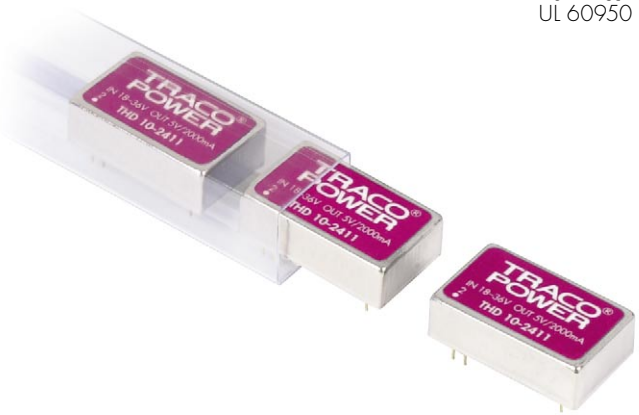
DC/DC Converters

THD 10 Series, 10 Watt

c US UL 60950

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: 48 Vin models:	20 mA typ. 10 mA typ.
Input current (full load)	24 Vin; 2.5.Vout models: 24 Vin; other output models: 48 Vin; 2.5.Vout models: 48 Vin; other output models:	380 mA typ. 480 mA typ. 190 mA typ. 240 mA typ.
Start-up voltage / under voltage shut down	24 Vin models: 48 Vin models:	18 VDC / 17 VDC 36 VDC / 34 VDC
Surge voltage (1 sec. max.)	24 Vin models: 48 Vin models:	50 V max. 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. – Load variation 10 – 100 %	± 1.0 % max. ± 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: 12 VDC output models:	2'200 µF max. 820 µF max.

General Specifications

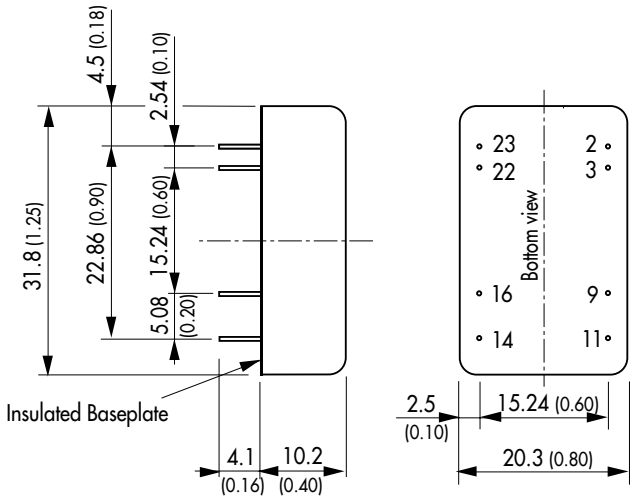
Temperature ranges	– Operating – Derating – Case temperature – Storage	–40 °C ... +85 °C 3%/K above 70°C +100 °C max. –55 °C ... +125 °C
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217 F)		>1 Mio. h @ + 25 °C
Isolation voltage Input/Output		1'500 VDC
Isolation capacity 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 diameter ø 0.5 ±0.05 (0.02 ±0.002)
Tolerances ±0.25 (0.01)

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)

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