

Features

- ◆ Compact design in SMD or DIP package
- ◆ Ultra wide 4:1 input voltage range
- ◆ Fully regulated outputs
- ◆ Low ripple and noise
- ◆ No minimum load required
- ◆ Temperature range -40°C to $+85^{\circ}\text{C}$
- ◆ I/O isolation 1500 VDC
- ◆ Continuous short-circuit protection
- ◆ Remote On/Off control
- ◆ Fully RoHS compliant
- ◆ 3-year product warranty



The TDR-3WI series is a family of compact 3 W dc/dc-converters with 4:1 input voltage ranges and tightly regulated output voltages even under no load conditions. The product is available in SMD-package or in DIP-package. They work with high efficiency over the full load range and come with a remote On/Off input. The usability in temperature ranges of up to $+85^{\circ}\text{C}$, continuous short circuit protection and excellent immunity against environmental influences make these converters very reliable.

A TDR-3WI converter is the ideal solution for space critical high end applications in communication equipment, instrumentation and industrial electronics.

Models

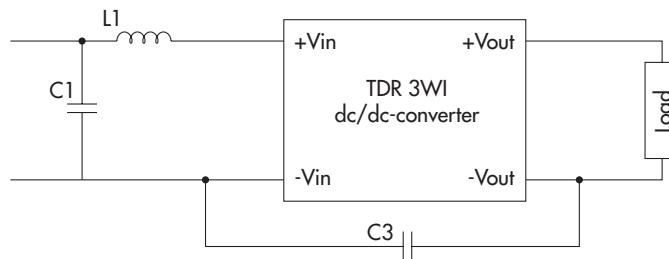
Order code DIP models	Order code SMD models	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TDR 3-1211WI	TDR 3-1211WISM	4.5 – 18 VDC (12 VDC nominal)	5.0 VDC	600 mA	81 %
TDR 3-1212WI	TDR 3-1212WISM		12 VDC	250 mA	82 %
TDR 3-1213WI	TDR 3-1213WISM		15 VDC	200 mA	82 %
TDR 3-1222WI	TDR 3-1222WISM		± 12 VDC	± 125 mA	82 %
TDR 3-1223WI	TDR 3-1223WISM		± 15 VDC	± 100 mA	81 %
TDR 3-2411WI	TDR 3-2411WISM	9 – 36 VDC (24 VDC nominal)	5.0 VDC	600 mA	80 %
TDR 3-2412WI	TDR 3-2412WISM		12 VDC	250 mA	82 %
TDR 3-2413WI	TDR 3-2413WISM		15 VDC	200 mA	82 %
TDR 3-2422WI	TDR 3-2422WISM		± 12 VDC	± 125 mA	82 %
TDR 3-2423WI	TDR 3-2423WISM		± 15 VDC	± 100 mA	81 %
TDR 3-4811WI	TDR 3-4811WISM	18 – 75 VDC (48 VDC nominal)	5.0 VDC	600 mA	80 %
TDR 3-4812WI	TDR 3-4812WISM		12 VDC	250 mA	83 %
TDR 3-4813WI	TDR 3-4813WISM		15 VDC	200 mA	82 %
TDR 3-4822WI	TDR 3-4822WISM		± 12 VDC	± 125 mA	82 %
TDR 3-4823WI	TDR 3-4823WISM		± 15 VDC	± 100 mA	81 %

General Specifications

Thermal shock		acc. MIL-STD-810F
Vibration		acc. MIL-STD-810F
Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)		>2.0 Mio h
Isolation voltage (60 sec.)	- Input/Output	1500 VDC
Isolation capacitance	- Input/Output	50 pF max.
Isolation resistance	- Input/Output (500 VDC)	>10 GOhm
Altitude during operation		tba.
Safety standard (designed to meet)		IEC/EN 60950-1, UL 60950-1
Safety approvals	- UL/cUL	www.ul.com -> certifications -> File e188913
Switching frequency		100 kHz (PWM)
Remote On/Off	- On: - Off: - Off stand by input current	open or high impedance 2...4 mA current applied via 1KOhm resistor 2.5 mA max.
Environmental compliance	- Reach - RoHS	www.tracopower.com/products/tdr3wi-reach.pdf RoHS directive 2011/65/EU

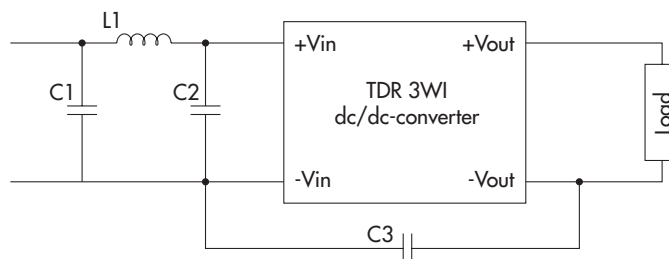
EMC Consideration

Recommended filter for
EN 55022 class A compliance



Input models	C1	C3	L1 value	order code (SMD type)	datasheet:
12 VDC	4.7 µF / 25 V 1812 MLCC	220pF / 3 kV 1808 MLCC	10 µH	TCK-047	www.tracopower.com/products/tck047.pdf
24 VDC	4.7 µF / 50 V 1812 MLCC		12 µH	TCK-062	www.tracopower.com/products/tck062.pdf
48 VDC	4.7 µF / 100 V 1812 MLCC		10 µH	TCK-047	www.tracopower.com/products/tck047.pdf

Recommended filter for
EN 55022 class B compliance



Input models	C1 & C2	C3	L1 value	order code (SMD type)	datasheet
12 VDC	6.8 µF / 25 V 1812 MLCC	220pF / 3 kV 1808 MLCC	10 µH	TCK-047	www.tracopower.com/products/tck047.pdf
24 VDC	4.7 µF / 50 V 1812 MLCC		12 µH	TCK-062	www.tracopower.com/products/tck062.pdf
48 VDC	4.7 µF / 100 V 1812 MLCC		18 µH	TCK-046	www.tracopower.com/products/tck046.pdf

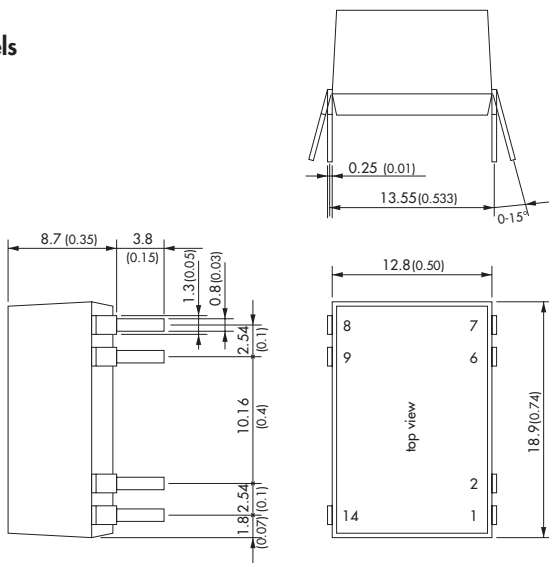
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Physical Specifications

Casing material	non-conductive plastic (UL94V-0 rated)
Package weight	4.5 g (0.16 oz)
Soldering profile for DIP-package models	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)
Moisture sensitivity level (for SMD-package models)	level 2a as per J-STD-033B.01 (to find at: www.jedec.org - free registration required)

Outline Dimensions

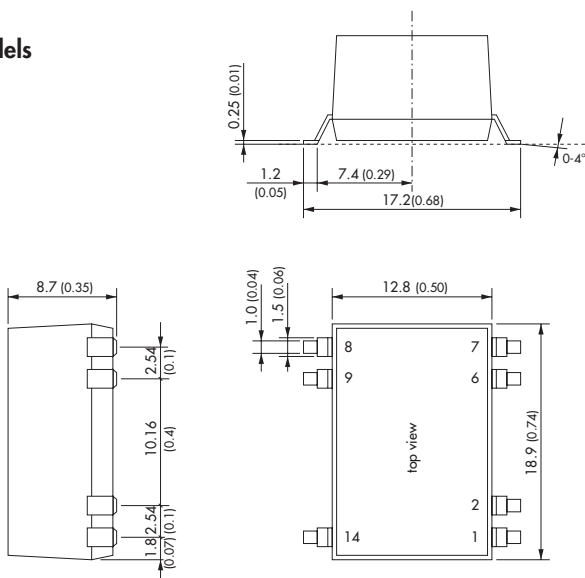
DIP-Models



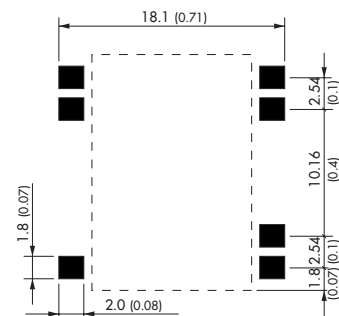
Pin-Out		
Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

NC = not to connect

SMD-Models



Recommended Solder Pad Dimension:



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

Specifications can be changed any time without notice.