

SIL06C Series

C-Class Non-Isolated

Data Sheet

Total Power: 30 Watts
Input Voltage: 4.5 - 13.8 Vdc
of Outputs: Single

SPECIAL FEATURES

- 6 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 IEC60950



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	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	Power up Remote ON/OFF	<20 ms <20 ms
Turn ON threshold	5 V _{in} 12 V _{in}	4.5 Vdc 9.0 Vdc
Turn OFF threshold	5 V _{in} 12 V _{in}	4.3 Vdc 7.5 Vdc
Output		
Voltage adjustability (See Note 7)	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/6 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 2)	See table
Transient response (See Note 1)	Deviation	75 mV; 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		See Table
Switching frequency	Fixed	200 kHz typical
Approvals and standards	(See Note 4)	TÜV Product Services EN60950, 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	Operating ambient temperature	-0 °C to +80 °C
(See Note 8)	Non-operating temperature	-40 °C to +125 °C
Protection		
Short-circuit	Hiccup, non latching	
Recommended System Capacitance		
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 ^(3,5)	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SIL06C-05SADJ-VJ	20 W	4.5 - 5.5 Vdc	0.9 - 3.3 V	0 A	6 A	89%	±0.2%	±0.5%
SIL06C-12SADJ-VJ	30 W	10.2 - 13.8 Vdc	0.9 - 5.0 V	0 A	6 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
SIL	06	C	12	SADJ	V	J
SIL = Single In Line	06 = 06 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 SIL06C 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 SIL06C series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

Ripple and Noise Specification

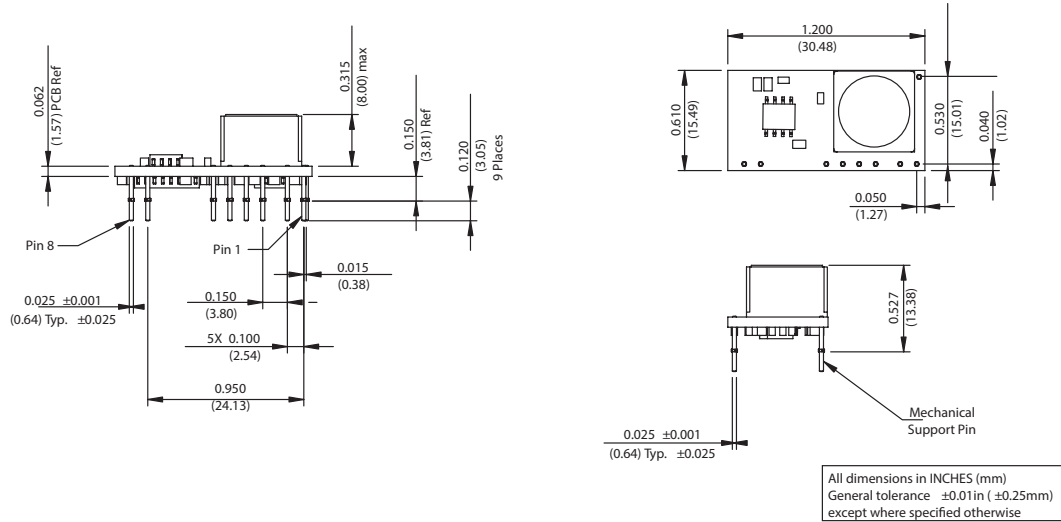
Model	Output Voltage	Pk - Pk	RMS
5 V input models	0.9 - 2.5 Vdc 3.3 Vdc	30 mV 40 mV	15 mV 15 mV
12 V input models	0.9 - 2.5 Vdc 3.3 Vdc	40 mV 50 mV	20 mV 20 mV

Notes:

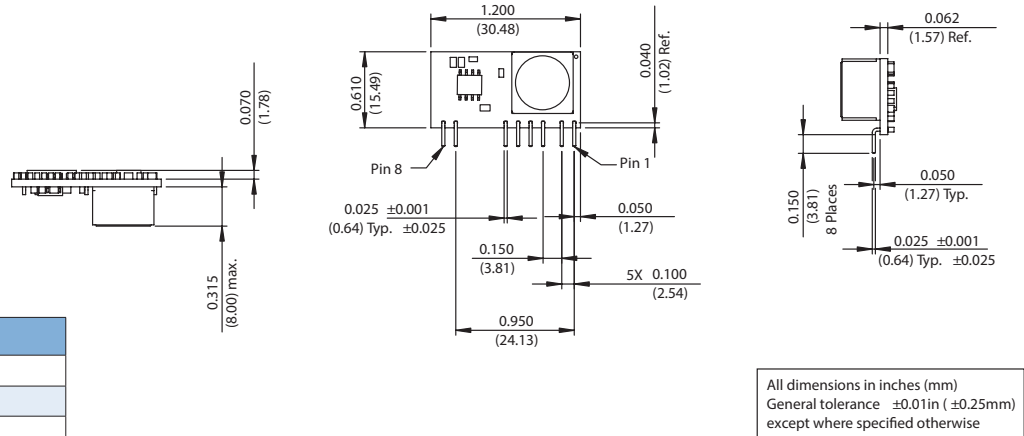
1. di/dt = 10 A/µs, Vin = Nom, Tc = 25 °C, load change = 0.5 Io max. to 0.75 Io max. and 0.75 Io max to 0.5 Io max.
2. Measured with external filter. See Application Note 131 for details.
3. Power up is the time from application of dc input to Power Good enabled. Remote ON/OFF is from ON/OFF asserted 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. Airflow dependent, 300 LFM minimum required.
6. Measured as per recommended set-up. Cin = 270 µF (20 mW ESR max.). Cout = 680 µF (10 mW 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.
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. 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/power> to find a suitable alternative.

Mechanical Drawings

Horizontal Mount



Vertical Mount



Pin Assignments

Pin	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 (Horiz only)

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