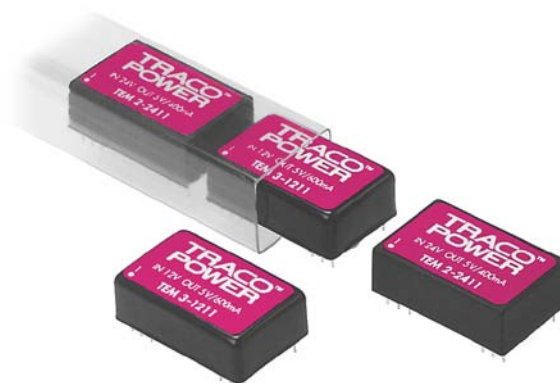


### Features

- ◆ 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

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

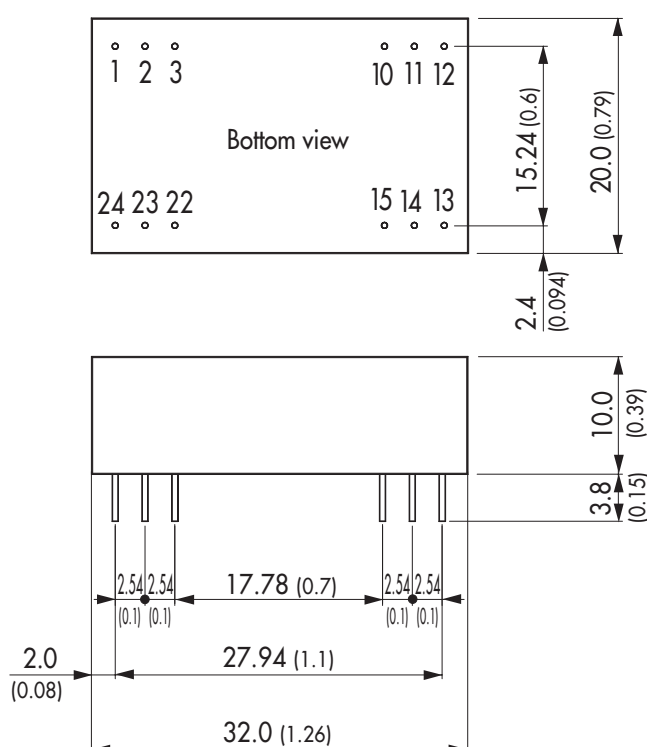
|                                                                      |                          |                                                                                                 |
|----------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------|
| 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 MTTF (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.