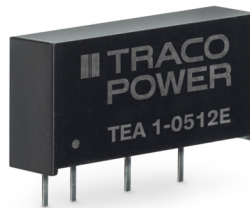


- **Highly cost efficient design**
- **I/O isolation: 1'500 VDC**
- **Operating temperature range
-40 to +85 °C without derating**
- **5 VDC (±10%) input voltage range**
- **Unregulated outputs**
- **Efficiency up to 78%**
- **Industry standard SIP-7 package**
- **3-year product warranty**



The TEA 1E is an unregulated 1 Watt DC/DC SIP-7 converter series 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 1'500 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 1-0505E | 4.5 - 5.5 VDC (5 VDC nom.) | 5 VDC | 200 mA | 78 % |

Input Specifications

| | | |
|------------------------|--------------|---|
| Input Current | - At no load | 28 mA typ. |
| Surge Voltage | | 9 VDC max. (1 s max.) |
| Recommended Input Fuse | | 500 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 | - Input Variation (1% Vin step) - Load Variation (10 - 90%) | 1.5% max. 9% max. |
| Ripple and Noise | - 20 MHz Bandwidth | 50 mVp-p typ. 100 mVp-p max. |
| Capacitive Load | | 1'000 µF max. |
| Minimum Load | | Not required |
| Temperature Coefficient | | ±0.03 %/K max. |
| Start-up Time | | 30 ms max. |
| Short Circuit Protection | | Limited 1 s max. |

Safety Specifications

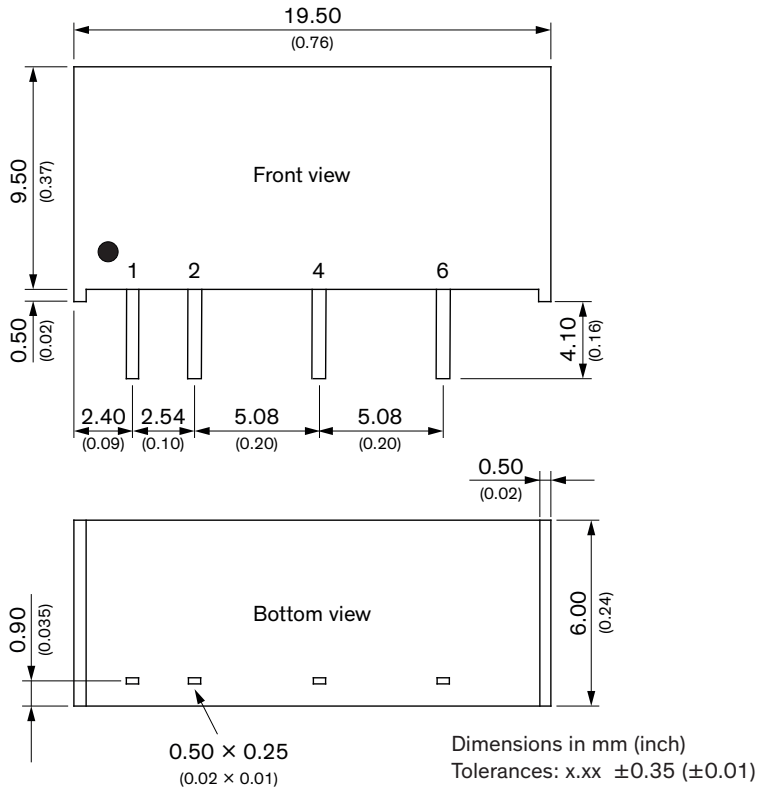
| | | |
|------------------|-----------------------------|--|
| Safety Standards | - IT / Multimedia Equipment | Designed for EN 60950-1 (no certification) |
|------------------|-----------------------------|--|

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 | 5 %/K above 85°C |
| Cooling System | | Natural convection (20 LFM) |
| Switching Frequency | | 100 kHz typ. |
| Insulation System | | Functional Insulation |
| Isolation Test Voltage | - Input to Output, 60 s | 1'500 VDC |
| Isolation Resistance | - Input to Output, 500 VDC | 1'000 MΩ min. |
| Isolation Capacitance | - Input to Output, 100 kHz, 1 V | 30 pF typ. |
| Reliability | - Calculated MTBF | 2'000'000 h (MIL-HDBK-217F, ground benign) |
| 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 |
| Connection Type | | THD (Through-Hole Device) |
| Weight | | 2 g |
| Environmental Compliance | - Reach - RoHS | |

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

Outline Dimensions



| Pinout | |
|--------|------------|
| Pin | Function |
| 1 | +Vin (Vcc) |
| 2 | -Vin (GND) |
| 4 | -Vout |
| 6 | +Vout |