

SIL05E Series

Non-Isolated DC-DC Converters

Data Sheet

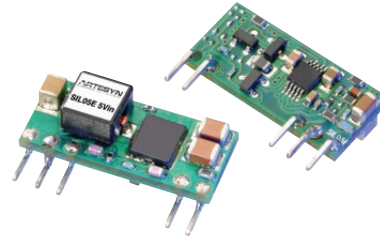
Total Power: 18 Watts
Input Voltage: 3.0 - 5.5 Vdc
of Outputs: Single

SPECIAL FEATURES

- 5 A current rating
- Input voltage range: 3.0 - 5.5 Vdc
- Output voltage range: 0.75 - 3.63 V
- 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-322
- Ideal solution where board space is at a premium or tighter card pitch is required
- Industry standard footprint
- Available RoHS compliant
- Two year warranty

SAFETY

- UL, cUL CAN/CSA 22.2 No. E174104
UL60950 File No. E174104
- TÜV Product Service (EN60950) Certificate No. B 03 10 38572
- CB report and certificate to DE3-51686M1



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 - 5 Vin source. The SIL05E has a wide input range (3.0 - 5.5 Vdc) and offers a wide 0.75 - 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 automated manufacturing techniques, the SIL05E offers compact size and efficiencies of up to 94%.

Electrical Specifications

Input		
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
Output		
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 within 1%

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

General Specifications

Efficiency		94%
Insulation voltage		Non-isolated
Switching frequency	Fixed	300 kHz typical
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	L x W x H	22.90 x 7.09 x 10.21 mm 0.902 x 0.279 x 0.402 inches
Weight		2.5 g (0.09 oz)
Coplanarity		100 µm
MTBF	Telcordia SR-332	9,009,000 hours

Environmental Specifications

Thermal performance	Operating ambient temperature	-40 °C to +85 °C
See Note 2	Non-operating temperature	-40 °C to +125 °C
Protection		
Short-circuit	Continuous	
Thermal	Automatic recovery	

EMC Characteristics

Electrostatic discharge	EN61000-4-2, IEC801-2
Conducted immunity	EN61000-4-6
Radiated immunity	EN61000-4-3

Ordering Information

Model Number ^(3,4)	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SIL05E-05W3V3-VJ	18.15 W	3.0 - 5.5 Vdc	0.75 - 3.63 Vdc	0 A	5 A	94%	±1.0%	±1.0%

Part Number System with Options

Product Family	Rated Output Current	Performance	Input Voltage	Type of Output	Output Voltage	Mounting/Packaging Options
SIL SIL = Single In Line	05 05 = 5 Amps	E E = Enhanced Performance	05 05 = 3.0 - 5.5 Vdc	W W = Wide	3V3 0.75 - 3.63 Vdc	VJ V = Vertical H = Horizontal J = Pb-free RoHS 6/6 compliant

Output Voltage Adjustment

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 to 3.63 Vdc.

When the SIL05E-05W3V3 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 - 3.63 Vdc
- When $V_{in} < 4.5$ V, then V_{out} can be adjusted from 0.75 - 2.75 Vdc

Notes:

- 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

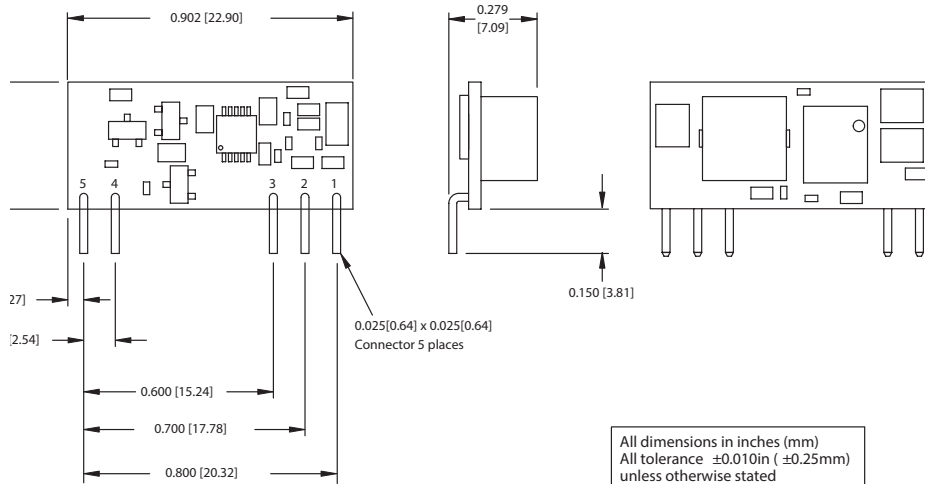
Unit is ON
 Unit is ON
 Unit is OFF

A 'Positive Logic' Remote ON/OFF version is also possible with this converter. To order please use part number SIL05E-05W3V3-VRJ.

- Full derating curves available in both the Longform (Technical Reference) and Application Note.
- For horizontal mounting option, please consult factory for details.
- NOTICE: Some models do not support all options. Please contact your local Artesyn Embedded Technologies representative or use the on-line model number search tool at <http://www.Artesyn.com/power> to find a suitable alternative.

Mechanical Drawings

Pin Assignments	
Pin	Function
1	Vout
2	Trim
3	Ground
4	Vin
5	Remote ON/OFF



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