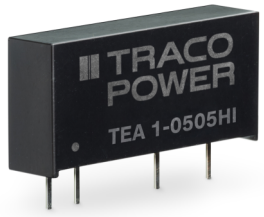
TRACO POWER

Unregulated DC/DC Converter

TEA 1HI Series, 1 Watt

- **Highly cost efficient design**
- **I/O isolation: 4’000 VDC**
- **Operating temperature range -40 to +85 °C without derating**
- **5 VDC (±10%) input voltage range**
- **Unregulated outputs**
- **Efficiency up to 79%**
- **Industry standard SIP-7 package**
- **3-year product warranty**



The TEA 1HI is an unregulated 1 Watt DC/DC SIP-7 converter series with high isolation which is specifically designed to offer a low-cost solution while keeping a high quality standard. This new series focuses on a simple but effective design approach, which minimizes component and labor cost and is complemented with a complete automatization of the manufacturing process. An operating temperature range from -40°C to 85°C without derating and an I/O-isolation of 4’000 VDC enables this series to cover many different applications. The industry standard package of this converter offers a broad application range in any space, cost critical application and is especially suited for high volume projects where simple but reliable products are needed.

Models

Order Code	Input Voltage Range	Output Voltage nom.	Output Current max.	Efficiency typ.
TEA 1-0505HI	4.5 - 5.5 VDC (5 VDC nom.)	5 VDC	200 mA	79 %

Input Specifications

Input Current	- At no load		20 mA typ.
Surge Voltage			9 VDC max. (1 s max.)
Recommended Input Fuse			800 mA (slow blow) (The need of an external fuse has to be assessed in the final application.)
Input Filter			Internal Capacitor

Output Specifications

Voltage Set Accuracy			±3% max. (at 60 % load)
Regulation (Unregulated)	- Input Variation (1% Vin step) - Load Variation	See application note:	1.5% max. www.tracopower.com/overview/tea1hi
Ripple and Noise	- 20 MHz Bandwidth		100 mVp-p max. 50 mVp-p typ.
Capacitive Load			2'200 µF max.
Minimum Load			10 % of Iout max.
Temperature Coefficient			±0.02 %/K max.
Start-up Time			10 ms max.
Short Circuit Protection			Limited 1 s max., Automatic recovery

Safety Specifications

Standards	- IT / Multimedia Equipment		Designed for IEC/EN/UL 62368-1 (not certified)

General Specifications

Relative Humidity			95% max. (non condensing)
Temperature Ranges	- Operating Temperature - Case Temperature - Storage Temperature		–40°C to +95°C +105°C max. –55°C to +125°C
Power Derating	- High Temperature	See application note:	5 %/K above 85°C www.tracopower.com/overview/tea1hi
Cooling System			Natural convection (20 LFM)
Switching Frequency			150 kHz max. (Royer) 80 kHz typ. (Royer)
Insulation System			Functional Insulation
Isolation Test Voltage	- Input to Output, 60 s		4'000 VDC
Isolation Resistance	- Input to Output, 500 VDC		1'000 MΩ min.
Isolation Capacitance	- Input to Output, 100 kHz, 1 V		30 pF max.
Reliability	- Calculated MTBF		2'000'000 h (MIL-HDBK-217F, ground benign)
Washing Process			Not allowed
Housing Material			Plastic (UL 94 V-0 rated)
Potting Material			Epoxy (UL 94 V-0 rated)
Pin Material			Phosphor Bronze (C5191)
Pin Foundation Plating			Nickel (1 µm min.)
Pin Surface Plating			Tin (3 µm min.), bright
Housing Type			Plastic Case
Mounting Type			PCB Mount
Connection Type			THD (Through-Hole Device)
Footprint Type			SIP7
Soldering Profile			Lead-Free Wave Soldering 265 °C / 5 s max.
Weight			2.3 g

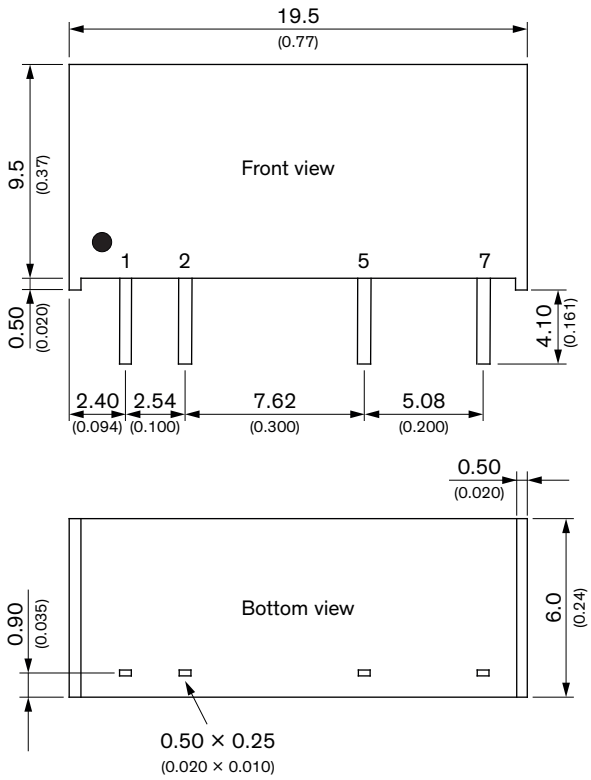
All specifications valid at nominal voltage, resistive full load and +25°C after warm-up time, unless otherwise stated.

Environmental Compliance	- REACH Declaration	www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant
	- RoHS Declaration	www.tracopower.com/info/rohs-declaration.pdf Exemptions: 7a, 7c-I (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).)
	- SCIP Reference Number	c75f4061-29c7-4520-81da-a857cb7778d0

Supporting Documents

Overview Link (for additional Documents)	www.tracopower.com/overview/tea1hi

Outline Dimensions



Dimensions in mm (inch)
Tolerances: x.x ±0.5 (x.xx ±0.02)
x.xx ±0.25 (x.xxx ±0.01)
Pin dimension tolerance: ±0.1 (±0.004)

Pinout	
Pin	**Function**
1	+Vin (Vcc)
2	–Vin (GND)
5	–Vout
7	+Vout