

DC/DC Converter

TMV 2HI Series, 2 Watt

- ◆ Ultra compact SIP-7 package
- ◆ Very high I/O-isolation 5'200 VDC (5'700 Vpk)
- ◆ Dedicated for IGBT applications
- ◆ Operating temperature range -40°C to +80°C
- ◆ Industry standard pinout
- ◆ 3-year product warranty



The TMV 2HI series is a range of 2 Watt non regulated dc/dc-converters with high I/O-isolation. They come in a very compact SIP-7 package.

Models				
Order code	Input voltage	Output voltage	Output current max.	Efficiency typ.
TMV 2-0503SHI	5 VDC ± 10 %	3.3 VDC	500 mA	74 %
TMV 2-0505SHI		5.0 VDC	400 mA	80 %
TMV 2-0509SHI		9.0 VDC	222 mA	81 %
TMV 2-0512SHI		12 VDC	168 mA	82 %
TMV 2-0515SHI		15 VDC	132 mA	79 %
TMV 2-0505DHI		± 5.0 VDC	± 200 mA	78 %
TMV 2-0509DHI		± 9.0 VDC	± 112 mA	80 %
TMV 2-0512DHI		± 12 VDC	± 84 mA	80 %
TMV 2-0515DHI		± 15 VDC	± 66 mA	79 %
TMV 2-05159HI		+15 / -9 VDC	+66 / -110 mA	80 %
TMV 2-1203SHI	12 VDC ± 10 %	3.3 VDC	500 mA	76 %
TMV 2-1205SHI		5.0 VDC	400 mA	79 %
TMV 2-1209SHI		9.0 VDC	222 mA	81 %
TMV 2-1212SHI		12 VDC	168 mA	83 %
TMV 2-1215SHI		15 VDC	132 mA	82 %
TMV 2-1205DHI		± 5.0 VDC	± 200 mA	79 %
TMV 2-1209DHI		± 9.0 VDC	± 112 mA	81 %
TMV 2-1212DHI		± 12 VDC	± 84 mA	82 %
TMV 2-1215DHI		± 15 VDC	± 66 mA	83 %
TMV 2-12159HI		+15 / -9 VDC	+66 / -110 mA	81 %
TMV 2-1503SHI	15 VDC ± 10 %	3.3 VDC	500 mA	77 %
TMV 2-1505SHI		5.0 VDC	400 mA	79 %
TMV 2-1509SHI		9.0 VDC	222 mA	83 %
TMV 2-1512SHI		12 VDC	168 mA	83 %
TMV 2-1515SHI		15 VDC	132 mA	85 %
TMV 2-1505DHI		± 5.0 VDC	± 200 mA	81 %
TMV 2-1509DHI		± 9.0 VDC	± 112 mA	84 %
TMV 2-1512DHI		± 12 VDC	± 84 mA	82 %
TMV 2-1515DHI		± 15 VDC	± 66 mA	82 %
TMV 2-15159HI		+15 / -9 VDC	+66 / -110 mA	83 %
TMV 2-2403SHI	24 VDC ± 10 %	3.3 VDC	500 mA	76 %
TMV 2-2405SHI		5.0 VDC	400 mA	77 %
TMV 2-2409SHI		9.0 VDC	222 mA	81 %
TMV 2-2412SHI		12 VDC	168 mA	82 %
TMV 2-2415SHI		15 VDC	132 mA	82 %
TMV 2-2405DHI		± 5.0 VDC	± 200 mA	77 %
TMV 2-2409DHI		± 9.0 VDC	± 112 mA	81 %
TMV 2-2412DHI		± 12 VDC	± 84 mA	81 %
TMV 2-2415DHI		± 15 VDC	± 66 mA	80 %
TMV 2-24159HI		+15 / -9 VDC	+66 / -110 mA	81 %

Input Specifications

Input current no load	5 Vin models:	35 mA typ.
	12 Vin models:	17 mA typ.
	15 Vin models:	16 mA typ.
	24 Vin models:	12 mA typ.
Surge voltage (1 sec. max.)	5 Vin models:	9 V max.
	12 Vin models:	18 V max.
	15 Vin models:	20 V max.
	24 Vin models:	30 V max.
Input filter	internal capacitor	

Output Specifications

Voltage set accuracy	±5 % max.	
Voltage balance (dual output models)	1 % max.	
Regulation	– Input variation – Load variation 20 – 100 %	1.2 % / 1 % change Vin
		3.3 VDC models: < 20 %
		5 VDC models: < 15 %
		other models: < 10 %
Ripple and noise (20 MHz Bandwidth)	100 mVp-p max.	
Short circuit protection	continuous, automatic recovery	
Capacitive load	– Single output	3.3 VDC models: 1650 µF max.
		5.0 & 9.0 VDC models: 940 µF max.
		12 & 15 VDC models: 440 µF max.
	– Dual output	±5.0 & ±9.0 VDC models: 440 µF max. (each output)
		±12 & ±15 VDC models: 200 µF max. (each output)
		+15 / –9 VDC models: 200 / 440 µF max.

Isolation /Safety

Isolation voltage	– Isolation test voltage (tested for 1 sec.)	5'700 Vpk
	– I/O isolation voltage (60 sec.)	5'200 VDC
Isolation capacitance (input/output)	7 pF typ.	
Isolation resistance (input/output)	>10 Gohm	
Common mode transient immunity (dv/dt)	15 kV/µs min.	

General Specifications

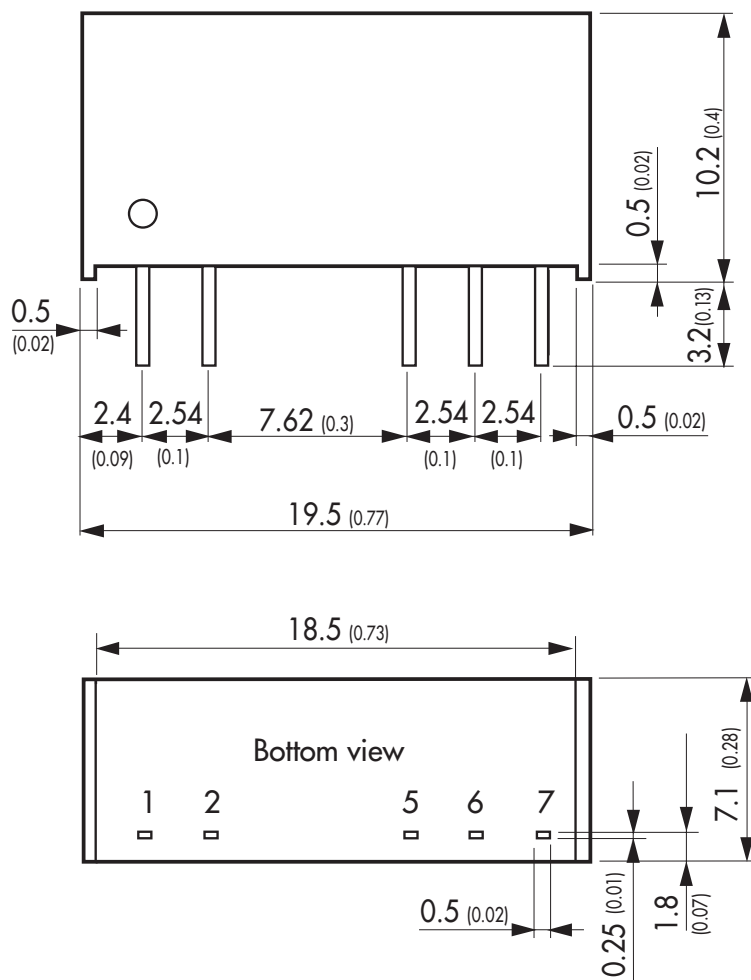
Temperature ranges	– Operating (convection cooling 20LFM, 0,1m/s)	–40°C to +80°C (without derating)
	– Case temperature	+95°C max.
	– Storage temperature	–55°C to +125°C
Humidity (non condensing)	95 % rel H max.	
Altitude during operation	4000 m	
Temperature coefficient	±0.02 %/K typ.	
Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign)	>1'109'000 h	
Switching frequency	100 kHz typ.	
Safety standards	CAN/CSA-C22.2 No 60950-1-07, 2nd ed; A1:2011 ANSI/UL No. 60950-1, 2nd ed.; A1:2011 IEC 60950-1:2005 (2nd edition); Am 1:2009 EN 60950-1:2006/A11:2009/A1:2010/A12:2011 www.tracopower.com/overview/tmv2hi	
	– Certification documents (pending)	
Environmental compliance	– Reach	www.tracopower.com/products/reach-declaration.pdf
	– 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-conducting FR4 (UL 94V-0 rated)
Pin material	tinned copper
Package weight	2.4 g (0.085oz)
Soldering temperature	max. 260°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

Dimensions in mm (inch)
Tolerances ± 0.5 (± 0.02)
Pin pitch tolerances ± 0.25 (± 0.01)
pins ± 0.05 (± 0.002)

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TRACO Power:

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