

# 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%.



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 25mV rms max.
Temperature co-efficient		±0.01%/°C
Transient response		60mV max. deviation 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. 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 UL/cUL60950
Material flammability		UL94V-0
Dimensions	(LxWxH)	33.02 x 13.46 x 8.21mm 1.3 x 0.53 x 0.323 inches
Weight		6.3g (0.22oz)
Coplanarity		100µm
MTBF	Telcordia SR-332 MIL-HDBK-217F	7,042,000 hours 680,000 hours

### ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 3)	Operating ambient, temperature Non-operating	-40°C to +100°C -40°C to +125°C
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### 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



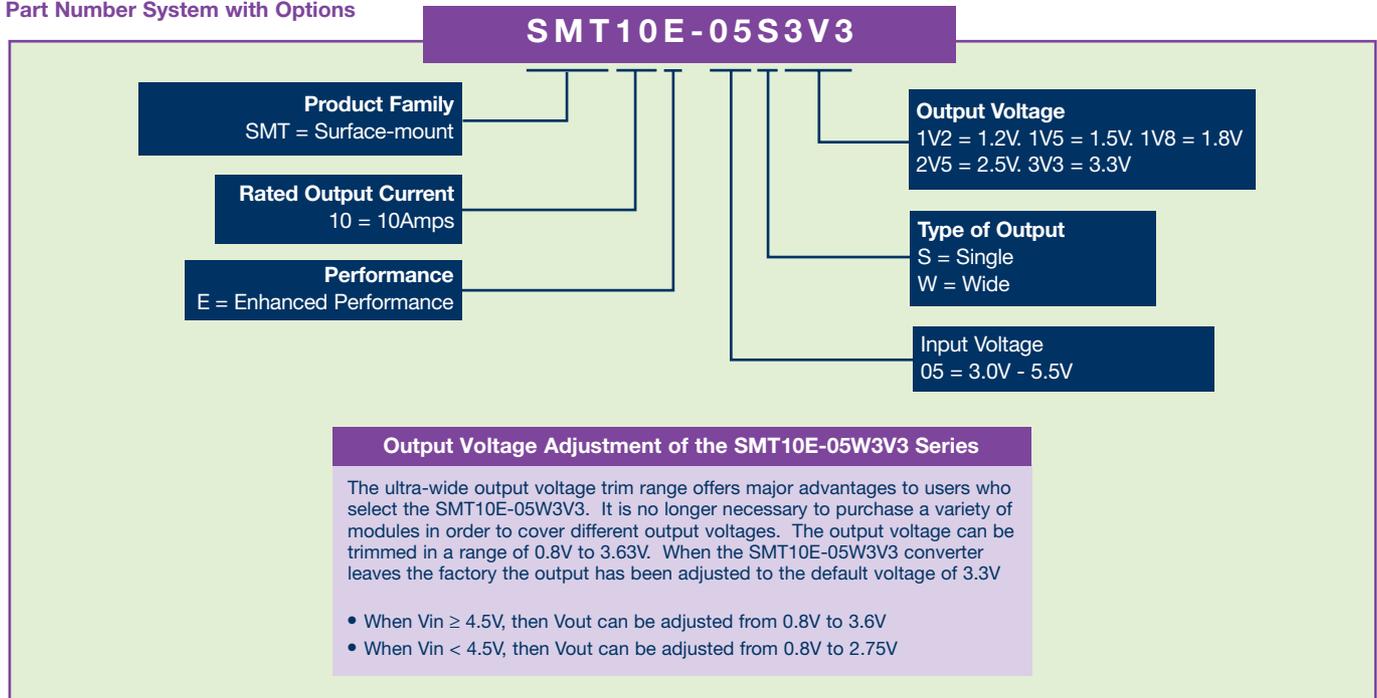
TÜV Product Service (EN60950) Certificate No. B03 10 38572 037  
CB Report and Certificate to IEC60950, Certificate No. DE3-51686M1

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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

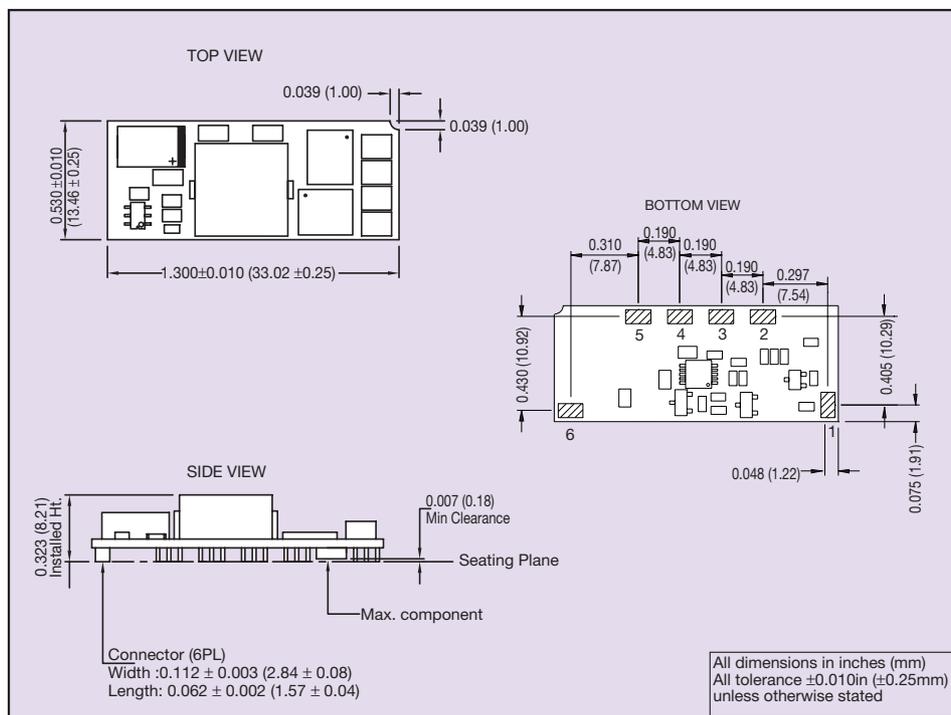
Unit is ON  
Unit is ON  
Unit is OFF

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