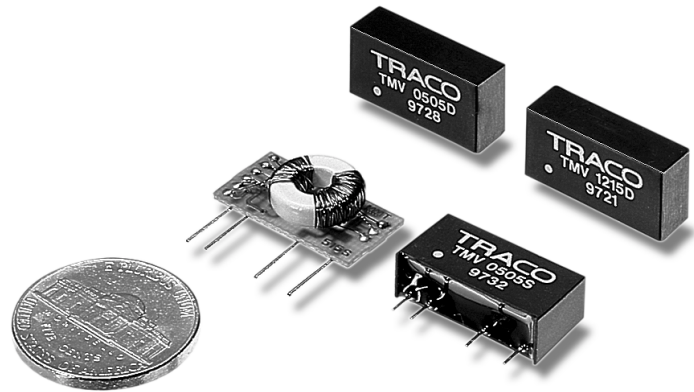


#### Features

- Isolation Test Voltage 6'000 Vpk
- With supplementary Insulation, rated for 250 Vrms working Voltage
- Physical Clearance of Isolation Barrier 2.5 mm min.
- Certified to IEC/EN 60950 Safety Standards
- Safety Barrier 100% Production Test
- Low Coupling Capacity
- Single-in-Line Package (SIP)
- 2 Year Product Warranty



The TMV-EN series are dc/dc converters with supplementary high I/O-isolation, to comply with safety standard IEC/EN 60950. They are designed for applications where approved isolation is required, i.e. information technology equipment or medical equipment. SMT-design and a special transformer technology made it possible to build these converters in a very small SIP-package, requiring a minimum space on the PCB.

#### Models

Ordercode	Input voltage	Output voltage	Output current max.	Efficiency typ.
TMV 0505 EN	5 VDC ±10%	5 VDC	200 mA	65 %
TMV 0512 EN		12 VDC	80 mA	65 %
TMV 0515 EN		15 VDC	65 mA	65 %
TMV 0505D EN		± 5 VDC	±100 mA	65 %
TMV 0512D EN		±12 VDC	± 40 mA	71 %
TMV 0515D EN		±15 VDC	± 30 mA	72 %
TMV 1205 EN	12 VDC ±10%	5 VDC	200 mA	65 %
TMV 1212 EN		12 VDC	80 mA	65 %
TMV 1215 EN		15 VDC	65 mA	65 %
TMV 1205D EN		± 5 VDC	±100 mA	65 %
TMV 1212D EN		±12 VDC	± 40 mA	73 %
TMV 1215D EN		±15 VDC	± 30 mA	74 %

### Input Specifications

Input current no load /full load	5 Vin models 12 Vin models	55 mA / 300 mA typ. 30 mA / 125 mA typ.
Surge voltage (1 sec. max.)	5 Vin models 12 Vin models	9 V max. 18 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 – Load variation 20 – 100 %	± 1.2 % / 1 % change Vin < 10 %
Ripple and noise (20 MHz Bandwidth)		120 mV pk-pk typ.
Temperature coefficient		± 0.02 % / °C
Short circuit protection		limited 1 sec. max.
Capacitive load	– Single output models – Dual output models	680 µF max. 220 µF max.

### Isolation /Safety

Isolation voltage	– Isolation test voltage (tested for 1 sec.) – Rated isolation voltage	6'000 VDC 3'000 VDC
Isolation capacity	Input/Output	10 pF typ.
Isolation resistance	Input/Output	>1'000 M ohm
Safety standards		EN 60950 (rated for 250VAC working voltage)
Safety approvals		test report by BSI (British Standard Institute)

### General Specifications

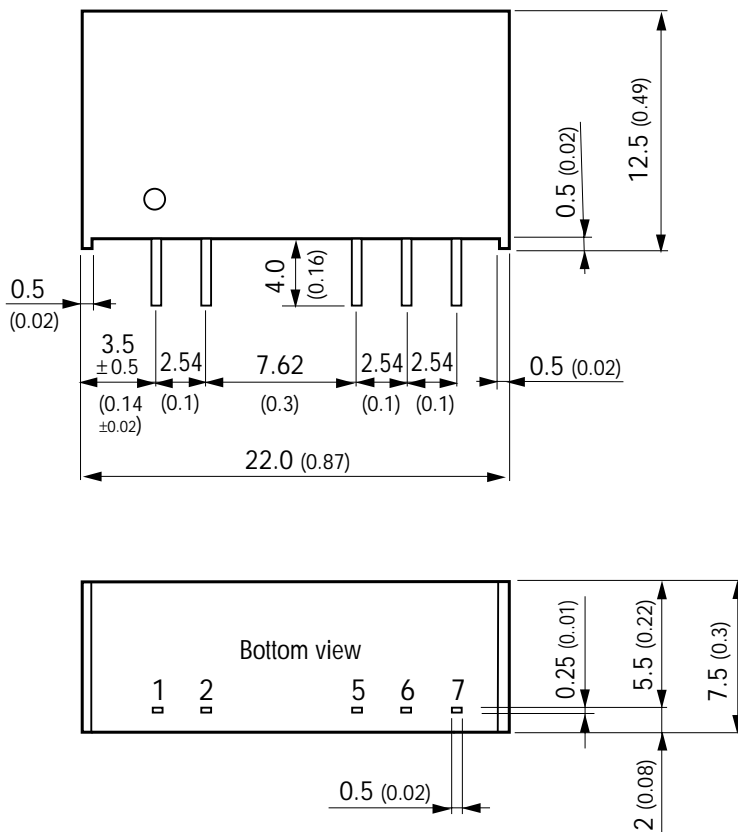
Temperature ranges	– Operating – Case temperature – Storage	– 40 °C ... +85 °C +95 °C max. – 40 °C ... +125 °C
Derating above 85°C		5 % / °C
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217 E)		> 2'000'000 h @ 25 °C
Switching frequency		50 kHz typ. (Frequency modulation)
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 (flammability to UL 94-V0)
Package weight	4.0 g (0.14 oz)
– Single output models	4.0 g (0.14 oz)
– Dual output models	
Soldering temperature	max. 260°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

( ) = inches

pins  $\pm 0.05$  (0.002)

Tolerances  $\pm 0.25$  (0.01)

Specifications can be changed without notice