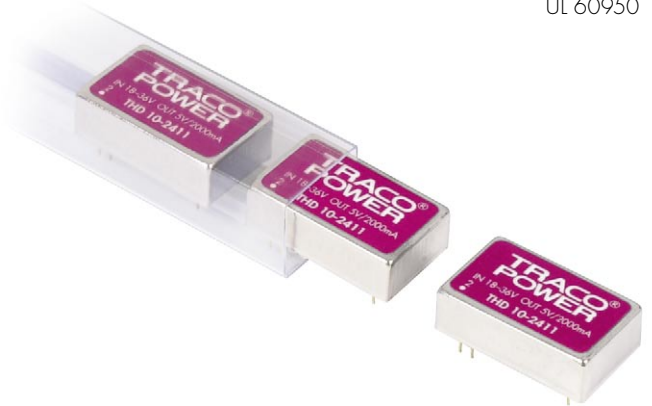


#### Features

- ◆ Very high Power Density in DIL-24 Package
- ◆ Wide 2:1 Input Range
- ◆ Very high Efficiency up to 87%
- ◆ I/O-Isolation 1500V
- ◆ Input Filter meets EN55022A without ext. Components
- ◆ Low Ripple and Noise
- ◆ Continuous Short Circuit Protection
- ◆ Extended Temp. Range
- ◆ -40°C to +85°C
- ◆ 3 Year Product Warranty



The THD-10 series is a range of isolated high performance 10W DC/DC converters in a low profile DIL-24 package with standard industry pin-out. Other features of this product are built-in overvoltage protection and internal EMI-filter to meet EN 55022, class A. Full SMD-design with exclusive use of ceramic capacitors guarantees a high reliability and long product lifetime. Typical applications for these converters are industrial electronics, instrumentation, data communication systems and battery operated equipment with limited space available on the PCB.

#### Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
THD 10-2409	18 – 36 VDC	2.5 VDC	3'000 mA	83 %
THD 10-2410		3.3 VDC	3'000 mA	85 %
THD 10-2411		5.1 VDC	2'000 mA	87 %
THD 10-2412		12 VDC	835 mA	87 %
THD 10-4809	36 – 75 VDC	2.5 VDC	3'000 mA	83 %
THD 10-4810		3.3 VDC	3'000 mA	85 %
THD 10-4811		5.1 VDC	2'000 mA	87 %
THD 10-4812		12 VDC	835 mA	87 %

### Input Specifications

Input current (no load)	24 Vin models: 20 mA typ. 48 Vin models: 10 mA typ.
Input current (full load)	24 Vin; 2.5.Vout models: 380 mA typ. 24 Vin; other output models: 480 mA typ. 48 Vin; 2.5.Vout models: 190 mA typ. 48 Vin; other output models: 240 mA typ.
Start-up voltage / under voltage shut down	24 Vin models: 18 VDC / 17 VDC 48 Vin models: 36 VDC / 34 VDC
Surge voltage (1 sec. max.)	24 Vin models: 50 V max. 48 Vin models: 100 V max.
Reverse voltage protection	0.5 A max.
Conducted noise (input)	EN 55022 level A, FCC part 15, level A

### Output Specifications

Voltage set accuracy	±1.2 %
Regulation	– Input variation Vin min. to Vin max. ± 1.0 % max. – Load variation 10 – 100 % ± 1.2 % max. (± 1.5% max. for 2.5 Vout models)
Ripple and noise (20 MHz Bandwidth)	85 mVpk-pk max.
Temperature coefficient	± 0.02 % /K
Output current limitation	>110% of Iout max., constant current
Short circuit protection	indefinite (automatic recovery)
Capacitive load	single output models: 2'200 µF max. 12 VDC output models: 820 µF max.

### General Specifications

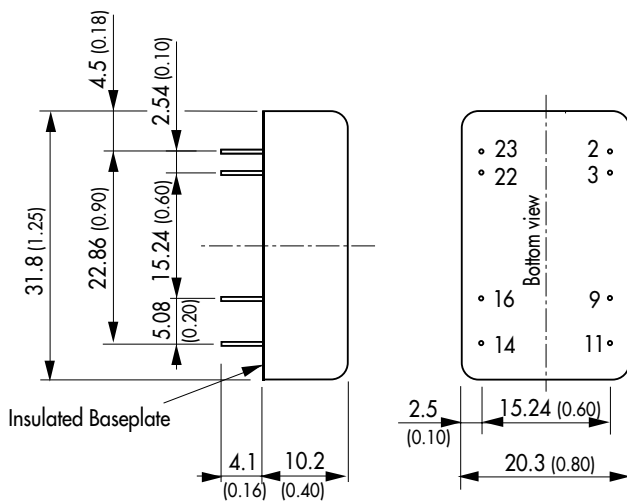
Temperature ranges	– Operating –40 °C ... +85 °C – Derating 3%/K above 70°C – Case temperature +100 °C max. – Storage –55 °C ... +125 °C
Humidity (non condensing)	95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217 F)	>1 Mio. h @ + 25 °C
Isolation voltage Input/Output	1'500 VDC
Isolation capacity Input/Output	1'200 pF typ
Isolation resistance Input/Output (500 VDC)	> 1'000 M Ohm
Switching frequency (fixed)	400 kHz typ. (Pulse width modulation PWM)
Safety standards	UL/cUL60950, EN 60950, IEC 60950 compliance up to 60 VDC input voltage (SELV limit)
Safety approvals	UL/cUL 60950

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

**Physical Specifications**

Case material	steel, nickel plated
Baseplate material	non conductive FR4
Potting material	silicon rubber TES (UL94V-0 rated)
Weight	17.3 g (0.61 oz)
Soldering temperature	max. 260 °C / 10 sec.

**Outline Dimensions mm (inches)**



Pin-Out	
Pin	Single output
2	-Vin (GND)
3	-Vin (GND)
9	No pin
11	No con.
14	+Vout
16	-Vout
22	+Vin (Vcc)
23	+Vin (Vcc)

Pin diameter  $\varnothing 0.5 \pm 0.05$  (0.02  $\pm$  0.002)  
Tolerances  $\pm 0.25$  (0.01)

Specifications can be changed without notice