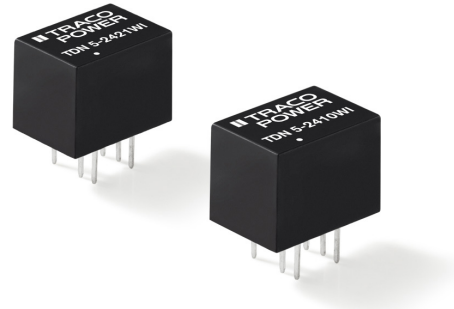


DC/DC Converter

TDN 5WI Series, 5 Watt

- Ultra compact DIP package
13,2 × 9,1 × 10,2 mm
- I/O-isolation 1'600 VDC
- Fully regulated outputs
- Operating temperature range
-40°C to +75°C
- Short circuit protection
- Remote On/Off
- 3-year product warranty
- Designed to meet UL 62368-1
(UL 60950-1)



The TDN 5WI Series redefines the power density of high performance DC/DC converters. The cubical package of only 1.23 cm³ encloses a sophisticated circuit which provides 5 Watt output power. They operate up to 50°C environment temperature at full load or up to 75°C with a 50% load derating. With 1600 VDC I/O-isolation voltage, external On/Off, and short current protection they cover a wide range of application when space is limited. The input of the converters is designed for a wide voltage range (4:1) and minimum load is not required. The functional I/O-isolation system is designed to meet IEC/EN 62368-1 with a test voltage (60 s) of 1600 VDC.

Also see:

TDN 5WISM, SMD version

www.tracopower.com/products/tdn5wism.pdf

| Models | | | | |
|--------------|-----------------------------------|----------------|---------------------|-----------------|
| Order code | Input voltage | Output voltage | Output current max. | Efficiency typ. |
| TDN 5-0910WI | 4.5 – 13.2 VDC (9 VDC nominal) | 3.3 VDC | 1000 mA | 76 % |
| TDN 5-0911WI | | 5.0 VDC | 1000 mA | 80 % |
| TDN 5-0919WI | | 9.0 VDC | 555 mA | 81 % |
| TDN 5-0912WI | | 12 VDC | 420 mA | 83 % |
| TDN 5-0913WI | | 15 VDC | 333 mA | 83 % |
| TDN 5-0915WI | | 24 VDC | 210 mA | 83 % |
| TDN 5-0921WI | | ± 5.0 VDC | ±500 mA | 80 % |
| TDN 5-0922WI | | ±12 VDC | ±210 mA | 83 % |
| TDN 5-0923WI | | ±15 VDC | ±168 mA | 83 % |
| TDN 5-2410WI | 9 – 36 VDC (24 VDC nominal) | 3.3 VDC | 1000 mA | 76 % |
| TDN 5-2411WI | | 5.0 VDC | 1000 mA | 80 % |
| TDN 5-2419WI | | 9.0 VDC | 555 mA | 81 % |
| TDN 5-2412WI | | 12 VDC | 420 mA | 83 % |
| TDN 5-2413WI | | 15 VDC | 333 mA | 83 % |
| TDN 5-2415WI | | 24 VDC | 210 mA | 83 % |
| TDN 5-2421WI | | ± 5.0 VDC | ±500 mA | 80 % |
| TDN 5-2422WI | | ±12 VDC | ±210 mA | 83 % |
| TDN 5-2423WI | | ±15 VDC | ±168 mA | 84 % |
| TDN 5-4810WI | 18 – 75 VDC (48 VDC nominal) | 3.3 VDC | 1000 mA | 76 % |
| TDN 5-4811WI | | 5.0 VDC | 1000 mA | 81 % |
| TDN 5-4819WI | | 9.0 VDC | 555 mA | 81 % |
| TDN 5-4812WI | | 12 VDC | 420 mA | 83 % |
| TDN 5-4813WI | | 15 VDC | 333 mA | 83 % |
| TDN 5-4815WI | | 24 VDC | 210 mA | 83 % |
| TDN 5-4821WI | | ± 5.0 VDC | ±500 mA | 80 % |
| TDN 5-4822WI | | ±12 VDC | ±210 mA | 83 % |
| TDN 5-4823WI | | ±15 VDC | ±168 mA | 84 % |

Input Specifications

| | |
|--|---|
| Input current at no load | 9 Vin models: 80 mA typ 24 Vin models: 30 mA typ. 48 Vin models: 15 mA typ. |
| Surge voltage (1 sec. max.) | 9 Vin models: 15 V max. 24 Vin models: 50 V max. 48 Vin models: 100 V max. |
| Reflected ripple current | 9 Vin models: 40 mAp-p typ. 24 Vin models: 20 mAp-p typ. 48 Vin models: 15 mAp-p typ. |
| Conducted noise | EN 55022 class A or B with external components, see supporting documents |
| ESD (electrostatic discharge) | EN 61000-4-2, air ± 8 kV, contact ± 6 kV, perf. criteria A |
| Radiated immunity | EN 61000-4-3, 10 V/m, perf. criteria A |
| Fast transient / surge (with external input capacitor) | EN 61000-4-4, ± 2 kV, perf. criteria A EN 61000-4-5, ± 1 kV perf. criteria A |
| –external input capacitor | all models: Nippon chemi-con KY 220 μ F/100V |
| Conducted immunity | EN 61000-4-6, 10 Vrms, perf. criteria A |
| Power frequency magnetic field | EN 61000-4-8, 100 A/m, perf. criteria A |

Output Specifications

| | |
|---|--|
| Voltage set accuracy | ± 1 % max. |
| Voltage balance (dual output models) | 1 % max. |
| Regulation | – Input variation – Load variation 0 – 100 % |
| | single output: 0.2 % max. dual output: 1 % max. cross regulation - dual output: 1 % max. (balanced load) 5 % max. (asymmetrical load 25 % / 100 %) |
| Temperature coefficient | ± 0.02 %/K typ. |
| Ripple and noise (20 MHz Bandwidth) | 9 Vin models: 50 mVp-p typ. other models: 75 mVp-p typ. |
| Start up time | – Power ON – Remote ON |
| (constant resistive load) | 10 ms typ. / 20 ms max. 10 ms typ. / 20 ms max. |
| Transient response (25% load step change) | 500 μ s typ. |
| Short circuit protection | continuous, automatic recovery |
| Capacitive load | –Single output |
| | 3.3 VDC models: 4400 μ F max. 5.0 VDC models: 2200 μ F max. 9.0 VDC models: 1470 μ F max. 12 VDC models: 1220 μ F max. 15 VDC models: 1000 μ F max. 24 VDC models: 470 μ F max. |
| | –Dual output |
| | ± 5.0 VDC models: 1000 μ F max. (each output) ± 12 VDC models: 680 μ F max. (each output) $+15$ VDC models: 440 μ F max. (each output) |

General Specifications

| | |
|---------------------------|---|
| Temperature ranges | – Operating (convection cooling 20LFM, 0,1m/s) – Case temperature – Storage temperature |
| | –40°C to +75°C +105°C max. –55°C to +125°C |
| Derating | 1.8%/K above 50°C |
| Humidity (non condensing) | 5 – 95 % rel H max. |
| Isolation voltage | – I/O isolation voltage (60 sec.) |
| | 1'600 VDC |
| Isolation capacitance | 50 pF max. |

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

General Specifications

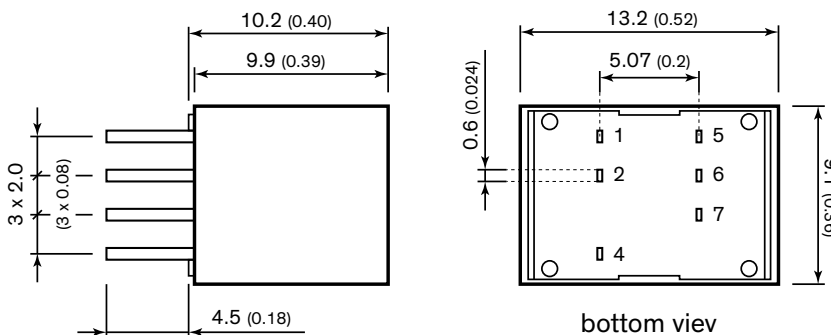
| | | |
|--|--|---|
| Isolation resistance (@ 500 VDC) | | >1 Gohm |
| Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign) | | 2'280'000 h |
| Switching frequency | | 100 kHz min. Pulse frequency modulation. |
| Thermal shock & vibration | | MIL-STD-810F |
| Remote On/Off | - On: - Off: - Off idle current: | open circuit or high impedance 2 – 4 mA current applied via 1kOhm resistor 2.5 mA max. |
| Safety standards | - Designed to meet (no certification) | IEC/EN/UL 62368-1, UL 60950-1 |
| Environmental compliance | - Reach - RoHS | www.tracopower.com/products/reach-declaration.pdf RoHS directive 2011/65/EU |

Physical Specifications

| | |
|-----------------------|-------------------------------------|
| Casing material | non-conducting FR4 (UL 94V-0 rated) |
| Potting material | silicone (UL 94V-0 rated) |
| Pin material | tinned copper |
| Package weight | 2.7 g (0.10 oz) |
| Soldering temperature | 260°C / 6 s max. |

Supporting Documents: www.tracopower.com/overview/tdn5wi

Outline Dimensions



Pin-Out

| Pin | Single | Dual |
|-----|------------|------------|
| 1 | +Vin (Vcc) | +Vin (Vcc) |
| 2 | -Vin (GND) | -Vin (GND) |
| 4 | On/Off | On/Off |
| 5 | no con. | -Vout |
| 6 | -Vout | Common |
| 7 | +Vout | +Vout |

Dimensions in [mm], () = Inch

Tolerances: x.x ±0.5 (±0.02)

Pin pitch tolerances ±0.25 (±0.01)

pin dimension tolerance ±0.1 (±0.004)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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