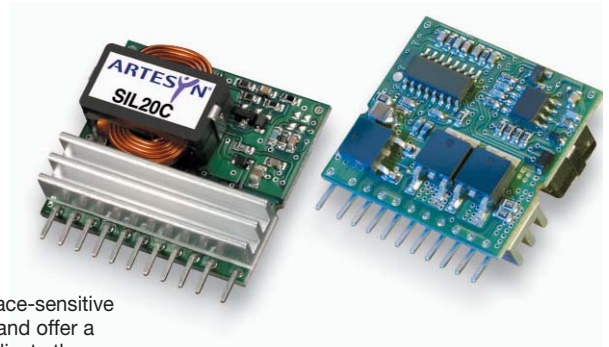


SIL20C Series

5Vin and 12Vin single output

NEW Product

- **20A current rating**
- **Input voltage range: 4.5V - 5.5V or 10.2V - 13.8V**
- **Output voltage range: 0.9V - 5.0V**
- **Industry leading value**
 - Cost optimized 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**



The SIL20C Series is a new high density open frame non-isolated converter for space-sensitive applications. Each model has a wide input range (4.5V to 5.5V or 10.2V to 13.8V) and offer a wide 0.9V to 3.3V/5V output voltage range with a 20A load. An external resistor adjusts the output voltage from its pre-set value of 0.9V to any value up to the maximum allowed value for that model. Typical efficiencies are 87% for the 5V input version and 91% for the 12V input version at full load conditions. The SIL20C series offers remote ON/OFF and over-current protection as standard. With full international safety approval including EN60950 and UL/cUL60950, the SIL20C 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 5)	5V input models 12V input models	0.9V to 3.3V 0.9V to 5.0V
Output setpoint accuracy	With 1.0% trim resistors	±2.5%
Line regulation	Low line to high line	±0.2% max.
Load regulation		±1.3% max.
Min/max load		0A/20A
Overshoot (at turn on)	5V input models 12V input models	3% max. 1% max.
Ripple and noise 5Hz to 20MHz	(See Note 1)	See table
Transient response (See Note 2)	Deviation	100mV 200µs recovery to within regulation band

INPUT SPECIFICATIONS

Input voltage range	5V input model 12V input model	4.5 to 5.5VDC 10.2 to 13.8VDC
Input current	Minimum load Remote OFF	65mA 20mA
Input current (max.) (See Note 3)	5V input model 12V input model	15.0 @ I _o max. 11.0 @ I _o max.
Input reflected ripple	(See Note 4)	200mA
Remote ON/OFF Logic compatibility ON OFF		Active high >2.4VDC <0.8VDC
Start-up time (See Note 9)	Power up Remote ON/OFF	<20ms <20ms

INPUT SPECIFICATIONS (CONTD.)

Turn ON threshold	5Vin 12Vin	4.5VDC 9.0VDC
Turn OFF threshold	5Vin 12Vin	4.3VDC 7.5VDC

GENERAL SPECIFICATIONS

Efficiency		See Table
Switching frequency	Fixed	275kHz typ.
Approvals and standards	(See Note 4)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		14.2g (0.5oz)
MTBF	Telcordia SR-332	7,963,574 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 10)	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)	270µF/20mΩ esr max.
Output capacitance	(See Note 11)	680µF/10mΩ 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 03 08 19870 219
CB report and certificate to IEC60950

SIL20C Series

5Vin and 12Vin 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.)	MAXIMUM LOAD (TYP.)	REGULATION		MODEL NUMBER ^(8, 13)
							LINE	LOAD	
66W	4.5 - 5.5VDC	N/A	0.9V - 3.3V	0A	20A	87%	±0.2%	±1.3%	SIL20C-05SADJ-V
100W	10.2 - 13.8VDC	N/A	0.9V - 5.0V	0A	20A	91%	±0.2%	±1.3%	SIL20C-12SADJ-V

Part Number System with Options

SIL20C-12SADJ-V

Product Family

SIL = Single in Line

Rated Output Current

20 = 20Amps

Performance

C = Cost Optimized

Mounting Option

V = Vertical Mount

H = Horizontal Mount

Number of Outputs

SADJ = Single Adjustable Output

Input Voltage

05 = 4.5V - 5.5V

12 = 10.2V - 13.8V

Output Voltage Adjustment of the SIL20C-12SADJ Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL20C-12SADJ 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 0.9V to 5.0V. When the SIL20C-12SADJ series converter leaves the factory the output has been adjusted to the default voltage of 0.9V

Notes

- 1 Measured as per recommended set-up. $2 \times C_{in} = 270\mu\text{F}$ (20mΩ esr max, $C_{out} = 680\mu\text{F}$ (10mΩ esr max).
- 2 $di/dt = 10\text{A}/\mu\text{s}$, $V_{in} = \text{Nom}$, $T_c = 25^\circ\text{C}$, load change = 0.50 I_o max. to 0.75 I_o max. and 0.75 I_o max. to 0.50 I_o max.
- 3 External input fusing is recommended.
- 4 Measured with external filter. See Application Note 131 for details.
- 5 Uses external resistor from trim pin to output ground. Min value = 485Ω for 5V model, 280Ω for 12V model. See Application Note 131 for details.
- 6 Signal line assumed <3m in length
- 7 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 8 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. SIL20C-05SADJ-H.
- 9 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.
- 10 See Application Note 131 for operation above 50°C.
- 11 See Application Note 131 for ripple current requirements.
- 12 These models have a wide trim output. 5Vin has an output of 0.9V to 3.3V and 12 Vin has an output of 0.9V to 5V. 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. SIL20C-05SADJ-HP4.

Ripple and Noise Specification

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

SIL20C Series

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DC/DC CONVERTERS

C Class Non-isolated

3

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NEW Product

PIN CONNECTIONS	
PIN NUMBER	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 (horizontal version only)
13	Mechanical support (horizontal version only)

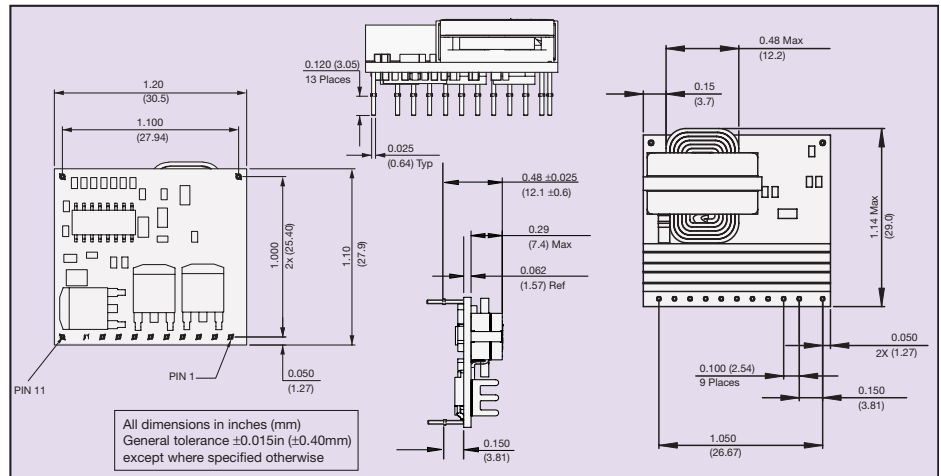


Figure 1: Mechanical Drawing - Horizontal Mount Version

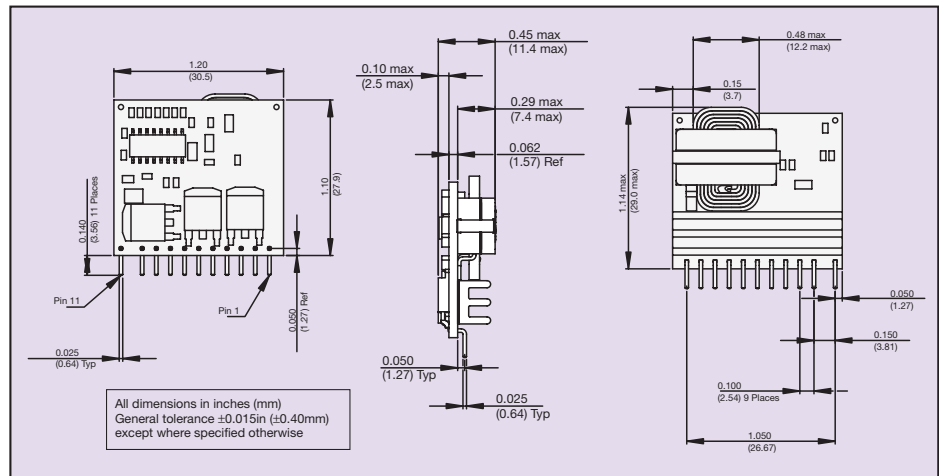


Figure 2: Mechanical Drawing - Vertical Mount Version

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

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