

#### Features

- 24-Pin DIP Package
- Tightly regulated Output
- Very low Output Noise
- Short-Circuit Protection
- Internal Filter
- Industry Standard Pinout
- 2 Year Product Warranty



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  $+70^{\circ}\text{C}$ . This product series provides a cost effective solution for many industrial or consumer electronics applications.

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

### Input Specifications

Input current (no load)	5 Vin models	100 mA typ.
	12 Vin models	50 mA typ.
	24 Vin models	25 mA typ.
Input current (full load)	5 Vin models	980 mA typ.
	12 Vin models	410 mA typ.
	24 Vin models	205 mA typ.
Surge voltage (1 sec. max.)	5 Vin models	7.5 VDC
	12 Vin models	15.0 VDC
	24 Vin models	30.0 VDC

### 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 % / °C
Output current limitation		> 120% Iout max., constant current
Short circuit protection		indefinite
Capacitive load	– single output models	470 µF max.
	– single output models	220 µF max.

### General Specifications

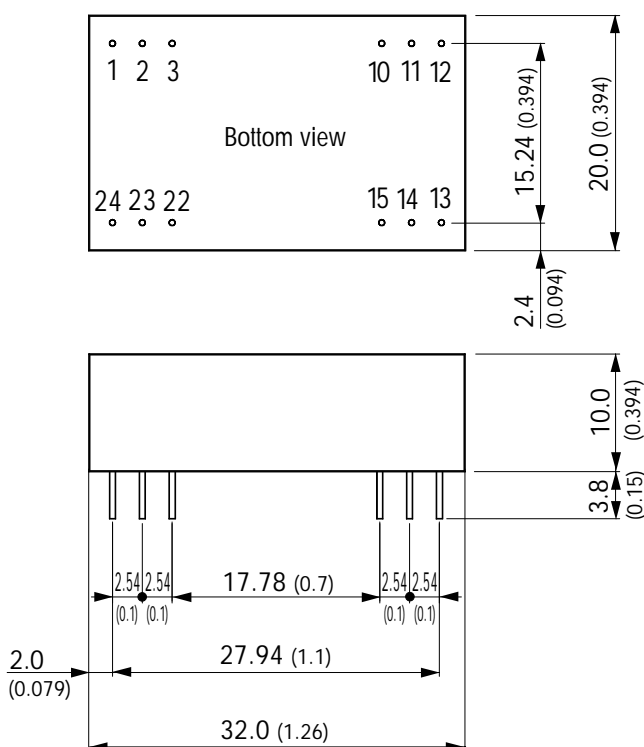
Temperature ranges – Operating		– 25 °C ... + 70 °C
	– Case	+ 95 °C max.
	– Storage	– 40 °C ... + 125 °C
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217 E)		> 600'000 h @ + 25 °C
Isolation voltage	Input/Output	500 VDC
Isolation capacity	Input/Output	100 pF typ
Isolation resistance	Input/Output (500 VDC)	> 1'000 M Ohm
Switching frequency		80 kHz typ.

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

**Physical Specifications**

Case 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	No function	-Vout
3	No function	Common
10	-Vout	Common
11	+Vout	+Vout
12	-Vin (GND)	-Vin (GND)
13	-Vin (GND)	-Vin (GND)
14	+Vout	+Vout
15	-Vout	Common
22	No function	Common
23	No function	-Vout
24	+Vin (Vcc)	+Vin (Vcc)

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

Tolerances  $\pm 0.5$  (0.02)

Specifications can be changed without notice