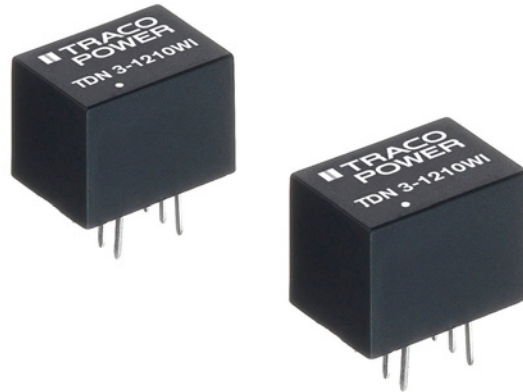


- ◆ Ultra compact DIP package  
0.52 × 0.36 × 0.40 inch
- ◆ I/O-isolation 1'500 VDC
- ◆ Fully regulated outputs
- ◆ Operating temperature range  
-40°C to +70°C without derating
- ◆ Short circuit protection
- ◆ Remote On/Off
- ◆ 3-year product warranty
- ◆ Built-in EN55022 class A filter



The TDN 3WI series with 4:1 input voltage range is a selection of 3 Watt regulated dc/dc-converters. They come in a very compact DIP package (0.52 × 0.36 × 0.40 inch).

Models				
Order code	Input voltage	Output voltage	Output current max.	Efficiency typ.
TDN 3-1210WI	4.5 – 18 VDC	3.3 VDC	700 mA	76 %
TDN 3-1211WI		5.0 VDC	600 mA	80 %
TDN 3-1212WI		12 VDC	250 mA	83 %
TDN 3-1213WI		15 VDC	200 mA	84 %
TDN 3-1215WI		24 VDC	125 mA	82 %
TDN 3-1221WI		±5.0 VDC	±300 mA	80 %
TDN 3-1222WI		±12 VDC	±125 mA	82 %
TDN 3-1223WI		±15 VDC	±100 mA	82 %
TDN 3-2410WI	9 – 36 VDC	3.3 VDC	700 mA	77 %
TDN 3-2411WI		5.0 VDC	600 mA	80 %
TDN 3-2412WI		12 VDC	250 mA	83 %
TDN 3-2413WI		15 VDC	200 mA	83 %
TDN 3-2415WI		24 VDC	125 mA	82 %
TDN 3-2421WI		±5.0 VDC	±300 mA	80 %
TDN 3-2422WI		±12 VDC	±125 mA	82 %
TDN 3-2423WI		±15 VDC	±100 mA	82 %
TDN 3-4810WI	18 – 75 VDC	3.3 VDC	700 mA	77 %
TDN 3-4811WI		5.0 VDC	600 mA	80 %
TDN 3-4812WI		12 VDC	250 mA	83 %
TDN 3-4813WI		15 VDC	200 mA	83 %
TDN 3-4815WI		24 VDC	125 mA	82 %
TDN 3-4821WI		±5.0 VDC	±300 mA	80 %
TDN 3-4822WI		±12 VDC	±125 mA	82 %
TDN 3-4823WI		±15 VDC	±100 mA	82 %

## Input Specifications

Input current no load	12 Vin models: 40 mA typ. 24 Vin models: 25 mA typ. 48 Vin models: 13 mA typ.
Surge voltage (1 sec. max.)	12 Vin models: 25 V max. 24 Vin models: 50 V max. 48 Vin models: 100 V max.
Reflected ripple current	20 mA <sub>p-p</sub> typ.
Input filter	internal capacitor
Conducted noise	EN 55022 class A internal filter
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 220µF/100V
Conducted immunity	EN 61000-4-6, 10 V <sub>rms</sub> , 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 %)
Ripple and noise (20 MHz Bandwidth)	50 mV <sub>p-p</sub> typ.
Start up time	– Power ON – Remote ON
(constant resistive load)	10 ms max. 10 ms max.
Transient response (25% load step change)	500 µs typ.
Short circuit protection	continuous, automatic recovery
Capacitive load	–Single output
	3.3 VDC models: 4700 µF max. 5.0 VDC models: 2530 µF max. 12 VDC models: 1220 µF max. 15 VDC models: 1000 µF max. 24 VDC models: 470 µF max.
	–Dual output
	±5.0 VDC models: 1470 µF max. (each output) ±12 VDC models: 680 µF max. (each output) +15 VDC models: 470 µF max.

## General Specifications

Temperature ranges	– Operating (convection cooling 20LFM, 0,1m/s) – Case temperature – Storage temperature
	–40°C to +70°C (without derating) +95°C max. –55°C to +125°C
Derating	2.9%/K above 70°C
Humidity (non condensing)	95 % rel H max.
Isolation voltage	– I/O isolation voltage (60 sec.)
	1'500 VDC
Isolation capacitance (input/output)	50 pF typ.
Isolation resistance (input/output)	>1 Gohm
Altitude during operation	tbd
Temperature coefficient	±0.02 %/K typ.
Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign)	5'627'000 h

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

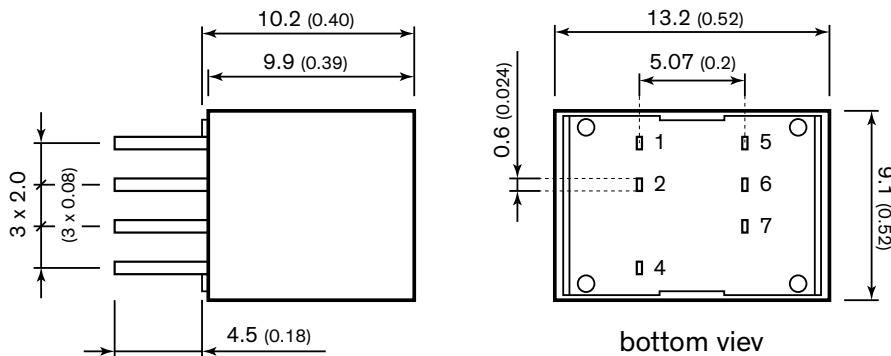
Switching frequency		100 kHz min.
Thermal shock & vibration		MIL-STD-810F
Remote On/Off	-On: -Off: -Off idle current:	open circuit or high impedance 2 – 4 mA current applied via 1kOhm resistor 2.5 mA max.
Safety standards		UL 60950-1 IEC/EN 60950-1 <a href="http://www.tracopower.com/overview/tdn3wi">www.tracopower.com/overview/tdn3wi</a>
Environmental compliance	- Reach - RoHS	<a href="http://www.tracopower.com/overview/tdn3wi">www.tracopower.com/overview/tdn3wi</a> 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	2.7g (0.10oz)
Soldering temperature	max. 260°C / 10 sec.

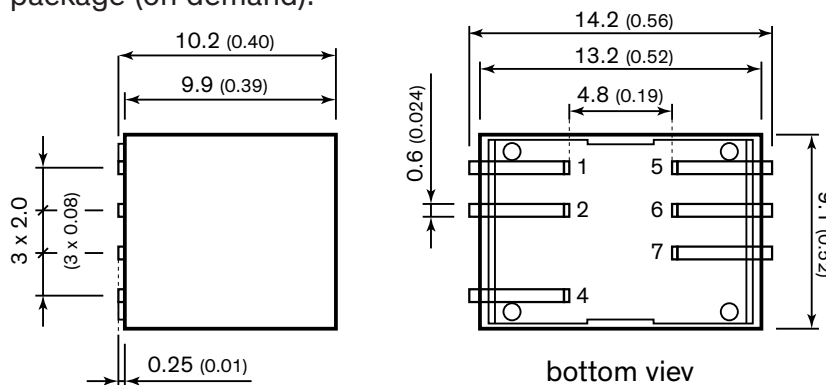
### Outline Dimensions

DIP package:



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

SMD package (on demand):



Dimensions in [mm], ( ) = Inch

Tolerances: x.xx ±0.5 (±0.02)

x.xxx ±0.25 (±0.01)

Pin pitch tolerances ±0.25 (±0.01)

pin dimension tolerance ±0.1 (±0.004)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at [www.tracopower.com](http://www.tracopower.com)