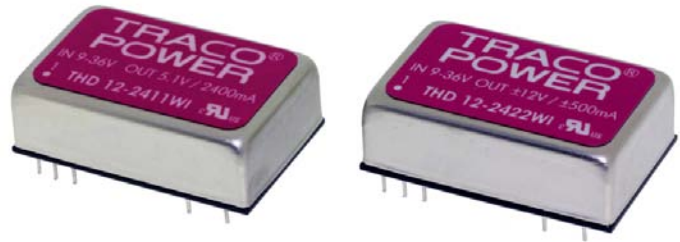


Features

- ◆ Highest power density:
12W in DIP 24 package!
- ◆ Ultra-wide 4:1 input range
- ◆ Very high efficiency up to 85%
- ◆ I/O isolation 1500V
- ◆ Input filter meets EN 55022A without ext. components
- ◆ Remote On/Off
- ◆ Under voltage lock-out circuit
- ◆ Shielded metal case with insulated baseplate
- ◆ Continuous short-circuit protection
- ◆ Operating temp. range -40°C to $+85^{\circ}\text{C}$
- ◆ Lead free design, RoHS compliant
- ◆ 3-year product warranty



The THD-12WI series is a range of high performance, isolated 12W dc/dc converter modules featuring ultra wide 4:1 input voltage ranges in a DIP-24 package with industry-standard footprint. Overload and overvoltage protection as well as remote On/Off are included as standard. Built-in filters for both input and output minimizes the need of external filtering. Full SMD-design with exclusive use of ceramic capacitors guarantees a high reliability and long product lifetime. Typical applications for these converters are industrial electronics, instrumentation, data communication systems and battery operated equipment with limited space available on the PCB.

Models

| Order code | Input voltage range | Output voltage | Output current max. | Efficiency typ. |
|---------------|--------------------------------|---------------------------------|---------------------|-----------------|
| THD 12-2410WI | 9 – 36 VDC (24 VDC nominal) | 3.3 VDC | 3'500 mA | 84 % |
| THD 12-2411WI | | 5.1 VDC | 2'400 mA | 85 % |
| THD 12-2412WI | | 12 VDC | 1'000 mA | 85 % |
| THD 12-2413WI | | 15 VDC | 800 mA | 85 % |
| THD 12-2421WI | | ± 5 VDC | $\pm 1'200$ mA | 82 % |
| THD 12-2422WI | | ± 12 VDC | ± 500 mA | 85 % |
| THD 12-2423WI | | ± 15 VDC | ± 400 mA | 85 % |
| THD 12-4810WI | | 18 – 75 VDC (48 VDC nominal) | 3.3 VDC | 3'500 mA |
| THD 12-4811WI | 5.1 VDC | | 2'400 mA | 85 % |
| THD 12-4812WI | 12 VDC | | 1'000 mA | 85 % |
| THD 12-4813WI | 15 VDC | | 800 mA | 85 % |
| THD 12-4821WI | ± 5 VDC | | $\pm 1'200$ mA | 82 % |
| THD 12-4822WI | ± 12 VDC | | ± 500 mA | 85 % |
| THD 12-4823WI | ± 15 VDC | | ± 400 mA | 85 % |

Input Specifications

| | |
|--|---|
| Input current (no load) | 24 V; 3.3 & 5.1 VDC models: 55 mA 24 V; other models: 15 mA 48 V; 3.3 & 5.1 VDC models: 20 mA 48 V; other models: 7 mA |
| Input current (full load) | 24 Vin models: 610 mA typ. 48 Vin models: 310 mA typ. |
| Input voltage variation (dv/dt) | 5 V / ms, max. (complies to ETS 300 132 part. 4.4) |
| Start-up voltage | 24 Vin models: 9 VDC (or lower) 48 Vin models: 18 VDC (or lower) |
| Under voltage shut down (lock-out circuit) | 24 Vin models: 8 VDC typ. 48 Vin models: 16 VDC typ. |
| Surge voltage (100 msec. max.) | 24 Vin models: 50 V max. 48 Vin models: 100 V max. |
| Conducted noise (input) | EN 55022 level A, FCC part 15, level A |
| ESD (input) | EN 61000-4-2, Perf. Criteria B |
| Fast Transient (input) | EN 61000-4-4, Perf. Criteria B |
| Surge (input) | EN 61000-4-5, Perf. Criteria B |

Output Specifications

| | |
|---|---|
| Voltage set accuracy | ±1.2 % |
| Regulation | – Input variation Vin min. to Vin max. 0.2 % max. – Load variation 10 – 100 % single output models: 0.5 % max. dual output models balanced load: 1.0 % max. dual output models unbalanced load: 5.0 % max. |
| Transient response setting time (25% load step change) | 250 µs |
| Ripple and noise (20 MHz Bandwidth) | 85 mVpk-pk max. |
| Temperature coefficient | ±0.02 %/K |
| Start up time (nominal Vin and constant resistive load) | – at power on 450 ms typ. – at remote on 5 ms typ. |
| Output current limitation | 150 % typ. of Iout max., constant current |
| Over-voltage protection (only single output models) | 3.3 VDC models: 3.9 VDC 5.1 VDC models: 6.2 VDC 12 VDC models: 15 VDC 15 VDC models: 18 VDC |
| Short circuit protection | indefinite, automatic recovery |
| Minimum load | 10 % of rated max. current (operation at lower load condition will not damage these converters however, they may not meet all listed specifications) |
| Capacitive load | 3.3 & 5.1 Vout models: 2000 µF max. 12 Vout models: 430 µF max. 15 Vout models: 300 µF max. ±5 Vout models: ±1250 µF max. ±12 Vout models: ±200 µF max. ±15 Vout models: ±120 µF max. |

General Specifications

| | |
|--------------------|---|
| Temperature ranges | – Operating –40°C to +85°C – Case temperature +105°C max. – Storage –55°C to +105°C |
| Derating | 3.3 & 5.1 Vout models: 2.2 %/K above 60°C other models: 2.5 %/K above 65°C |

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

General Specifications

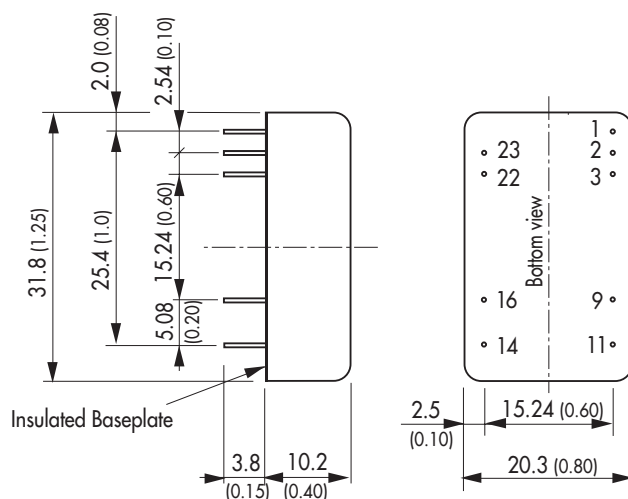
| | |
|---|--|
| Humidity (non condensing) | 95 % rel H max. |
| Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign) | >870'000 h |
| Thermal shock | MIL-STD-810F |
| Isolation voltage (60sec.) – Input/Output | 1500 VDC |
| Isolation capacitance – Input/Output | 1500 pF max. |
| Switching frequency | 400 kHz typ. (pulse width modulation PWM) |
| Safety standards | UL 60950-1, IEC/EN 60950-1 |
| Safety approvals – UL/cUL | www.ul.com -> certifications -> File e188913 |
| Remote On/Off – On: | 3.0 ... 12 VDC or open circuit (referenced to -Vin) |
| – Off: | 0 ... 1.2 VDC or short circuit pin 1 and pin 2/3 |
| – Off idle current: | 2.5 mA |

Physical Specifications

| | |
|-----------------------|-----------------------|
| Casing material | copper, nickel plated |
| Baseplate material | non conductive FR4 |
| Potting material | epoxy (UL94V-0 rated) |
| Weight | 18 g (0.62 oz) |
| Soldering temperature | max. 265°C / 10 sec. |

Application note: www.tracopower.com/products/thd12wi-application.pdf

Outline Dimensions



Pin-Out

| Pin | Single | Dual |
|-----|---------------|---------------|
| 1 | Remote On/Off | Remote On/Off |
| 2 | -Vin (GND) | -Vin (GND) |
| 3 | -Vin (GND) | -Vin (GND) |
| 9 | ntc. | Common |
| 11 | ntc. | -Vout |
| 14 | +Vout | +Vout |
| 16 | -Vout | Common |
| 22 | +Vin (Vcc) | +Vin (Vcc) |
| 23 | +Vin (Vcc) | +Vin (Vcc) |

ntc = not to connect

Dimensions in [mm], () = Inch
Pin diameter $\varnothing 0.5 \pm 0.05$ (0.02 ± 0.002)
Tolerances ± 0.5 (± 0.02)
Pin pitch tolerances ± 0.35 (± 0.014)

Specifications can be changed any time without notice.



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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