

## SIL15E Series

### Non-Isolated DC-DC Converters

#### Data Sheet

**Total Power:** 54.5 Watts  
**Input Voltage:** 5.5 Vdc  
**# of Outputs:** Single

#### SPECIAL FEATURES

- 15 A current rating
- Input voltage range: 3.0 - 5.5 Vdc
- Output voltage range: 0.8 - 3.63 V
- 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 pinout
- Available RoHS compliant
- Two year warranty

#### SAFETY

- UL, cUL CAN/CSA 22.2 No. E174104
- UL6950 File No. E174104
- TÜV Product Service (EN60950) Certificate No. B 03 10 38572
- CB report and certificate to DE3-51686M1



#### Electrical Specifications

Input		
Input voltage range		3.0 - 5.5 Vdc
Input current	No load	70 mA
Input current (max.)		11.8 A @ Io max. and Vout = 3.63 V
Input current ripple		110 mA rms
Remote ON/OFF		See Note 2
Start-up time		<20 ms
Output		
Voltage adjustability	Fixed output version Wide trim version	±10.0% 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 coefficient		±0.01% / °C
Transient response		60 mV max deviation 50 µs recovery to within ±1.0%
Short circuit protection		Continuous
Thermal protection		Automatic recovery

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

## General Specifications

Efficiency		See Table
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	50.8 x 7.8 x 12.7 mm 2.0 x 0.31 x 0.5 inches
Pin length		0.135 ± 0.02 inches 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

## EMC Characteristics

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

## Environmental Specifications

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

## Ordering Information

Model Number <sup>(2,5,6)</sup>	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SIL15E-05W3V3-VJ	54.5 W	3.0 - 5.5 Vdc	0.8 - 3.63 Vdc	0 A	15 A	94% <sup>(4)</sup>	±0.2%	±1.0%

## Part Number System with Options

Product Family	Rated Output Current	Performance	Input Voltage	Type of Output	Output Voltage	Mounting Option	Packaging Options
<b>SIL</b>	<b>15</b>	<b>E</b>	<b>- 05</b>	<b>W</b>	<b>3V3</b>	<b>- V</b>	<b>J</b>
SIL = Single In Line	15 = 15 Amps	E = Enhanced Performance	05 = 3 - 5.5 Vdc	W = Wide	3V3 = 3.3 V	V = Vertical H = Horizontal <sup>(5)</sup>	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 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

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

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. 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> to find a suitable alternative.

## Mechanical Drawings

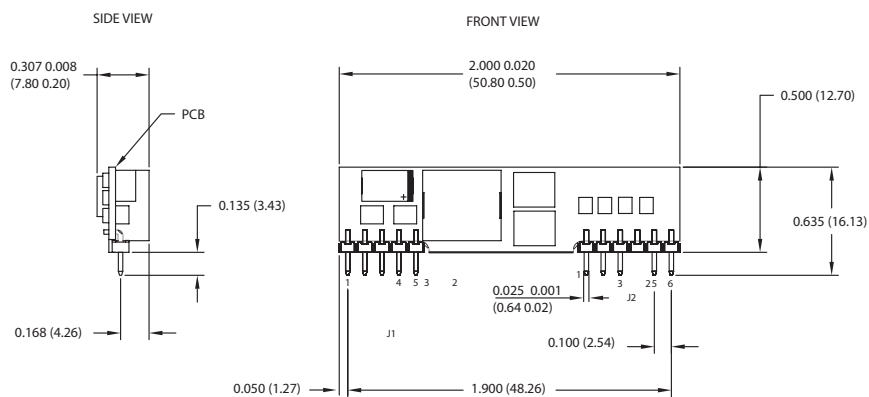
## Pin Assignments

## J1

Pin	Function
1	+Vout
2	+Vout
3	Remote Sense (+)
4	+Vout
5	Ground

## J1

Pin	Function
1	Ground
2	+Vin
3	+Vin
4	No Pin
5	Trim



Dimensions in Inches (mm)  
Tolerances (unless otherwise specified)  
2 Place 0.15  
3 Place 0.006

## WORLDWIDE OFFICES

## Americas

2900 South Diablo Way  
Suite B100  
Tempe, AZ 85282, USA  
+1 888 412 7832

## Europe (UK)

Ground Floor Offices, Barberry House  
4 Harbour Buildings, Waterfront West  
Brierley Hill, West Midlands  
DY5 1LN, UK  
+44 (0) 1384 842 211

## Asia (HK)

14/F, Lu Plaza  
2 Wing Yip Street  
Kwun Tong, Kowloon  
Hong Kong  
+852 2176 3333

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