



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!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

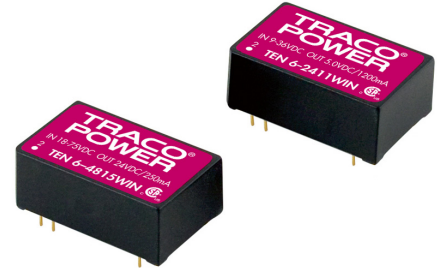
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Features

- ◆ Wide 4:1 input voltage range
- ◆ High efficiency
- ◆ Operating temperature range
-40°C to +85°C
- ◆ No minimum load required
- ◆ Models with 1'500 VDC and 3'000 VDC
I/O isolation (functional insulation)
- ◆ Input filter meets EN 55022, class A
- ◆ Overload protection
- ◆ DIP-24 plastic package
- ◆ Industry standard pinout
- ◆ 3-year product warranty



The TEN-6WIN series is designed for an optimized cost/performance ratio of DC/DC converters with output power of 6 Watt.

General features like no minimum load requirement, overload protection, internal filter for EN55022 class A and high efficiency make these converters easy to design in. With the popular DIP-24 standard package they are also a drop in replacement for many cost critical applications.

Models

Order code		Input voltage range	Output voltage	Output current max.	Efficiency typ.
1'500 VDC isolation	3'000 VDC isolation				
TEN 6-2410WIN	TEN 6-2410WIN-HI	9 – 36 VDC (24 VDC nominal)	3.3 VDC	1200 mA	77 %
TEN 6-2411WIN	TEN 6-2411WIN-HI		5 VDC	1200 mA	80 %
TEN 6-2412WIN	TEN 6-2412WIN-HI		12 VDC	500 mA	84 %
TEN 6-2413WIN	TEN 6-2413WIN-HI		15 VDC	400 mA	84 %
TEN 6-2415WIN	TEN 6-2415WIN-HI		24 VDC	250 mA	84 %
TEN 6-2421WIN	TEN 6-2421WIN-HI		±5 VDC	±500 mA	80 %
TEN 6-2422WIN	TEN 6-2422WIN-HI		±12 VDC	±250 mA	84 %
TEN 6-2423WIN	TEN 6-2423WIN-HI		±15 VDC	±200 mA	84 %
TEN 6-4810WIN	TEN 6-4810WIN-HI		18 – 75 VDC (48 VDC nominal)	3.3 VDC	1200 mA
TEN 6-4811WIN	TEN 6-4811WIN-HI	5 VDC		1200 mA	80 %
TEN 6-4812WIN	TEN 6-4812WIN-HI	12 VDC		500 mA	84 %
TEN 6-4813WIN	TEN 6-4813WIN-HI	15 VDC		400 mA	84 %
TEN 6-4815WIN	TEN 6-4815WIN-HI	24 VDC		250 mA	84 %
TEN 6-4821WIN	TEN 6-4821WIN-HI	± 5 VDC		±500 mA	80 %
TEN 6-4822WIN	TEN 6-4822WIN-HI	±12 VDC		±250 mA	84 %
TEN 6-4823WIN	TEN 6-4823WIN-HI	±15 VDC		±200 mA	84 %

Input Specifications

Input current at no load	24 Vin models: 20 mA typ. 48 Vin models: 10 mA typ.
Input current at full load	24 Vin, 3.3VDC models: 215 mA typ. 24 Vin other models: 300 mA typ. 48 Vin, 3.3VDC models: 110 mA typ. 48 Vin other models: 150 mA typ.
Recommended input fuse (slow blow)	24 Vin models: 1500 mA 48 Vin models: 800 mA
Start-up voltage / under voltage shut down	24 Vin models: 9 VDC / 8.5 VDC (or lower) 48 Vin models: 18 VDC / 16 VDC (or lower)
Surge voltage (1 sec. max.)	24 Vin models: 50 V max. 48 Vin models: 100 V max.
Conducted noise	EN 55022 class A

Output Specifications

Voltage set accuracy	±2 %
Regulation	– Input variation Vin min. to Vin max. 0.5 % max. – Load variation 0 – 100 % single output models: 1.2 % max. dual output models balanced load: 1.2 % max. dual output models 50%/100% unbalanced load: 3.0 % max.
Minimum load	not required
Temperature coefficient	±0.02 %/K
Ripple and noise (20 MHz Bandwidth)	80 mVp-p max.
Dynamic load response (change from 75 % to 100 % load)	±3 % peak variation typ. 300 µS response time typ.
Current limitation	150 % of lout max. typ., constant power
Short circuit protection	continuous, automatic recovery
Capacitive load	3.3 & 5.0 VDC models: 470 µF max. 12 & 15 VDC models: 100 µF max. 24 VDC models: 47 µF max. dual output models: 100 µF max. (each output)

General Specifications

Temperature ranges	– Operating –40°C to +85°C – Case temperature +100°C max. – Storage –50°C to +125°C
Derating	3.3 & 5.0 VDC models: 2.5 %/K above +60°C other models: 3.3 %/K above +70°C
Humidity (non condensing)	95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)	>800'000 h
Isolation voltage (input/output, 60 sec., functional insulation)	standard models: 1'500 VDC models with suffix -H: 3'000 VDC
Isolation capacitance (input/output, 100 KHz, 1 V)	1000 pF typ.
Isolation resistance (input/output, 500 VDC)	>1'000 M Ohm
Switching frequency	330 kHz typ.

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

General Specifications

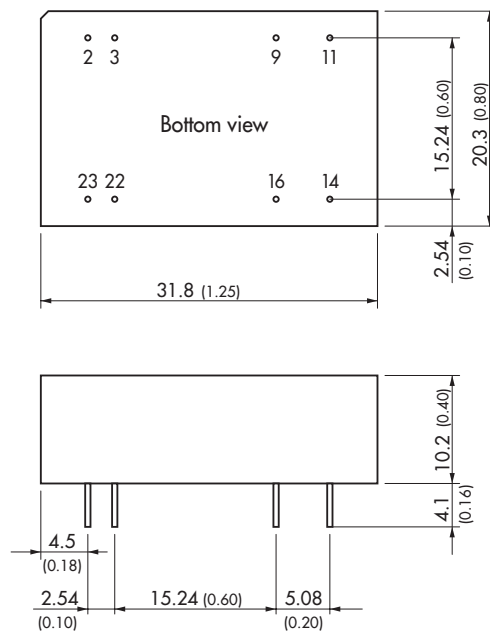
Safety approvals	- CSA certificate of compliance	CAN/CSA-C22.2 No 60950-1-07, Am 1:2011 ANSI/UL Std No 60950-1, 2nd Ed, AM 1:2011 IEC 60950-1:2005 2nd Ed, Am 1:2009 EN 60950-1:2006, +A11:2009, +A1:2010, +A12:2011 www.tracopower.com/overview/ten6win
	- CB test certificate	
	- certification documents	
Environmental compliance	- Reach	www.tracopower.com/info/reach-declaration.pdf RoHS directive 2011/65/EU
	- RoHS	

Physical Specifications

Casing material	non conductive plastic (UL 94V-0-rated)
Potting material	epoxy (XM-2109 & XY-2110, UL 94V-0-rated)
Weight	13.0 g (0.46 oz)
Soldering temperature (1.5mm from case for 10 sec.)	max. 260°C

Supporting documents: www.tracopower.com/overview/ten6win

Outline Dimensions



Pin-Out		
Pin	Single	Dual
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	No function	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

Dimensions in [mm], () = Inch
Pin diameter $\varnothing 0.5 \pm 0.05$ (0.02 ± 0.002)
Tolerances ± 0.25 (± 0.01)
Pin pitch tolerances ± 0.13 (± 0.0005)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at www.tracopower.com