ARTESYN SIL25C SERIES

C-Class Non-Isolated



Advanced Energy's Artesyn SIL25C series 25 amp high density non-isolated DC-DC converter is designed for cost- and space-sensitive applications. It accepts a 10.2 to 13.8 Vdc input and provides a negative 5.05 Vdc output. Rated at 125 watts, the converter has a typical efficiency of 90%. Standard features include remote sense, remote On/Off and remote 'power good' indication.

DATA SHEET

Total Power:

25 Amps

Input Voltage:

4.5 - 13.8 Vdc

# of Outputs:

Single

RoHS 6/6 COMPLIANT

SPECIAL FEATURES

- 25 A current rating
- Input voltage range: 10.2 - 13.8 Vdc
- Nominal output voltage: -5.05 V
- Industry-leading value
- Cost optimized design
- Excellent transient response
- Output voltage adjustability
- Supports silicon voltage migration
- Reduced design-in and qual time
- Designed in reliability: MTBF of 3 million hours per Telcordia SR-332
- RoHS compliant
- Two year warranty

SAFETY

- UL, cUL CAN/CSA 22.2 No. TBD
- UL60950 File No. TBD

TÜV Product Service (EN60950) Certificate No. TBD

- CB report and certificate to TB

©2020 Advanced Energy Industries, Inc.

ELECTRICAL SPECIFICATIONS

Input		
Input voltage range	Nominal 12 V	10.2 - 13.8 +Vdc
Input current	No load Remote OFF	400 mA 30 mA
Input current (max.)	See Note 4	14.2 A max. @ Io max. and Vin = 10.8 V
Input reflexted ripple	See Note 2	300 mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		 Logic high >2.4 Vdc <1.2 Vdc
Start-up time	See Note 5	Power up: 10 ms Remote ON/OFF: 10ms
Turn ON threshold		10 Vdc
Turn OFF threshold		9.5 Vdc
Output		
Voltage adjustability	See Note 1	-4.5 to -5.5 Vdc
Output setpoint accuracy	Using 1.0% trim resistors	±3.0%
Line regulation	Low line to high line	±1.0%
Load regulation	Full load to min. load	±1.0%
Min./max. load		0 A/25 A
Ripple and noise 5 Hz to 20 MHz	See Note 2	100 mV pk-pk 40 mV rms
Transient response	See Note 3	130 mV typical deviation 150 µs recovery to within regulation band

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

GENERAL SPECIFICATIONS

Efficiency		90%
Switching frequency	Fixed (2 phase)	250 kHz typ. per phase
Approvals and standards	(See Note 7)	TÜV Product Services EN60950, UL/cUL60950
Material flammability		UL94V-0
Weight		28.3 g (1 oz)
MTBF	Telcordia SR-332	3,000,000 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient temperature	-40 °C to +80 °C
(See Note 8)	Non-operating temperature	-40 °C to +125 °C
Protection		
Short-circuit	Hiccup, non-latching	
Over-temperature	Hiccup, non-latching	
Recommended System Capacitance		
Input capacitance	(See Note 9)	3 x 270 µF
Output capacitance	(See Note 9)	3 x 680 µF

ORDERING INFORMATION

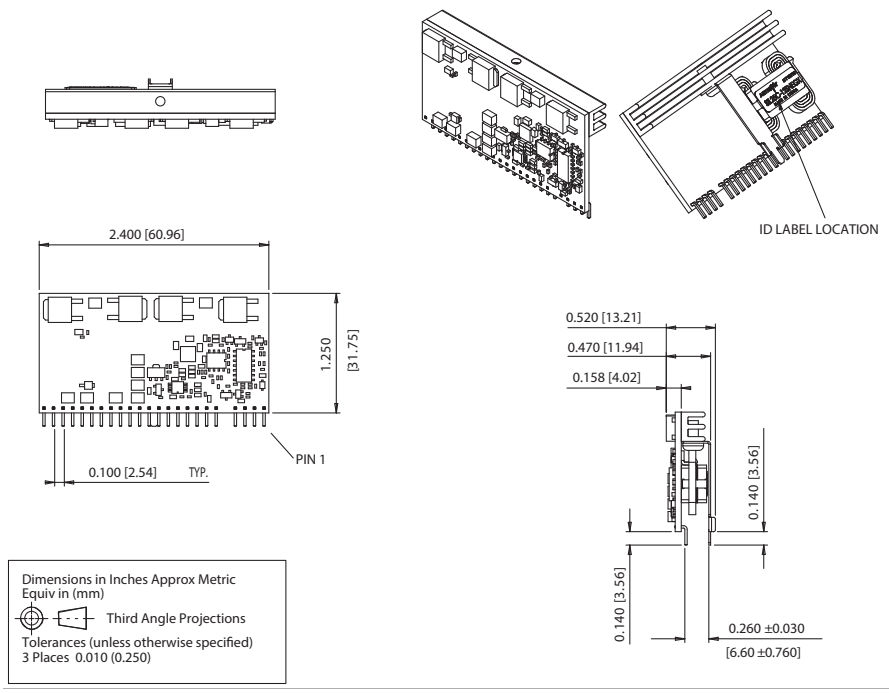
Model Number [11]	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SIL25C-12SNEG-VJ	125 W	10.2 - 13.8 Vdc	-5.05 V	0 A	25 A	90%	±1.0%	±1.0%

PART NUMBER SYSTEM WITH OPTIONS

Product Family	Rated Output Current	Performance		Input Voltage	Number of Outputs	Output Voltage		Mounting Option	Packaging Options
SIL	25	C	-	12	S	NEG	-	V	J
SIL = Single In Line	25 = 25 Amps	C = Cost Optimized		12 = 10.2 - 13.8 Vdc	S = Single Output	NEG - -5.05V		V = Vertical	J = Pb free (RoHS 6/6 compliant)

Notes:
1. Uses external resistor. See Application Note 148 for details.
2. Measured with external filter. See Application Note 148 for details.
3. di/dt = 1 A/µs, 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.
4. External input fusing is recommended.
5. Power up is the time from application of dc input to POWER GOOD high. emote ON/OFF asserted high to POWER GOOD high.
6. Signal line assumed <3 m.
7. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
8. See Application Note 148 for operation above 50°C.
9. See Application Note 148 for ripple current requirements.
10. Output can be adjusted from -4.5 Vdc to -5.5 Vdc.
11. 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	Trim
2	Not Connected
3	Ground
4	Power Good
5	No Pin
6	Not Connected
7	Ground
8	Ground
9	Remote ON/OFF
10	Remote Sense (GND)
11	Remote Sense (Vo)
12	Vin
13	Vin
14	Vin
15	Vout
16	Vout
17	Ground
18	Vout
19	Ground
20	Vout
21	Ground
22	Vout
23	Ground
24	Vout

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE

For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832

Specifications are subject to change without notice. Not responsible for errors or omissions. ©2020 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy®, AE® and Artesyn™ are U.S. trademarks of Advanced Energy Industries, Inc.