# SMT30E Series
## 12 Vin single output

**Total Power:**    99W
**Input Voltage:**  8-14 Vdc
**# of Outputs:**   Single
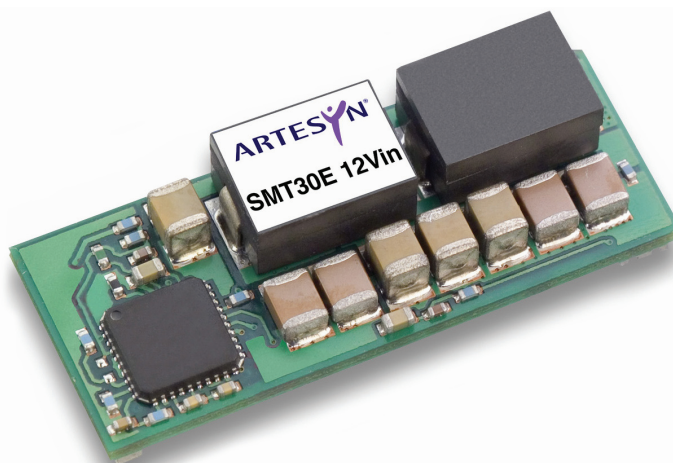


## Special Features

- 30 A current rating
- Input voltage range:
  8 Vdc to 14 Vdc
- Output voltage range:
  0.8 Vdc to 3.63 Vdc
- Ultra high efficiency:
  91% @ 12 Vin and 3.3 Vout
- Extremely low internal power
  dissipation
- Minimal thermal design
  concerns
- Designed in reliability:
  MTBF of 3,289,053 hours per
  Telcordia SR-332
- Ideal solution where board
  space is at a premium or tighter
  card pitch is required
- Industry standard
  surface-mount footprint
- Available RoHS compliant
- 2 year warranty

## Safety

- UL/cUL CAN/CSA 22.2
  No. EI74104
- UL 60950 File No. EI74104
- TÜV Product Service
  (EN60950) Certificate No. B05
  06 38572 055
- CB report and certificate to
  IEC60950

## Electrical Specifications

| Output | | |
|---|---|---|
| Voltage adjustability: | 0.8 - 3.63 Vdc | |
| Setpoint accuracy: | ±1.3% typ. | |
| Line regulation: | ±0.2% typ. | |
| Load regulation: | ±1.5% typ. | |
| Total error band: | ±3.0% typ. | |
| Overshoot / undershoot: | None | |
| Ripple and noise: | 5 Hz to 20 MHz | 60 mV pk-pk 25 mV rms |
| Transient coefficient: | ±0.01% / °C typ. | |
| Transient response: Slew rate = 0.5 A µs | 1.5 Vout | 50% to 75% load step 3% max. deviation 10 µs recovery to within ±1.0 |

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## Input

| Input voltage range: | 8 - 14 Vdc | |
|---|---|---|
| Input current: | No load (max.) | 250 mA |
| Input current (max.): | | 9.2 A max. @ lo max. and $V_{out}$ = 3.3 V |
| Input reflected ripple: | | 220 mA rms |
| Remote ON/OFF: | | (See note 1) |
| Start-up time: | | 20 ms |

## EMC Characteristics

| Electrostatic discharge: | EN61000-4-2, IEC801-2 |
|---|---|
| Conducted immunity: | EN61000-4-6 |
| Radiated immunity: | EN61000-4-3 |

## General Specifications

| Efficiency: | @ 12 Vin, 3.3 Vout | 91% typ. |
|---|---|---|
| Insulation voltage: | | Non-isolated |
| Switching frequency: | Fixed | 1.3 MHz typ. |
| Approvals and standards: | | EN60950-1 UL/cUL60950-1 |
| Material flammability: | | UL94V-0 |
| Dimensions: | (Lx W x H) | 33.02 x 13.46 x 8.10 mm 1.3 x 0.53 x 0.319 inches |
| Weight: | | 6.3 g (0.22 oz.) |
| Coplanarity: | | 100 μm |
| MTBF: | Telcordia SR-332 | 3,289,053 hours |

# Environmental Specifications

| Thermal performance: | Operating ambient, temperature Non-operating | -40 °C to +85 °C -40 °C to +125 °C |
|---|---|---|
| MSL: | JEDEC J-STD-020C | Level 3 |

## Protection

| Short-circuit: | | Continuous |
|---|---|---|
| Thermal: | | Automatic recovery |

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## Ordering Information

| Output Power (max) | Input Voltage | Output Voltage [11] | Output Current (min) | Output Current (max) | Maximum Load (typ) | Regulation | | Model Numbers [12, 13] |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Line | Load | |
| 99 W | 8 - 14 Vdc | 0.8-3.63 V | 0 A | 30 A | 91% | ±0.2% | ±1.5% | SMT30E-12W3V3J |

All specifications are typical 12 Vin and 1.5 $V_{out}$, full load at 25 °C unless otherwise stated. $C_{out}$ = 100µF

## Part Number System with Options

| Product Family | Rated Output Current | Performance | Input Voltage | Type of Output | Output Voltage | Packaging Options |
|---|---|---|---|---|---|---|
| **SMT** | **30** | **E** | **12** | **W** | **3V3** | **TJ** |
| SMT = Surface Mount | 06 = 6 A | E = Enhanced Performance | 12 = 8 Vdc to 14 Vdc | W = Wide | 0.8 Vdc to 3.63 Vdc | No 'T' suffix = Pb-free RoHS 6/6 compliant parts in trays e.g. SMT30E-12W3V3J  -TJ = PB-free RoHS 6/6 compliant part in Tape and Reel e.g. SMT30E-12W3v3-TJ |

### Output Voltage Adjustment of the SMT30E-12W3V3J Series

The ultra-wide output voltage trim range offers major advantages to users who select the SMT30E-12W3V3J. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.8 Vdc to 3.63 Vdc. When the SMT30E-12W3V3J converter leaves the factory the output has been adjusted to the default voltage of 0.8 V.

### Notes

1   The SMT30E features a 'Positive Logic' Remote ON/OFF operation. If not using the Remote ON/OFF pin, leave the pin open (the converter will be on). The Remote ON/OFF pin is referenced to ground.

The following conditions apply for the SMT30E:

| Configuration | Converter Operation |
|---|---|
| Remote pin open circuit | Unit is ON |
| Remote pin pulled low [Von/off < 0.8 V] | Unit is OFF |
| Remote pin pulled high [Von/off >2.8 V] | Unit is ON |

A 'Negative Logic' Remote ON/OFF version is also possible with this converter. To order please place the suffix 'R' towards the end of the model number, e.g. SMT30E-12W3V3-TRJ.

2   TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.

3   NOTICE: Some models do not support all options. Please contact your local Emerson Network Power representative or use the on-line model number search tool at http://www.powerconversion.com to find a suitable alternative.

### Notes

A   The derating curves represent the condition at which internal components are within the Emerson Network Power derating guidelines.

B   Characteristic data has been developed from actual products tested at 25 °C. This data is considered typical data for the converter.

# Specifications

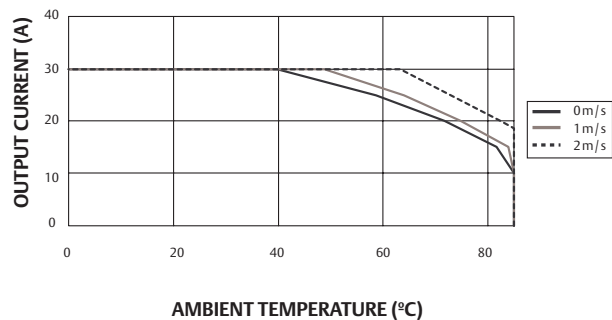All specifications are typical at nominal input, full load at 25 °C unless otherwise stated.



Figure 1 - Derating Curve
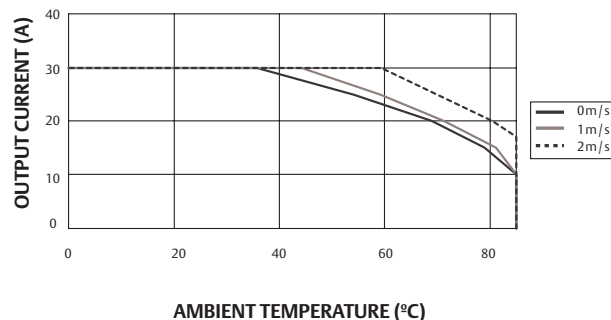Vin = 12 V, Output Voltage = 1.0 V (See Note A)



Figure 2 - Derating Curve
Vin = 12 V, Output Voltage = 1.5 V (See Note A)
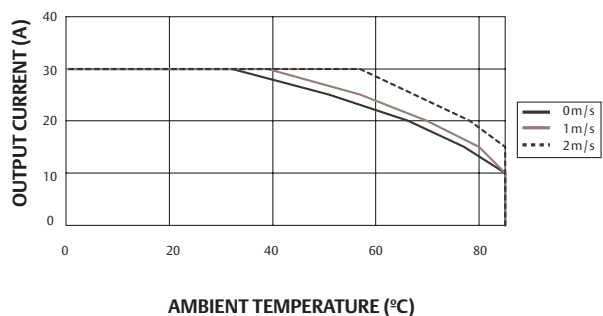


Figure 3 - Derating Curve
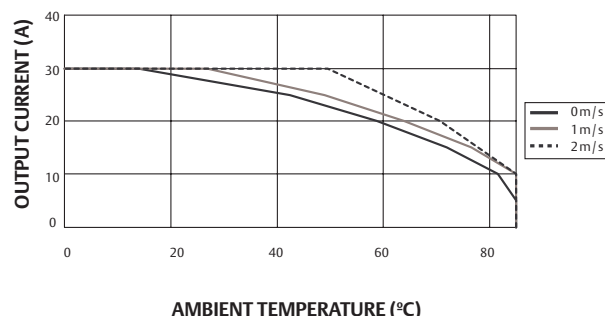Vin = 12 V, Output Voltage = 1.8 V (See Note A)



Figure 4 - Derating Curve
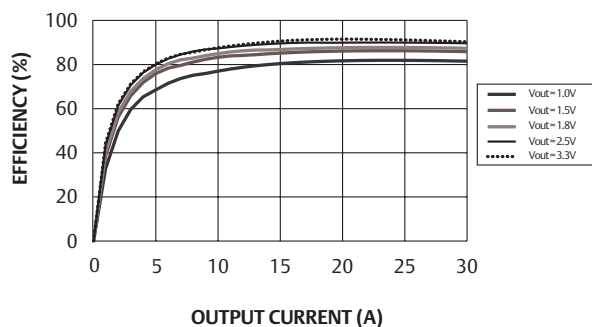Vin = 12 V, Output Voltage = 2.5 V (See Note A)



Figure 5 - Efficiency vs Load Current
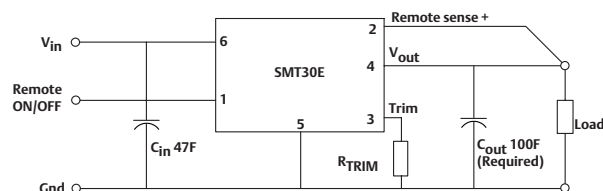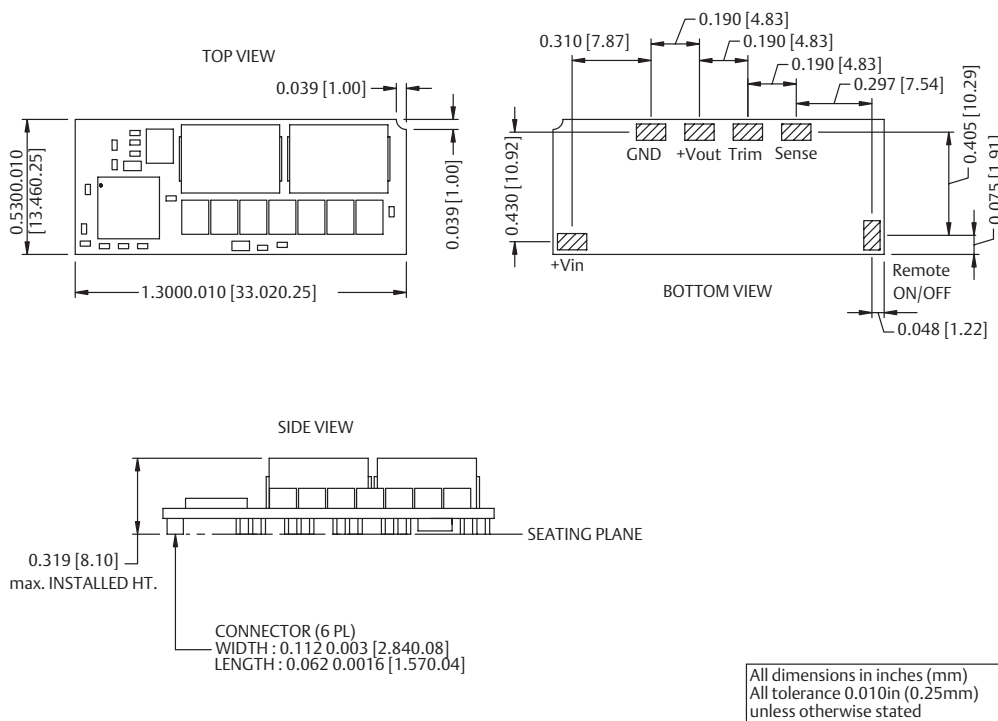Vin = 12 V (See Note B)



Figure 6 - Standard Application

## Mechanical Drawing

TOP VIEW

0.039 [1.00]

0.039 [1.00]

0.5300.010 [13.460.25]

1.3000.010 [33.020.25]

0.310 [7.87]

0.190 [4.83]

0.190 [4.83]

0.190 [4.83]

0.297 [7.54]

0.405 [10.29]

0.075 [1.91]

0.430 [10.92]

GND  +Vout  Trim  Sense

+Vin

BOTTOM VIEW

Remote
ON/OFF

0.048 [1.22]

SIDE VIEW

0.319 [8.10]
max. INSTALLED HT.

SEATING PLANE

CONNECTOR (6 PL)
WIDTH : 0.112 0.003 [2.840.08]
LENGTH : 0.062 0.0016 [1.570.04]

All dimensions in inches (mm)
All tolerance 0.010in (0.25mm)
unless otherwise stated

| Pin connections | |
| --- | --- |
| Pin Number | Function |
| 1 | Remote ON/OFF |
| 2 | Remote Sense |
| 3 | Trim |
| 4 | +Vout |
| 5 | GND |
| 6 | +Vin |

Figure 7 - Mechanical Drawing and
Pinout Table

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