

### Features

- ◆ Ultra wide 4:1 input voltage
- ◆ I/O isolation 5000 VACrms rated for 250 VACrms working voltage
- ◆ 2 x MOPP Medical safety according to AAMI/ANSI ES 60601-1:2005(R) and IEC/EN 60601-1 3rd edition
- ◆ Low leakage current <2  $\mu$ A
- ◆ Very high efficiency up to 89%
- ◆ Extended operating temperature range  $-40^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  at full load.
- ◆ Input filter to meet EN55022 class A
- ◆ 3-year product warranty



The THM-6WI series is a range of high performance, regulated 6 Watt DC/DC converters in a DIP-24 plastic package. The reinforced I/O-isolation system complies with the medical safety requirements for MOPP (Means Of Patient Protection). Together with a wide 4:1 input voltage range, and an internal EMI filter to meet EN55022 class A the converters constitute also a reliable solution for many demanding applications such as transportation systems, industrial control equipments, measurement equipments, and some IGBT driver applications. With A high efficiency of up to 89% and highest grade components the converters can reliably operate in an ambient temperature range of  $-40^{\circ}\text{C}$  up to  $+80^{\circ}\text{C}$  at full load.


### Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
THM 6-0510WI	4.5 – 9 VDC (5 VDC nominal)	3.3 VDC	1800 mA	82.5 %
THM 6-0511WI		5.0 VDC	1200 mA	86.0 %
THM 6-0512WI		12 VDC	500 mA	86.0 %
THM 6-0513WI		15 VDC	400 mA	86.0 %
THM 6-0515WI		24 VDC	250 mA	86.5 %
THM 6-0521WI		$\pm 5.0$ VDC	$\pm 600$ mA	84.0 %
THM 6-0522WI		$\pm 12$ VDC	$\pm 250$ mA	86.5 %
THM 6-0523WI		$\pm 15$ VDC	$\pm 200$ mA	87.5 %
THM 6-2410WI	9 – 36 VDC (24 VDC nominal)	3.3 VDC	1800 mA	83.0 %
THM 6-2411WI		5.0 VDC	1200 mA	86.5 %
THM 6-2412WI		12 VDC	500 mA	89.0 %
THM 6-2413WI		15 VDC	400 mA	89.0 %
THM 6-2415WI		24 VDC	250 mA	88.5 %
THM 6-2421WI		$\pm 5.0$ VDC	$\pm 600$ mA	85.0 %
THM 6-2422WI		$\pm 12$ VDC	$\pm 250$ mA	88.5 %
THM 6-2423WI		$\pm 15$ VDC	$\pm 200$ mA	88.0 %
THM 6-4810WI	18 – 75 VDC (48 VDC nominal)	3.3 VDC	1800 mA	82.5 %
THM 6-4811WI		5.0 VDC	1200 mA	86.5 %
THM 6-4812WI		12 VDC	500 mA	88.0 %
THM 6-4813WI		15 VDC	400 mA	89.0 %
THM 6-4815WI		24 VDC	250 mA	88.0 %
THM 6-4821WI		$\pm 5.0$ VDC	$\pm 600$ mA	85.0 %
THM 6-4822WI		$\pm 12$ VDC	$\pm 250$ mA	88.0 %
THM 6-4823WI		$\pm 15$ VDC	$\pm 200$ mA	88.0 %



**General Specifications**

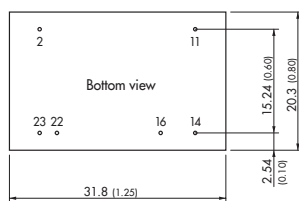
Temperature ranges	- Operating - Casing - Storage	-40°C to +90°C (with derating) +105°C max. -55°C to +125°C
Derating		4% above 80°C
Humidity (non condensing)		5 to 95 % rel H max.
Temperature coefficient		±0.02 %/K typ.
Altitude		5000 m
Switching frequency		250 kHz ±25 kHz. (puls width modulation)
I/O isolation voltage (50Hz, 60sec.)	- to meet UL/IEC/EN 60601-1	5000 VACrms, rated for 250 VACrms working voltage, 2 x MOPP
Clearance/creepage		8 mm min.
Leakage current		2 µA max. (at 240 VAC, 60 Hz)
Isolation capacitance	- Input/Output	17 pF max. (at 100 KHz, 1 V)
Safety standards		ANSI/AAMI ES 60601-1:2005/(R)2012, IEC/EN 60601-1 3rd edition <a href="http://www.tracopower.com/overview/thm6wi">www.tracopower.com/overview/thm6wi</a>
Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)		>4.7 Mio. h
Casing material		non conductive plastic (UL 94V-0-rated)
Potting material		silicone (UL 94V-0-rated)
Vibration and thermal shock resistance		according to MIL-STD-810F
Weight		14.0 g (0.48oz)
Soldering temperature		max. 265°C / 10 sec.
Environmental compliance	- Reach - RoHS	<a href="http://www.tracopower.com/overview/thm6wi">www.tracopower.com/overview/thm6wi</a> according RoHS directive 2011/65/EU



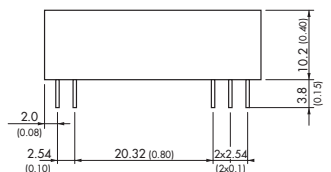
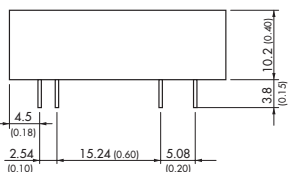
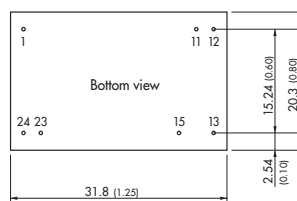
- The component is not be used in an oxygen rich environment.
- The component is not to be used in conjunction with flammable anaesthetics and agents.
- The component has to be disposed appropriately. Please refer to local regulations (Waste Electrical and Electronic Equipment).
- A modification of the component is not allowed.

**Outline Dimensions**

Standard pinning



Optional pinning: suffix -A1



Dimensions in [mm], ( ) = Inch  
Pin ø 0.6 ±0.1 (0.024 ±0.004)

Tolerances ±0.5 (±0.02)  
Pin pitch tolerances ±0.25 (±0.01)

Standard Pinout		
Pin	Single	Dual
2	-Vin (GND)	-Vin (GND)
11	No con.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

Optional Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
11	No pin	Common
12	-Vout	No pin
13	+Vout	-Vout
15	No pin	+Vout
23	-Vin (GND)	-Vin (GND)
24	-Vin (GND)	-Vin (GND)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at [www.tracopower.com](http://www.tracopower.com)