



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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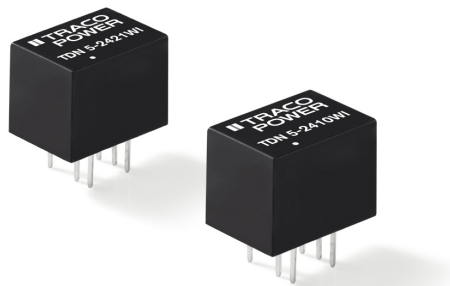
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DC/DC Converter

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 mA _{p-p} typ. 24 Vin models: 20 mA _{p-p} typ. 48 Vin models: 15 mA _{p-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 220µF/100V
Conducted immunity	EN 61000-4-6, 10 V _{rms} , 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 mV _{p-p} typ. other models: 75 mV _{p-p} typ.
Start up time (constant resistive load)	– Power ON: 10 ms typ. / 20 ms max. – Remote ON: 10 ms typ. / 20 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: 4400 µF max. 5.0 VDC models: 2200 µF max. 9.0 VDC models: 1470 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: 1000 µF max. (each output) ±12 VDC models: 680 µF max. (each output) +15 VDC models: 440 µF 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

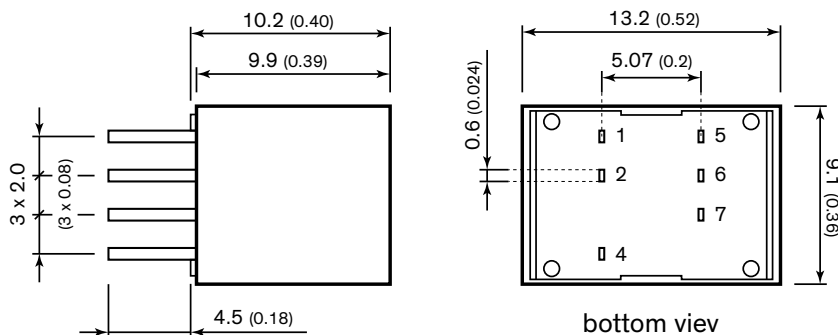
Isolation resistance (@ 500 VDC)	>1 Gohm
Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign)	2'280'000 h
Switching frequency	100 kHz min. Pulse frequency modulation.
Thermal shock & vibration	MIL-STD-810F
Remote On/Off	– On: open circuit or high impedance – Off: 2 – 4 mA current applied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