

Features

- ◆ Highest power density 25W converter!
Ultra compact design: 1.0" x 1.0" x 0.4"
- ◆ Shielded metal case with isolated baseplate
- ◆ Wide 2:1 input voltage ranges
- ◆ Very high efficiency up to 90%
- ◆ Output voltage adjustable
- ◆ Remote On/Off control
- ◆ Operating temp. range -40°C to +80°C
and up to +85°C with heat-sink
- ◆ I/O isolation voltage 1500 VDC
- ◆ 3-year product warranty



The THL 25 series is the latest generation of dc-dc converter modules with highest power density. The product achieves 25 Watt output power and comes in a metal case with small dimensions of only 1.0"x 1.0"x 0.4".

All models have a wide 2:1 input voltage range and precisely regulated output voltages. High efficiency of up to 90% makes this product very reliable and applicable in temperature ranges of up to +80°C or up to +85°C with optional mounted heat sink. Typical applications are in mobile equipments, instrumentation, distributed power architectures in communication and industrial electronics and everywhere where space on the PCB is critical.

Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
THL 25-1210	9 – 18 VDC (12 VDC nominal)	3.3 VDC	6000 mA	87 %
THL 25-1211		5.0 VDC	5000 mA	89 %
THL 25-1212		12 VDC	2090 mA	89 %
THL 25-1213		15 VDC	1670 mA	89 %
THL 25-1222		±12 VDC	±1040 mA	89 %
THL 25-1223		±15 VDC	±840 mA	89 %
THL 25-2410		18 – 36 VDC (24 VDC nominal)	3.3 VDC	6000 mA
THL 25-2411	5.0 VDC		5000 mA	90 %
THL 25-2412	12 VDC		2090 mA	90 %
THL 25-2413	15 VDC		1670 mA	90 %
THL 25-2422	±12 VDC		±1040 mA	89 %
THL 25-2423	±15 VDC		±840 mA	89 %
THL 25-4810	36 – 75 VDC (48 VDC nominal)		3.3 VDC	6000 mA
THL 25-4811		5.0 VDC	5000 mA	90 %
THL 25-4812		12 VDC	2090 mA	90 %
THL 25-4813		15 VDC	1670 mA	90 %
THL 25-4822		±12 VDC	±1040 mA	89 %
THL 25-4823		±15 VDC	±840 mA	89 %

General Specifications

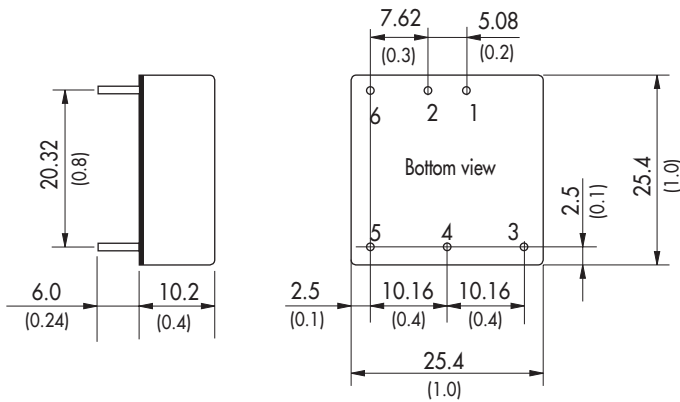
Temperature ranges	<ul style="list-style-type: none"> - Operating (natural convection 20 LFM) - Operating with heat sink (natural convection 20 LFM) - Case temperature - Storage 	<ul style="list-style-type: none"> -40°C to +80°C (with derating) -40°C to +85°C (with derating) +105°C max. -50°C to +125°C
Load derating (natural convection 20 LFM, typical values over series)	<ul style="list-style-type: none"> - without heat sink - with heat sink 	<ul style="list-style-type: none"> 2.0 %/K above +55°C 2.5 %/K above +65°C see application note for particular models
Thermal impedance	<ul style="list-style-type: none"> - Natural convection - Natural convection with heat sink 	<ul style="list-style-type: none"> 17.6°C/W 14.8°C/W
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)		>313'000 h
Isolation voltage (60sec.)	- Input/Output	1500 VDC
Isolation capacitance	- Input/Output	2000 pF max.
Isolation resistance	- Input/Output (500 VDC)	>1000 MOhm
Remote On/Off	<ul style="list-style-type: none"> - On: - Off: - Off idle current: 	<ul style="list-style-type: none"> 3.5 ... 15 VDC or open circuit 0 ... 1.2 VDC or short circuit pin 6 and pin 2 3 mA typ.
Switching frequency (fixed)		285 kHz typ. (pulse width modulation PWM)
Safety standards (designed to meet)		UL/cUL 60950-1, IEC/EN 60950-1
Safety approvals	<ul style="list-style-type: none"> - CB test certificate according IEC 60950-1 - CSA certificate for UL/CSA 60950-1 	<ul style="list-style-type: none"> www.tracopower.com/products/thl25-cb.pdf www.tracopower.com/products/thl25-csa.pdf
Environmental compliance	<ul style="list-style-type: none"> - Reach - RoHS 	<ul style="list-style-type: none"> www.tracopower.com/products/reach-declaration.pdf RoHS directive 2011/65/EU

Physical Specifications

Casing material	metal
Baseplate	non conductive FR4
Potting material	epoxy (UL 94V-0 rated)
Weight	16.5 g (0.58 oz)
Soldering temperature	max. 260°C / 10sec.

Application note : www.tracopower.com/products/thl25-application.pdf

Outline Dimensions



Pin-Out		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	Trim	Common
5	-Vout	-Vout
6	Remote On/Off	

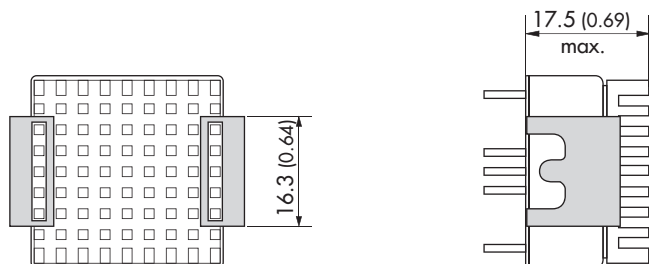
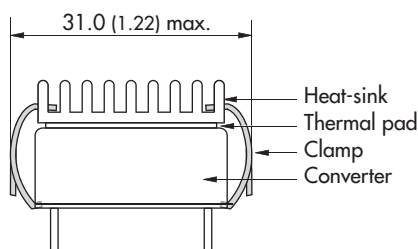
Dimensions in [mm], () = Inch
 Pin diameter \varnothing 1.0 (0.04)
 Pin pitch tolerances: ± 0.25 (± 0.01)
 Tolerances: ± 0.5 (± 0.02)

Heat-Sink (Option)

Order code: THL-HS1
 (cont.: heat-sink, thermal pad, 2 clamps)
Material: Aluminum
Finish: Anodic treatment (black)
Weight: 4 g (0.14 oz) without converter
 Thermal impedance after assembling: 15.8 K/W



Note:
 The product label on converter has to be removed before mounting the heat-sink.
 For volume orders converters will be supplied with mounted heat-sink. Please contact factory for quotation.
 Separate heat-sinks are only available for prototypes and small quantity orders.



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