

# SMT10E Series

3.0-5.5Vin single output

**NEW Product**

- **10A current rating**
- **Input voltage range: 3.0V - 5.5V**
- **Output voltage range: 0.8V - 3.63V**
- **Ultra high efficiency: 96% @ 5Vin and 3.3Vout**
- **Extremely low internal power dissipation**
- **Minimal thermal design concerns**
- **Designed in reliability: MTBF of >7 million 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**



The SMT10E series are non-isolated DC/DC converters packaged in a surface-mount footprint giving designers a cost effective solution for conversion from either a 3.3V or 5V input to output voltages of 0.8V and 3.63V. The SMT10E offers a range of fixed outputs (and one wide trim output unit) at an industry leading 10A which allows maximum design flexibility and a pathway for future upgrades. Local voltage conversion by the SMT10E series from existing 3.3V or 5V system voltages eliminates the need for redesign of existing power architectures when voltage requirements change. 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 96%.



**2 YEAR WARRANTY**

*All specifications are typical at 5Vin and 3.3Vout, full load at 25°C unless otherwise stated*

## SPECIFICATIONS

### OUTPUT SPECIFICATIONS

|                                    |                       |  |
|------------------------------------|-----------------------|--|
| Voltage adjustability (See Note 1) | Fixed output versions | ±10%   |
|                                    | Wide trim version     | 0.8V to 3.63V  |
| Setpoint accuracy                  |                       | ±0.4%  |
| Line regulation                    |                       | ±0.2%  |
| Load regulation                    |                       | ±1.0%  |
| Minimum load                       |                       | 0A   |
| Overshoot/undershoot               |                       | None   |
| Ripple and noise                   | 0 to 20MHz BW         | 50mV pk-pk<br>25mV rms max.                          |
| Temperature co-efficient           |                       | ±0.01%/°C  |
| Transient response                 |                       | 60mV max. deviation<br>50µs recovery to within ±1.0% |
| Remote sense                       |                       | 10% Vo compensation                                  |

### INPUT SPECIFICATIONS

|                      |         |                                       |
|----------------------|---------|---------------------------------------|
| Input voltage range  |         | 3.0 to 5.5VDC                         |
| Input current        | No load | 70mA typ.                             |
| Input current (max.) |         | 8A max. @ Io max.<br>and Vout = 3.63V |
| Input current ripple |         | 110mA rms                             |
| Remote ON/OFF        |         | (See Note 2)                          |
| Start-up time        |         | 20ms                                  |

### EMC CHARACTERISTICS

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

### GENERAL SPECIFICATIONS

|                         |                                   |   |
|-------------------------|-----------------------------------|---|
| Efficiency              |                                   | See table   |
| Insulation voltage      |                                   | Non-isolated  |
| Switching frequency     | Fixed                             | 300kHz typ.   |
| Approvals and standards |                                   | EN60950<br>UL/cUL60950                              |
| Material flammability   |                                   | UL94V-0   |
| Dimensions              | (LxWxH)                           | 33.02 x 13.46 x 8.21mm<br>1.3 x 0.53 x 0.323 inches |
| Weight                  |                                   | 6.3g (0.22oz)                                       |
| Coplanarity             |                                   | 100µm   |
| MTBF                    | Telcordia SR-332<br>MIL-HDBK-217F | 7,042,000 hours<br>680,000 hours                    |

### ENVIRONMENTAL SPECIFICATIONS

|                                  |   |                                    |
|----------------------------------|---|------------------------------------|
| Thermal performance (See Note 3) | Operating ambient, temperature<br>Non-operating | -40°C to +100°C<br>-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

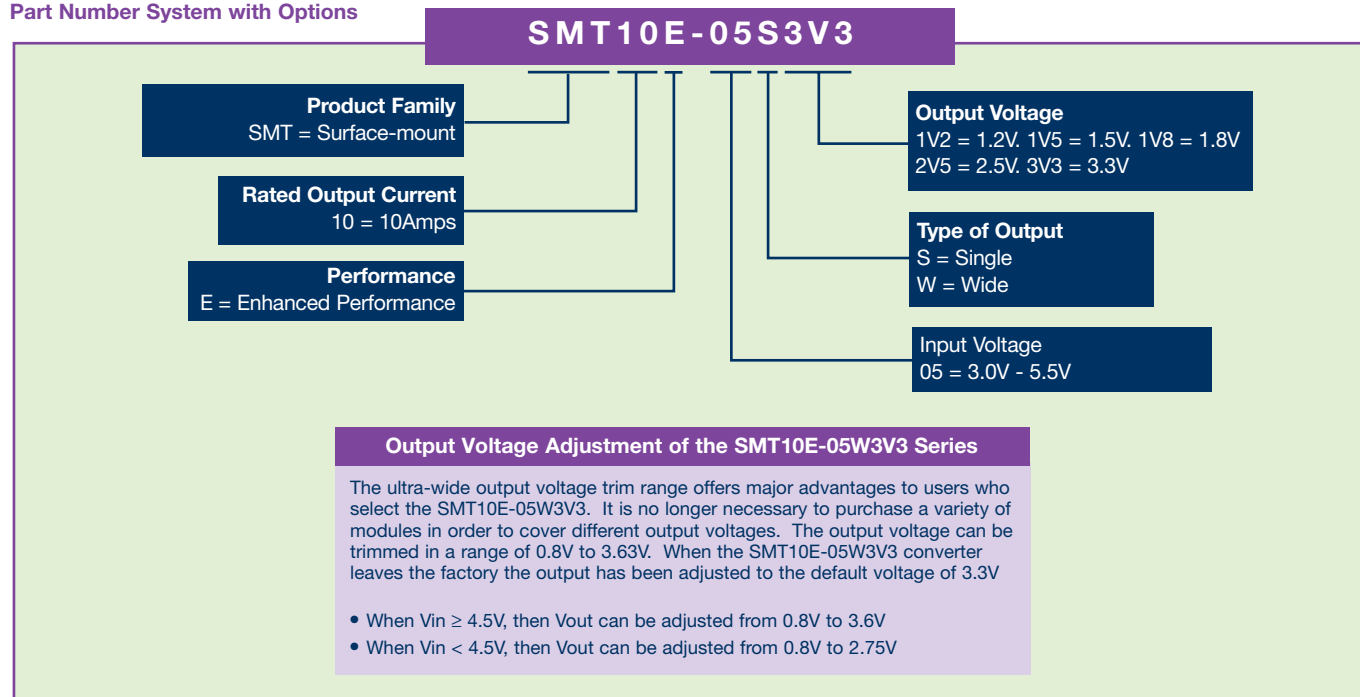
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For the most current data and application support visit [www.artesyn.com/powergroup/products.htm](http://www.artesyn.com/powergroup/products.htm)

**NEW Product**

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | REGULATION |       | MODEL NUMBER <sup>(2)</sup> |
|---------------------|---------------|----------------|-----------------------|-----------------------|-------------------|------------|-------|-----------------------------|
|                     |               |                |                       |                       |                   | LINE       | LOAD  |                             |
| 13.2W               | 3.0V - 5.5V   | 1.2V           | 0A                    | 10A                   | 89%               | ±0.2%      | ±1.0% | SMT10E-05S1V2               |
| 16.5W               | 3.0V - 5.5V   | 1.5V           | 0A                    | 10A                   | 90%               | ±0.2%      | ±1.0% | SMT10E-05S1V5               |
| 19.8W               | 3.0V - 5.5V   | 1.8V           | 0A                    | 10A                   | 92%               | ±0.2%      | ±1.0% | SMT10E-05S1V8               |
| 27.5W               | 3.0V - 5.5V   | 2.5V           | 0A                    | 10A                   | 95%               | ±0.2%      | ±1.0% | SMT10E-05S2V5               |
| 36.3W               | 4.5V - 5.5V   | 3.3V           | 0A                    | 10A                   | 96%               | ±0.2%      | ±1.0% | SMT10E-05S3V3               |
| 36.3W               | 3.0V - 5.5V   | 0.8V - 3.63V   | 0A                    | 10A                   | 96%               | ±0.2%      | ±1.0% | SMT10E-05W3V3               |

## Part Number System with Options



## Notes

- 1 When  $V_{in} \geq 4.5V$ , then  $V_{out}$  can be adjusted from 0.8V to 3.6V. When  $V_{in} < 4.5V$ , then  $V_{out}$  can be adjusted from 0.8V to 2.75V.
- 2 The SMT10E features a 'Negative 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

Remote pin open circuit  
Remote pin pulled low  
Remote pin pulled high [ $V_{on/off} > 1.2V$ ]

### Converter Operation

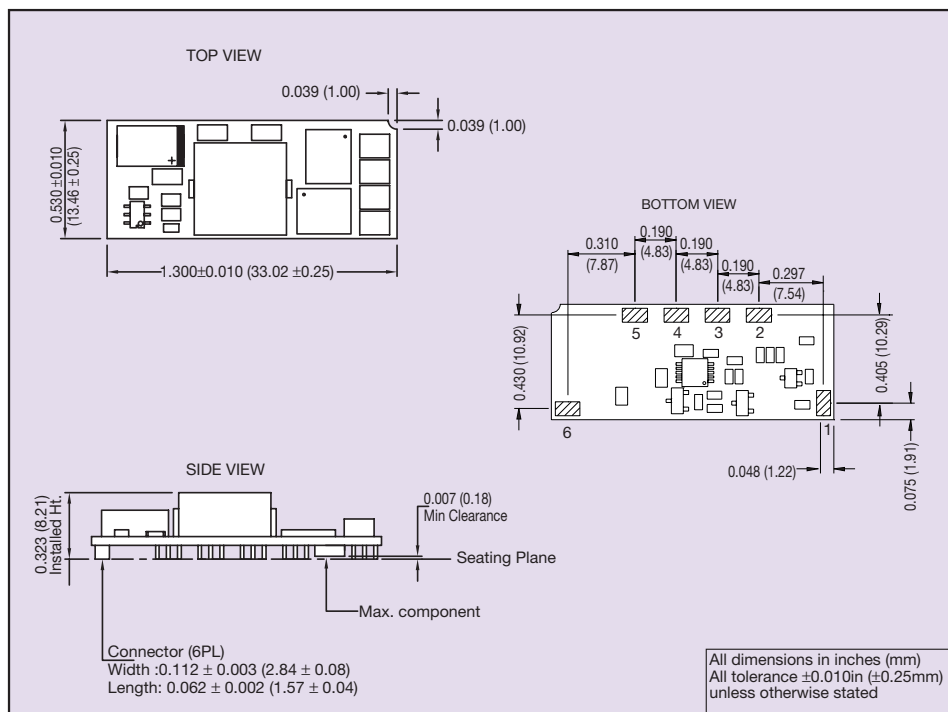
Unit is ON  
Unit is ON  
Unit is OFF

A 'Positive 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-05W3V3-R.

- 3 Full de-rating curves available in both the Long Form Data Sheet and Application Note 168.

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