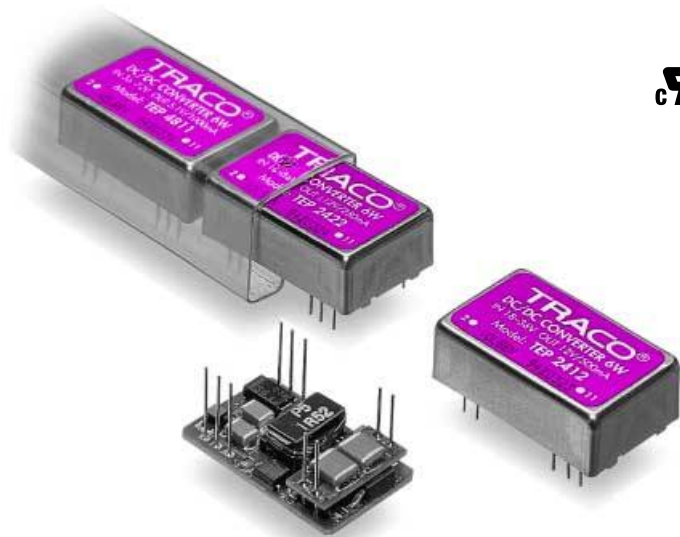


Features

- Wide 2:1 Input Range
- Full SMD-Design
- High Power Density
- High Efficiency up to 84%
- No Derating up to +75°C
- Regulated Outputs
- I/O-Isolation 1'500 VDC
- Indefinite Short-Circuit Protection
- Input Filter meets EN 55022, Class A and FCC, Level A without external Components
- 24-pin DIP with industry Standard Pinout
- High Reliability, MTBF >1 Mio. h
- 2 Year Product Warranty



The TEP series are high performance, isolated DC/DC-converters with a very high power density. They offer the designer a ideal solution in space critical on-board level power distribution applications. SMD-design with exclusive use of ceramic capacitors guarantees very high reliability. An automated production with 100% parameter test ensures the high quality standard of this product.

| Models | | | | |
|--|---------------------|--|---|--------------------------------------|
| Ordercode | Input voltage range | Output voltage | Output current max. | Efficiency typ. |
| TEP 2411 TEP 2412 TEP 2421 TEP 2422 TEP 2423 | 18 – 36 VDC | 5.1 VDC 12 VDC ± 5 VDC ± 12 VDC ± 15 VDC | 1000 mA 500 mA ± 500 mA ± 250 mA ± 200 mA | 80 % 83 % 80 % 83 % 83 % |
| TEP 4811 TEP 4812 TEP 4821 TEP 4822 TEP 4823 | 36 – 72 VDC | 5.1 VDC 12 VDC ± 5 VDC ± 12 VDC ± 15 VDC | 1000 mA 500 mA ± 500 mA ± 250 mA ± 200 mA | 81 % 84 % 82 % 84 % 84 % |

Input Specifications

| | | |
|---|--|--|
| Input current (no load) | 24 Vin single output models 24 Vin dual output models 48 Vin single output models 48 Vin dual output models | 16 mA typ. 20 mA typ. 7 mA typ. 10 mA typ. |
| Input current (full load) | 24 Vin; 5.1 Vout models 24 Vin; other output models 48 Vin; 5.1 Vout models 48 Vin; other output models | 250mA typ. 290mA typ. 120mA typ. 140mA typ. |
| Start-up voltage / under voltage shut down | 24 Vin models 48 Vin models | 16.5 VDC / 16 VDC 32.5 VDC / 32 VDC |
| Surge voltage (1 sec. max.) | 24 Vin models 48 Vin models | t.b.a. t.b.a. |
| Conducted noise (input) | | EN 55022 level A, FCC part 15, level A |

Output Specifications

| | | |
|-------------------------------------|---|--|
| Voltage set accuracy | | ± 3 % |
| Regulation | – Input variation Vin min. to Vin max. – Load variation 10 – 100 % – single output models – dual output models balanced load – dual output models unbalanced load | ± 0.5 % max. ± 1 % max. ± 2 % max. ± 3 % max. |
| Ripple and noise (20 MHz Bandwidth) | | 60 mVpk-pk max. |
| Temperature coefficient | | ± 0.05 % / °C |
| Output current limitation | | >110 % of Iout max. constant current |
| Short circuit protection | | constant current, indefinite |
| Capacitive load | – single output models – dual output models | 10'000 µF max. 10'000 µF max. |

General Specifications

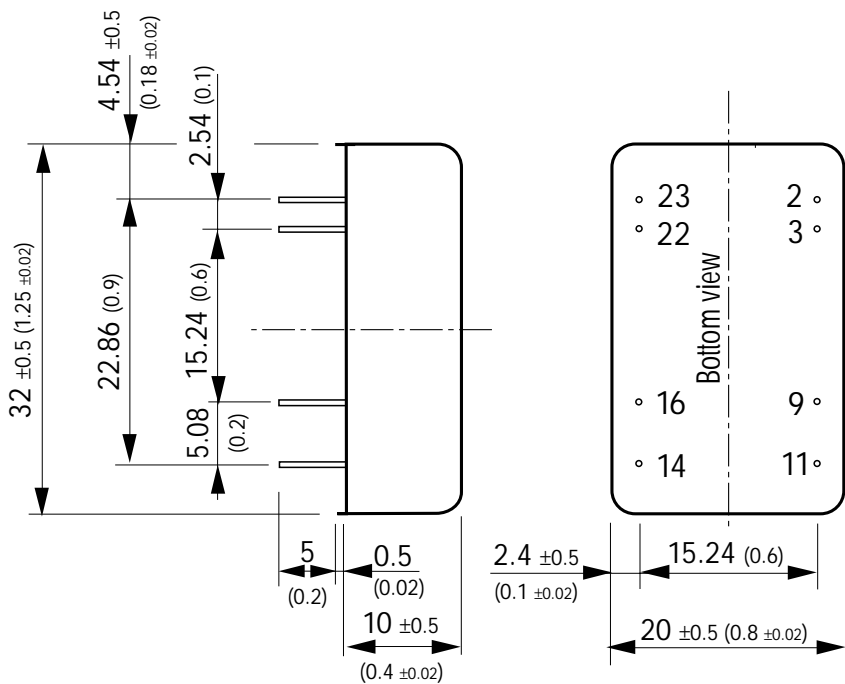
| | | |
|---|--|--|
| Temperature ranges | – Operating – Case temperature – Storage | – 25 °C ... + 75 °C (no derating) + 95 °C max. – 40 °C ... + 115 °C |
| Humidity (non condensing) | | 95 % rel H max. |
| Reliability, calculated MTBF (MIL-HDBK-217 E) | | >1 Mio. h @ + 25 °C |
| Isolation voltage | Input/Output | 1'500 VDC |
| Isolation capacity | Input/Output | 2200 pF typ |
| Isolation resistance | Input/Output (500 VDC) | > 1'000 M Ohm |
| Switching frequency | | 325 kHz typ. (Pulse frequency modulation PFM) |
| Safety standards | | UL 1950 , IEC 60950, EN 60950 Compliance up to 60 VDC input voltage (SELV limit) |
| Safety approval | | UL /cUL File E188913 |

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

Physical Specifications

| | |
|-----------------------|---|
| Case material | Steel chrome-nickel plated |
| Potting material | Silicon rubber TSE (flammability to UL 94V-0) |
| Weight | 16 g (0.56 oz) |
| Soldering temperature | max. 260 °C / 10 sec. |

Outline Dimensions mm (inches)



| Pin-Out | | |
|---------|-------------|------------|
| Pin | Single | Dual |
| 2 | -Vin (GND) | -Vin (GND) |
| 3 | -Vin (GND) | -Vin (GND) |
| 9 | No pin | Common |
| 11 | No function | -Vout |
| 14 | +Vout | +Vout |
| 16 | -Vout | Common |
| 22 | +Vin (Vcc) | +Vin (Vcc) |
| 23 | +Vin (Vcc) | +Vin (Vcc) |

Pin diameter $\varnothing 0.5 \pm 0.05$ (0.02 ±0.002)
Tolerances ± 0.5 (0.02)

Specifications can be changed without notice