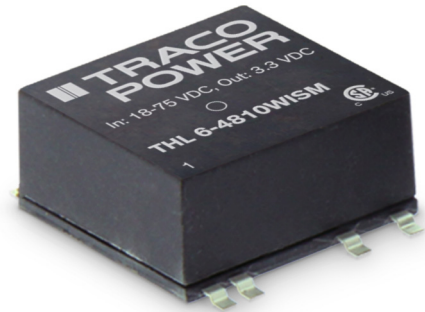


#### Features

- ◆ Compact design in SMD package
- ◆ Ultra wide 4:1 input voltage range
- ◆ Fully regulated outputs
- ◆ I/O isolation 1500 VDC
- ◆ Operating temp. range  $-40^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$
- ◆ Short circuit protection
- ◆ Input filter to meet EN 55022, class A
- ◆ Qualified for leadfree reflow solder process
- ◆ 3-year product warranty



The THL 6WISM series is a family of compact 6 W dc/dc-converters with 4:1 input voltage ranges. The product is available in SMD-package which is 31% smaller than a standard DIP-24 package. The internal filter to meet EN55022 Class A without external components makes these converters easy to design in.

They come with remote On/Off and short circuit protection. THL 6WISM converter is an excellent solution for data- and telecom applications and for instrumentation and industrial electronics.

#### Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
THL 6-2410WISM	9 – 36 VDC (nominal 24 VDC)	3.3 VDC	1450 mA	76 %
THL 6-2411WISM		5.0 VDC	1200 mA	79 %
THL 6-2412WISM		12 VDC	500 mA	83 %
THL 6-2413WISM		15 VDC	400 mA	83 %
THL 6-2415WISM		24 VDC	250 mA	83 %
THL 6-2421WISM		$\pm 5$ VDC	$\pm 600$ mA	82 %
THL 6-2422WISM		$\pm 12$ VDC	$\pm 250$ mA	83 %
THL 6-2423WISM		$\pm 15$ VDC	$\pm 200$ mA	83 %
THL 6-4810WISM	18 – 75 VDC (nominal 48 VDC)	3.3 VDC	1450 mA	76 %
THL 6-4811WISM		5.0 VDC	1200 mA	79 %
THL 6-4812WISM		12 VDC	500 mA	83 %
THL 6-4813WISM		15 VDC	400 mA	83 %
THL 6-4815WISM		24 VDC	250 mA	83 %
THL 6-4821WISM		$\pm 5$ VDC	$\pm 600$ mA	82 %
THL 6-4822WISM		$\pm 12$ VDC	$\pm 250$ mA	83 %
THL 6-4823WISM		$\pm 15$ VDC	$\pm 200$ mA	83 %

### Input Specifications

<b>Input current at no load</b> (nominal input voltage)	24 Vin models: <b>30 mA typ.</b> 48 Vin models: <b>20 mA typ.</b>
<b>Input current at full load</b> (nominal input voltage)	24 Vin; 3.3 VDC model: <b>260 mA typ.</b> 24 Vin other models: <b>300 mA typ.</b> 48 Vin; 3.3 VDC model: <b>130 mA typ.</b> 48 Vin other models: <b>150 mA typ.</b>
<b>Surge voltage</b> (100 msec. max.)	24 Vin models: <b>50 V max.</b> 48 Vin models: <b>100 V max.</b>
<b>Conducted noise</b>	<b>EN 55022 level A, FCC part 15, level A without external components</b>
<b>Recommended input fuse</b> (slow blow)	24 V models: <b>1500 mA</b> 48 V models: <b>750 mA</b>

### Output Specifications

<b>Voltage set accuracy</b>	<b>±2 % max</b>
<b>Regulation</b>	- Input variation Vin min. to Vin max. <b>1.0 % max.</b> - Load variation 15 – 100 % <b>1.2 % max.</b>
<b>Minimum load</b>	<b>15 % of rated max current</b> (operation at lower load condition is safe but a higher output ripple will be experienced)
<b>Temperature coefficient</b>	<b>±0.02 %/K</b>
<b>Ripple and noise</b> (20 MHz bandwidth)	<b>100 mVp-p max.</b>
<b>Transient response</b> (25 % load step change)	- Recovery time <b>300 µs typ.</b> - Deviation <b>± 3 % typ.</b>
<b>Short circuit protection</b>	<b>continuous, automatic recovery</b>
<b>Maximum capacitive load</b>	3.3 & 5 VDC models: <b>330 µF</b> 12, 15 & 24 VDC models: <b>100 µF</b> ±5,±12 & ±15 VDC models: <b>100 µF</b> (each output)

### General Specifications

<b>Temperature</b>	- Operating (convection cooling 50 LFM, 0.25 m/s) <b>-40°C to +80°C</b> - Storage <b>-50°C to +125°C</b> - Case <b>+105°C max.</b>
<b>Load derating</b> (convection cooling 50 LFM, 0.25 m/s)	3.3 & 5.0 VDC models: <b>2.2 %/K above +55°C</b> other output models: <b>2.5 %/K above +60°C</b>
<b>Humidity</b> (non condensing)	<b>95 %</b>
<b>Reliability, calculated MTBF</b> (MIL-HDBK-217F, at +25°C, ground benign)	<b>&gt;350'000 h</b>
<b>Isolation voltage</b>	- Input/Output 60 sec. <b>1'500 VDC</b> 1 sec. <b>1'800 VDC</b>
<b>Isolation capacitance</b>	- Input/Output (100 kHz, 1 V) <b>1500 pF max.</b>
<b>Isolation resistance</b>	- Input/Output (500 VDC) <b>&gt;1 GOhm</b>
<b>Safety standard</b>	<b>IEC/EN 60950-1, UL 60950-1</b> <a href="http://www.tracopower.com/overview/thl6wism">www.tracopower.com/overview/thl6wism</a>
<b>Switching frequency</b>	<b>330 kHz</b>
<b>Altitude during operation</b>	<b>5'000 m max. (16'400 ft) approved</b>
<b>Remote On/Off</b>	- On: <b>2.5 to 50 VDC or open circuit</b> - Off: <b>-0.7 to +0.8 VDC</b> - Off stand by input current <b>10 mA max.</b>
<b>Environmental compliance</b>	- Reach <a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a> - RoHS <b>RoHS directive 2011/65/EU</b>

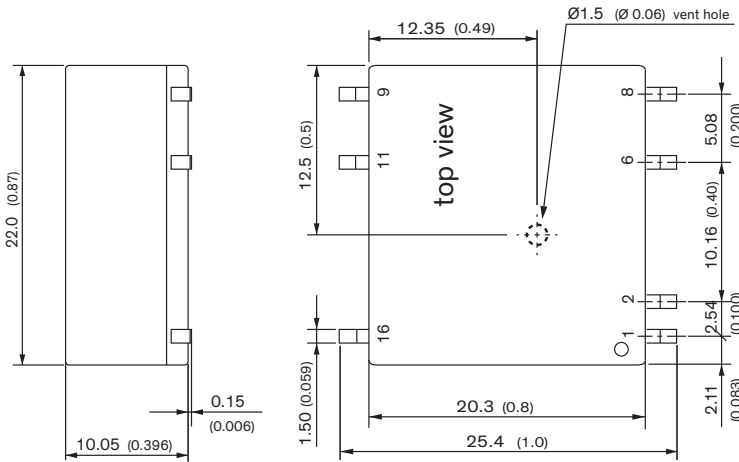
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

**Physical Specifications**

Casing material	non-conductive plastic (UL94V-0 rated)
Pin material	Phosphor bronze
Weight	7.8 g (0.27oz)
Lead-free reflow solder process	as per J-STD-020D.01 (to find at: <a href="http://www.jedec.org">www.jedec.org</a> - free registration required)
Moisture sensivity level	level 2a as per J-STD-033B.01 (to find at: <a href="http://www.jedec.org">www.jedec.org</a> - free registration required)

**Application note:** [www.tracopower.com/overview/thl6wism](http://www.tracopower.com/overview/thl6wism)

**Outline Dimensions**



Pin-Out		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
6	NC	Common
8	NC	-Vout
9	+Vout	+Vout
11	-Vout	Common
16	+Vin (Vcc)	+Vin (Vcc)

NC = Not connected

Dimensions in mm (inch)  
Tolerances: x.x±0.25 (x.xx±0.01)  
              x.xx ±.13 (x.xxx ±.005)  
Pin tolerances: ±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)