

SMT05E Series

3.0-5.5 Vin
single output

Total Power: 8.25W
Input Voltage: 3.0 - 5.5 Vdc
of Outputs: Single

Special Features

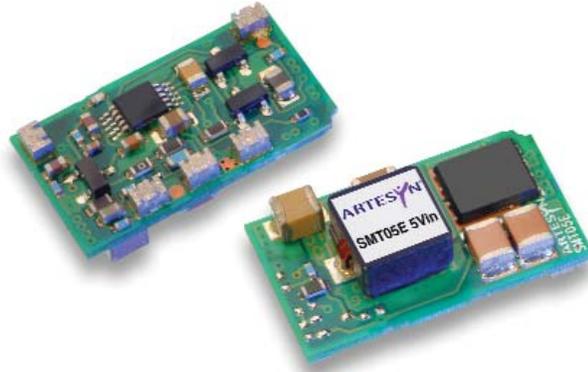
- 5 A Current rating
- Input voltage range:
3.0 Vdc - 5.5 Vdc
- Output voltage range:
0.75 Vdc - 3.63 Vdc
- Ultra high efficiency:
94% @ 5 Vin and 3.3 Vout
- Extremely low internal power
dissipation
- Minimal thermal
design concerns
- Designed in reliability:
MTBF of >9 million hours per
Telcordia SR-332
- Ideal solution where board
space is at a premium or
tighter card pitch is required
- Industry standard
surface-mount footprint
- Available RoHS compliant
- 2 year warranty

Safety

UL/cUL CAN/CSA 22.2
No. E174104
UL 60950 File No. E174104

TÜV Product Service (EN60950)
Certificate No. B 03 10 38572

CB report and certificate to
DE3-51686M1



The SMT05E series are non-isolated dc-dc converters packaged in a surface mount footprint giving designers a cost effective solution for conversion from a 3.3 Vdc to 5 Vdc source. The SMT05E has a wide input range (3.0 Vdc to 5.5 Vdc) and offers a wide 0.75 Vdc to 3.63 Vdc output voltage range with a 5 A load, which allows for maximum design flexibility and a pathway for future upgrades. The SMT05E 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 SMT05E offers compact size and efficiencies of up to 94%.



Specifications

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

OUTPUT SPECIFICATIONS

| | |
|-----------------------------------|--|
| Voltage adjustability | 0.75-3.63 Vdc |
| Setpoint accuracy | ±0.4% |
| Line regulation | ±1.0% |
| Load regulation | ±1.0% |
| Minimum load | 0 A |
| Overshoot/undershoot | None |
| Ripple and noise 5 Hz to 20MHz | 75 mV pk-pk 25 mV rms |
| Temperature co-efficient | ±0.01%/°C |
| Transient response | 60 mV max. deviation 50 µs recovery to within 1% |

INPUT SPECIFICATIONS

| | |
|------------------------|--|
| Input voltage range | 3.0-5.5 Vdc |
| Input current | No load (max.) 150 mA |
| Input current (max.) | 3.9 A max. @ Io max. and Vout = 3.3 V |
| Input reflected ripple | 40 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 | See Table | |
| Insulation voltage | Non-isolated | |
| Switching frequency | Fixed | 300 kHz typ. |
| Approvals and standards | EN60950 UL/cUL60950 | |
| Material flammability | UL94V-0 | |
| Dimensions | (LxWxH) | 20.32 x 11.43 x 6.70 mm 0.800 x 0.450 x 0.264 inches |
| Weight | 2.8 g (0.10 oz) | |
| Coplanarity | 100 µm | |
| MTBF | Telcordia SR-332 | 9,009,000 hours |

ENVIRONMENTAL SPECIFICATIONS

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

PROTECTION

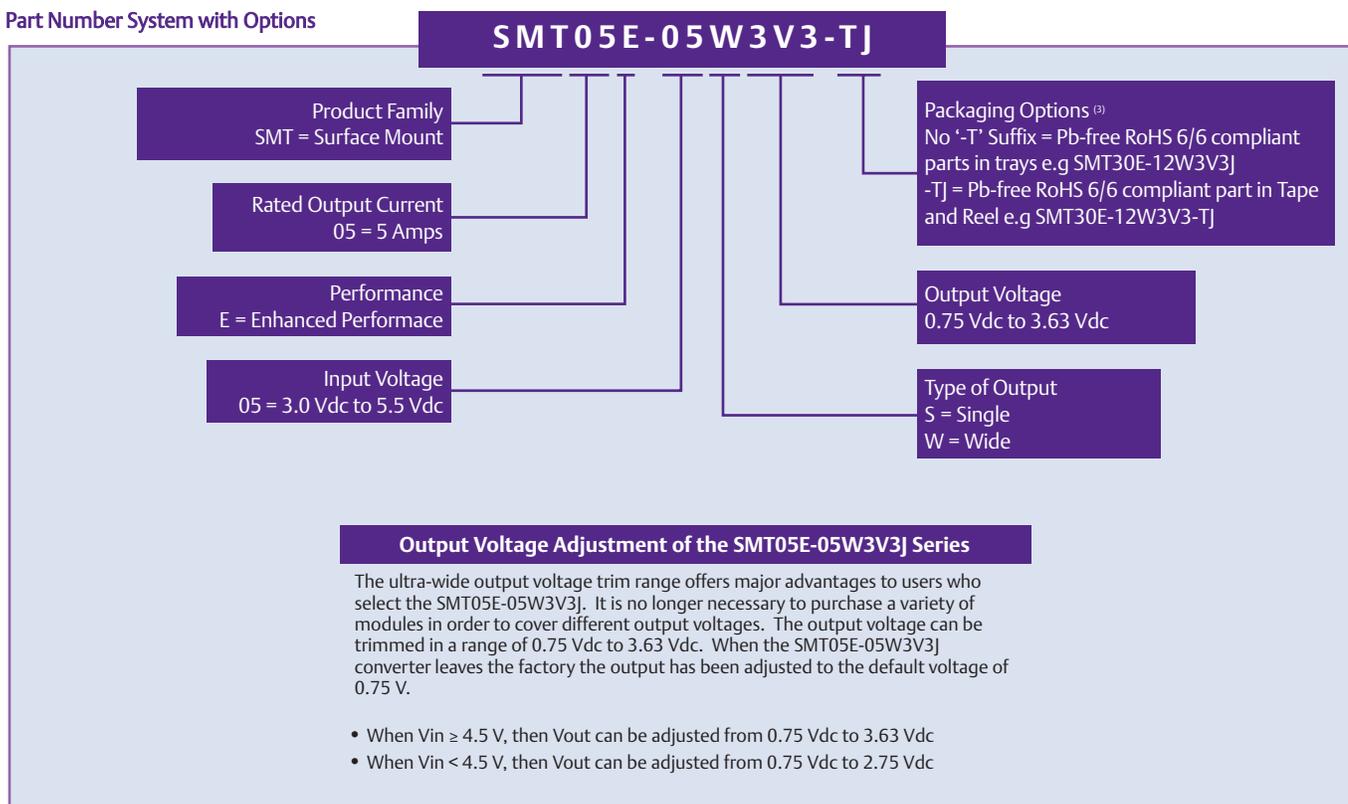
| | |
|---------------|--------------------|
| Short-circuit | Continuous |
| Thermal | Automatic recovery |

Specifications

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

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | REGULATION | | MODEL NUMBER ^(3,4) |
|---------------------|---------------|----------------|-----------------------|-----------------------|-------------------|------------|-------|-------------------------------|
| | | | | | | LINE | LOAD | |
| 8.25 W | 3.0-5.5 Vdc | 1.5 Vdc | 0 A | 5 A | 87.5% | ±1.0% | ±1.0% | SMT05E-05S1V5J |
| 18.15 W | 3.0-5.5 Vdc | 0.75-3.63 Vdc | 0 A | 5 A | 94% | ±1.0% | ±1.0% | SMT05E-05W3V3J |

Part Number System with Options



Notes

- 1 The SMT05E 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 SMT05E:

Configuration

Remote pin open circuit

Remote pin pulled low

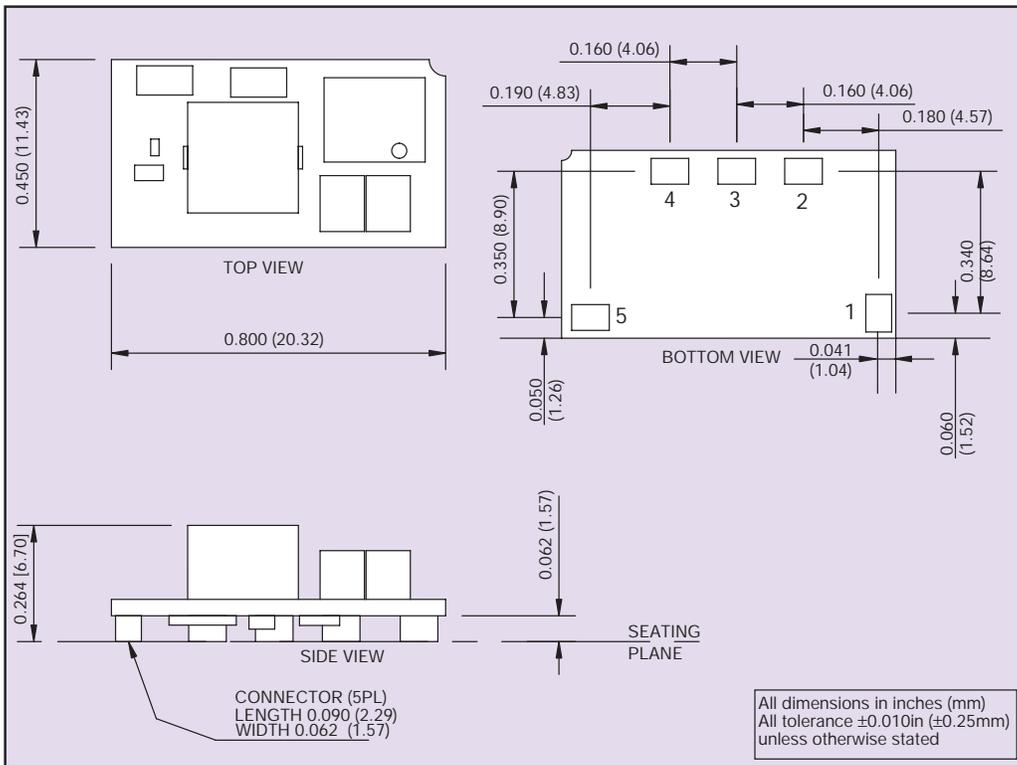
Remote pin pulled high [$V_{on/off} > 2.5$ V] Unit is OFF

Converter Operation

Unit is ON

Unit is ON

- An 'Positive Logic' Remote ON/OFF version is also possible with this converter. To order please use part number SMT05E-05W3V3-RJ or SMT05E-05W3V3-RTJ.
- 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.



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

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