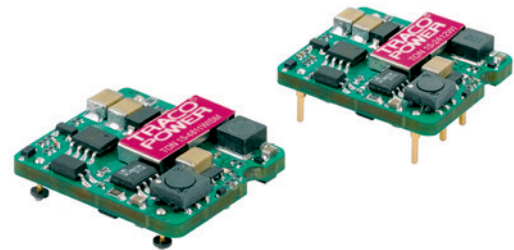


Features

- ◆ Ultra compact 15W converter
- ◆ Ultra wide 4:1 input voltage range
- ◆ Cost efficient open frame design with industry standard pin-out
- ◆ Surface-mount (SM) and through-hole version
- ◆ I/O isolation voltage 2250V, rated for basic insulation
- ◆ Extended operating temperature range -40°C to $+85^{\circ}\text{C}$
- ◆ Remote On/Off
- ◆ Lead free design, RoHS compliant
- ◆ 3-years product warranty



The TON-15WI series is a generation of high performance 15W dc-dc converters with ultra-wide input voltage range and precisely regulated output voltage. The ultra compact open frame design with industry standard pin-out provides the designer now a 50% smaller, cost efficient alternative to existing 10 to 15W converters in the market. Built-in filters for both input and output minimize the need for external filtering.

Further features include remote On/Off, output voltage trimming, over voltage protection and short circuit protection. Typical applications are distributed power systems, instrumentation and industrial electronics, everywhere where space on the PCB is a critical factor.

Models

| Order code | Input voltage range | Output voltage | Output current max. | Efficiency typ. |
|---------------|---------------------------------|----------------|---------------------|-----------------|
| TON 15-2410WI | 9 – 36 VDC (24 VDC nominal) | 3.3 VDC | 4'000 mA | 85 % |
| TON 15-2411WI | | 5.0 VDC | 3'000 mA | 87 % |
| TON 15-2412WI | | 12 VDC | 1'300 mA | 86 % |
| TON 15-2413WI | | 15 VDC | 1'000 mA | 86 % |
| TON 15-4810WI | 18 – 75 VDC (48 VDC nominal) | 3.3 VDC | 4'000 mA | 85 % |
| TON 15-4811WI | | 5.0 VDC | 3'000 mA | 87 % |
| TON 15-4812WI | | 12 VDC | 1'300 mA | 86 % |
| TON 15-4813WI | | 15 VDC | 1'000 mA | 86 % |

Add suffix **SM** for surface mount version

Input Specifications

| | | |
|--|--|---|
| Input current at no load | 24 V; 3.3/5 Vout models: 24 V; 12/15 Vout models: 48 V; 3.3/5 Vout models: 48 V; 12/15 Vout models: | 65 mA typ 10 mA typ. 40 mA typ 15 mA typ. |
| Input current at full load | 24 V; 3.3 Vout models: 24 V; other output models: 48 V; 3.3 Vout models: 48 V; other output models: | 680 mA typ. 790 mA typ. 340 mA typ. 390 mA typ. |
| Input voltage variation (dv/dt) | | 5 V/ms, max. (complies with ETS 300 132 part. 4.4) |
| Start-up voltage / under voltage lockout | 24 V models: 48 V models: | 9 VDC / 8 VDC 18 VDC / 16 VDC |
| Surge voltage (100 msec. max.) | 24 V models: 48 V models: | 50 V max. 100 V max. |
| Input filter | | capacitor type (see application note for compliance to EN 55022 class A/B) |
| Radiated immunity | | EN 61000-4-3 10 V/m, perf. criteriy A |
| Fast transient / surge | | EN 61000-4-4, ± 2 kV, perf. criteria A EN 61000-4-5, ± 1 kV perf. criteria A with external input capacitor e.g. Nippon chemi-con KY 220 μ F, 100 V, ESR 48 mOhm |
| Conducted immunity | | EN 61000-4-6, 3 Vrms, perf. criteria A |
| Reflected ripple current | | 30 mA _{p-p} typ. |

Output Specifications

| | | |
|--|--|--|
| Voltage set accuracy | | ± 1 % |
| Output voltage adjustment | | ± 10 % (see application note) |
| Regulation | - Input variation Vin min. to Vin max - Load variation 0 – 100 % | 0.2 % max. 0.2 % max. |
| Minimum load | | 0 % of rated max. load |
| Temperature coefficient | | ± 0.02 %/K |
| Ripple and noise (20 MHz Bandwidth, measured with 1 μ F M/C and 10 μ F TC) | | 100 mV _{pk-pk} typ |
| Start up time | - Power On (constant resistive load) - Remote On | 30 ms typ. 30 ms typ. |
| Transient response setting time (25% load step chang) | | 250 μ s typ. |
| Short circuit protection | | indefinite (automatic recovery) |
| Over load protection | | at 150 % of Iout max., foldback |
| Over voltage protection | 3.3 Vout models: 5 Vout models: 12 Vout models: 15 Vout models: | 3.7 – 5.4 Vout 5.6 – 7.0 Vout 13.8 – 17.5 Vout 16.8 – 20.5 Vout |
| Capacitive load | 3.3 Vout & 5.0 Vout models: 12 Vout models: 15 Vout models: | 1'000 μ F max. 330 μ F max. 220 μ F max. |

General Specifications

| | | |
|---------------------------|--------------------------|---|
| Temperature ranges | - Operating - Storage | -40°C to +85°C (with derating) -55°C to +125°C |
| Derating | | 6.7 %/K above 75°C |
| Humidity (non condensing) | | 5 % to 95 % rel H |

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

General Specifications

| | | |
|--|--|---|
| Thermal shock | | acc. MIL-STD-810F |
| Vibration | | acc. MIL-STD-810F |
| Reliability, calculated MTBF (MIL-HDBK-217F, at 25°C, ground benign) | | >2.4 Mio. h |
| Isolation voltage (60 sec) – Input / Output | | 2'250 VDC (complies with basic insulation rating per EN 60950-1) |
| Isolation resistance – Input / Output | | >1'000 M Ohm |
| Isolation capacitance – Input / Output | | 1500 pF max. |
| Switching frequency (Pulse width modulation PWM) | 3.3 / 5 Vout models: 12 / 15 Vout models: | 350 kHz typ. 400 kHz typ. |
| Remote On/Off | – On: – Off: – Off idle current: | 3.0 to 15 VDC or open circuit. 0 to 1.2 VDC or short circuit pin 6 and pin 2 2.5 mA typ. negative remote On/Off logic on demand |
| Safety standards | | UL 60950-1, EN 60950-1, IEC 60950-1 |
| Safety approval | | www.ul.com -> certifications -> File e188913 |
| Environmental compliance | – Reach – RoHS | www.tracopower.com/products/reach-declaration.pdf RoHS directive 2011/65/EU |

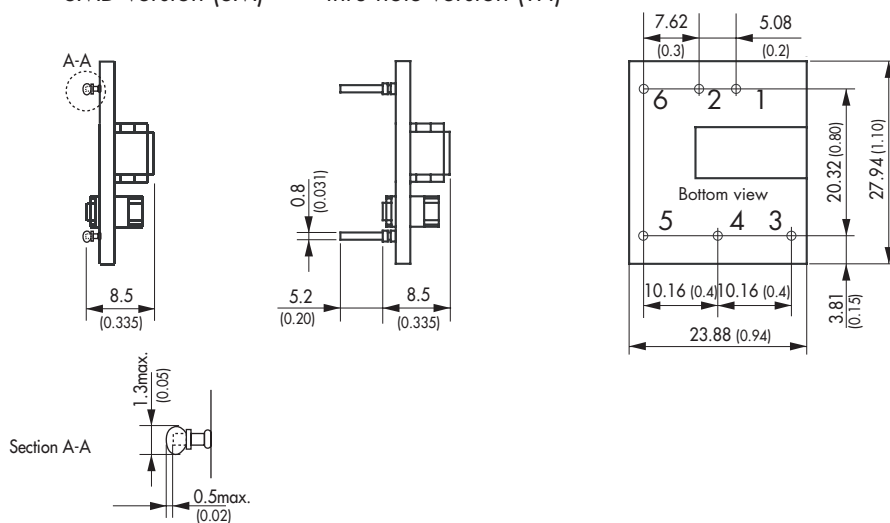
Physical Specifications

| | | |
|--|--|---|
| Weight | | 10.5g (0.36oz) |
| Soldering profile for trough hole version | | max. 265°C / 10 sec. (wave soldering) |
| Lead-free reflow solder process for SMD-package models | | as per J-STD-020D.01 (to find at: www.jedec.org - free registration required) |
| Washing procedure | | www.tracopower.com/products/ton15-clean.pdf |

Application note: www.tracopower.com/products/ton15wi-application.pdf

Outline Dimensions

SMD version (SM) thru hole version (TH)



| Pin-Out | |
|---------|---------------|
| Pin | Single |
| 1 | +Vin (Vcc) |
| 2 | -Vin (GND) |
| 3 | +Vout |
| 4 | Trim |
| 5 | -Vout |
| 6 | Remote On/Off |

Dimensions in [mm], () = Inch
Tolerances: ±0.5 (±0.02)
Pin pitch tolerances: ±0.25 (±0.01)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at www.tracopower.com



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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