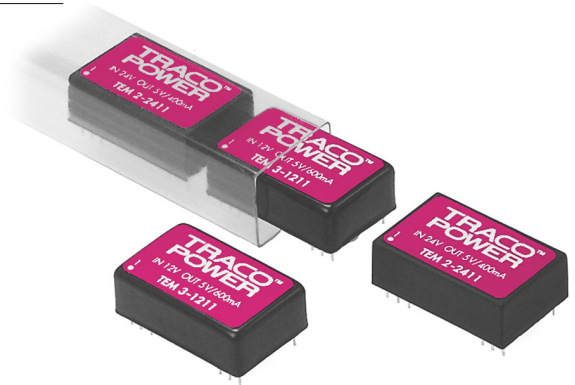


#### Features

- ◆ DIL-24 metal package
- ◆ Tightly regulated output
- ◆ Very low output noise
- ◆ Short circuit protection
- ◆ Operating temperature range  $-25^{\circ}\text{C}$  to  $+71^{\circ}\text{C}$
- ◆ I/O isolation 1'000 VDC
- ◆ Internal filter
- ◆ Industry standard pinout
- ◆ 3-year product warranty

August 2012: Obsolete



The TEM 3 series is a range of isolated dc/dc converters in a DIL-24 package. They offer tight output regulation and very low output noise. Operating temperature range is  $-25^{\circ}\text{C}$  to  $+71^{\circ}\text{C}$ . This product series provides a cost effective solution for many industrial or consumer electronics applications.

Models				
Ordercode	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TEM 3-0511	5 VDC $\pm 10\%$	5 VDC	600 mA	60 %
TEM 3-0512		12 VDC	250 mA	62 %
TEM 3-0521		$\pm 12$ VDC	$\pm 125$ mA	60 %
TEM 3-0522		$\pm 15$ VDC	$\pm 100$ mA	60 %
TEM 3-1211	12 VDC $\pm 10\%$	5 VDC	600 mA	60 %
TEM 3-1212		12 VDC	250 mA	62 %
TEM 3-1221		$\pm 12$ VDC	$\pm 125$ mA	60 %
TEM 3-1222		$\pm 15$ VDC	$\pm 100$ mA	60 %
TEM 3-2411	24 VDC $\pm 10\%$	5 VDC	600 mA	60 %
TEM 3-2412		12 VDC	250 mA	64 %
TEM 3-2421		$\pm 12$ VDC	$\pm 125$ mA	60 %
TEM 3-2422		$\pm 15$ VDC	$\pm 100$ mA	60 %

### Input Specifications

Input current no load / full load	5 Vin models:	100 mA / 980 mA typ.
	12 Vin models:	50 mA / 410 mA typ.
	24 Vin models:	25 mA / 205 mA typ.
Surge voltage (1 sec. max.)	5 Vin models:	7.5 V max.
	12 Vin models:	15 V max.
	24 Vin models:	30 V max.

### Output Specifications

Voltage set accuracy		±3 %	
Regulation	– Input variation Vin min. to Vin max.	±0.5 % max.	
	– Load variation 10 – 100 %		
	single output models:		±0.5 % max.
	dual output models balanced load:		±1.0 % max.
	dual output models unbalanced load:	±3.0 % max.	
Ripple and noise (20 MHz Bandwidth)		50 mVpk-pk max	
Temperature coefficient		±0.02 %/K	
Current limitation		>120 % of Iout max., constant current	
Short circuit protection		indefinite	
Capacitive load	single output models:	470 µF max.	
	dual output models:	220 µF max.	

### General Specifications

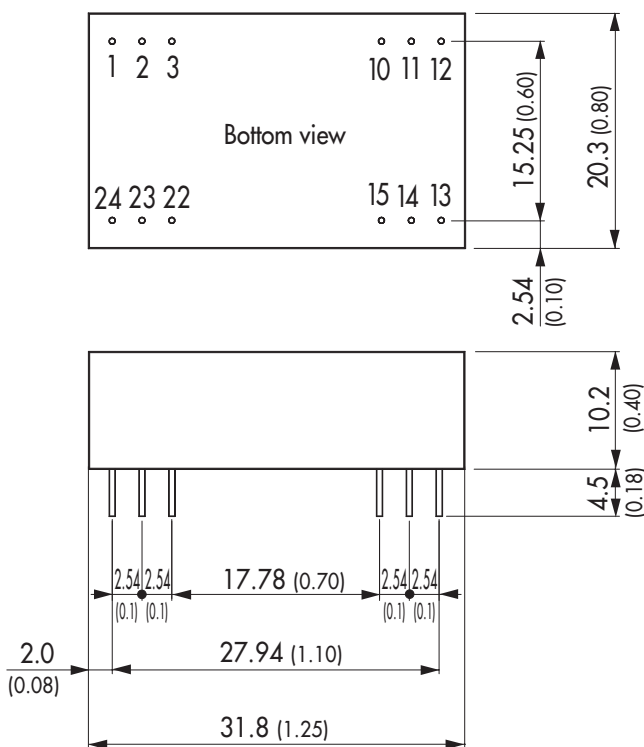
Temperature ranges	– Operating	–25°C to +71°C
	– Case	+95°C max.
	– Storage	–40°C to +125°C
Derating		3 %/K above +70°C
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTF (MIL-HDBK-217F, @ +25°C, ground benign)		>600'000 Mio. h
Isolation voltage (60 sec.)	– Input/Output	1'000 VDC
Isolation capacitance	– Input/Output	100 pF typ.
Isolation resistance	– Input/Output (500 VDC)	>1'000 M Ohm
Switching frequency		80 kHz typ. (Pulse frequency modulation PFM)
Safety standards		cUL/UL 60950-1, IEC/EN 60950-1
Safety approval		CSA File No. 226037 <a href="http://directories.csa-international.org">http://directories.csa-international.org</a>

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

**Physical Specifications**

Casing material	black coated metal
Weight	14 g (0.49 oz)
Soldering temperature	max. 260°C / 10 sec.

**Outline Dimensions mm (inches)**



Pin-Out		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	ntd.	-Vout
3	ntc.	Common
10	-Vout	Common
11	+Vout	+Vout
12	-Vin (GND)	-Vin (GND)
13	-Vin (GND)	-Vin (GND)
14	+Vout	+Vout
15	-Vout	Common
22	ntc.	Common
23	ntc.	-Vout
24	+Vin (Vcc)	+Vin (Vcc)

ntc. = not to connect

Pin diameter  $\varnothing 0.5 \pm 0.05$  (0.02)  $\pm 0.002$   
Tolerances  $\pm 0.5$  ( $\pm 0.02$ )

Specifications can be changed any time without notice.

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