

## SIL15C Series

### C-Class Non-Isolated

#### Data Sheet

**Total Power:** 75 Watts  
**Input Voltage:** 4.5 - 5.5 Vdc or  
 10.2 - 13.8 Vdc  
**# of Outputs:** Single

#### SPECIAL FEATURES

- 15 A current rating
- Input voltage range: 4.5 - 5.5 Vdc or 10.2 - 13.8 Vdc
- Output voltage: 0.9 - 5.0 V
- Industry-leading value
- Cost optimized design
- Excellent transient response
- Output voltage adjustability
- Path for future upgrades
- Supports silicon voltage migration
- Reduced design-in and qual time
- Designed-in reliability: MTBF of >7 million hours per Telcordia SR-332
- Available RoHS compliant
- Two year warranty

#### SAFETY

- UL, cUL CAN/CSA 22.2 No. E139421
- UL6950 File No. E139421
- TÜV Product Service (EN60950)
- Certificate No. B 04 08 19870 228
- CB report and certificate to US/6415C/UL



#### Electrical Specifications

Input		
Input voltage range	5 V input model 12 V input model	4.5 - 5.5 Vdc 10.2 - 13.8 Vdc
Input current	Minimum load Remote OFF	65 mA 20 mA
Input current (max.) (See Note 3)	5 V input model 12 V input model	11.5 A @ Io max. 8.1 A @ Io max.
Input reflected ripple (See Note 4)	5 V input model 12 V input model	200 mA (pk-pk) 200 mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		Active high >2.4 Vdc <0.8 Vdc
Start-up time (See Note 9)	Power up Remote ON/OFF	<20 ms <20 ms
Turn ON threshold	5 Vin 12 Vin	4.5 Vdc 9.0 Vdc
Turn OFF threshold	5 Vin 12 Vin	4.3 Vdc 7.5 Vdc
Output		
Voltage adjustability (See Note 5)	5 V input model 12 V input model	0.9 - 3.3 Vdc 0.9 - 5.0 Vdc
Output setpoint accuracy	with 1.0% trim resistors	±2.5%
Line regulation	Low line to high line	±0.2%
Load regulation	Full load to min. load	±0.5%
Min/Max load		0 A/15 A
Overshoot (at turn on)	5 V input model 12 V input model	3.0% max. 1.0% max.
Undershoot		100 mV max.
Ripple and noise	5 Hz to 20 MHz (See Note 1)	See table
Transient response (See Note 2)	Deviation	100 mV; 200 µs recovery to within regulation band

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

## General Specifications

Efficiency		See Table
Switching frequency	Fixed	200 kHz
Approvals and standards	(See Note 4)	TÜV Product Services EN60950, UL/cUL60950
Material flammability		UL94V-0
Weight		14.2 g (0.5 oz)
MTBF	Telcordia SR-332	7,817,294 hours

## Environmental Specifications

Thermal performance	Operating ambient temperature	-0 °C to +80 °C
(See Note 8)	Non-operating temperature	-40 °C to +125 °C
<b>Protection</b>		
Short-circuit	Hiccup, non latching	
<b>Recommended System Capacitance</b>		
Input capacitance	(See Note 11)	270 μF / 20 mW ESR max.
Output capacitance	(See Note 11)	680 μF / 10 mW ESR max.

## Ordering Information

Model Number (8, 13, 14)	Output Power (Max.)	Input Voltage	Output Voltage <sup>(12)</sup>	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SIL15C-05SADJ-VJ	50 W	4.5 - 5.5 Vdc	0.9 - 3.3 V	0 A	15 A	89%	±0.2%	±0.5%
SIL15C-12SADJ-VJ	75 W	10.2 - 13.8 Vdc	0.9 - 5.0 V	0 A	15 A	91%	±0.2%	±0.5%

## Part Number System with Options

Product Family	Rated Output Current	Performance	Input Voltage	Number of Outputs	Mounting Option	Packaging Options
<b>SIL</b>	<b>15</b>	<b>C</b>	<b>12</b>	<b>SADJ</b>	<b>V</b>	<b>J</b>
SIL = Single In Line	15 = 15 Amps	C = Cost Optimized	05 = 4.5 - 5.5 12 = 10.2 - 13.8	Single Adjustable Output	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 SIL15C series. 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 0.9 Vdc to 5.0 Vdc. When the SIL15C series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

## Ripple and Noise Specification

Model	Output Voltage	Pk - Pk	RMS
5 V input models	0.9 - 2.5 Vdc 3.3 Vdc	30 mV 40 mV	15 mV 15 mV
12 V input models	0.9 - 2.5 Vdc 3.3 Vdc	50 mV 50 mV	20 mV 20 mV

## Notes:

- Measured as per recommended set-up. Cin = 270  $\mu$ F (20 mW ESR max.). Cout = 680  $\mu$ F (10 mW ESR max.).
- di/dt = 10 A/ $\mu$ s, Vin = Nom, Tc = 25 °C, load change = 0.5 Io max. to 0.75 Io max. and 0.75 Io max. to 0.5 Io max.
- External input fusing recommended.
- Measured with external filter. See Application Note 131 for details.
- Uses external resistor from trim pin to output ground. Min value = 485  $\Omega$  for 5 V model, 280  $\Omega$  for 12 V model. See Application Note 131 for details.
- Signal line assumed <3 m in length
- This product is only for inclusion by professional installers within other equipment and must not be operated as a stand-alone product.
- The standard unit with the suffix '-V' is for vertical mounting. To order a unit with horizontal mounting, please add the suffix '-H' to the model number, e.g. SIL15C-05SADJ-HJ.
- Power up is the time from application of dc input to Power Good enabled. Remote ON/OFF is from ON/OFF asserted high to Power Good enabled.
- See Application Note 131 for operation above 50 °C.
- See Application Note 131 for ripple current requirements
- These models have a wide trim output. 5 Vin has an output of 0.9 Vdc to 3.3 Vdc and 12 Vin has an output of 0.9 Vdc to 5 Vdc. An external resistor adjusts the output voltage.
- To order a unit with a pin length of 0.150", please add suffix 'P4' to the model number, e.g. SIL15C-05SADJ-HP4J.
- 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

Pin	Function
1	Vout
2	Vout
3	Vout
4	Trim
5	Remote ON/OFF
6	Power Good
7	Ground
8	Ground
9	Reserved
10	Vin
11	Vin
12	Mechanical support (Horiz only)
13	Mechanical support (Horiz only)

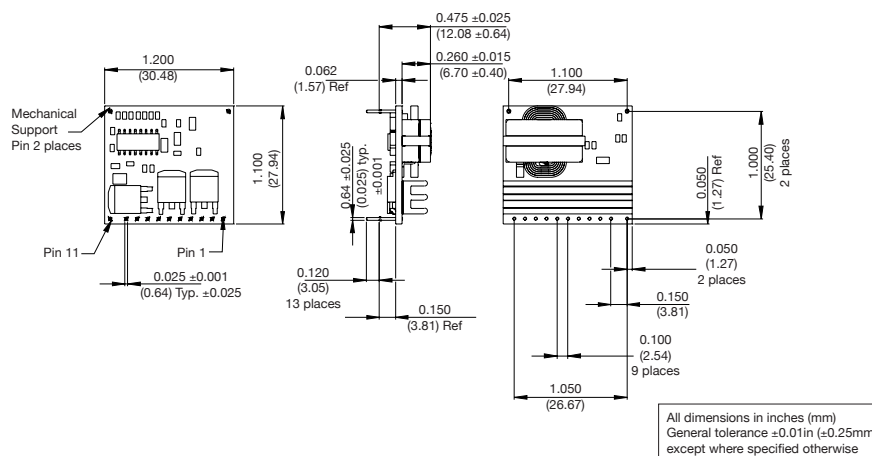


Figure 1: Mechanical Drawing - Horizontal Mount Version

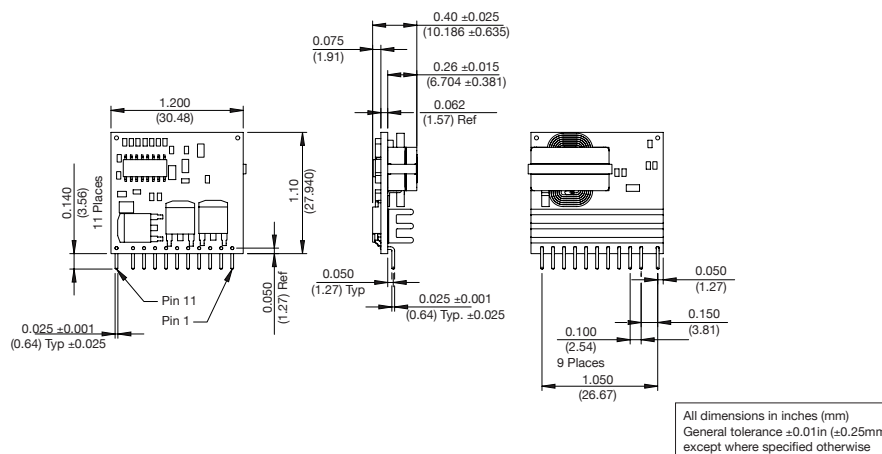


Figure 2: Mechanical Drawing - Vertical Mount Version

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