

SIL/SMT20C2 Series

C-Class Non-Isolated

Data Sheet

Total Power: 20 Amps
Input Voltage: 4.5 - 13.8 Vdc
of Outputs: Single

SPECIAL FEATURES

- 20 A current rating
- Input voltage range: 4.5 - 13.8 Vdc
- Output voltage: 0.59 - 5.1 V
- Industry-leading value
- Cost optimized design
- Excellent transient response
- Output enable
- Output voltage adjustability
- Path for future upgrades
- Supports silicon voltage migration
- Reduced design-in and qual time
- Current sink capability
- RoHS compliant
- Two year warranty

SAFETY

- UL, cUL CAN/CSA 22.2 No.
- TÜV Product Service (EN60950)
- CB report and certificate to IEC60950



Electrical Specifications

Input

Input voltage range		4.5 - 13.8 Vdc
Input current	Minimum load Remote OFF	50 mA 5 mA
Input current (max.)	See Note 3	18 A @ I _o max.
Start-up time	Remote ON/OFF	3 ms

Output

Output voltage	See Note 5	0.59 - 5.1 V
Output setpoint accuracy	0.1% trim resistors	±1.0%
Line regulation	Low line to high line	±0.2%
Load regulation	Full load to min. load	±0.5%
Min./max. load		0 A/20 A
Overshoot	At turn-on	0.5% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise 5 Hz to 20 MHz	See Note 1	30 mV V _{in} = 5 V, V _{out} = 2.5 V
Transient response	See Note 1, 2	130 mV max. deviation; 50 μs recovery to within regulation band

General

Efficiency	V _{in} = 5 V, V _o = 2.5 V, I _o = 20 A	90%
Switching frequency	Fixed	750 kHz
Material flammability		UL94V-0
Approvals and standards		EN60950; UL/cUL6950
Weight		8.50 g (0.03 oz.)
MTBF	12 V @ 40 °C, 100% load Bellcore 332	6,721,853 hours
Coplanarity		150 μm

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

Environmental Specifications

Thermal performance	Operating ambient temperature	-0 °C to +70 °C
See Note 5	Non-operating temperature	-40 °C to +125 °C
Protection		
Short-circuit	Hiccup, non-latching	
Oversoltage protection	Hiccup, non-latching	
Recommended System Capacitance		
Input	See Note 6	0 μ F
Output	See Note 7	0 μ F

Ordering Information

Model Number ^(®)	Output Power (Max.)	Input Voltage	Mount	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
								Line	Load
SIL20C2-00SADJ-HJ	100 W	4.5 - 13.8 Vdc	Horizontal	0.59 - 5.1 V	0 A	20 A	93%	\pm 0.2%	\pm 0.5%
SIL20C2-00SADJ-VJ	100 W	4.5 - 13.8 Vdc	Vertical	0.59 - 5.1 V	0 A	20 A	93%	\pm 0.2%	\pm 0.5%
SMT20C2-00SADJJ	100 W	4.5 - 13.8 Vdc	Horizontal Surface Mount	0.59 - 5.1 V	0 A	20 A	93%	\pm 0.2%	\pm 0.5%

Part Number System with Options

Product Family	Rated Output Current	Performance	Generation	Input Voltage	Output Voltage	Mounting Option	RoHS Compliance
SXX	20	C	2	00	SADJ	V	J
SIL = Single In Line SMT = Surface Mount	06 = 6 Amp 15 = 15 Amp 20 = 20 Amp 30 = 30 Amp 40 = 40 Amp	C = Cost Optimized	Blank = Standard 2 = Increased current density	00 = 4.5 - 13.8 V	Single Adjustable Output	V = Vertical H = Horizontal Blank = Horizontal Surface Mount	J = Pb free (RoHS 6/6 compliant)

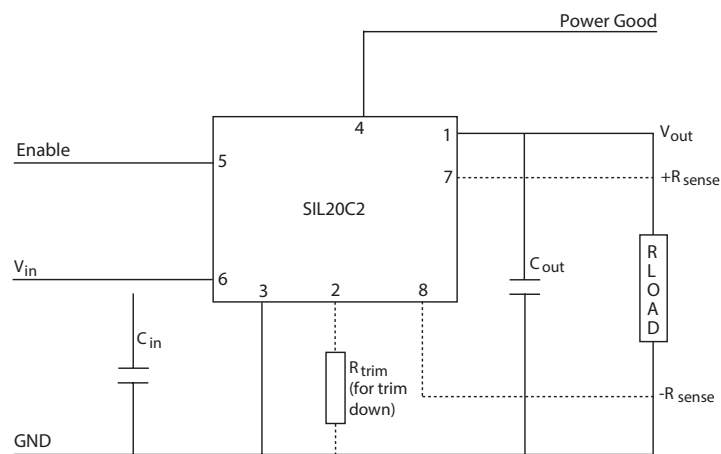
Output Voltage Adjustment

The ultra-wide output voltage trim range offers major advantages to users who select the SIL/SMT40C2 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 0.59 - 5.1 V. When the SIL20C2 converter leaves the factory, the output has been adjusted to the default voltage of 0.59 V.

Notes:

- Measured as per recommended system capacitance.
- $di/dt = 10 \text{ A}/\mu\text{s}$, $V_{in} = \text{Nom}$, $T_c = 25 \text{ }^\circ\text{C}$, load change = 0.75 I_o to full I_o and full I_o to 0.75.
- External input fusing is recommended.
- Additional part numbers may be available with different output voltages.
- Airflow dependent, 100 LFM minimum required.
- No capacitors needed for ripple current stability.
- No capacitors needed for stability.
- NOTICE: Some models do not support all options. Please contact your local Artesyn Embedded Technologies representative or use the on-line model number search tool at <http://www.Artesyn.com/power> to find a suitable alternative.

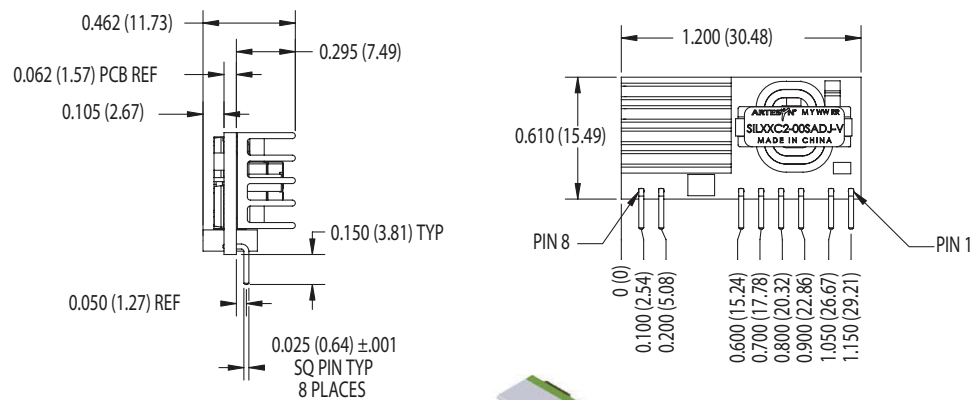
Standard Application Drawing



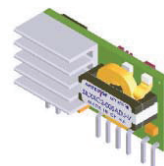
Mechanical Drawings

Vertical Mount

Pin Assignments	
Pin	Function
1	Vout
2	Trim
3	Ground
4	Power Good
5	Enable
6	Vin
7	Remote Sense (+)
8	Remote Sense (-)

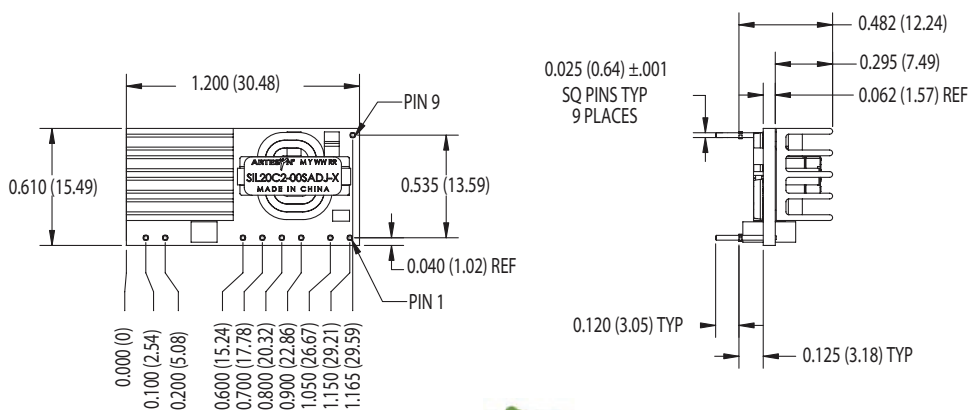


Dimensions in Inches (mm)
Tolerances (unless otherwise specified)
2 Places ± 0.030 (± 0.76)
3 Places ± 0.010 (± 0.25)

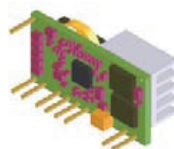


Horizontal Mount

Pin Assignments	
Pin	Function
1	Vout
2	Trim
3	Ground
4	Power Good
5	Enable
6	Vin
7	Remote Sense (+)
8	Remote Sense (-)
9	Mech Support (Horizontal version only)



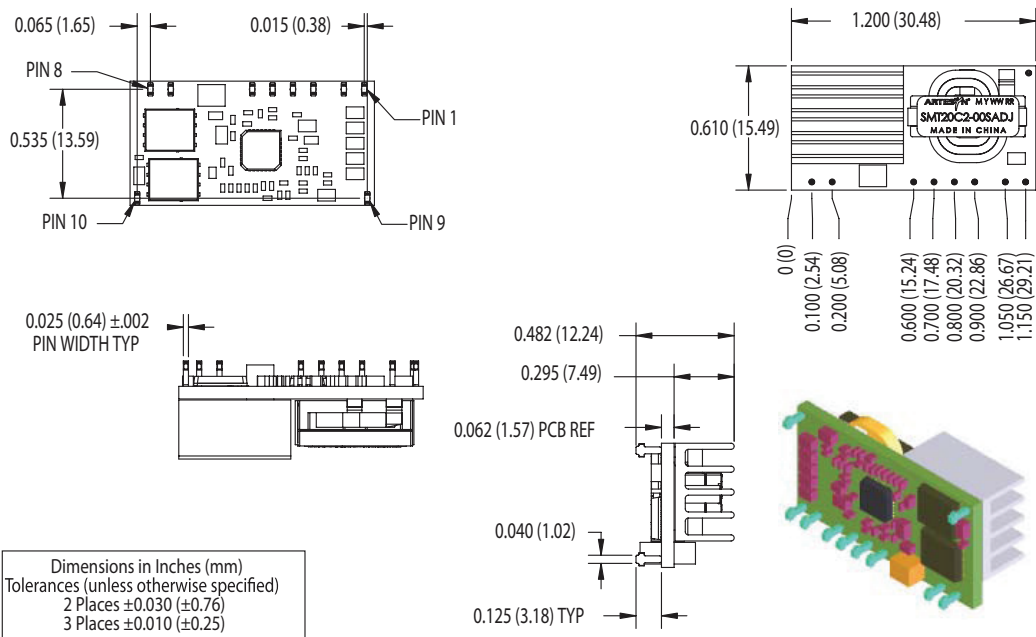
Dimensions in Inches (mm)
Tolerances (unless otherwise specified)
2 Places ± 0.030 (± 0.76)
3 Places ± 0.010 (± 0.25)



Mechanical Drawings

Surface Mount

Pin Assignments	
Pin	Function
1	Vout
2	Trim
3	Ground
4	Power Good
5	Enable
6	Vin
7	Remote Sense (+)
8	Remote Sense (-)
9	Mech Support (Horizontal Version only)
10	Mech Support (Horizontal Version only)



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