

SIL15E Series

3.0 Vin to 5.5 Vin single output

DC-DC CONVERTERS

E Class Non-isolated

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NEW Product



- **15 A current rating**
- **Input voltage range: 3.0 Vdc to 5.5 Vdc**
- **Output voltage range: 0.8 Vdc to 3.63 Vdc**
- **Ultra high efficiency: 95% @ 5 Vin and 3.3 Vout**
- **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**
- **Available RoHS compliant**



The SIL15E 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 3.3 V or 5 V input to output voltages of 0.8 Vdc to 3.63 Vdc. The SIL15E offers a range of fixed outputs, as well as a wide trim unit at an industry leading 15 A which allows maximum design flexibility and a pathway for future upgrades. Local voltage conversion by the SIL15E series from existing 3.3 V or 5 V system voltages eliminates the need for redesign of existing power architectures when voltage requirements change. The SIL15E 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 SIL15E offers compact size and efficiencies of up to 95%.



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

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability (See Note 1)	Fixed output versions	±10%
	Wide trim version	0.8-3.63 Vdc
Setpoint accuracy		±0.4%
Line regulation		±0.2%
Load regulation		±1.0%
Minimum load		0 A
Overshoot/undershoot		None
Ripple and noise (0-20 MHz BW)		60 mV pk-pk 25 mV rms max.
Temperature co-efficient		±0.01%/°C
Transient response		60 mV max. deviation 50 µs recovery to within ±1.0%
Remote sense		10% Vo compensation

INPUT SPECIFICATIONS

Input voltage range		3.0-5.5 Vdc
Input current	No load	70 mA typ.
Input current (max.)		11.8 A max. @ Io max. and Vout = 3.63 V
Input current ripple		110 mA rms
Remote ON/OFF		(See Note 2)
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 UL/cUL60950
Material flammability		UL94V-0
Dimensions (LxWxH)		50.8 x 7.8 x 12.7 mm 2.0 x 0.31 x 0.5 inches
Pin length		0.135 ±0.02 in (3.43 ±0.5 mm)
Weight		5 g (0.18 oz)
MTBF	Telcordia SR-332 MIL-HDBK-217F	7,042,000 hours 680,000 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (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

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

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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 ^(2,5,6,7)
						LINE	LOAD	
29.7 W	3.0-5.5 Vdc	1.8 V	0 A	15 A	89%	±0.2%	±1.0%	SIL15E-05S1V8-VJ
41.2 W	3.0-5.5 Vdc	2.5 V	0 A	15 A	92%	±0.2%	±1.0%	SIL15E-05S2V5-VJ
54.5 W	4.5-5.5 Vdc	3.3 V	0 A	15 A	94%	±0.2%	±1.0%	SIL15E-05S3V3-VJ
54.5 W	3.0-5.5 Vdc	0.8-3.63 Vdc	0 A	15 A	94% ⁽⁴⁾	±0.2%	±1.0%	SIL15E-05W3V3-VJ

Part Number System with Options

SIL15E-05S3V3-VJ

Product Family
SIL = Single In Line

Rated Output Current
15 = 15 Amps

Performance
E = Enhanced Performance

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

Mounting Option
V = Vertical
H = Horizontal ⁽⁵⁾

Output Voltage
2.5 V, 3.3 V etc

Type of Output
S = Single
W = Wide

Input Voltage
05 = 3.0 Vdc to 5.5 Vdc

Output Voltage Adjustment of the SIL15E-05W3V3 Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL15E-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 0.8 Vdc to 3.63 Vdc. When the SIL15E-05W3V3 converter leaves the factory the output has been adjusted to the default voltage of 3.3 V.

- When $V_{in} \geq 4.5$ V, then V_{out} can be adjusted from 0.8 Vdc to 3.63 Vdc
- When $V_{in} < 4.5$ V, then V_{out} can be adjusted from 0.8 Vdc to 2.75 Vdc

Notes

- 1 When $V_{in} \geq 4.5$ V, then V_{out} can be adjusted from 0.8 Vdc to 3.63 Vdc. When $V_{in} < 4.5$ V, then V_{out} can be adjusted from 0.8 Vdc to 2.75 Vdc.
- 2 The SIL15E 5 V 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 SIL15E:

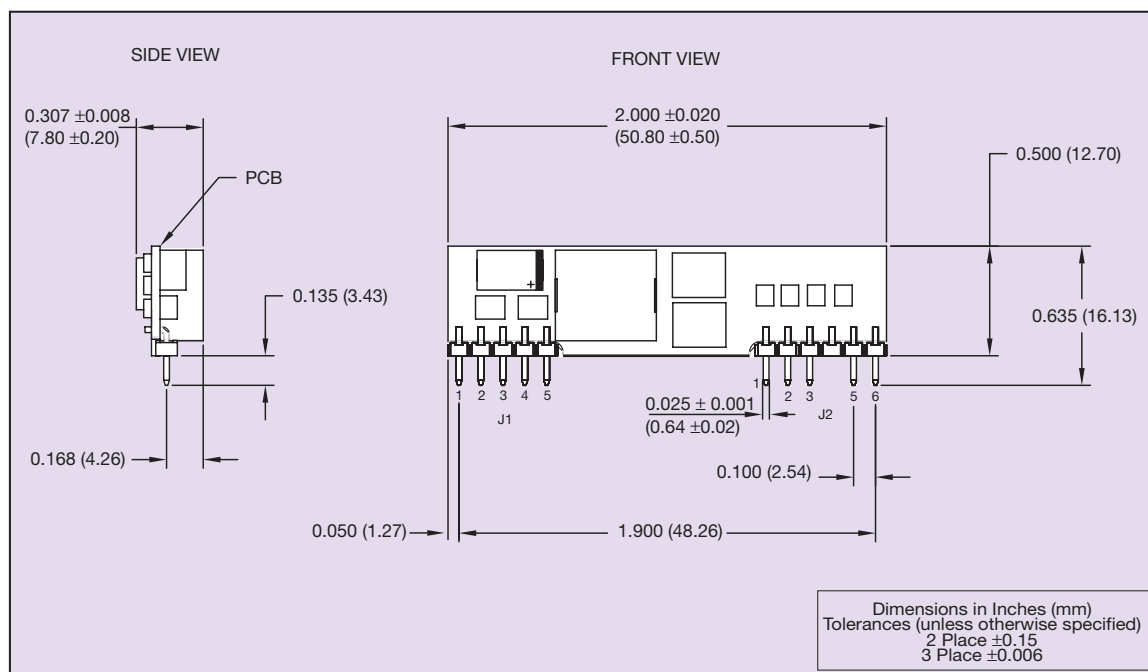
Configuration	Converter Operation
Remote pin open circuit	Unit is ON
Remote pin pulled low	Unit is ON
Remote pin pulled high [$V_{on/off} > 1.2$ V]	Unit is OFF

A '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. SIL15E-05W3V3-VRJ.

- 3 Full derating curves available in both the Longform Datasheet and Application Note 134.
- 4 When the unit is trimmed down to 0.8 V, the efficiency is 82%.
- 5 For horizontal mounting option please consult factory for details.
- 6 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 7 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.

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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