

# SMT10E Series

12 Vin single output

**NEW Product**



- **10 A Current rating**
- **Input voltage range: 10 Vdc to 14 Vdc**
- **Output voltage range: 0.8 Vdc to 3.63 Vdc**
- **Ultra high efficiency: 94% @ 12 Vin and 3.3 Vout**
- **Extremely low internal power dissipation**
- **Minimal thermal design concerns**
- **Designed in reliability: MTBF of 6,920,000 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**



The SMT10E series are non-isolated dc-dc converters packaged in a surface-mount footprint giving designers a cost effective solution for conversion from a 12 V source. The SMT10E has a wide input range (10 Vdc to 14 Vdc) and offers a wide 0.8 Vdc to 3.63 Vdc output voltage range with a 10 A load, which allows for maximum design flexibility and a pathway for future upgrades. The SMT10E is designed for applications that include distributed power, workstations, optical network and wireless applications. Implemented using state of the art surface-mount technology and automated manufacturing techniques, the SMT10E offers compact size and efficiencies of up to 94%.



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

## SPECIFICATIONS

### OUTPUT SPECIFICATIONS

|                          |  |
|--------------------------|--|
| Voltage adjustability    | 0.8-3.63 Vdc   |
| Setpoint accuracy        | ±0.4% typ.   |
| Line regulation          | ±0.2% typ.   |
| Load regulation          | ±1.0%typ.  |
| Total error band         | ±3.0% typ.   |
| Minimum load             | 0 A  |
| Overshoot/undershoot     | None   |
| Ripple and noise         | 5 Hz to 20 MHz 60 mV pk-pk<br>25 mV rms                  |
| Temperature co-efficient | ±0.01%/°C  |
| Transient response       | 100 mV max. deviation<br>100 µs recovery to within ±1.0% |
| Remote sense             | 10% Vo compensation                                      |

### INPUT SPECIFICATIONS

|                        |  |
|------------------------|--|
| Input voltage range    | 10-14 Vdc                              |
| Input current          | No load (max.) 100 mA                  |
| Input current (max.)   | 3 A max. @ Io max.<br>and Vout = 3.3 V |
| Input reflected ripple | 100 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              | 94%  |
| Insulation voltage      | Non-isolated   |
| Switching frequency     | Fixed 200 kHz typ.   |
| Approvals and standards | EN60950<br>UL/cUL60950                                       |
| Material flammability   | UL94V-0  |
| Dimensions              | (LxWxH) 33.02 x 13.46 x 8.21 mm<br>1.3 x 0.53 x 0.323 inches |
| Weight                  | 6.3 g (0.22 oz)  |
| Coplanarity             | 100 µm   |
| MTBF                    | Telcordia SR-332 6,920,000 hours                             |

### ENVIRONMENTAL SPECIFICATIONS

|                     |                                |                   |
|---------------------|--------------------------------|-------------------|
| Thermal performance | Operating ambient, temperature | -40 °C to +85 °C  |
| (See Note 2)        | Non-operating                  | -40 °C to +125 °C |

### PROTECTION

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

### International Safety Standard Approvals



UL/cUL CAN/CSA-C22.2 No. 60950-1-03/UL 60950-1,  
File No. E174104



TÜV Product Service (EN60950) Certificate No. B03 10 38572 037  
CB Report and Certificate to IEC60950, Certificate No.  
DE3-51686M1

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DC-DC CONVERTERS | E Class Non-isolated

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For the most current data and application support visit [www.artesyn.com/powergroup/products.htm](http://www.artesyn.com/powergroup/products.htm)

**NEW Product**

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | REGULATION |       | MODEL NUMBER <sup>(3,4)</sup> |
|---------------------|---------------|----------------|-----------------------|-----------------------|-------------------|------------|-------|-------------------------------|
|                     |               |                |                       |                       |                   | LINE       | LOAD  |                               |
| 33 W                | 10-14 Vdc     | 0.8-3.63 Vdc   | 0 A                   | 10 A                  | 94%               | ±0.2%      | ±1.0% | SMT10E-12W3V3J                |

## Part Number System with Options

**SMT10E-12W3V3-TJ**

**Product Family**  
SMT = Surface Mount

**Rated Output Current**  
10 = 10 Amps

**Performance**  
E = Enhanced Performance

**Packaging Options <sup>(3)</sup>**  
No '-T' Suffix = Pb-free RoHS 6/6 compliant parts in trays e.g SMT10E-12W3V3J  
-TJ = Pb-free RoHS 6/6 compliant part in Tape and Reel e.g SMT10E-12W3V3-TJ

**Output Voltage**  
0.8 Vdc to 3.63 Vdc

**Type of Output**  
W = Wide

**Input Voltage**  
12 = 10 Vdc to 14 Vdc

### Output Voltage Adjustment of the SMT10E-12W3V3J Series

The ultra-wide output voltage trim range offers major advantages to users who select the SMT10E-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 SMT10E-12W3V3J converter leaves the factory the output has been adjusted to the default voltage of 0.8 V.

## Notes

- 1 The SMT10E features an '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 SMT10E:

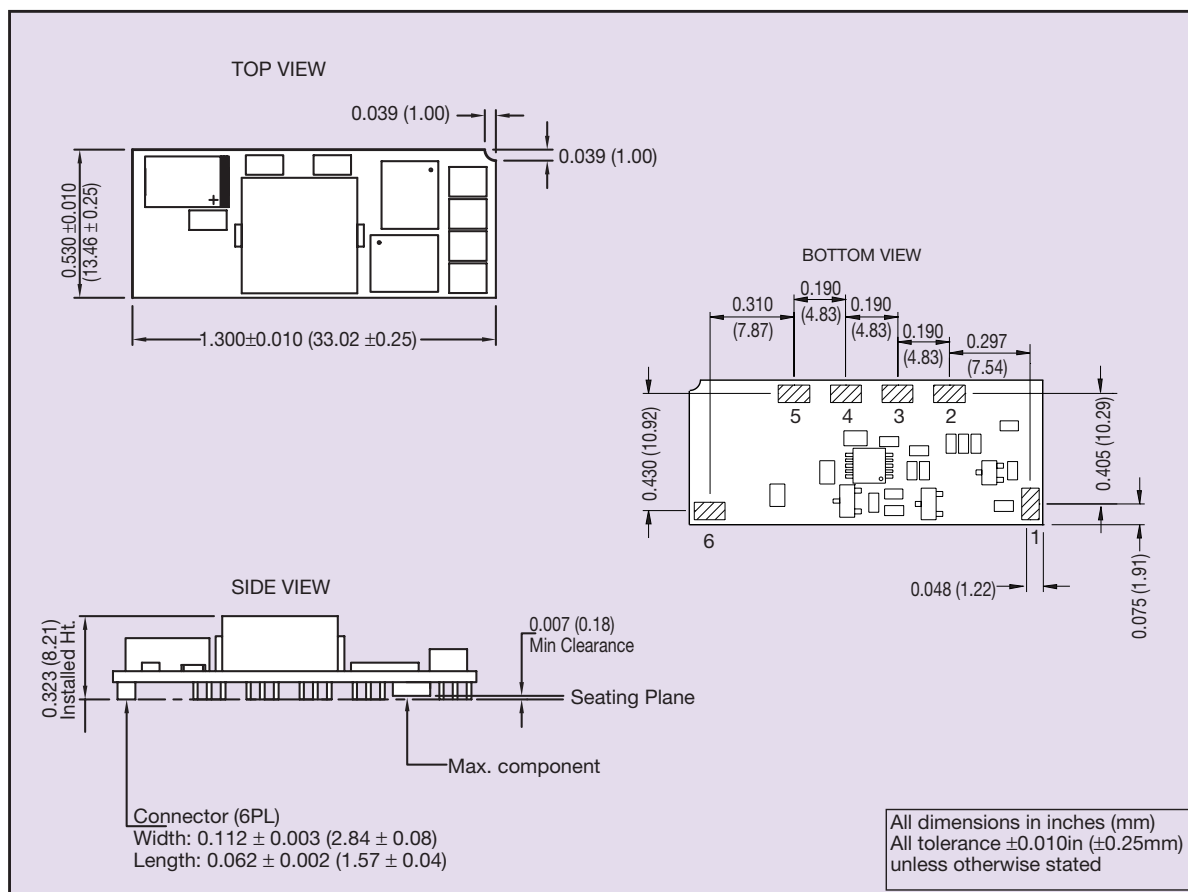
| Configuration                            | Converter Operation |
|--|---------------------|
| Remote pin open circuit                  | Unit is ON          |
| Remote pin pulled low [Von/off < 0.8 V]  | Unit is OFF         |
| Remote pin pulled high [Von/off > 1.6 V] | Unit is ON          |

An 'Negative Logic' Remote ON/OFF version is also possible with this converter. To order please place the suffix '-R' at the end of the model number, e.g. SMT10E-12W3V3-RJ.

- 2 Full derating curves available in both the Longform Datasheet and Application Note.
- 3 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 4 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

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| PIN CONNECTIONS |                 |
|-----------------|-----------------|
| PIN NUMBER      | FUNCTION        |
| 1               | Remote ON/OFF   |
| 2               | Remote Sense +* |
| 3               | Trim*           |
| 4               | +Vout           |
| 5               | Ground          |
| 6               | +Vin            |

\*The sense function and the trim function are customer specified options. Please consult factory for details.

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Please consult our website for the following items: ✓ Application Note ✓ Longform Datasheet

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