

#### Features



- High Power Density:  
30W in a 50x40x10mm Package
- Industry Standard Footprint
- Very high Efficiency
- Models with low Output  
Voltages: 1.8, 2.5, 3.3VDC
- Output Voltage adjustable
- Remote on/off
- Operating Ambient Temperature Range  
– 40°C to +70°C
- EMI-Filter to meet EN 55022A
- Six-side shielded Metal Case
- 2 Year Product Warranty



The TEN 30 Series is a new high efficiency, isolated 30W converter in a shielded metalcase with excellent specification. The 12 models in this series feature 2:1 input range with 18-36 or 36-75VDC. Very high efficiency allows safe operating ambient temperatures from –40°C to +70°C. Overload and overvoltage protection, under voltage shutdown as well as remote on/off are standard features of this converter. Built-in EMI-filter to comply with EN 55022A minimizes the need for external filter circuits. Typical applications for the TEN30 series converter are communication and networking systems, industrial electronics and distributed power systems.

| Models      |                     |                |                     |                 |
|-------------|---------------------|----------------|---------------------|-----------------|
| Ordercode   | Input voltage range | Output voltage | Output current max. | Efficiency typ. |
| TEN 30-2408 | 18 – 36 VDC         | 1.8VDC         | 6'000 mA            | 82 %            |
| TEN 30-2409 |                     | 2.5VDC         | 6'000 mA            | 84 %            |
| TEN 30-2410 |                     | 3.3VDC         | 6'000 mA            | 86 %            |
| TEN 30-2411 |                     | 5 VDC          | 6'000 mA            | 88 %            |
| TEN 30-2412 |                     | 12 VDC         | 2'500 mA            | 89 %            |
| TEN 30-4808 | 36 – 75 VDC         | 1.8VDC         | 6'000 mA            | 83 %            |
| TEN 30-4809 |                     | 2.5 VDC        | 6'000 mA            | 85 %            |
| TEN 30-4810 |                     | 3.3VDC         | 6'000 mA            | 87 %            |
| TEN 30-4811 |                     | 5 VDC          | 6'000 mA            | 89 %            |
| TEN 30-4812 |                     | 12 VDC         | 2'500 mA            | 90 %            |

**Input Specifications**

|   |  |  |
|---|--|--|
| Input current (no load)                       | 24 Vin models:<br>48 Vin models:   | 50 mA typ.<br>40 mA typ.   |
| Input current (full load)                     | 24 Vin; 1.8 Vout models:<br>24 Vin; 2.5 Vout models:<br>24 Vin; 3.3 Vout models:<br>24 Vin; other output models:<br>48 Vin; 1.8 Vout models:<br>48 Vin; 2.5 Vout models:<br>48 Vin; 3.3 Vout models:<br>48 Vin; other output models: | 740 mA typ.<br>980 mA typ.<br>1300 mA typ.<br>1900 mA typ.<br>370 mA typ.<br>490 mA typ.<br>640 mA typ.<br>940 mA typ. |
| Start-up voltage /<br>under voltage shut down | 24 Vin models:<br>48 Vin models:   | 17.8 VDC / 15.8 VDC<br>36 VDC / 33 VDC   |
| Surge voltage<br>(100 msec. max.)             | 24 Vin models:<br>48 Vin models:   | 50 V max.<br>100 V max.  |
| Conducted noise ( Input )                     |  | EN 55022 level A, FCC part 15, level A   |

**Output Specifications**

|                                     |  |   |
|-------------------------------------|--|---|
| Voltage set accuracy                |  | ± 1 %   |
| Output voltage adjustment           |  | ± 10 %  |
| Regulation                          | – Input variation Vin min. to Vin max.<br>– Load variation 10 – 100 %                      | ± 0.2 % max.<br>± 0.5 % max.  |
| Ripple and noise (20 MHz Bandwidth) | 12 Vout models:<br>all other models:   | 75 mVpk-pk max.<br>50 mVpk-pk max.  |
| Temperature coefficient             |  | ± 0.02 % / °C   |
| Output current limitation           |  | 110% – 140% Iout max., foldback   |
| Short circuit protection            |  | Hiccup mode, indefinite (automatic recovery)  |
| Capacitive load                     | 1.8 Vout models / 2.5 Vout models:<br>3.3 Vout models / 5 Vout models:<br>12 Vout models : | 65'000 µF max. / 33'000 µF max.<br>19'500 µF max. / 10'200 µF max.<br>3'300 µF max. |

**General Specifications**

|   |  |  |
|---|--|--|
| Temperature ranges                            | – Operating<br>– Case temperature<br>– Storage | – 40 °C ... + 71 °C<br>+ 100 °C max.<br>– 55 °C ... + 125 °C |
| Derating                                      |  | 2.6 %/°C above 60°C  |
| Humidity (non condensing)                     |  | 95 % rel H max.  |
| Reliability, calculated MTBF (MIL-HDBK-217 E) |  | > 290'000 h @ + 25 °C  |
| Isolation voltage                             | Input/Output                                   | 1'500 VDC  |
| Isolation capacity                            | Input/Output                                   | 500 pF typ   |
| Isolation resistance                          | Input/Output                                   | > 1'000 Mohm   |

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

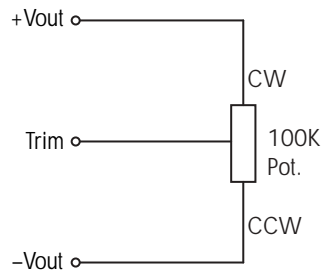
**General Specifications**

|                             |                                  |  |
|-----------------------------|----------------------------------|--|
| Remote on/off               | ON:<br>OFF:<br>OFF idle current: | 3.5 ... 12 VDC or open circuit.<br>0 ... 1.2 VDC or short circuit pin 4 and pin 2<br>2.5 mA max. |
| Switching frequency (fixed) |                                  | 300 kHz typ. (Pulse width modulation PWM)  |
| Safety standards            |                                  | UL 1950, EN 60950, IEC 60950<br>Compliance up to 60 VDC input voltage(SELV limit)                |
| Safety approvals            |                                  | UL /cUL File E188913   |

**Physical Specifications**

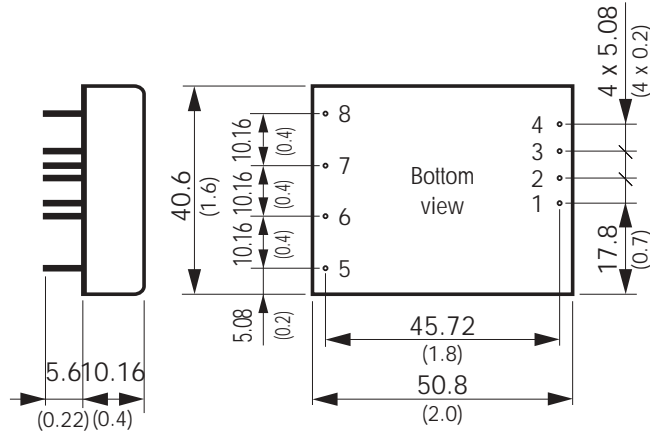
|                       |                                  |
|-----------------------|----------------------------------|
| Case material         | Copper nickel plated             |
| Baseplate             | Plastic                          |
| Potting material      | Epoxy (flammability to UL 94V-0) |
| Weight                | 48 g (1.69 oz)                   |
| Soldering temperature | max. 260 °C / 10 sec.            |

**Output Voltage Adjustment**



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

**Outline Dimensions mm (inches)**



Pin diameter  $\varnothing$  1.0  $\pm$ 0.05 (0.039  $\pm$ 0.002)

| Pin-Out |               |
|---------|---------------|
| Pin     |               |
| 1       | +Vin (Vcc)    |
| 2       | -Vin (GND)    |
| 3       | No pin        |
| 4       | Remote on/off |
| 5       | No pin        |
| 6       | +Vout         |
| 7       | -Vout         |
| 8       | Trim          |

Specifications can be changed without notice