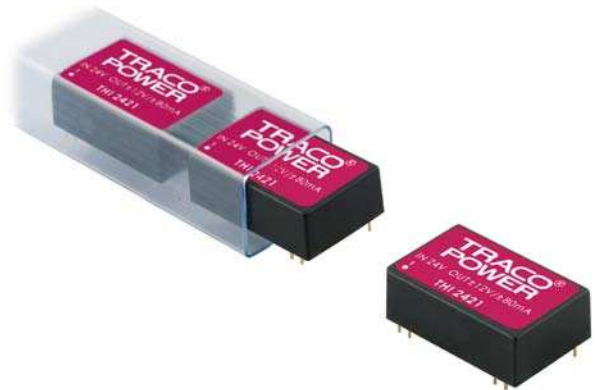


Features

- ◆ DIP-24 plastic package
- ◆ I/O isolation voltage 2500 VACrms
- ◆ Supplementary insulation rated for working voltage up to 250 VAC
- ◆ Regulated output
- ◆ Operating temp. range -40°C to $+85^{\circ}\text{C}$
- ◆ Low coupling capacity
- ◆ Short circuit protection
- ◆ 3-years product warranty



The THI 2 series is a family of dc/dc converter with very high I/O isolation specification. They are certified according to EN 60950 and IEC 60601-1 safety standards and offer a cost effective solution for all industrial, telecom and medical applications where a supplementary insulation is required. SMD technology and a 100 % production test of the safety barrier ensure a very high reliability of this product.

Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
THI 0511	5.0 VDC $\pm$ 10%	5 VDC	400 mA	62 %
THI 0512		12 VDC	165 mA	63 %
THI 0513		15 VDC	130 mA	64 %
THI 0520		$\pm$ 5 VDC	$\pm$ 100 mA	42 %
THI 0521		$\pm$ 12 VDC	$\pm$ 80 mA	57 %
THI 0522		$\pm$ 15 VDC	$\pm$ 65 mA	57 %
THI 1211	12.0 VDC $\pm$ 10%	5 VDC	400 mA	62 %
THI 1212		12 VDC	165 mA	63 %
THI 1213		15 VDC	130 mA	64 %
THI 1220		$\pm$ 5 VDC	$\pm$ 100 mA	45 %
THI 1221		$\pm$ 12 VDC	$\pm$ 80 mA	59 %
THI 1222		$\pm$ 15 VDC	$\pm$ 65 mA	59 %
THI 2411	24 VDC $\pm$ 10%	5 VDC	400 mA	62 %
THI 2412		12 VDC	165 mA	63 %
THI 2413		15 VDC	130 mA	64 %
THI 2420		$\pm$ 5 VDC	$\pm$ 100 mA	45 %
THI 2421		$\pm$ 12 VDC	$\pm$ 80 mA	58 %
THI 2422		$\pm$ 15 VDC	$\pm$ 65 mA	58 %

Input Specifications

Input current no load / full load	5 Vin models: 100 mA / 660 mA typ. 12 Vin models: 50 mA / 280 mA typ. 24 Vin models: 30 mA / 140 mA typ.
Surge voltage (1 sec. max.)	5 Vin models: 7.5 V max. 12 Vin models: 15 V max. 24 Vin models: 30 V max.
Input filter	Pi-Filter

Output Specifications

Voltage set accuracy	±3 %
Voltage balance (dual output models)	3 % max.
Regulation	– Input variation 0.5 % – Load variation 10–100% 1.0 % max.
Ripple and noise (20 MHz Bandwidth)	50 mVpk-pk max.
Temperature coefficient	±0.02 %/K
Current limitation	>120 % constant current
Short circuit protection	continuous (automatic recovery)
Capacitive load	single output models: 680 µF max. dual output models: 270 µF max. (each output)

General Specifications

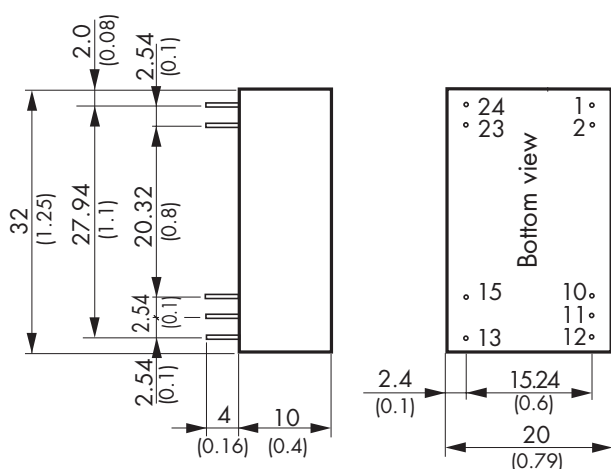
Temperature ranges	– Operating –40°C to +85°C – Case +95°C max. – Storage –40°C to +125°C
Derating	3 %/K above 70°C
Humidity (non condensing)	95 % rel. H max.
Reliability, calculated MTBF (MIL-HDBK-217F, at 25°C, ground benign)	>600'000 h
Isolation voltage	– I/O Isolation voltage 2'500 VACrms (rated for 250VAC) – Isolation test voltage (1 sec.) 6'000 Vpk
Isolation capacitance	– Input/Output 20 pF typ.
Isolation resistance	– Input/Output >10 Gohm
Safety standards	IEC/EN 60950 IEC/EN 60601-1, rated for 250VAC
Switching frequency	25 – 80 kHz (PFM)

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

General Specifications

Casing material	plastic (UL 94V-0 rated)
Weight	12.4 g (0.44 oz)
Soldering temperature	max. 265°C / 10 sec

Outline Dimensions



Pin-Out

Pin	Single	Dual
1	+Vin (VCC)	+Vin (VCC)
2	+Vin (VCC)	+Vin (VCC)
10	No pin	Common
11	No pin	Common
12	-Vout	No pin.
13	+Vout	-Vout
15	No pin	+Vout
23	-Vin (GND)	-Vin (GND)
24	-Vin (GND)	-Vin (GND)

Dimensions in [mm], () = Inch
Pin diameter: 0.5 ±0.05 (0.024 ±0.002)
Tolerances: ±0.25 (±0.01)
Pin pitch tolerances: ±0.05 (±0.002)

Specifications can be changed any time without notice.