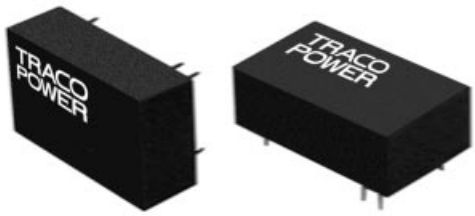
DC/DC Converter

TEL 2 Series 2 Watt

TENTATIVE

Features

- Ultracompact DIL-16 Plastic Package
- Wide 2:1 Input Range
- Regulated Output
- I/O-Isolation 1000V
- Input Filter meets EN55022A without ext. Components
- Low Ripple and Noise
- Continuous Shortcircuit Protection
- Operating Temp.Range -40°C to +85°C
- 3 Year Product Warranty



The TEL-2 series, comprising 20 models, is a range of isolated 2Watt converters in a low profile DIL-16 package. Requiring only 3.25 cm2 of space on the PCB they provide a complete DC/DC converter without need of any external components. Wide input range and tightly regulated output voltage qualifies these converters for many cost critical applications in industrial and consumer electronics.

Models

Ordercode	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TEL 2-0510	4.5 – 9.0 VDC	3.3 VDC	500 mA	70 %
TEL 2-0511		5 VDC	400 mA	73 %
TEL 2-0512		12 VDC	167 mA	75 %
TEL 2-0513		15 VDC	134 mA	73 %
TEL 2-0521		± 5 VDC	± 200 mA	64 %
TEL 2-0522		± 12 VDC	± 83 mA	69 %
TEL 2-0523		± 15 VDC	± 67 mA	71 %
TEL 2-1210	9 – 18 VDC	3.3 VDC	500 mA	73 %
TEL 2-1211		5 VDC	400 mA	77 %
TEL 2-1212		12 VDC	167 mA	80 %
TEL 2-1213		15 VDC	134 mA	80 %
TEL 2-1221		± 5 VDC	± 200 mA	73 %
TEL 2-1222		± 12 VDC	± 83 mA	78 %
TEL 2-1223		± 15 VDC	± 67 mA	78 %
TEL 2-2410	18 – 36 VDC	3.3 VDC	500 mA	72 %
TEL 2-2411		5 VDC	400 mA	77 %
TEL 2-2412		12 VDC	167 mA	80 %
TEL 2-2413		15 VDC	134 mA	81 %
TEL 2-2421		± 5 VDC	± 200 mA	74 %
TEL 2-2422		± 12 VDC	± 83 mA	78 %
TEL 2-2423		± 15 VDC	± 67 mA	80 %
TEL 2-4810	36 – 72 VDC	3.3 VDC	500 mA	71 %
TEL 2-4811		5 VDC	400 mA	73 %
TEL 2-4812		12 VDC	167 mA	79 %
TEL 2-4813		15 VDC	134 mA	79 %
TEL 2-2421		± 5 VDC	± 200 mA	71 %
TEL 2-4822		± 12 VDC	± 83 mA	77 %
TEL 2-4823		± 15 VDC	± 67 mA	77 %

Input Specifications

Input current at full load (nominal input)	5 Vin models:	930 mA typ.
	12 Vin models:	420 mA typ.
	24 Vin models:	205 mA typ.
	48 Vin models:	100 mA typ.
Surge voltage (100 msec. max.)	5 Vin models:	11 V max.
	12 Vin models:	25 V max.
	24 Vin models:	50 V max.
	48 Vin models:	100 V max.
Conducted noise (input)		EN 55022 level A, FCC part 15, level A

Output Specifications

Voltage set accuracy		± 2 %
Regulation	– Input variation Vin min. to Vin max.	± 0.5 % max.
	– Load variation 25 – 100 %	± 0.75 % max.
	dual output models:	± 2.0% (balanced load)
Ripple and noise (20 MHz Bandwidth)		50 mVpk-pk max
Temperature coefficient		± 0.02 %/K
Short circuit protection		continuous, automatic recovery
Minimum load		25% of rated max current (operation at lower load condition is safe but a higher output ripple will be experienced)
Capacitive load	3.3 VDC output models:	2'200 µF max.
	5 VDC output models:	1'000 µF max.
	12 VDC output models:	170 µF max.
	15 VDC output models:	110 µF max.
	± 5 VDC output models:	470 µF max.
	± 12 VDC output models:	100 µF max.
	± 15 VDC output models:	47 µF max.

General Specifications

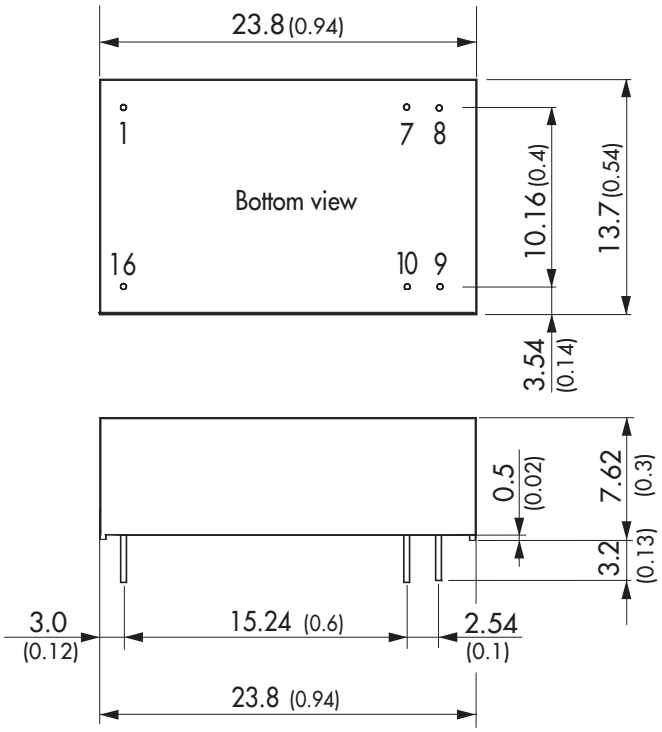
Temperature ranges	– Operating	– 40 °C ... + 85 °C (no derating)
	– Storage	– 40 °C ... + 125 °C
Humidity (non condensing)		95 % rel. H max.
Reliability, calculated MTBF (MIL-HDBK-217 F)		> 1.2 Mio h @ 25°C
Isolation voltage	Input/Output	1'000 VDC
Isolation capacity	Input/Output	250 pF max.
Isolation resistance	Input/Output (500 VDC)	> 1'000 M Ohm
Switching frequency		300 kHz (PFM)

Physical Specifications

Case material	Non-conductive plastic
Potting material	Epoxy, UL94V-0 - rated
Weight	5.1 g (0.17oz)

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

Outline Dimensions mm (inches)



Pin-Out		
Pin	**Single**	**Dual**
1	–Vin (GND)	–Vin (GND)
7	No con.	No con.
8	No con.	Common
9	+Vout	+Vout
10	–Vout	–Vout
16	+Vin	+Vin

Pin diameter ø 0.5 ±0.05 (0.02) ±0.002
Tolerances ±0.25 (0.01)

Specifications can be changed without notice

TRACO ELECTRONIC AG
Jenatschstrasse 1 • CH-8002 Zurich • Switzerland
Tel. +41-1284 2911 • Fax +41-1201 1168 • e-mail: sales@traco.ch • internet: http://www.tracopower.com