

# SIL06C Series

5 Vin and 12 Vin single output

**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 <sub>o</sub> max. 1.6 A @ I <sub>o</sub> 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
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### PROTECTION

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

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DC-DC CONVERTERS

C Class Non-isolated

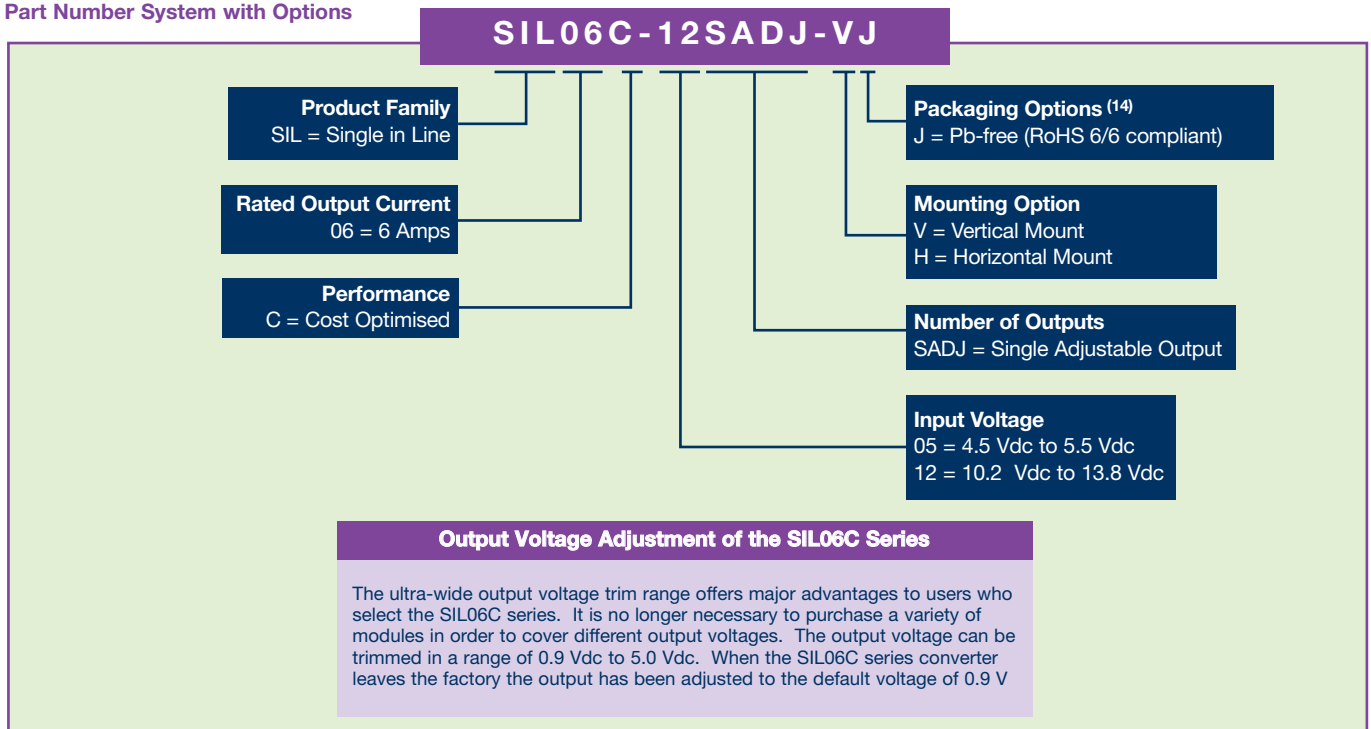
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**NEW Product**

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE <sup>(12)</sup>	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER <sup>(5,13,14,15)</sup>
							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  $di/dt = 10 \text{ A}/\mu\text{s}$ ,  $V_{in} = \text{Nom}$ ,  $T_c = 25 \text{ }^\circ\text{C}$ , 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 $\Omega$  esr max.).  $C_{out} = 680 \mu\text{F}$  (10 m $\Omega$  esr max.).
- 7 Uses external resistor from trim to output ground. Minimum value 485  $\Omega$  for 5 V model, 280  $\Omega$  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  $^\circ\text{C}$ .
- 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

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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

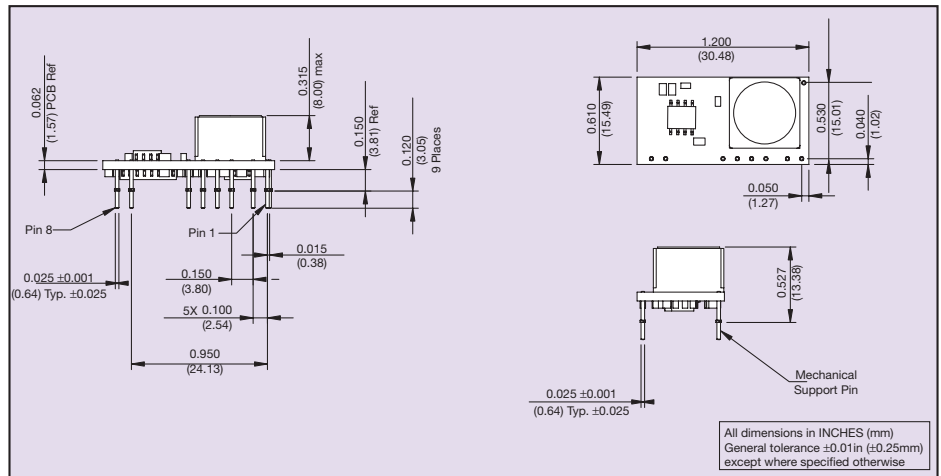


Figure 1: Mechanical Drawing - Horizontal Mount Version

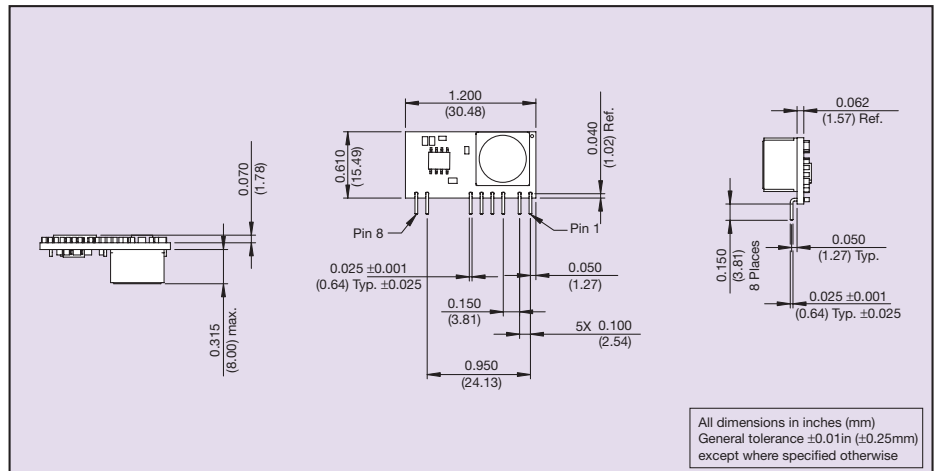


Figure 2: Mechanical Drawing - Vertical Mount Version

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

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