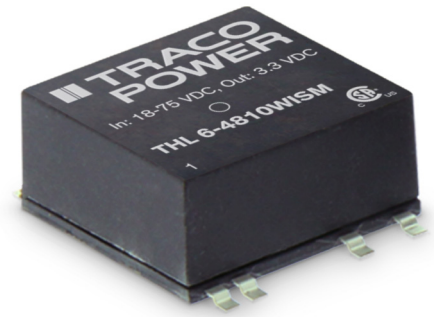
DC/DC Converters

THL 6WISM Series, 6 Watt

c SP us 226037 CB Scheme IEC 60950-1

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°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		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	**9 – 36 VDC**	15 VDC	400 mA	83 %
THL 6-2415WISM	(nominal 24 VDC)	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		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	**18 – 75 VDC**	15 VDC	400 mA	83 %
THL 6-4815WISM	(nominal 48 VDC)	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
	– Certification documents		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

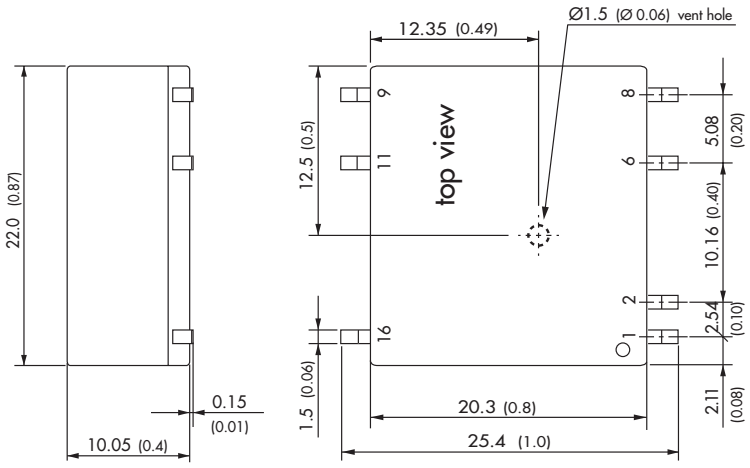
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Pysical 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 sensivity 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 pich tolerances: ±0.13 (±0.005)