



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



- ◆ 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 +85°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
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
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
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, balanced loads)	0.1 % typ. / 1 % max.		
Regulation	– Input variation (1 % change of Vin)	1.2 % typ.	
	– Load variation (20 – 100 %)	3.3 Vout models:	< 20 %
		(±)5 Vout models:	< 15 %
		other models:	< 10 %
Ripple and noise (20 MHz Bandwidth)	100 mVp-p max.		
Short circuit protection	continuous, automatic recovery		
Temperature coefficient	±0.01 %/K typ. / ±0.02 %/K max.		
Capacitive load	– Single output	3.3 Vout models:	1650 µF max.
		5.0 & 9.0 Vout models:	940 µF max.
		12 & 15 Vout models:	440 µF max.
	– Dual output	±5.0 & ±9.0 Vout models:	440 µF max. (each output)
		±12 & ±15 Vout models:	200 µF max. (each output)
		+15 / –9 Vout models:	200 / 440 µF max.

### Isolation /Safety

Isolation voltage	– Isolation test voltage (tested for 1 s)	5'700 Vpk
	– I/O isolation voltage (60 s)	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

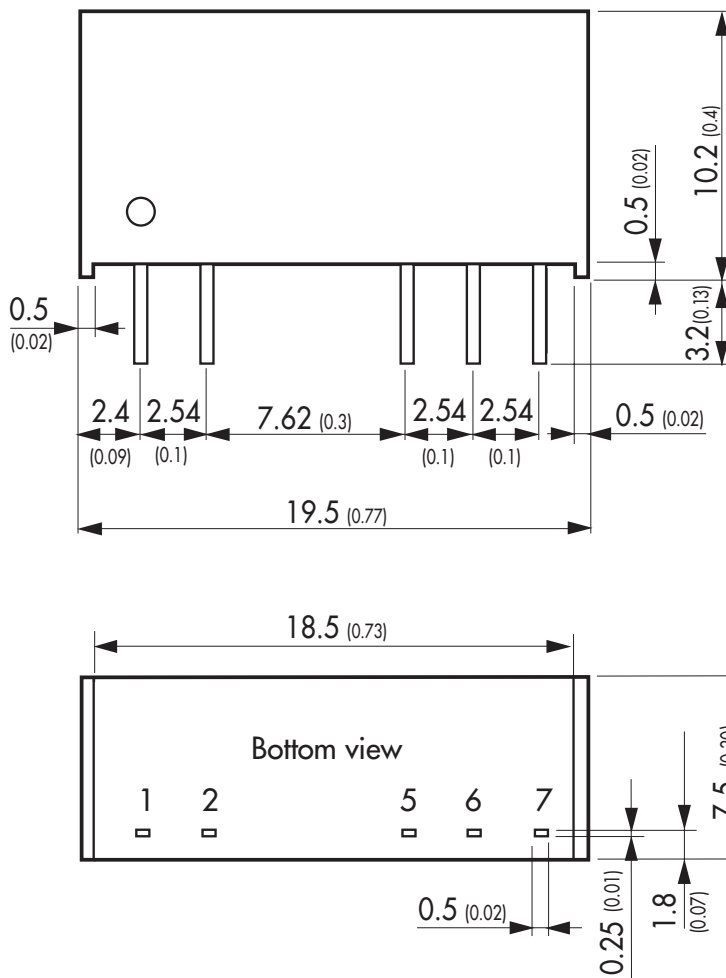
Temperature ranges	– Operating	–40°C to +85°C
	– Case temperature	+95°C max.
	– Storage temperature	–55°C to +125°C
Derating	6.7 %/K above +80°C	
Humidity (non condensing)	95 % rel H max.	
Altitude during operation	4000 m	
Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign)	>1'109'000 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 <a href="http://www.tracopower.com/overview/tmv2hi">www.tracopower.com/overview/tmv2hi</a>	
Environmental compliance	– Reach	<a href="http://www.tracopower.com/products/reach-declaration.pdf">www.tracopower.com/products/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-conducting FR4 (UL 94V-0 rated)
Pin material	tinned copper
Package weight	2.4 g (0.085oz)
Soldering temperature	max. 260°C / 10 s

### 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  $\pm 0.5$  ( $\pm 0.02$ )  
Pin pitch tolerances  $\pm 0.25$  ( $\pm 0.01$ )  
pins  $\pm 0.05$  ( $\pm 0.002$ )