



#### 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. 48 Vin models: 20 mA typ.
Input current (full load)	24 Vin; 24 Vin; 24 Vin; 24 Vin; 48 Vin; 48 Vin; 48 Vin; 48 Vin;	2.5 Vout models: 744 mA typ. 3.3 Vout models: 959 mA typ. 5.0 Vout models: 1183 mA typ. other output models: 1420 mA typ. 2.5 Vout models: 372 mA typ. 3.3 Vout models: 480 mA typ. 5.0 Vout models: 592 mA typ. other output models: 710 mA typ.
Start-up voltage / under voltage shut down		24 Vin models: 17.8 VDC / 15.8 VDC 48 Vin models: 36 VDC / 33 VDC
Surge voltage (100 msec. max.)		24 Vin models: 50 V max. 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. - Load variation 10 – 100 %	0.3 % max. 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: 12 / 15 Vout models:	6'800 µF max. 680 µF max.

### General Specifications

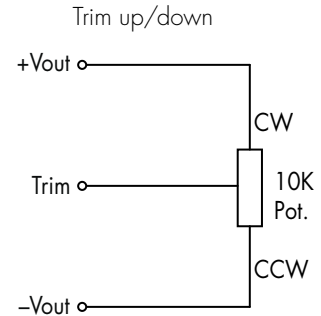
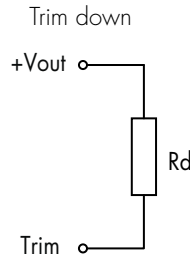
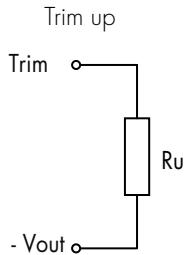
Temperature ranges	- Operating - Case temperature - Storage	-25 °C ... +71 °C (with derating) +105 °C max. -50 °C ... +125 °C
Derating		2 %/K above 50°C
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217E ground benign)		> 600'000 h @ +25 °C
Isolation voltage (60 sec)	- Input/Output	1'500 VDC
Isolation capacity	- Input/Output	1200 pF typ
Isolation resistance	- Input/Output	>1'000 Mohm
Remote On/Off (optional)	- On: - Off: - Off idle current:	2.5 ... 100 VDC or open circuit. -1.0 ... +1.0 VDC or short circuit pin 3 and pin 2 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 <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.

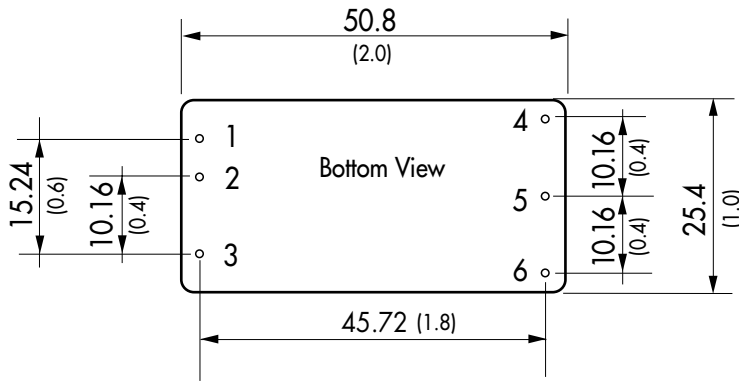
**Output Voltage Adjustment**



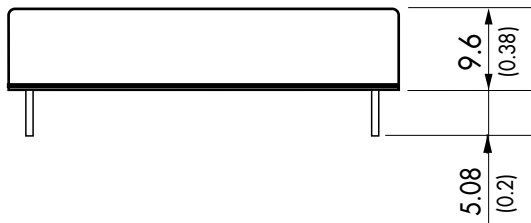
$$R_u \text{ [kOhm]} = \frac{(33 \times V_{out}) - (30 \times V_{adj})}{V_{adj} - V_{out}}$$

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

**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