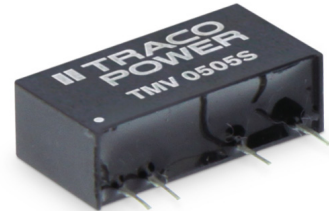


#### Features

- ◆ Single-in-line (SIL) package
- ◆ Isolated single and dual output models
- ◆ I/O isolation 3'000 VDC
- ◆ Unregulated device
- ◆ 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	84 mA	78 %
TMV 0515S		15 VDC	67 mA	78 %
TMV 0505D		± 5 VDC	±100 mA	72 %
TMV 0512D		±12 VDC	±42 mA	78 %
TMV 0515D		±15 VDC	±34 mA	79 %
TMV 1205S	12 VDC ±10%	5 VDC	200 mA	73 %
TMV 1212S		12 VDC	84 mA	80 %
TMV 1215S		15 VDC	67 mA	80 %
TMV 1205D		± 5 VDC	±100 mA	74 %
TMV 1212D		±12 VDC	±42 mA	81 %
TMV 1215D		±15 VDC	±34 mA	81 %
TMV 2405S	24 VDC ±10%	5 VDC	200 mA	71 %
TMV 2412S		12 VDC	84 mA	78 %
TMV 2415S		15 VDC	67 mA	79 %
TMV 2405D		± 5 VDC	±100 mA	72 %
TMV 2412D		±12 VDC	±42 mA	79 %
TMV 2415D		±15 VDC	±34 mA	80 %

### Input Specifications

Input current no load /full load	5 Vin models	30 mA / 270 mA typ.
	12 Vin models	12 mA / 110 mA typ.
	24 Vin models	7 mA / 55 mA typ.
Surge voltage (1 s 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		±1 % typ. / ±3 % max.
Voltage balance (dual output models, balanced loads)		±0.1 % typ. / ±1 % max.
Regulation	– Input variation (1 % change of Vin)	1.2 % typ. / 1.5 % max.
	– Load variation (20 – 100 %)	5 to 10 % max.
Ripple and noise (20 MHz Bandwidth)		65 mVp-p typ. / 100 mVp-p max.
Temperature coefficient		±0.01 %/K typ. / ±0.02 %/K max.
Short circuit protection		limited 0.5 s max.
Capacitive load	single output models:	220 µF max.
	dual output models:	100 µF max. (each output)

### General Specifications

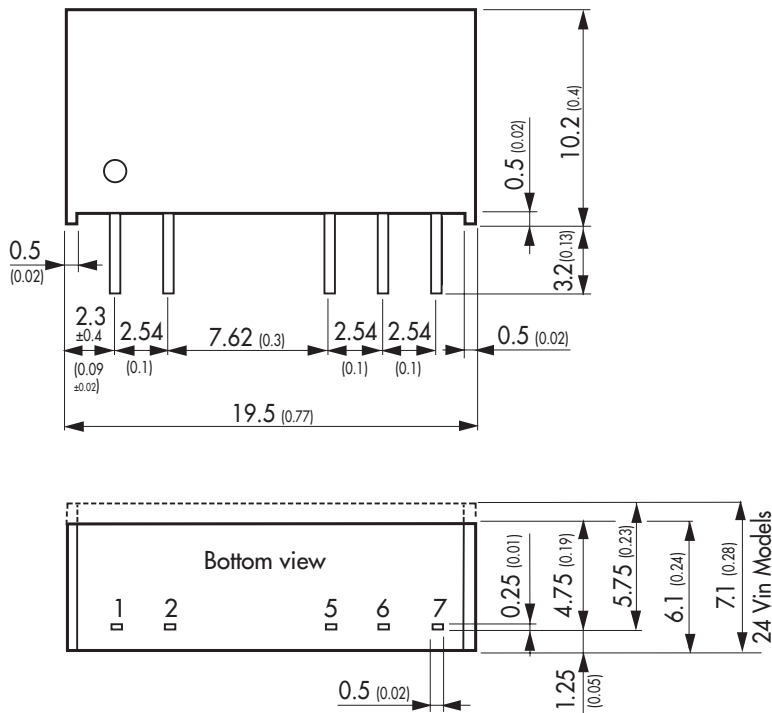
Temperature Ranges	– Operating	3.3, 5 & ±5 Vout models:	–40°C to +85°C
		all other output models:	–40°C to +90°C
	– Case temperature		+95°C max.
	– Storage		–50°C to +125°C
Derating		3.3, 5 & ±5 Vout models:	4 %/K above 75 °C
		all other output models:	4 %/K above 80 °C
Humidity (non condensing)			95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign)			>2'000'000 h
Isolation Test Voltage (Input/Output, 60 s)			3'000 VDC
Insulation System			Functional
Isolation Capacitance (Input/Output)			60 pF typ. / 100 pF max.
Isolation Resistance (Input/Output)			>10 GOhm
Switching Frequency			70 to 120 kHz (Frequency modulation)
Environmental Compliance	– Reach		<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a>
	– RoHS		RoHS directive 2011/65/EU

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	5 & 12 Vin models:	2.1 g (0.07 oz)
	24 Vin models:	2.6 g (0.09 oz)
Soldering temperature	max. 265°C / 10 s	

**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)

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