- **Ultra compact SMD package 13,2 × 9,1 × 10,2 mm**
- **I/O-isolation 1‘600 VDC**
- **Fully regulated outputs**
- **Operating temperature range −40°C to +70°C without derating**
- **Short circuit protection**
- **Remote On/Off**
- **3-year product warranty**

The TDN 3WISM Series comprises 3 Watt fully regulated, high performance DC/DC converters. They come in a compact cubical package of only 1.23 cm^3. Full load operation is reliable up tp 70°C environment temperature. With 1‘600 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.

Models

Order code	Input voltage	Output voltage	Output current max.	Efficiency typ.
TDN 3-1210WISM	**4.5 – 18 VDC** (12 VDC nominal)	3.3 VDC	700 mA	76 %
TDN 3-1211WISM		5.0 VDC	600 mA	80 %
TDN 3-1219WISM		9.0 VDC	333 mA	81 %
TDN 3-1212WISM		12 VDC	250 mA	83 %
TDN 3-1213WISM		15 VDC	200 mA	84 %
TDN 3-1215WISM		24 VDC	125 mA	82 %
TDN 3-1221WISM		± 5.0 VDC	±300 mA	80 %
TDN 3-1222WISM		±12 VDC	±125 mA	82 %
TDN 3-1223WISM		±15 VDC	±100 mA	82 %
TDN 3-2410WISM	**9 – 36 VDC** (24 VDC nominal)	3.3 VDC	700 mA	77 %
TDN 3-2411WISM		5.0 VDC	600 mA	80 %
TDN 3-2419WISM		5.0 VDC	333 mA	81 %
TDN 3-2412WISM		12 VDC	250 mA	83 %
TDN 3-2413WISM		15 VDC	200 mA	83 %
TDN 3-2415WISM		24 VDC	125 mA	82 %
TDN 3-2421WISM		± 5.0 VDC	±300 mA	80 %
TDN 3-2422WISM		±12 VDC	±125 mA	82 %
TDN 3-2423WISM		±15 VDC	±100 mA	82 %
TDN 3-4810WISM	**18 – 75 VDC** (48 VDC nominal)	3.3 VDC	700 mA	77 %
TDN 3-4811WISM		5.0 VDC	600 mA	80 %
TDN 3-4819WISM		9.0 VDC	333 mA	81 %
TDN 3-4812WISM		12 VDC	250 mA	83 %
TDN 3-4813WISM		15 VDC	200 mA	83 %
TDN 3-4815WISM		24 VDC	125 mA	82 %
TDN 3-4821WISM		± 5.0 VDC	±300 mA	80 %
TDN 3-4822WISM		±12 VDC	±125 mA	82 %
TDN 3-4823WISM		±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 mAp-p typ.
Conducted noise			EN 55022 class A or B with external components,
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 Vrms, perf. criteria A
Magnetic field immunity			EN 61000-4-8, 100 A/m continuous, perf. criteria A 1000 A/m 1 second, perf criteria A

Output Specifications

Voltage set accuracy			±1 % max.
Regulation	– Input variation		0.2 % max.
	– Load variation 0 – 100 %		1 % max.
	– cross regulation - dual output:		5 % max. (asymmetrical load 25 % / 100 %)
Temperature coefficient			±0.02 %/K typ.
Ripple and noise (20 MHz Bandwidth)			50 mVp-p typ.
Start up time	– Power ON		10 ms max.
(constant resistive load)	– Remote ON		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.
		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:	1470 µF max. (each output)
		±12 VDC models:	680 µF max. (each output)
		+15 VDC models:	470 µF max. (each output)

General Specifications

Temperature ranges	– Operating (convection cooling 20LFM, 0,1m/s)	–40°C to +70°C (without derating)
	– Case temperature	+95°C max.
	– Storage temperature	–55°C to +125°C
Derating		2.9%/K above 70°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.
Isolation resistance (@ 500 VDC)		>1 Gohm

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

General Specifications

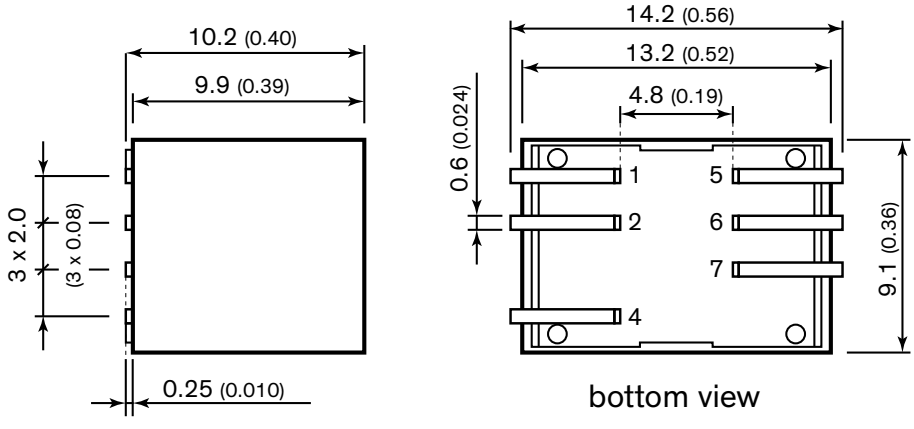
Reliability, calculated MTBF (MIL-HDBK-217F at +25°C, ground benign)		5'627'000 h
Switching frequency		100 kHz min. Pulse frequency modulation.
Thermal shock & vibration		MIL-STD-810F
Remote On/Off	–On: –Off: –Off idle current:	open circuit or high impedance 2 – 4 mA current applied via 1kOhm resistor 2.5 mA max.
Environmental compliance	– Reach – RoHS	 RoHS directive 2011/65/EU
Moisture sensitivity level (MSL)		IPC J-STD-033B Level 2

Physical Specifications

Casing material	non-conducting FR4 (UL 94V-0 rated)
Potting material	silicone (UL 94V-0 rated)
Base material	non-conducting FR4 (UL 94V-0 rated)
Package weight	2.7g (0.10oz)
Soldering temperature	max. 260°C / 6 sec
Lead-free reflow solder process	according to IPC J-STD-020D

Supporting Documents: www.tracopower.com/overview/tdn3wism

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)