

SIL06C Series

5 Vin and 12 Vin single output

DC-DC CONVERTERS

C Class Non-isolated

1

NEW Product



- **6 A current rating**
- **Input voltage range: 4.5 Vdc to 5.5 Vdc or 10.2 Vdc to 13.8 Vdc**
- **Output voltage range: 0.9 Vdc to 5.0 Vdc**
- **Industry leading value**
 - Cost optimised design
- **Excellent transient response**
- **Output Voltage adjustability**
 - Pathway for future upgrades
 - Supports silicon voltage migration
 - Resulting in reduced design-in and qualification time
- **Designed in reliability: MTBF of >7 million hrs per Telcordia SR-332**
- **Available RoHS compliant**



The SIL06C series is a new high density open frame non-isolated converter for space sensitive applications. Each model has a wide input range (4.5 Vdc to 5.5 Vdc or 10.2 Vdc to 13.8 Vdc) and offer a wide 0.9 Vdc to 5 Vdc output voltage range with a 6 A load. An external resistor adjusts the output voltage from its pre-set value of 0.9 V to any value up to the 5 V maximum. Typical efficiencies for the models are 89% for the 5 V input version and 91% for the 12 V input version. The SIL06C series offers remote ON/OFF and overcurrent protection as standard. With full international safety approval including EN60950 and UL/cUL60950, the SIL06C reduces compliance costs and time to market.



2 YEAR WARRANTY

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

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability (See Note 7)	5 V input models 12 V input models	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% max.
Load regulation	Full load to min. load	±0.5% max.
Min./max. load		0 A/6 A
Overshoot (at turn on)	5 V input models 12 V input models	3.0% max. 1.0% max.
Undershoot		100 mV max.
Ripple and noise	5 Hz to 20 MHz (See Note 2)	See table
Transient response (See Note 1)	Deviation	75 mV 150 µs recovery to within regulation band

INPUT SPECIFICATIONS

Input voltage range	5 V input model 12 V input model	4.5-5.5 Vdc 10.2-13.8 Vdc
Input current	No load Remote OFF	50 mA 5 mA
Input current (max.) (See Note 9)	5 V input model 12 V input model	5.1 A @ I _o max. 1.6 A @ I _o max.
Input reflected ripple (See Note 2)	5 V input model 12 V input model	52 mA (pk-pk) 56 mA (pk-pk)
Remote ON/OFF Logic compatibility	ON OFF	Active high >2.4 Vdc <0.8 Vdc
Start-up time (See Note 3)	Power up Remote ON/OFF	<20 ms <20 ms

INPUT SPECIFICATIONS (CONTD.)

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

GENERAL SPECIFICATIONS

Efficiency		See Table
Switching frequency	Fixed	200 kHz
Approvals and standards	(See Note 4)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		9.3 g (0.3 oz)
MTBF	Telcordia SR-332	7,562,142 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 8)	Operating ambient, temperature Non-operating	0 °C to +80 °C -40 °C to +125 °C
----------------------------------	---	-------------------------------------

PROTECTION

Short-circuit protection	Hiccup, non-latching
--------------------------	----------------------

RECOMMENDED SYSTEM CAPACITANCE

Input capacitance	(See Note 11)	270 µF/20 mΩ esr max.
Output capacitance	(See Note 11)	680 µF/10 mΩ esr max.

International Safety Standard Approvals



UL/cUL CAN/CSA 22.2 No. E139421
UL60950 File No. E139421



TÜV Product Service (EN60950) Certificate No. B 04 08 19870 228
CB report and certificate to IEC60950

SIL06C Series

5 Vin and 12 Vin single output

DC-DC CONVERTERS | C Class Non-isolated

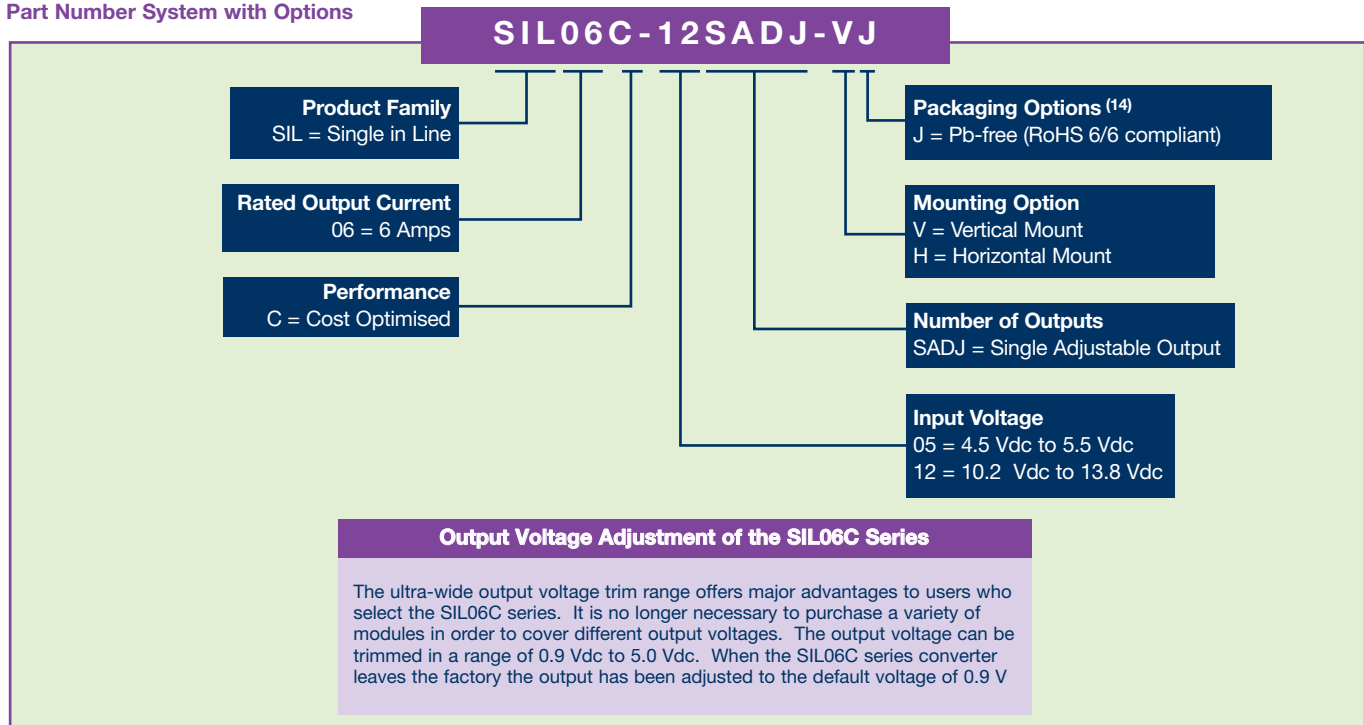
2

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE ⁽¹²⁾	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER ^(5,13,14,15)
							LINE	LOAD	
20 W	4.5-5.5 Vdc	N/A	0.9-3.3 Vdc	0 A	6 A	89%	±0.2%	±0.5%	SIL06C-05SADJ-VJ
30 W	10.2-13.8 Vdc	N/A	0.9-5.0 Vdc	0 A	6 A	91%	±0.2%	±0.5%	SIL06C-12SADJ-VJ

Part Number System with Options



Notes

- 1 $di/dt = 10 \text{ A}/\mu\text{s}$, $V_{in} = \text{Nom}$, $T_c = 25^\circ\text{C}$, load change = 0.5 I_o max. to 0.75 I_o max. and 0.75 I_o max. to 0.5 I_o max.
- 2 Measured with external filter. See Application Note 131 for details.
- 3 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
- 4 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 5 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. SIL06C-05SADJ-HJ.
- 6 Measured as per recommended set-up. $C_{in} = 270 \mu\text{F}$ (20 m Ω esr max.). $C_{out} = 680 \mu\text{F}$ (10 m Ω esr max.).
- 7 Uses external resistor from trim to output ground. Minimum value 485 Ω for 5 V model, 280 Ω for 12 V model. See Applications Note 131 for details.

Notes cond.

- 8 Signal line assumed <3 m.
- 9 External input fusing recommended.
- 10 See Application Note 131 for operation above 50 °C.
- 11 See Application Note 131 for more details.
- 12 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.
- 13 To order a unit with a pin length of 0.150", please add suffix 'P4' to the model number, e.g. SIL06C-05SADJ-HP4J.
- 14 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 15 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.

Ripple and Noise Specification

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

SIL06C Series

5 Vin and 12 Vin single output

DC-DC CONVERTERS

C Class Non-isolated

3

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

PIN CONNECTIONS	
PIN NUMBER	FUNCTION
1	Vout
2	Trim
3	Ground
4	Power Good
5	Remote ON/OFF
6	Vin
7	Mechanical support
8	Mechanical support
9	Mechanical support on horizontal version only

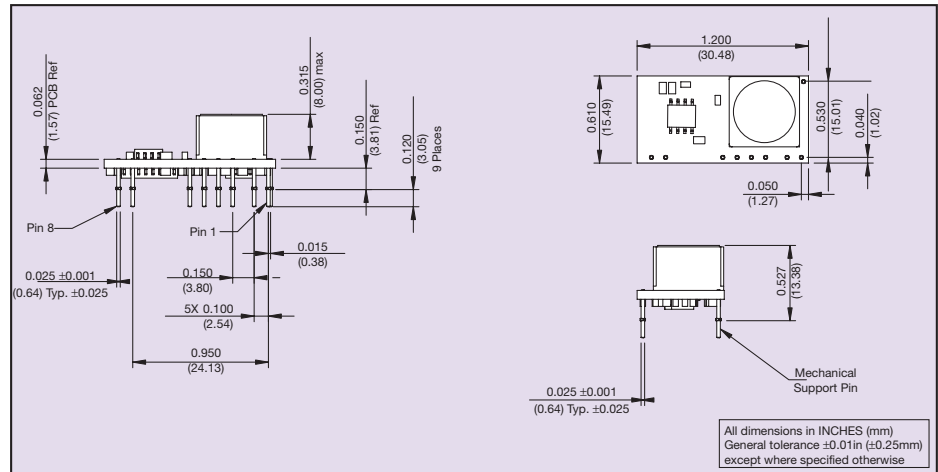


Figure 1: Mechanical Drawing - Horizontal Mount Version

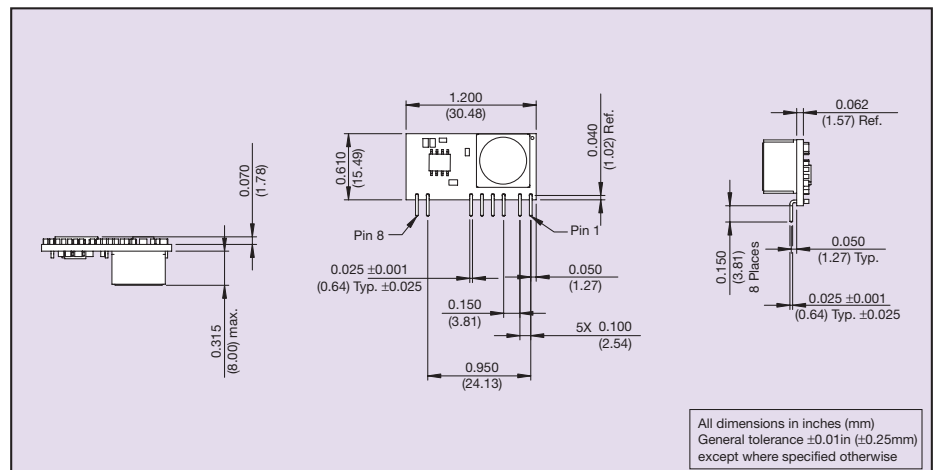


Figure 2: Mechanical Drawing - Vertical Mount Version

Datasheet © Artesyn Technologies® 2005

The information and specifications contained in this datasheet are believed to be correct at time of publication. However, Artesyn Technologies accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice. No rights under any patent accompany the sale of any such product(s) or information contained herein.

Please consult our website for the following items: ✓ Application Note ✓ Longform Data Sheet

www.artesyn.com