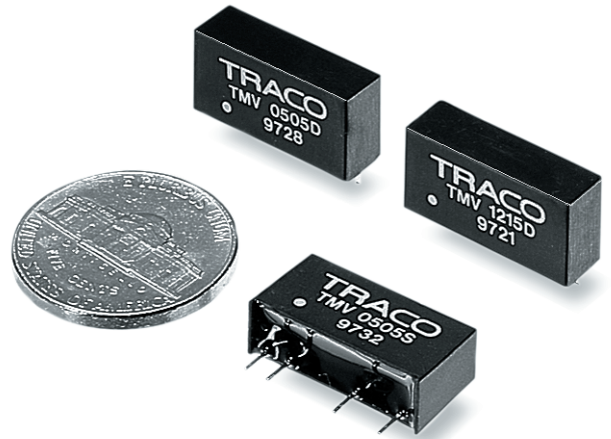


#### Features

- ◆ Single-in-line (SIL) package
- ◆ Isolated single and dual output models
- ◆ I/O isolation 3'000 VDC
- ◆ High Efficiency up to 81%
- ◆ Extended temperature range  
-40°C to +85°C
- ◆ Pin-compatible with other manufacturers
- ◆ 100% Burn-in (8 h)
- ◆ Lead free design, RoHS compliant
- ◆ 3-year product warranty



The TMV series are miniature, isolated 1 W DC/DC-converters with high isolation in a Single-in-Line package (SIP). Requiring only 1.2 cm<sup>2</sup> board space they offer the ideal solution in many space critical applications for board level power distribution. The use of SMD-technology makes it possible to offer a product with high performance at low cost.

| Models    |               |                |                     |                 |
|-----------|---------------|----------------|---------------------|-----------------|
| Ordercode | Input voltage | Output voltage | Output current max. | Efficiency typ. |
| TMV 0505S | 5 VDC ±10%    | 5 VDC          | 200 mA              | 71 %            |
| TMV 0509S |               | 9 VDC          | 110 mA              | 76 %            |
| TMV 0512S |               | 12 VDC         | 80 mA               | 78 %            |
| TMV 0515S |               | 15 VDC         | 65 mA               | 78 %            |
| TMV 0505D |               | ± 5 VDC        | ±100 mA             | 72 %            |
| TMV 0512D |               | ±12 VDC        | ± 40 mA             | 78 %            |
| TMV 0515D |               | ±15 VDC        | ± 30 mA             | 79 %            |
| TMV 1205S | 12 VDC ±10%   | 5 VDC          | 200 mA              | 73 %            |
| TMV 1212S |               | 12 VDC         | 80 mA               | 80 %            |
| TMV 1215S |               | 15 VDC         | 65 mA               | 80 %            |
| TMV 1205D |               | ± 5 VDC        | ±100 mA             | 74 %            |
| TMV 1212D |               | ±12 VDC        | ± 40 mA             | 81 %            |
| TMV 1215D |               | ±15 VDC        | ± 30 mA             | 81 %            |
| TMV 2405S | 24 VDC ±10%   | 5 VDC          | 200 mA              | 71 %            |
| TMV 2412S |               | 12 VDC         | 80 mA               | 78 %            |
| TMV 2415S |               | 15 VDC         | 65 mA               | 79 %            |
| TMV 2405D |               | ± 5 VDC        | ±100 mA             | 72 %            |
| TMV 2412D |               | ±12 VDC        | ± 40 mA             | 79 %            |
| TMV 2415D |               | ±15 VDC        | ± 30 mA             | 80 %            |

### Input Specifications

|                                  |               |  |
|----------------------------------|---------------|--|
| Input current no load /full load | 5 Vin models  | 30 mA / 260 mA typ.                                      |
|                                  | 12 Vin models | 12 mA / 110 mA typ.                                      |
|                                  | 24 Vin models | 7 mA / 50 mA typ.  |
| Surge voltage (1 sec. max.)      | 5 Vin models  | 9 V max.   |
|                                  | 12 Vin models | 18 V max.  |
|                                  | 24 Vin models | 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 capacitor                                       |

### Output Specifications

|                                      |                             |                          |
|--------------------------------------|-----------------------------|--------------------------|
| Voltage set accuracy                 |                             | ± 3 %                    |
| Voltage balance (dual output models) |                             | ± 1 % max.               |
| Regulation                           | – Input variation           | ± 1.2 % / 1 % change Vin |
|                                      | – Load variation 20 – 100 % | ± 10 % max.              |
| Ripple and noise (20 MHz Bandwidth)  |                             | 100 mV pk-pk max.        |
| Temperature coefficient              |                             | ± 0.02 % / K             |
| Short circuit protection             |                             | limited 1 sec. max.      |
| Capacitive load                      | single output models:       | 680 µF max.              |
|                                      | dual output models:         | 220 µF max.              |

### General Specifications

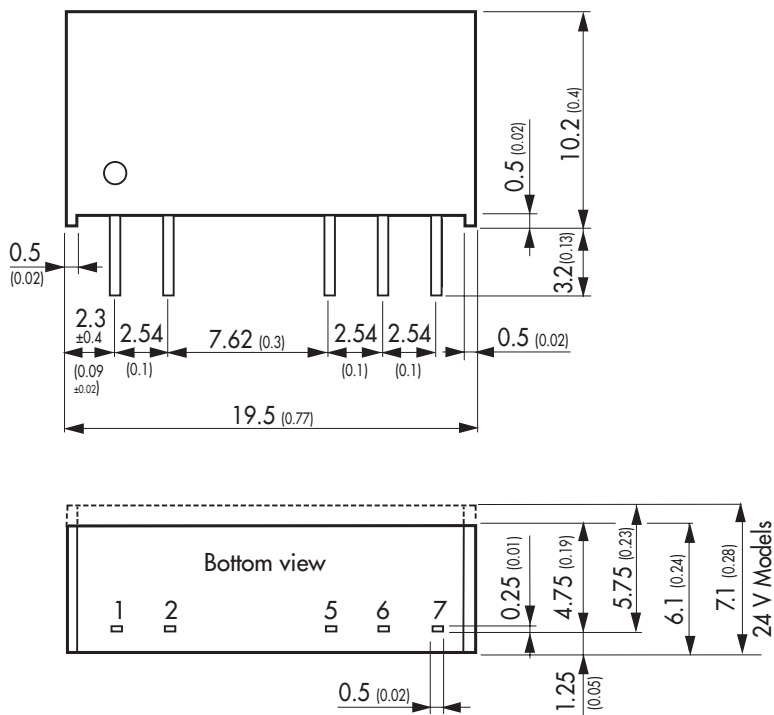
|  |                    |   |
|--|--------------------|---|
| Temperature ranges   | – Operating        | –40 °C ... +85 °C   |
|  | – Case temperature | +95 °C max.   |
|  | – Storage          | –40 °C ... +105 °C  |
| Humidity (non condensing)  |                    | 95 % rel H max.   |
| Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign) |                    | >2'000'000 h  |
| Isolation voltage  | Input/Output       | 3'000 VDC   |
| Isolation capacitance  | Input/Output       | 60 pF typ.  |
| Isolation resistance   | Input/Output       | >10'000 M Ohm   |
| Switching frequency  |                    | 100 kHz typ. (Frequency modulation)   |
| Frequency change over line and load                                  |                    | ± 30 % max.   |
| Environmental compliance   | – Reach            | <a href="http://www.tracopower.com/overview/tmv">www.tracopower.com/overview/tmv</a><br>RoHS directive 2011/65/EU |
|  | – RoHS             |   |

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

**Physical Specifications**

|                       |  |   |
|-----------------------|--|---|
| Casing material       |  | non conductive plastic (UL 94V-0 rated) |
| Package weight        | - Single output models<br>- Dual output models | 2.1 g (0.07 oz)<br>2.6 g (0.09 oz)      |
| Soldering temperature |  | max. 265°C / 10 sec.                    |

**Outline Dimensions mm (inches)**



| Pin-Out |            |            |
|---------|------------|------------|
| Pin     | Single     | Dual       |
| 1       | +Vin (Vcc) | +Vin (Vcc) |
| 2       | -Vin (GND) | -Vin (GND) |
| 5       | -Vout      | -Vout      |
| 6       | No pin     | Common     |
| 7       | +Vout      | +Vout      |

Dimensions in [mm], ( ) = Inch  
Tolerances: ±0.25 (±0.01)  
Pins: ±0.05 (±0.002)

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