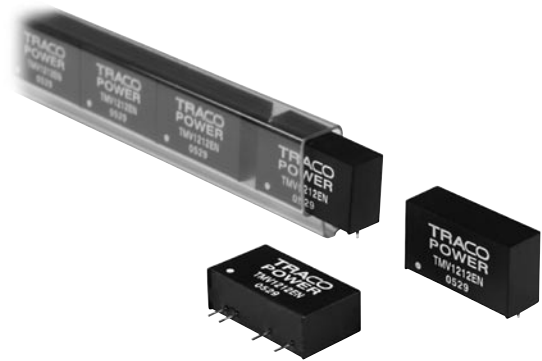


### Features

- ◆ Isolation test voltage 6'000 Vpk
- ◆ With reinforced insulation, rated for 250 Vrms working voltage
- ◆ Physical clearance of isolation barrier 2.0 mm min.
- ◆ Certified to IEC/EN/UL 60950-1 Safety Standards
- ◆ Safety barrier 100% production test
- ◆ Low coupling capacity
- ◆ Single-in-line package (SIP)
- ◆ Lead-free design, RoHS compliant
- ◆ 3-year product warranty

CB  
Scheme

UL  
60950-1



The TMV-EN series is a range of 1 W DC/DC converters with high I/O-isolation. This product features an isolation barrier which is approved for supplementary an reinforced insulation. SMD construction and a special designed toroidal transformer made it possible to built these converters in a standard SIP package with a very small footprint. These features making the TMV-EN series an economical solution in many DC/DC converter applications requiring safety agency approval.

### Models

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

### Input Specifications

Input current no load/full load	5 Vin models: 55 mA/300 mA typ. 12 Vin models: 30 mA/125 mA typ.
Surge voltage (1 sec. max.)	5 Vin models: 9 V max. 12 Vin models: 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      ±1.2 %/1% change Vin – Load variation 20 – 100 %      <10 %
Ripple and noise (20 MHz Bandwidth)	120 mV pk-pk typ.
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.

### Isolation /Safety

Isolation voltage	– Isolation test voltage (tested for 1 sec.) – I/O isolation voltage (60 sec.)	6'000 Vpk 3'000 VACrms
Isolation capacity (input/output)		10 pF typ.
Isolation resistance (input/output)		>1'000 Mohm
Working voltage (rated)		300 VACrms
Safety standards		IEC/EN 60950-1, UL 60950-1 CSA C22.2 No. 60950-1-03
Safety approvals	– CB report – CSA certification	<a href="http://www.tracopower.com/products/tmv-en_cb.pdf">www.tracopower.com/products/tmv-en_cb.pdf</a> <a href="http://www.tracopower.com/products/tmv-en_csa.pdf">www.tracopower.com/products/tmv-en_csa.pdf</a>

### General Specifications

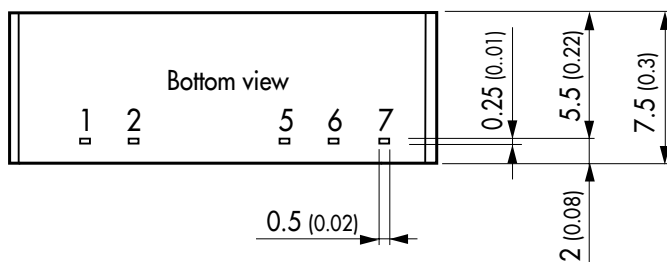
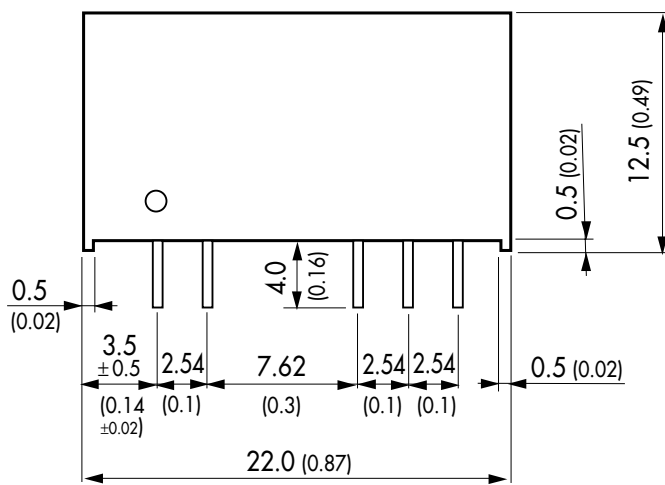
Temperature ranges	– Operating – Case temperature – Storage	–40 °C to +85 °C +105 °C max. –40 °C to +125 °C
Derating		4 %/K above 70 °C
Humidity (non condensing)		95 % rel H max.
Temperature coefficient		±0.02 %/K typ.
Reliability, calculated MTBF (MIL-HDBK-217E)		>2'000'000 h @ 25 °C
Switching frequency		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-conducting FR4 (UL 94V-0 rated)
Package weight	4.0 g (0.14 oz)
Soldering temperature	max. 265°C / 10 sec

**Outline Dimensions**



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  
Tolerances ±0.25 (0.01)  
pins ±0.05 (0.002)

Specifications can be changed any time without notice.