

SIL05E Series

3 Vin to 5.5 Vin single output

DC-DC CONVERTERS

E Class Non-isolated

1

NEW Product



- **5 A Current rating**
- **Input voltage range: 3.0 Vin to 5.5 Vin**
- **Output voltage range: 0.75 Vdc to 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 footprint**
- **Available RoHS compliant**

The SIL05E series are non-isolated dc-dc converters packaged in a single-in-line footprint giving designers a cost effective solution for conversion from a 3.3 Vin to 5 Vin source. The SIL05E 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 SIL05E 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 SIL05E offers compact size and efficiencies of up to 94%.



2 YEAR WARRANTY

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

SPECIFICATIONS

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 20 MHz	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	94% typ.
Insulation voltage	Non-isolated
Switching frequency	Fixed 300 kHz typ.
Approvals and standards	EN60950 UL/cUL60950
Material flammability	UL94V-0
Dimensions	(LxWxH) 0.902 x 0.279 x 0.402 inches 22.90 x 7.09 x 10.21 mm
Weight	2.5 g (0.09 oz)
MTBF	Telcordia SR-332 9,009,000 hours

ENVIRONMENTAL SPECIFICATIONS

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

PROTECTION

Short-circuit	Continuous
Thermal	Automatic recovery

International Safety Standard Approvals



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



TÜV Product Service (EN60950) Certificate No. B 03 10 38572 037
CB report and certificate to DE3-51686M1

SIL05E Series

3.0-5.5V_{in} single output

DC-DC CONVERTERS | E Class Non-isolated

2

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER (3,4,5)
						LINE	LOAD	
18.15 W	3.0-5.5 V _{in}	0.75-3.63 V _{dc}	0 A	5 A	94%	±1.0%	±1.0%	SIL05E-05W3V3-VJ

Part Number System with Options

SIL05E-05W3V3-VJ

Product Family
SIL = Single In Line

Rated Output Current
05 = 5 Amps

Performance
E = Enhanced Performance

Input Voltage
05 = 3.0 V_{dc} to 5.5 V_{dc}

Packaging Options (4)
J = Pb-free (RoHS 6/6 compliant)

Mounting Option
V = Vertical
H = Horizontal

Output Voltage
0.75 V_{dc} to 3.63 V_{dc}

Type of Output
W = Wide

Output Voltage Adjustment of the SIL05E-05W3V3 Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL05E-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 0.75 V_{dc} to 3.63 V_{dc}. When the SIL05E-05W3V3 converter leaves the factory the output has been adjusted to the default voltage of 0.75 V

- When V_{in} ≥ 4.5 V, then V_{out} can be adjusted from 0.75 V_{dc} to 3.63 V_{dc}
- When V_{in} < 4.5V, then V_{out} can be adjusted from 0.75 V_{dc} to 2.75 V_{dc}

Notes

- 1 The SIL05E 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 SIL05E:

Configuration

Remote pin open circuit
Remote pin pulled low
Remote pin pulled high [V_{on/off} >2.5 V]

Converter Operation

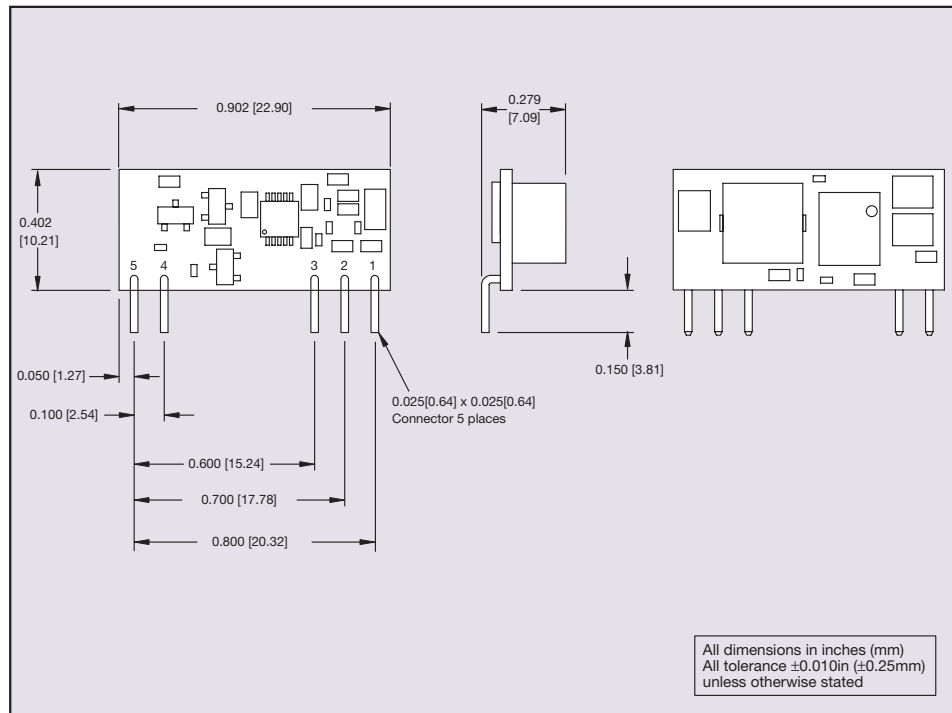
Unit is ON
Unit is ON
Unit is OFF

An 'Positive Logic' Remote ON/OFF version is also possible with this converter. To order please place the suffix 'R' towards the end of the model number e.g. SIL05E-05W3V3-VRJ.

- 2 Full derating curves available in both the Longform Datasheet and Application Note.
- 3 For horizontal mounting option please consult factory for details.
- 4 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 5 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.

SIL05E Series

3.0-5.5Vin single output



PIN CONNECTIONS	
PIN NUMBER	FUNCTION
1	Vout
2	Trim
3	GND
4	Vin
5	Remote ON/OFF

Datasheet © Artesyn Technologies® 2005

The information and specifications contained in this datasheet are believed to be correct at time of publication. However, Artesyn Technologies accepts no responsibility for consequences arising from printing errors or inaccuracies. The information and specifications contained or described herein are subject to change in any manner at any time without notice. No rights under any patent accompany the sale of any such product(s) or information contained herein.

Please consult our website for the following items: ✓ Application Note ✓ Longform Datasheet

www.artesyn.com