

## 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

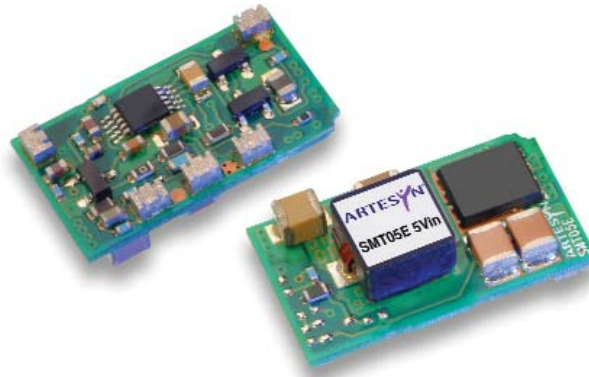
- 5 A Current rating
- Input voltage range:  
3.0 Vdc - 5.5 Vdc
- Output voltage range:  
0.75 Vdc - 3.63 Vdc
- Ultra high efficiency:  
94% @ 5 Vin and 3.3 Vout
- Extremely low internal power  
dissipation
- Minimal thermal  
design concerns
- Designed in reliability:  
MTBF of >9 million hours per  
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%.

Rev.06.26.07  
smt05e  
1 of 4



# 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<br>5 Hz to 20MHz | 75 mV pk-pk<br>25 mV rms                               |
| Temperature co-efficient          | ±0.01%/°C                                              |
| Transient response                | 60 mV max. deviation<br>50 µs recovery to<br>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.<br>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<br>UL/cUL60950 |                                                         |
| Material flammability   | UL94V-0                |                                                         |
| Dimensions              | (LxWxH)                | 20.32 x 11.43 x 6.70 mm<br>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<br>(See Note 2) | Operating ambient,<br>temperature | -40 °C to +85 °C  |
|                                     | Non-operating                     | -40 °C to +125 °C |

## PROTECTION

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

# Specifications

Rev.06.26.07  
smt05e  
3 of 4

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 <sup>(3,4)</sup> |
|---------------------|---------------|----------------|-----------------------|-----------------------|-------------------|------------|-------|-------------------------------|
|                     |               |                |                       |                       |                   | 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

**SMT05E-05W3V3-TJ**

Product Family  
SMT = Surface Mount

Rated Output Current  
05 = 5 Amps

Performance  
E = Enhanced Performance

Input Voltage  
05 = 3.0 Vdc to 5.5 Vdc

Packaging Options <sup>(3)</sup>  
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  
0.75 Vdc to 3.63 Vdc

Type of Output  
S = Single  
W = Wide

### Output Voltage Adjustment of the SMT05E-05W3V3J Series

The ultra-wide output voltage trim range offers major advantages to users who select the SMT05E-05W3V3J. 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 0.75 Vdc to 3.63 Vdc. When the SMT05E-05W3V3J converter leaves the factory the output has been adjusted to the default voltage of 0.75 V.

- When  $V_{in} \geq 4.5$  V, then  $V_{out}$  can be adjusted from 0.75 Vdc to 3.63 Vdc
- When  $V_{in} < 4.5$  V, then  $V_{out}$  can be adjusted from 0.75 Vdc to 2.75 Vdc

## 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

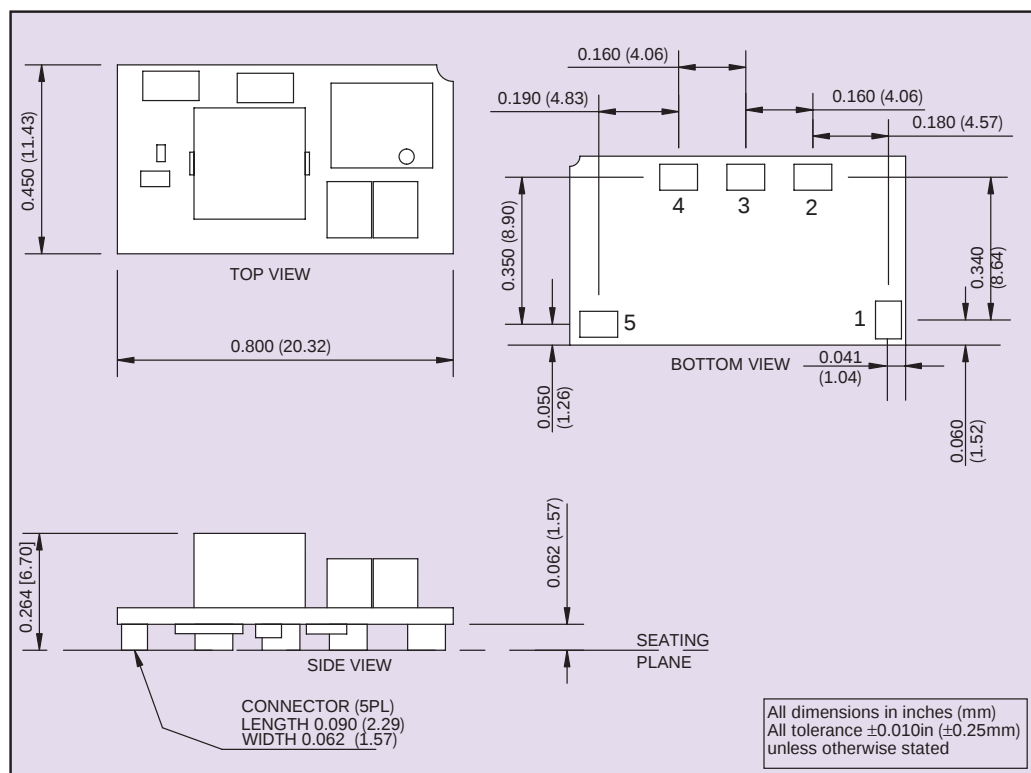
### Converter Operation

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          |

### Americas

5810 Van Allen Way  
Carlsbad, CA 92008  
USA  
Telephone: +1 760 930 4600  
Facsimile: +1 760 930 0698

### Europe (UK)

Waterfront Business Park  
Merry Hill, Dudley  
West Midlands, DY5 1LX  
United Kingdom  
Telephone: +44 (0) 1384 842 211  
Facsimile: +44 (0) 1384 843 355

### Asia (HK)

16th - 17th Floors, Lu Plaza  
2 Wing Yip Street, Kwun Tong  
Kowloon, Hong Kong  
Telephone: +852 2176 3333  
Facsimile: +852 2176 3888

For global contact, visit:

[www.powerconversion.com](http://www.powerconversion.com)

[technicalsupport@powerconversion.com](mailto:technicalsupport@powerconversion.com)

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

### Emerson Network Power.

The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- **Embedded Power**
- Inbound Power
- Integrated Cabinet Solutions
- Outside Plant
- Precision Cooling
- Site Monitoring and Services

**EmersonNetworkPower.com**

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co.  
©2007 Emerson Electric Co.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Artesyn Embedded Technologies:](#)

[SMT05E-05W3V3-TJ](#)