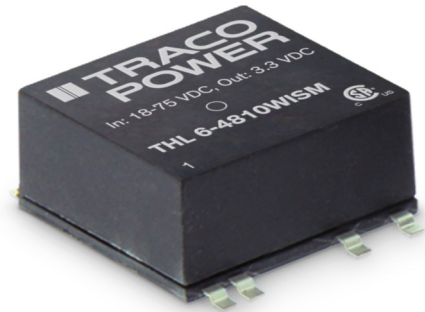


Features

- ◆ Compact design in SMD package
- ◆ Ultra wide 4:1 input voltage range
- ◆ Fully regulated outputs
- ◆ I/O isolation 1500 VDC
- ◆ Operating temp. range -40°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 | | ± 5 VDC | ± 600 mA | 82 % |
| THL 6-2422WISM | | ± 12 VDC | ± 250 mA | 83 % |
| THL 6-2423WISM | | ± 15 VDC | ± 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 | | ± 5 VDC | ± 600 mA | 82 % |
| THL 6-4822WISM | | ± 12 VDC | ± 250 mA | 83 % |
| THL 6-4823WISM | | ± 15 VDC | ± 200 mA | 83 % |

Input Specifications

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

Output Specifications

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

General Specifications

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

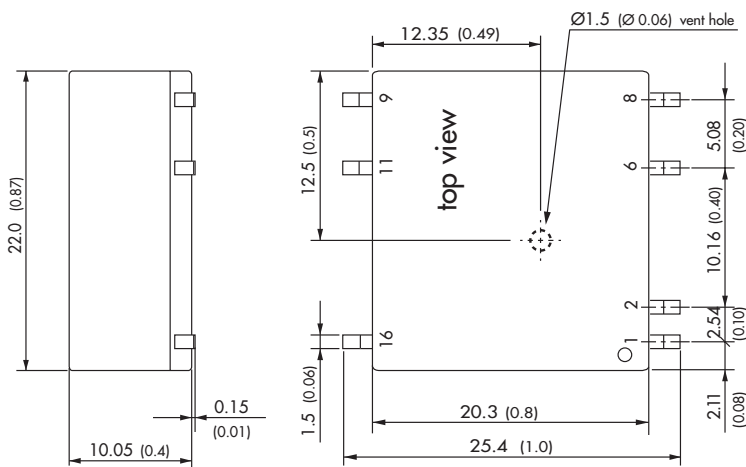
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Physical Specifications

| | |
|---------------------------------|---|
| Casing material | non-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: www.jedec.org - free registration required) |
| Moisture sensitivity level | level 2a as per J-STD-033B.01 (to find at: www.jedec.org - free registration required) |

Application note: www.tracopower.com/overview/thl6wism

Outline Dimensions



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

ntc. = not to connect

Dimensions in [mm], () = Inch
Tolerances: ±0.25 (±0.01)
Pin pitch tolerances: ±0.13 (±0.005)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at www.tracopower.com

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