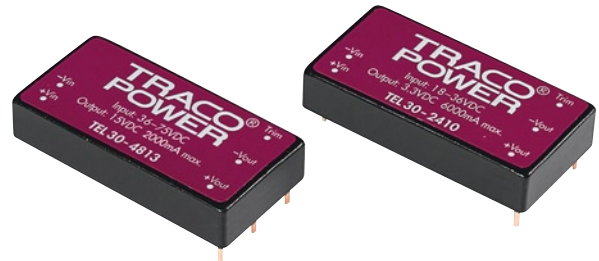




#### Features

- ◆ Highest Power Density: 30W in 51x25x9.6mm Package
- ◆ Industry Standard Footprint
- ◆ Very high Efficiency
- ◆ Models with low Output Voltages: 2.5 & 3.3VDC
- ◆ Output Voltage adjustable
- ◆ Optional Remote On/Off
- ◆ Under Voltage Lockout
- ◆ Operating Temperature Range -25°C to +71°C
- ◆ Six-side shielded Metal Case
- ◆ Lead free Design, RoHS compliant
- ◆ 3 Year Product Warranty



The TEL 30 Series is a new range of cost efficient, isolated 30W converters in a shielded metal case with excellent specification. The 10 models in this series feature 2:1 input range with 18-36 or 36-75 VDC. Overload and over voltage protection, under voltage shutdown as well as remote On/Off are features of this converter. Typical applications for the TEL 30 Series converter are communication and networking systems, industrial electronics and distributed power architectures.

#### Models

| Ordercode   | Input voltage range | Output voltage | Output current max. | Efficiency |
|-------------|---------------------|----------------|---------------------|------------|
| TEL 30-2409 | 18 – 36 VDC         | 2.5 VDC        | 6'000 mA            | 84 %       |
| TEL 30-2410 |                     | 3.3 VDC        | 6'000 mA            | 86 %       |
| TEL 30-2411 |                     | 5.1 VDC        | 5'000 mA            | 84 %       |
| TEL 30-2412 |                     | 12 VDC         | 2'500 mA            | 88 %       |
| TEL 30-2413 |                     | 15 VDC         | 2'000 mA            | 88 %       |
| TEL 30-4809 | 36 – 75 VDC         | 2.5 VDC        | 6'000 mA            | 84 %       |
| TEL 30-4810 |                     | 3.3 VDC        | 6'000 mA            | 86 %       |
| TEL 30-4811 |                     | 5.1 VDC        | 5'000 mA            | 88 %       |
| TEL 30-4812 |                     | 12 VDC         | 2'500 mA            | 88 %       |
| TEL 30-4813 |                     | 15 VDC         | 2'000 mA            | 88 %       |

### Input Specifications

|   |  |  |
|---|--|--|
| Input current (no load)                       |  | 24 Vin models: 40 mA typ.<br>48 Vin models: 20 mA typ.   |
| Input current (full load)                     | 24 Vin;<br>24 Vin;<br>24 Vin;<br>24 Vin;<br>48 Vin;<br>48 Vin;<br>48 Vin;<br>48 Vin; | 2.5 Vout models: 744 mA typ.<br>3.3 Vout models: 959 mA typ.<br>5.0 Vout models: 1183 mA typ.<br>other output models: 1420 mA typ.<br>2.5 Vout models: 372 mA typ.<br>3.3 Vout models: 480 mA typ.<br>5.0 Vout models: 592 mA typ.<br>other output models: 710 mA typ. |
| Start-up voltage /<br>under voltage shut down |  | 24 Vin models: 17.8 VDC / 15.8 VDC<br>48 Vin models: 36 VDC / 33 VDC   |
| Surge voltage<br>(100 msec. max.)             |  | 24 Vin models: 50 V max.<br>48 Vin models: 100 V max.  |

### Output Specifications

|                                     |   |  |
|-------------------------------------|---|--|
| Voltage set accuracy                |   | ±1.0 % max.                                  |
| Output voltage adjustment           |   | ±10 %  |
| Regulation                          | – Input variation Vin min. to Vin max.<br>– Load variation 10 – 100 % | 0.3 % max.<br>1.0 % max.                     |
| Ripple and noise (20 MHz Bandwidth) |   | 100 mVpk-pk max.                             |
| Temperature coefficient             |   | ±0.02 % / K                                  |
| Output current limitation           |   | 110% – 140% Iout max., foldback              |
| Short circuit protection            |   | hiccup mode, indefinite (automatic recovery) |
| Capacitive load                     | 1.8 / 2.5 / 5 Vout models:<br>12 / 15 Vout models:                    | 6'800 µF max.<br>680 µF max.                 |

### General Specifications

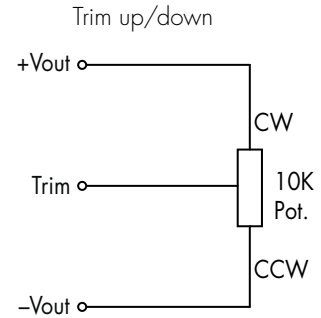
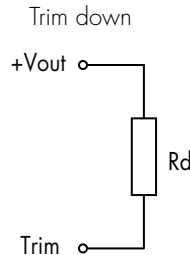
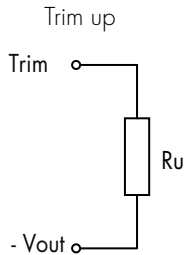
|  |  |  |
|--|--|--|
| Temperature ranges   | – Operating<br>– Case temperature<br>– Storage | –25 °C ... +71 °C (with derating)<br>+105 °C max.<br>–50 °C ... +125 °C  |
| Derating   |  | 2 %/K above 50°C   |
| Humidity (non condensing)                                  |  | 95 % rel H max.  |
| Reliability, calculated MTBF (MIL-HDBK-217E ground benign) |  | > 600'000 h @ +25 °C   |
| Isolation voltage (60 sec)                                 | – Input/Output                                 | 1'500 VDC  |
| Isolation capacity   | – Input/Output                                 | 1200 pF typ  |
| Isolation resistance                                       | – Input/Output                                 | >1'000 Mohm  |
| Remote On/Off<br>(optional)                                | – On:<br>– Off:<br>– Off idle current:         | 2.5 ... 100 VDC or open circuit.<br>–1.0 ... +1.0 VDC or short circuit pin 3 and pin 2<br>5 mA max.                    |
| Switching frequency (fixed)                                |  | 350 kHz typ. (pulse width modulation PWM)  |
| Safety standards   |  | UL 60950-1, EN 60950-1, IEC 60950-1  |
| Safety approvals   |  | CSA File No. 226037<br><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**

|                       |                                  |
|-----------------------|----------------------------------|
| Case material         | aluminum                         |
| Potting material      | epoxy (flammability to UL 94V-0) |
| Weight                | 32 g (1.13 oz)                   |
| Soldering temperature | max. 265 °C / 10 sec.            |

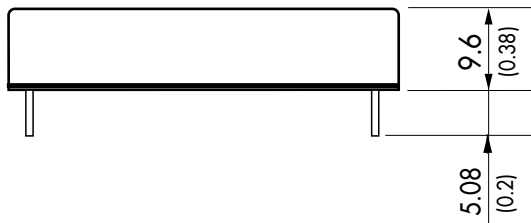
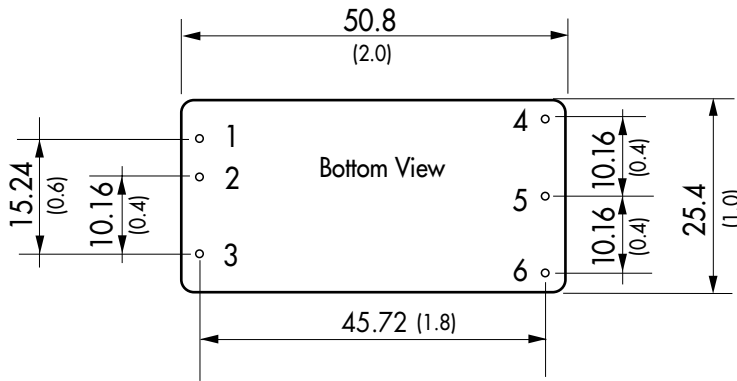
**Output Voltage Adjustment**



$$R_u \text{ [kOhm]} = \frac{(33 \times V_{out}) - (30 \times V_{adj})}{V_{adj} - V_{out}}$$

$$R_d \text{ [kOhm]} = \frac{(36.667 \times V_{adj}) - (33 \times V_{out})}{V_{out} - V_{adj}}$$

**Outline Dimensions mm (inches)**



| Pin-Out |                          |
|---------|--------------------------|
| Pin     |                          |
| 1       | +Vin (Vcc)               |
| 2       | -Vin (GND)               |
| 3       | Remote On/Off (optional) |
| 4       | +Vout                    |
| 5       | -Vout                    |
| 6       | Trim                     |

Dimensions in [mm], ( ) = Inch  
 Pin diameter: 1.0 ±0.05 (0.039 ±0.002)  
 Pin pitch tolerance: ±0.25 (±0.01)  
 Case tolerances: ±0.5 (±0.02)

Specifications can be changed any time without notice