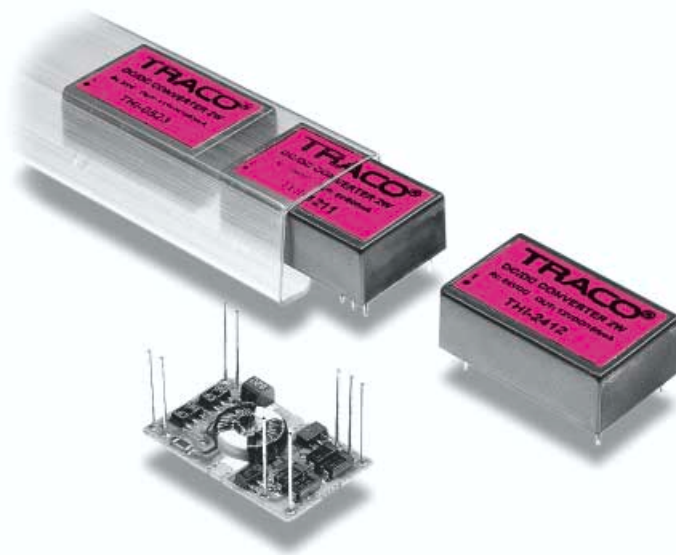


Features

- I/O-Isolation Test Voltage 6000V
- Supplementary Insulation to meet IEC/EN 60950 and IEC/EN 60601-1 Safety Standards
- Agency Safety Approvals
- SMD-Technology with Ceramic Capacitors
- Regulated Single- and Dual Output Models
- Low Coupling Capacity
- 24-Pin DIP Plastic Package
- 2 Year Product Warranty



The THI 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

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

Input Specifications

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

Output Specifications

Voltage set accuracy	$\pm 3 \%$	
Voltage balance (dual output models)	$\pm 3 \%$ max.	
Regulation	– Input variation Vin min. to Vin max. – Load variation 10 – 100 %:	$\pm 0.5 \%$ max. $\pm 1.0 \%$ max.
Ripple and noise (20 MHz Bandwidth)	50 mVpk-pk max.	
Temperature coefficient	$\pm 0.02 \%$ / °C	
Current limitation	> 120 % constant current	
Short circuit protection	indefinite (automatic recovery)	
Capacitive load	– Single output models – Dual output models	680 μ F max. 270 μ F max.

Isolation / Safety

Isolation voltage	– Rated isolation voltage – Isolation test voltage (1 sec.)	3'000 Vrms (for 250VAC working voltage) 6'000 VDC
Isolation capacity	Input / Output	20 pF typ.
Isolation resistance	Input / Output	>10'000 M ohm
Safety standards	EN 60950 IEC/EN 60601-1 rated for 250VAC	
Safety approvals	test report by BSI (British Standard Institute)	

General Specifications

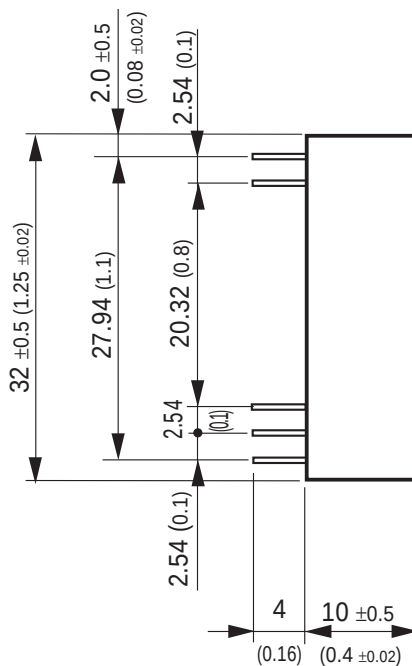
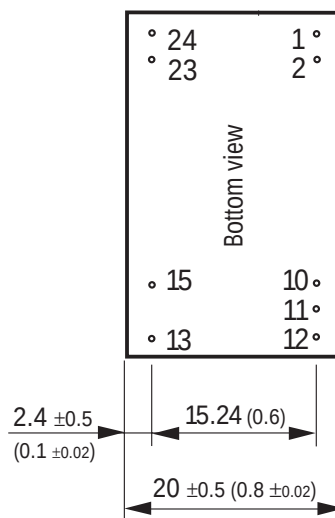
Temperature ranges	– Operating – Case – Storage	– 25 °C ... +60 °C + 95 °C – 40 °C ... +125 °C
Derating above 60°C	3%	
Humidity (non condensing)	95 % rel H max.	
Reliability, calculated MTBF (MIL-HDBK-217 E)	> 600'000 h @ 25 °C	
Switching frequency	25 – 80 kHz (depending on load)	

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

Physical Specifications

Case material	non conductive black plastic (flammability to UL 94V-0)
Weight	12 g (0.42 oz)
Soldering temperature	max. 260°C / 10 sec

Outline Dimensions mm (inches)



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)

() = inches

Pins $\varnothing$ 0.5 mm (0.02)

Specifications can be changed without notice