

# SIL10E Series

## Single output

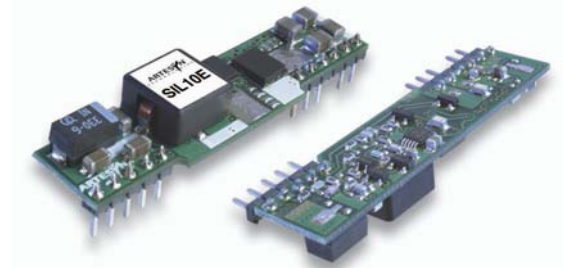
DC/DC CONVERTERS

E Class Non-isolated

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**NEW Product**

- **10A Current rating**
- **Input voltage range: 3.0V - 5.5V**
- **Output voltage range: 0.8V - 3.63V**
- **Ultra high efficiency: 95% @ 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 footprint and pin out**



The SIL10E series are non-isolated DC/DC converters packaged in a single-in-line footprint giving designers a cost effective solution for conversion from either a 5V or a 3.3V source. The SIL10E 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. The SIL10E 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 SIL10E offers compact size and efficiencies of up to 95%.

**2 YEAR WARRANTY**

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

### SPECIFICATIONS

#### OUTPUT SPECIFICATIONS

Voltage adjustability	Fixed output versions 5Vin with wide trim 3.3Vin with wide trim	±10% 3.6V to 0.8V 2.75V to 0.8V
Setpoint accuracy		±2.7%
Line regulation		±1.0%
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		50mV 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
Input current (max.)		8A max. @ Io max. and Vout = 3.3V
Input current ripple		65mA rms
Remote ON/OFF		(See Note 1)
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 (Vertical version)	(LxWxH)	50.8 x 7.8 x 12.7mm 2.0 x 0.31 x 0.5 inches
Pin length	Vertical	0.135 ±0.02 in (3.43 ±0.5mm)
Weight		5g (0.18oz)
MTBF	Telcordia SR-332	7,042,000

#### ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient, (See Note 2)	-40°C to +100°C
	Non-operating	-40°C to +125°C

#### PROTECTION

Short-circuit protection		Continuous
Thermal protection		Automatic recovery

#### International Safety Standard Approvals



UL/cUL CAN/CSA 22.2 No. E174104  
UL60950 file No. E174104

TÜV Product Service (EN60950) Certificate No. B02 12 38572 035  
CB report and certificate to IEC60950

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**NEW Product**

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER
						LINE	LOAD	
8.8W	3.0V - 5.5V	0.8V	0A	10A	83%	±1%	±1.5%	SIL10E-05S0V8-V
11W	3.0V - 5.5V	1.0V	0A	10A	86%	±1%	±1.5%	SIL10E-05S1V0-V
13.2W	3.0V - 5.5V	1.2V	0A	10A	88%	±1%	±1%	SIL10E-05S1V2-V <sup>(3)</sup>
16.5W	3.0V - 5.5V	1.5V	0A	10A	90%	±1%	±1%	SIL10E-05S1V5-V
19.8W	3.0V - 5.5V	1.8V	0A	10A	92%	±1%	±1%	SIL10E-05S1V8-V
22W	3.0V - 5.5V	2.0V	0A	10A	93%	±1%	±1%	SIL10E-05S2V0-V
27.5W	3.0V - 5.5V	2.5V	0A	10A	94%	±1%	±1%	SIL10E-05S2V5-V <sup>(3)</sup>
36.3W	4.5V - 5.5V	3.3V	0A	10A	95%	±1%	±1%	SIL10E-05S3V3-V
36.3W	4.5V - 5.5V	3.3V	0A	10A	95%	±1%	±1%	SIL10E-05W3V3-V

### Part Number System with Options

**SIL10E-05S3V3-V**

**Product Family**  
SIL = Single In Line

**Rated Output Current**  
10 = 10Amps

**Performance**  
E = Enhanced Performance

**Input Voltage**  
05 = 3.0V - 5.5V  
12 = 10V - 14V

**Mounting Option**  
V = Vertical Mount  
H = Horizontal Mount

**Output Voltage**  
2.5V, 3.3V etc

**Number of Outputs**  
S = Single  
W = Wide

#### Output Voltage Adjustment of the SIL10E-05W3V3 Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL10E-05W3V3. 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 0.8V to 3.6V. When the SIL10E-05W3V3 converter leaves the factory the output has been adjusted to the default voltage of 3.3V

- 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

### Notes

- 1 Referenced to ground for shutdown. If pin 6 is high unit will shutdown. If pin 6 is open unit will operate as normal. Converter is guaranteed OFF when control pin is greater than 1.2V.
- 2 Full de-rating curves available in both the Long Form Data Sheet and Application Note 134.
- 3 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-V02.

**CAUTION: High internal temperatures. Ensure that unit is not user accessible.**

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**NEW Product**

### J1 PIN CONNECTIONS

PIN NUMBER	FUNCTION
1	+Vout
2	+Vout
3	Remote Sense (+)
4	+Vout
5	Ground

### J2 PIN CONNECTIONS

PIN NUMBER	FUNCTION
1	Ground
2	+Vin
3	+Vin
4	No Pin
5	Trim
6	Remote ON/OFF

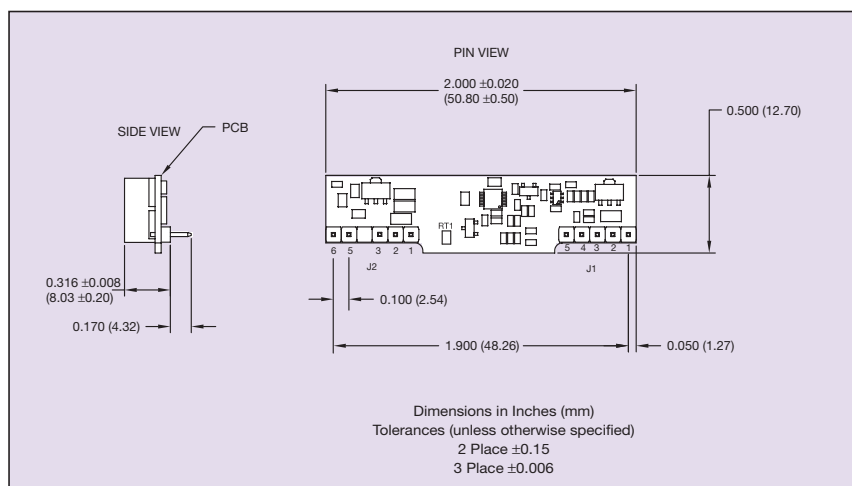


Figure 1: Mechanical Drawing - Horizontal Mount Version

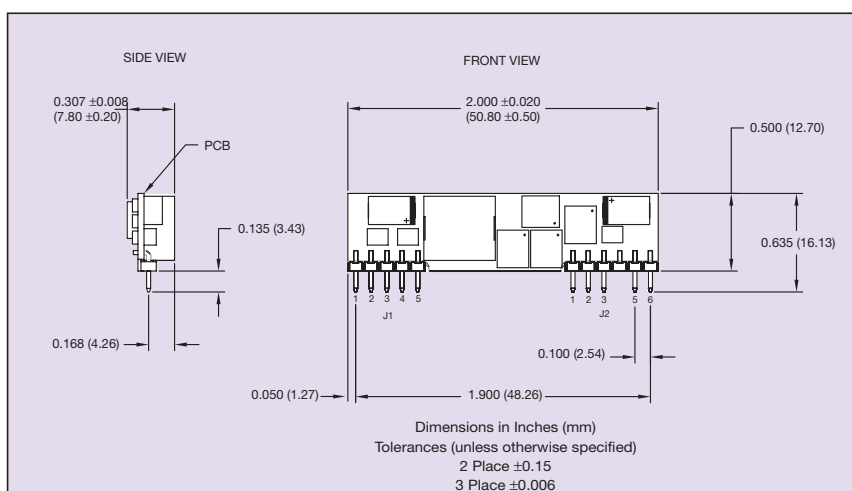


Figure 2: Mechanical Drawing - Vertical Mount Version