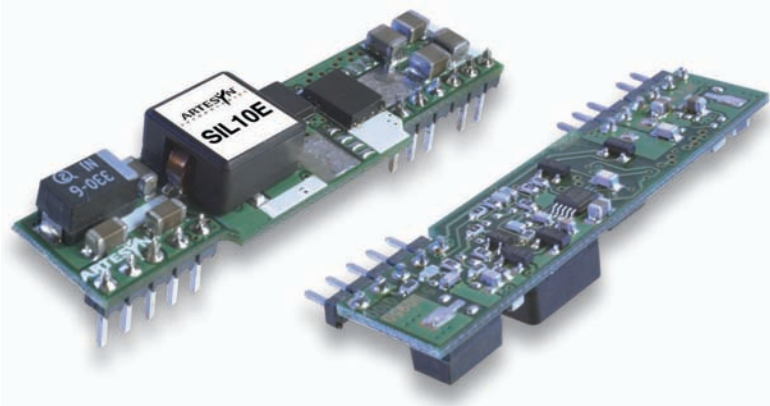


## SIL10E Series

### 3.0 Vin - 5.5 Vin

**Total Power:** 49.9 Watts  
**Input Voltage:** 3.0-5.5 Vdc  
**# of Outputs:** Single



## Special Features

- 10 A Current rating
- Input voltage range: 3 Vdc to 5.5 Vdc
- Output voltage range: 0.8 Vdc to 3.63 Vdc
- Ultra high efficiency: 96% @ 5 Vin and 3.3 Vout
- Extremely low internal power dissipation
- Minimal thermal design concerns
- Designed in reliability: MTBF of 7,000,000 hours per Telcordia SR-332
- Ideal solution where board space is at a premium or tighter card pitch is required
- Industry standard footprint and pin out
- Available RoHS compliant
- 2 year warranty

## Safety

- UL/cUL CAN/CSA 22.2 No. 60950-1-03/UL 60950-1, File No. E186249
- TÜV Product Service (EN60950) Certificate No. B 08 05 51485 378
- CB report and certificate to IEC60950, Certificate No. DE3-51686M1

## Electrical Specifications

| Input                               |   |   |
|-------------------------------------|---|---|
| Input voltage range:                |   | 3.0-5.5 Vdc   |
| Input current:                      | No load   | 70 mA   |
| Input current (max.):               |   | 8 A max. @ Io max. and Vout = 3.3 V                   |
| Input reflected ripple:             |   | 65 mA rms   |
| Remote ON/OFF:                      |   | (See Note 2)  |
| Start-up time:                      |   | 20 ms   |
| Output                              |   |   |
| Voltage adjustability: (See Note 1) | Fixed output versions<br>5 Vin with wide trim<br>3.3 Vin with wide trim | ±10%<br>0.8 - 3.63 Vdc<br>0.8 - 2.75 Vdc              |
| Setpoint accuracy:                  |   | ±0.4% typ.  |
| Line regulation:                    |   | ±0.2% typ.  |
| Load regulation:                    |   | ±1.0% typ.  |
| Minimum load:                       |   | 0 A   |
| Overshoot/Undershoot:               |   | None  |
| Ripple and noise:                   |   | 50 mV pk-pk<br>25 mV rms max.                         |
| Temperature co-efficient:           |   | ±0.01%/°C   |
| Transient response:                 |   | 50 mV max. deviation<br>50µs recovery to within ±1.0% |
| Remote sense:                       |   | 10% Vo compensation                                   |

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



## 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               | (L x W x H)                       | 50.8 x 7.8 x 12.7 mm<br>2.0 x 0.31 x 0.5 inches |
| Pin length:              | (Vertical)                        | 0.135 ± 0.02 in (3.43 ± 0.5 mm)                 |
| Weight:                  |                                   | 5 g (0.18 oz)                                   |
| MTBF:                    | Telcordia SR-332<br>MIL-HDBK-217F | 7,042,000 hours<br>680,000 hours                |

## Environmental Specifications

|                                      |                               |                   |
|--------------------------------------|-------------------------------|-------------------|
| Thermal performance:<br>(See Note 3) | Operating ambient temperature | -40° C to +100 °C |
|                                      | Non-operating                 | -40 °C to +125 °C |

## Protection

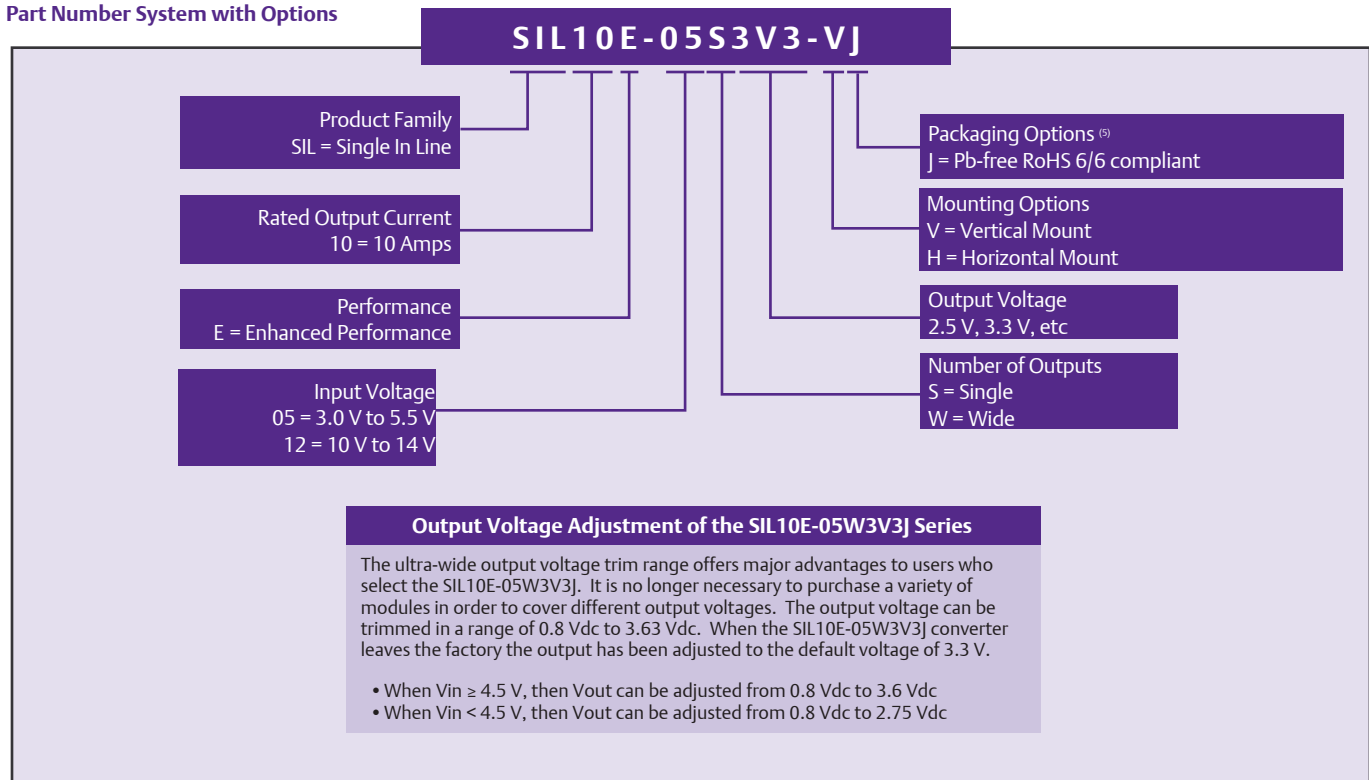
|                |                    |
|----------------|--------------------|
| Short circuit: | Continuous         |
| Thermal:       | Automatic recovery |

# Ordering Information

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

| Ordering Information |               |                |                 |      |                   |            |       |                                    |
|----------------------|---------------|----------------|-----------------|------|-------------------|------------|-------|------------------------------------|
| Output Power (Max.)  | Input Voltage | Output Voltage | Output Currents |      | Efficiency (typ.) | Regulation |       | Model Numbers <sup>(4, 5, 6)</sup> |
|                      |               |                | Min             | Max  |                   | Line       | Load  |                                    |
| 8.8 W                | 3.0 - 5.5 Vdc | 0.8 V          | 0 A             | 10 A | 83%               | ±0.2%      | ±1.5% | SIL10E-05S0V8-VJ                   |
| 11 W                 | 3.0 - 5.5 Vdc | 1 V            | 0 A             | 10 A | 86%               | ±0.2%      | ±1.5% | SIL10E-05S1V0-VJ                   |
| 13.2 W               | 3.0 - 5.5 Vdc | 1.2 V          | 0 A             | 10 A | 88%               | ±0.2%      | ±1.0% | SIL10E-05S1V2-VJ                   |
| 16.5 W               | 3.0 - 5.5 Vdc | 1.5 V          | 0 A             | 10 A | 90%               | ±0.2%      | ±1.0% | SIL10E-05S1V5-VJ                   |
| 19.8 W               | 3.0 - 5.5 Vdc | 1.8 V          | 0 A             | 10 A | 92%               | ±0.2%      | ±1.0% | SIL10E-05S1V8-VJ                   |
| 22 W                 | 3.0 - 5.5 Vdc | 2 V            | 0 A             | 10 A | 93%               | ±0.2%      | ±1.0% | SIL10E-05S2V0-VJ                   |
| 27.5 W               | 3.0 - 5.5 Vdc | 2.5 V          | 0 A             | 10 A | 94%               | ±0.2%      | ±1.0% | SIL10E-05S2V5-VJ                   |
| 36.3 W               | 4.5 - 5.5 Vdc | 3.3 V          | 0 A             | 10 A | 95%               | ±0.2%      | ±1.0% | SIL10E-05S3V3-VJ                   |
| 36.3 W               | 4.5 - 5.5 Vdc | 0.8 - 3.63 V   | 0 A             | 10 A | 95%               | ±0.2%      | ±1.0% | SIL10E-05W3V3-VJ                   |

## Part Number System with Options



## Notes

- 1 When  $V_{in} \geq 4.5$  V, then  $V_{out}$  can be adjusted from 0.8 V to 3.6 V. When  $V_{in} < 4.5$  V, then  $V_{out}$  can be adjusted from 0.8 V to 2.75 V.
- 2 The SIL10E features a 'Negative Logic' Remote ON/OFF operation. If you are 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 SIL10E:

### Configuration

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

### Converter Operation

- Unit is ON
- Unit is ON
- Unit is OFF

## Notes Continued

- 3 Full derating curves available in both the Longform Datasheet and Application Note 136.
- 4 For certain applications that use low ESR capacitors on the output of the converter and to insure maximum converter stability, please add the suffix '02' to the model, e.g. SIL10E-05S2V5-V02J.
- 5 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 6 NOTICE: Some models do not support all options. Please contact your local Emerson Network Power representative or use the on-line model number search tool at <http://www.PowerConversion.com> to find a suitable alternative.

# Mechanical Drawings

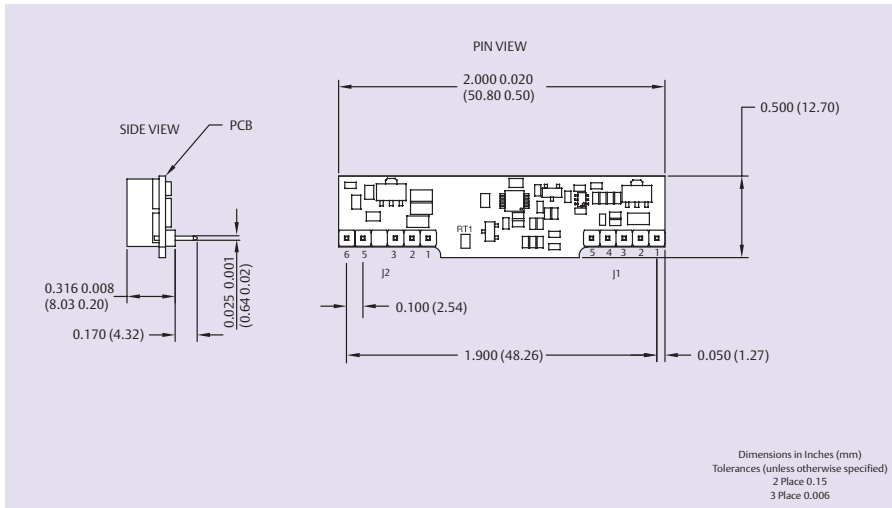


Figure 1: Horizontal Mount Version

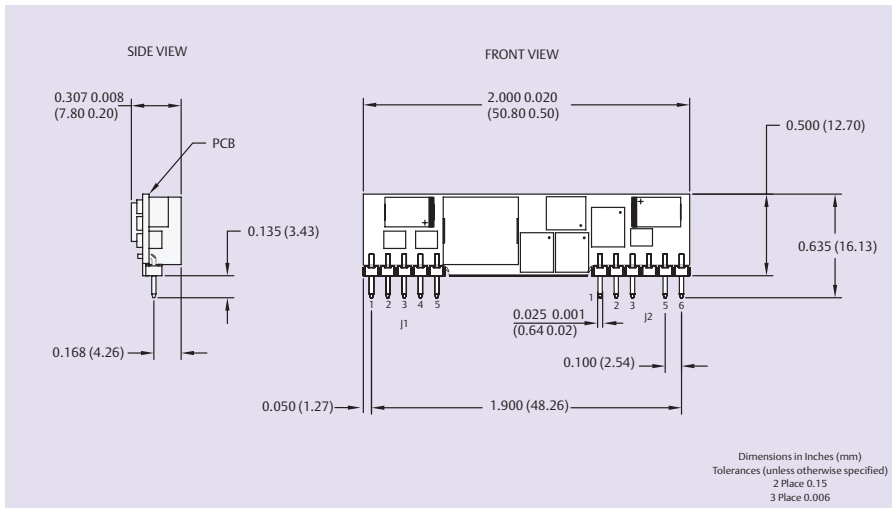


Figure 2: Vertical Mount Version

| Input Pin Connections |                  |
|-----------------------|------------------|
| J1                    |                  |
| Pin 1                 | +Vout            |
| Pin 2                 | +Vout            |
| Pin 3                 | Remote Sense (+) |
| Pin 4                 | +Vout            |
| Pin 5                 | Ground           |

| Input Pin Connections |               |
|-----------------------|---------------|
| J2                    |               |
| Pin 1                 | Ground        |
| Pin 2                 | +Vin          |
| Pin 3                 | +Vin          |
| Pin 4                 | No Pin        |
| Pin 5                 | Trim          |
| Pin 6                 | Remote ON/OFF |

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