

SIL40C2 Series

4.5-13.8 Vin Single C-Class Non-Isolated

40 A Current Rating
Input Voltage: 4.5-13.8 V
No. of Outputs: Single



Electrical Specifications

Output

| | | |
|------------------------------------|------------------------|--|
| Output voltage | See Note 5 | 0.6-5 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/40 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 | 25 mV Vin=5 V, Vout=2.5 V |
| Transient response | See Notes 1, 2 | 130 mV max. deviation 50 μs recovery to within regulation band |

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 | 25 A @ Io max. |
| Start-up time | Remote ON/OFF | 3 ms |

Special Features

- 40 A current rating
- Input voltage range: 4.5-13.8 V
- Output voltage: 0.6-5 V
- Industry leading value
- Cost optimized design
- Excellent transient response
- Output enable
- Output voltage adjustability
- Pathway for future upgrades
- Supports silicon voltage migration
- Resulting in reduced design-in and qual time
- RoHS Compliant

Safety

UL, cUL CAN/CSA 22.2 No.
E139421 UL6950 File No. TBD
TÜV Product Service (EN60950)
Certificate No. TBD
CB report and certificate to
IEC60950

General

| | | |
|--------------------------------------|--|-----------------------|
| Efficiency | Vin=5 V, Vo=2.5 V, Io=20 A | 94% |
| Switching frequency | Fixed | 500 kHz |
| Approvals and standards (pending) | | EN60950 UL/cUL6950 |
| Material flammability | | UL94V-0 |
| Weight | | 17 g (0.06 oz.) |
| MTBF | 12 V @ 40 °C, 100% load Bellcore 332 | 6,749,409 hours |
| Coplanarity | | 150 μm |

Environmental Specifications

| | | |
|-----------------------------------|---|-------------------------------------|
| Thermal performance See Note 5 | Operating ambient, temperature Non-operating | 0 °C to +70 °C -40 °C to +125 °C |
|-----------------------------------|---|-------------------------------------|

Protection

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

Recommended System Capacitance

| | | |
|--------------------|------------|------|
| Input capacitance | See Note 6 | 0 μF |
| Output capacitance | See Note 7 | 0 μF |

Ordering Information

| Output Power (Max.) | Input Voltage | OVP | Output Voltage | Output Current (Min.) | Output Current (Max.) | Efficiency (Typical) | Regulation Line | Regulation Load | Model Number ^(3,5) |
|---------------------|---------------|-----|----------------|-----------------------|-----------------------|----------------------|-----------------|-----------------|-------------------------------|
| 200 W | 4.5-13.8 Vdc | N/A | 0.6-5 Vdc | 0 A | 40 A | 94% | ±0.2% | ±0.5% | SIL40C2-00SADJ-VJ |
| 200 W | 4.5-13.8 Vdc | N/A | 0.6-5 Vdc | 0 A | 40 A | 94% | ±0.2% | ±0.5% | SIL40C2-00SADJ-HJ |
| 200 W | 4.5-13.8 Vdc | N/A | 0.6-5 Vdc | 0 A | 40 A | 94% | ±0.2% | ±0.5% | SMT40C2-00SADJJ |

Part Number System with Options

Rev. 07.02.08
SIL40C2
3 of 5

| Product Family | Rated Output Current | Performance | Generation | Input Voltage | Output Voltage | Mounting Option | RoHS Compliance ⁽⁸⁾ |
|--|---|--|---|---|---|--|---|
| SIL | 40 | C | 2 | 00 | SADJ | V | J |
| Product Family SIL = Single In Line SMT = Surface Mount | Rated Output Current 06 = 6 A 15 = 15 A 20 = 20 A 30 = 30 A 40 = 40 A | Performance C = Cost Optimized | Generation Blank = Standard Part 2 = Increased Current Density | Input Voltage 00 = 4.5-13.8 V | Output Voltage Single Adjustable Output | Mounting Option V = Vertical H = Horizontal (Applicable to SIL version only) | RoHS Compliance J = Pb-free RoHS 6/6 Compliant |

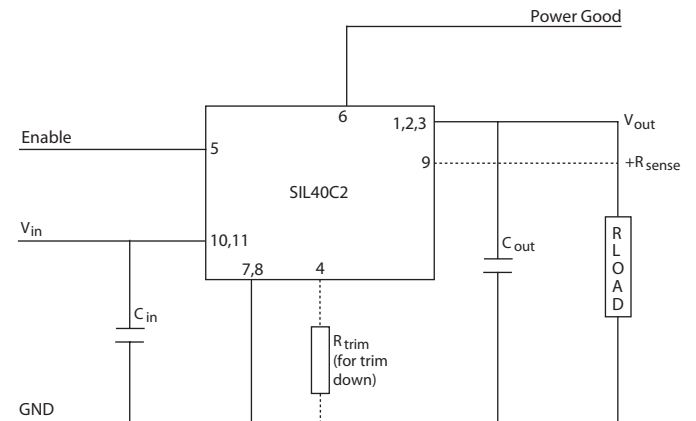
Output Voltage Adjustment of the SIL40C2 Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL40C2 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 0.6-5 V. When the SIL40C2 converter leaves the factory, the output has been adjusted to the default voltage of 0.6 V.

Notes:

- 1 Measured as per recommended system capacitance.
- 2 $di/dt = 10 \text{ A}/\mu\text{s}$, $V_{in} = \text{Nom}$, $T_c = 25^\circ\text{C}$, load change = 0.75 I_o to full I_o and full I_o to 0.75.
- 3 External input fusing is recommended.
- 4 Additional part numbers may be available with different output voltages.
- 5 Airflow dependent, 100 LFM minimum required.
- 6 No capacitors needed for ripple current capability.
- 7 No capacitors needed for stability.
- 8 TSE RoHS 5/6 (non-Pb-free) compliant versions are also available on special request, please contact our local sales representative for details.
- 9 NOTICE: Some models may not support all options. Please contact your local representative or use the on-line model number search tool at <http://www.powerconversion.com> to find a suitable alternative.
- 10 To order a Horizontal Mounting option with a pin length of 0.165", please use the model # SIL40C2-00SA-HP5J

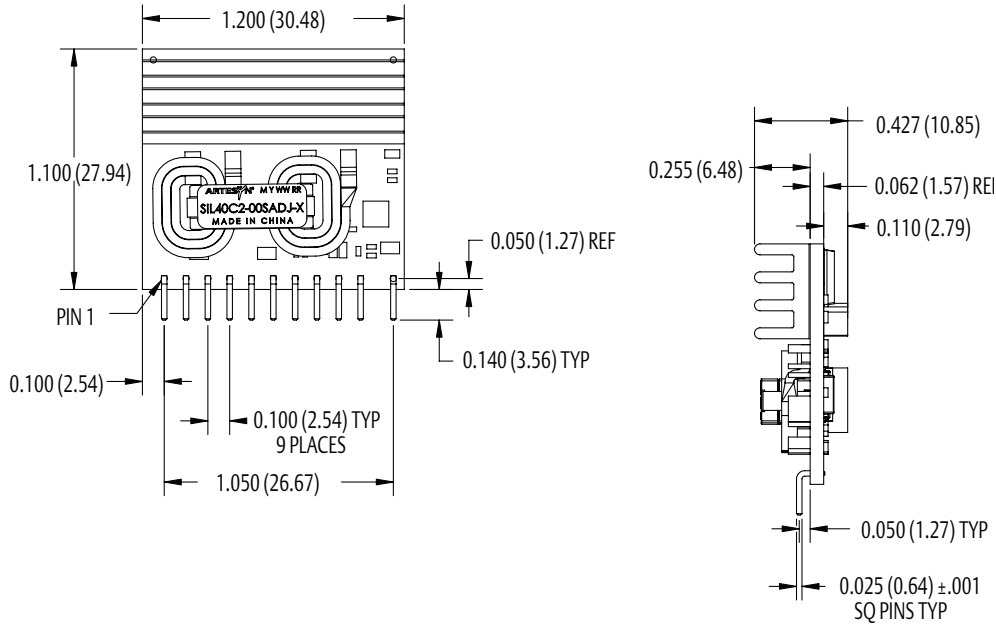
Standard Application Drawing



Mechanical Drawings

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

Vertical Mount

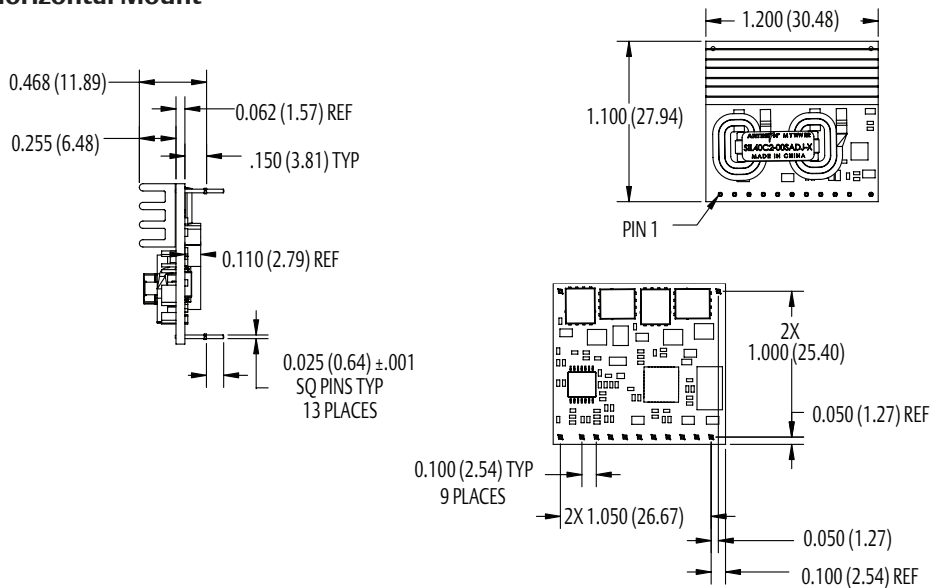


Pin Assignments

| Pin No. | Function |
|---------|---------------|
| 1 | Vout |
| 2 | Vout |
| 3 | Vout |
| 4 | Trim |
| 5 | Enable |
| 6 | Power Good |
| 7 | Ground |
| 8 | Ground |
| 9 | (+) Sense |
| 10 | Vin |
| 11 | Vin |
| 12 | *Mech support |
| 13 | *Mech support |

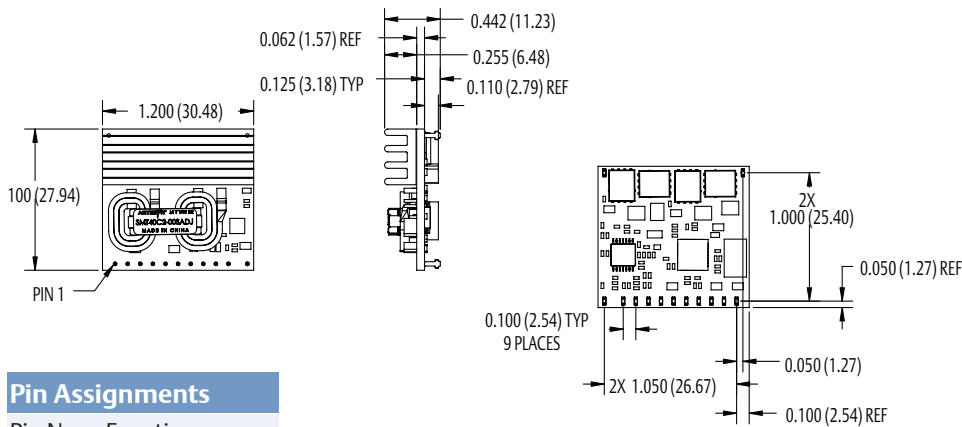
*Horizontal and SMT version only

Horizontal Mount



Surface Mount

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



Pin Assignments

| Pin No. | Function |
|---------|---------------|
| 1 | Vout |
| 2 | Vout |
| 3 | Vout |
| 4 | Trim |
| 5 | Enable |
| 6 | Power Good |
| 7 | Ground |
| 8 | Ground |
| 9 | (+) Sense |
| 10 | Vin |
| 11 | Vin |
| 12 | *Mech support |
| 13 | *Mech support |

*Horizontal and SMT version only

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- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
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