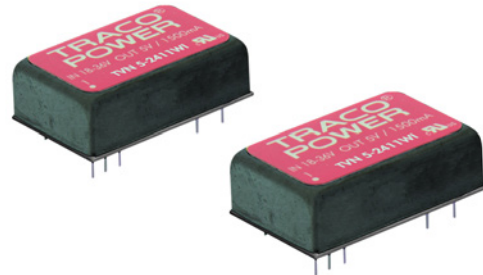


Features

- ◆ Ultra low ripple and noise 10 mVp-p typ.
- ◆ 6-side shielded DIP-24 metal package
- ◆ Input filter to meet EN55022, class B
- ◆ Ultra wide 4:1 input voltage range
9–36, 18–75 VDC
- ◆ Operating temperature range
–40°C to +85°C without derating
- ◆ Under voltage lockout
- ◆ I/O isolation 1500 VDC
- ◆ Adjustable output voltage
- ◆ No minimum load required
- ◆ Remote On/Off
- ◆ 3-year product warranty



The TVN 5WI series is a ultra low ripple and noise 5 Watt dc/dc converter in six side shielded metal package. The conducted noise complies with EN 55022 class B and makes this converters the ideal solution for audio, measurement and detection circuits.

Standard features include remote On/Off, over voltage protection, under voltage shut down and short circuit protection.

Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TVN 5-2410WI	9 – 36 VDC (24 VDC nominal)	3.3 VDC	1'515 mA	80 %
TVN 5-2411WI		5.0 VDC	1'000 mA	83 %
TVN 5-2412WI		12 VDC	416 mA	86 %
TVN 5-2413WI		15 VDC	333 mA	86 %
TVN 5-2415WI		24 VDC	208 mA	86 %
TVN 5-2421WI		±5 VDC	±500 mA	84 %
TVN 5-2422WI		±12 VDC	±208 mA	85 %
TVN 5-2423WI		±15 VDC	±166 mA	86 %
TVN 5-2425WI		±24 VDC	±104 mA	87 %
TVN 5-4810WI		18 – 75 VDC (48 VDC nominal)	3.3 VDC	1'515 mA
TVN 5-4811WI	5.0 VDC		1'000 mA	83 %
TVN 5-4812WI	12 VDC		416 mA	85 %
TVN 5-4813WI	15 VDC		333 mA	86 %
TVN 5-4815WI	24 VDC		208 mA	88 %
TVN 5-4821WI	±5 VDC		±500 mA	83 %
TVN 5-4822WI	±12 VDC		±208 mA	85 %
TVN 5-4823WI	±15 VDC		±166 mA	86 %
TVN 5-4825WI	±24 VDC		±104 mA	86 %

Input Specifications

Input current at no load		7 mA typ.
Start-up voltage	24 Vin models:	< 9.0 VDC
	48 Vin models:	< 18 VDC
Under voltage shut down (lock-out circuit)	24 Vin models:	8.5 VDC typ.
	48 Vin models:	16 VDC typ.
Surge voltage (1 sec.)	24 Vin models:	50 V max.
	48 Vin models:	100 V max.
Conducted noise		EN 55022 class B internal filter for 48 Vin models with two 4.7µF/100V MLCC input capacitor in parallel
ESD (electrostatic discharge)		EN 61000-4-2, air ±8 kV, contact ±6 kV, perf. criteria A
Radiated immunity		EN 61000-4-3, 20 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, ±2 kV perf. criteria A
	– external input capacitor	24 Vin models: Nippon chemi-con KY 220 µF, 100 V, ESR 48 mOhm and TVS 70V, 3000W peak (SMDJ70A) in parallel
		48 Vin models: Nippon chemi-con KY 220 µF, 100 V, ESR 48 mOhm and TVS 120V, 3000W peak (SMDJ120A) in parallel
Conducted immunity		EN 61000-4-6, 10 Vrms, perf. criteria A

Output Specifications

Voltage set accuracy		±1 %
Voltage adjustment range (single output models only)	single output models:	-10%, +20%
	dual output models:	±10 %
Regulation	– Input variation Vin min. to Vin max.	0.2 % max.
	– Load variation 0 – 100 %	single output models: 0.5 % max.
		dual output models: 1 % max.
	– Load cross variation 25 % / 100 %	3 % max.
Minimum load		not required
Temperature coefficient		±0.02 %/K
Ripple and noise (20 MHz bandwidth)		10 mVp-p typ.
Start up time	– Power On	50 ms typ.
(constant resistive load)	– Remote On	50 ms typ.
Transient response (25% load step change)		250 µs typ.
Short circuit protection		continuous, automatic recovery
Over load protection		at 170 % of Iout nom. hiccup mode
Over-voltage protection		at 135 % of Vout nom.
Capacitive load (max. values)	3.3 VDC models:	2'200 µF
	5.0 VDC models:	1'000 µF
	12 VDC models:	220 µF
	15 VDC models:	150 µF
	24 VDC models:	100 µF
	±5 VDC models:	680 µF (each output)
	±12 VDC models:	150 µF (each output)
	±15 VDC models:	150 µF (each output)
	±24 VDC models:	100 µF (each output)

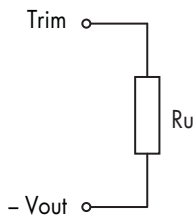
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

General Specifications

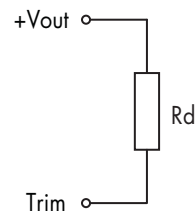
Temperature ranges	<ul style="list-style-type: none"> - Operating - Casing temperature - Storage 	<ul style="list-style-type: none"> -40°C to +85°C (without derating) +105°C max. -55°C to +125°C
Thermal impedance	- Natural convection	20 K/W
Humidity (non condensing)		5 – 95 % rel. H
Isolation voltage (60 sec.)	- Input / Output	1600 VDC
Isolation resistance	- Input / Output	>1 GOhm
Isolation capacitance	- Input / Output	1'200 pF max.
Switching frequency		300 kHz typ. (pulse width modulation PWM)
Thermal shock, mechanical shock & vibration	- Test conditions	MIL-STD-810F www.tracopower.com/products/mil810.pdf
Remote On/Off	<ul style="list-style-type: none"> - On: - Off: - Off idle current: 	<ul style="list-style-type: none"> 3.0 ... 12 VDC or open circuit 0 ... 1.2 VDC or short circuit pin 23 and pin 22 3.0 mA
Reliability, calculated MTBF (MIL-HDBK-217F, at +70°C, ground benign)		4.4 mio. h
Environmental compliance	<ul style="list-style-type: none"> - Reach - RoHS 	www.tracopower.com/overview/tvn5wi RoHS directive 2011/65/EU

Output Voltage Adjustment

Trim up



Trim down



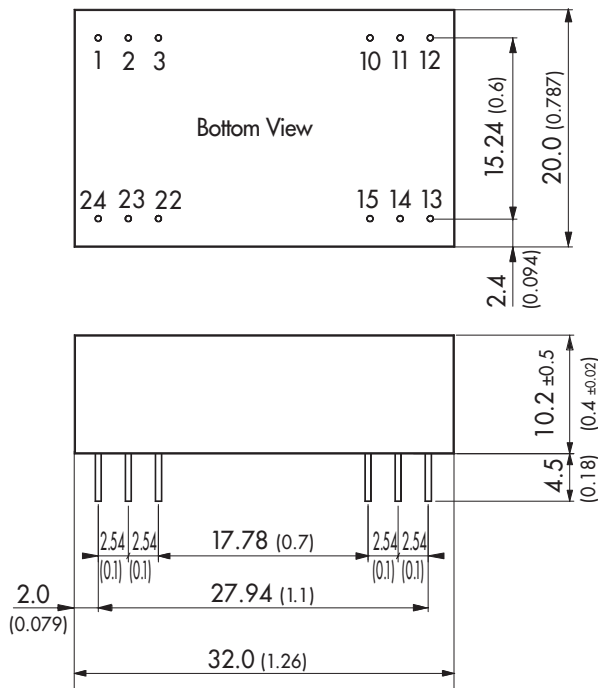
Nominal output voltage at open Trim input
Ru, Rd for adjustment to be advised

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

Physical Specifications

Casing material	copper
Baseplate material	non conductive FR4
Potting material	epoxy (UL94V-0 rated)
Weight	14.8 g (0.52oz)
Soldering temperature	max. +265°C / 10 sec.

Outline Dimensions



Pin-Out		
Pin	Single	Dual
1	+Vin (Vcc)	
2	+Vin (Vcc)	
3	Case	
10	No pin	Common
11	No pin	+Vout 1
12	Case	
13	TRIM	
14	-Vout	-Vout 2
15	+Vout	Common
22	Remote On / Off	
23	-Vin	
24	-Vin	

Dimensions in [mm], () = Inch
 Pin diameter: 1.0 ±0.1 (0.04 ±0.004)
 Pin pitch tolerances: ±0.25 (±0.01)
 Case tolerances: ±0.5 (±0.02)