-package, which requires only 0.7 cm<sup>2</sup> of board space. They provide a cost effective solution to generate supplementary, isolated voltages. Full SMD-design and a 100 % production test of parameters ensure a high reliability of this product.

| Models    |                   |                |                     |                 |
|-----------|-------------------|----------------|---------------------|-----------------|
| Ordercode | Input voltage     | Output voltage | Output current max. | Efficiency typ. |
| TME 0505S | 5 VDC $\pm 10\%$  | 5 VDC          | 200 mA              | 70 %            |
| TME 0509S |                   | 9 VDC          | 110 mA              | 76 %            |
| TME 0512S |                   | 12 VDC         | 80 mA               | 77 %            |
| TME 0515S |                   | 15 VDC         | 65 mA               | 78 %            |
| TME 1205S | 12 VDC $\pm 10\%$ | 5 VDC          | 200 mA              | 71 %            |
| TME 1509S |                   | 9 VDC          | 110 mA              | 77 %            |
| TME 1212S |                   | 12 VDC         | 80 mA               | 79 %            |
| TME 1215S |                   | 15 VDC         | 65 mA               | 80 %            |
| TME 2405S | 24 VDC $\pm 10\%$ | 5 VDC          | 200 mA              | 70 %            |
| TME 2409S |                   | 9 VDC          | 110 mA              | 76 %            |
| TME 2412S |                   | 12 VDC         | 80 mA               | 79 %            |
| TME 2415S |                   | 15 VDC         | 65 mA               | 79 %            |

### Input Specifications

|                                  |  |  |
|----------------------------------|--|--|
| Input current no load /full load | 5 Vin models<br>12 Vin models<br>24 Vin models | 30 mA / 290 mA typ.<br>15 mA / 120 mA typ.<br>10 mA / 60 mA typ. |
| Surge voltage (1 sec. max.)      | 5 Vin models<br>12 Vin models<br>24 Vin models | 9 V max.<br>18 V max.<br>30 V max.                               |
| Reverse voltage protection       |  | 0.3 A max.   |
| Reflected input ripple current   |  | can be reduced by ext. 1–3.3 µF polyester film capacitor         |
| Input filter                     |  | Internal capacitors  |

### Output Specifications

|                                     |  |   |
|-------------------------------------|--|---|
| Voltage set accuracy                |  | ± 3 %                                   |
| Regulation                          | – Input variation<br>– Load variation 20 – 100 % | ± 1.2 % / 1 % change Vin<br>± 10 % max. |
| Ripple and noise (20 MHz Bandwidth) |  | 150 mV pk-pk max.                       |
| Temperature coefficient             |  | ± 0.02 % / K                            |
| Short circuit protection            |  | limited 1 sec. max.                     |
| Capacitive load                     |  | 33 µF max.                              |

### General Specifications

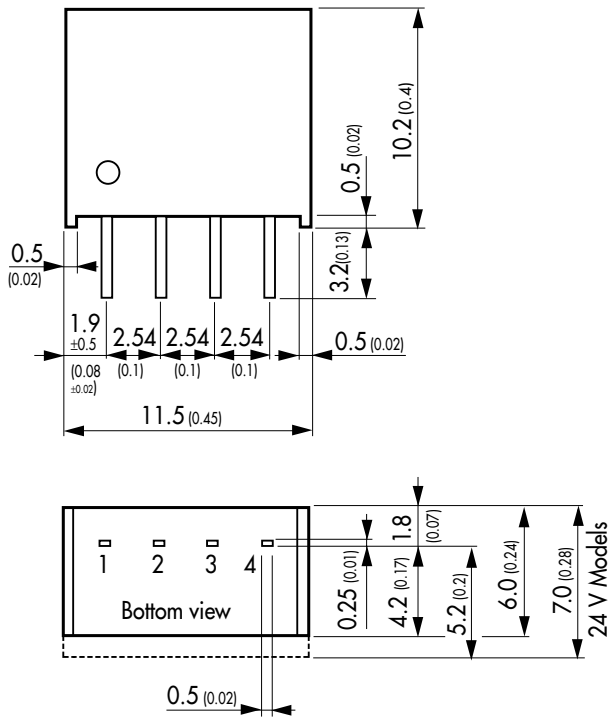
|  |  |  |
|--|--|--|
| Temperature ranges                           | – Operating<br>– Case temperature<br>– Storage | –40 °C ... +85 °C<br>+95 °C max.<br>–40 °C ... +105 °C |
| Humidity (non condensing)                    |  | 95 % rel H max.  |
| Reliability, calculated MTBF (MIL-HDBK-217E) |  | >2'000'000 h @ 25 °C                                   |
| Isolation voltage                            | Input/Output                                   | 1'000 VDC  |
| Isolation capacity                           | Input/Output                                   | 60 pF typ.   |
| Isolation resistance                         | Input/Output                                   | >1'000 Mohm  |
| Switching frequency                          |  | 90 kHz typ. (Frequency modulation)                     |
| Frequency change over line and load          |  | ± 30 % max.  |

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

**Physical Specifications**

|                       |  |                 |
|-----------------------|--|-----------------|
| Case material         | non conductive black plastic<br>(UL 94-V0 rated) |                 |
| Package weight        | 5 Vin & 12 Vin models                            | 1.3 g (0.05 oz) |
|                       | 24 Vin models                                    | 1.7 g (0.06 oz) |
| Soldering temperature | max. 265°C / 10 sec                              |                 |

**Outline Dimensions mm (inches)**



| Pin-Out |            |
|---------|------------|
| Pin     | Single     |
| 1       | -Vin (GND) |
| 2       | +Vin (Vcc) |
| 3       | -Vout      |
| 4       | +Vout      |

Tolerances  $\pm 0.25$  (0.01)  
pins  $\pm 0.05$  (0.002)

Specifications can be changed without notice