

## 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<br>5 Hz to 20 MHz | See Note 1                 | 25 mV<br>Vin=5 V, Vout=2.5 V                                         |
| Transient response                 | See Notes 1, 2             | 130 mV max. deviation<br>50 µs recovery to within<br>regulation band |
| Input                              |                            |                                                                      |
| Input voltage range                |                            | 4.5-13.8 Vdc                                                         |
| Input current                      | Minimum load<br>Remote OFF | 50 mA<br>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<br>(pending) |                                            | EN60950<br>UL/cUL6950 |
| Material flammability                |                                            | UL94V-0               |
| Weight                               |                                            | 17 g (0.06 oz.)       |
| MTBF                                 | 12 V @ 40 °C,<br>100% load<br>Bellcore 332 | 6,749,409 hours       |
| Coplanarity                          |                                            | 150 µm                |

## Environmental Specifications

|                     |                                |                   |
|---------------------|--------------------------------|-------------------|
| Thermal performance | Operating ambient, temperature | 0 °C to +70 °C    |
| See Note 5          | Non-operating                  | -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 <sup>(3,5)</sup> |
|---------------------|---------------|-----|----------------|-----------------------|-----------------------|----------------------|-----------------|-----------------|-------------------------------|
| 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

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

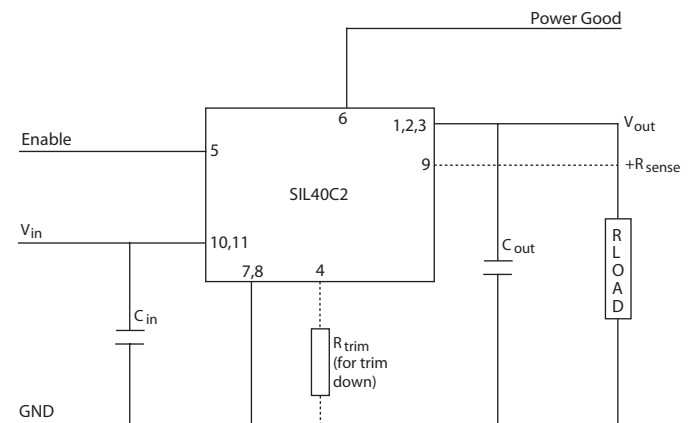
### Output Voltage Adjustment of the SIL40C2 Series

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 Io to full Io and full Io 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

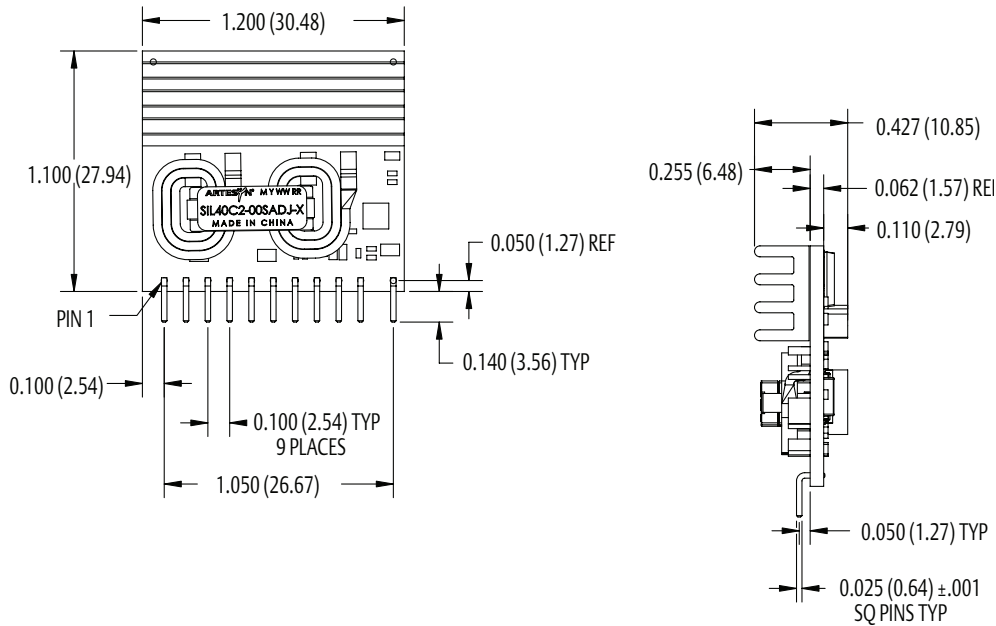
### Standard Application Drawing



## Mechanical Drawings

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

### Vertical Mount

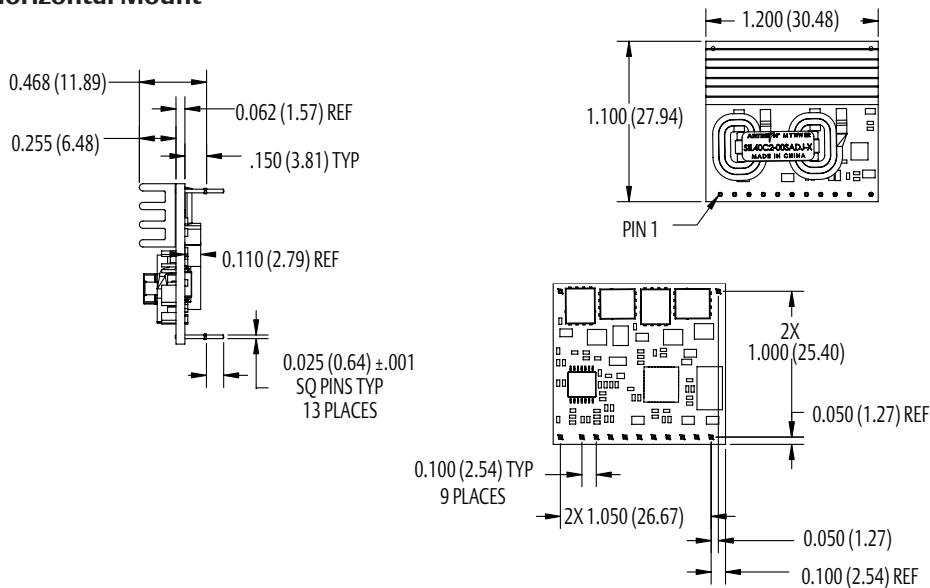


### Pin Assignments

| 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 |

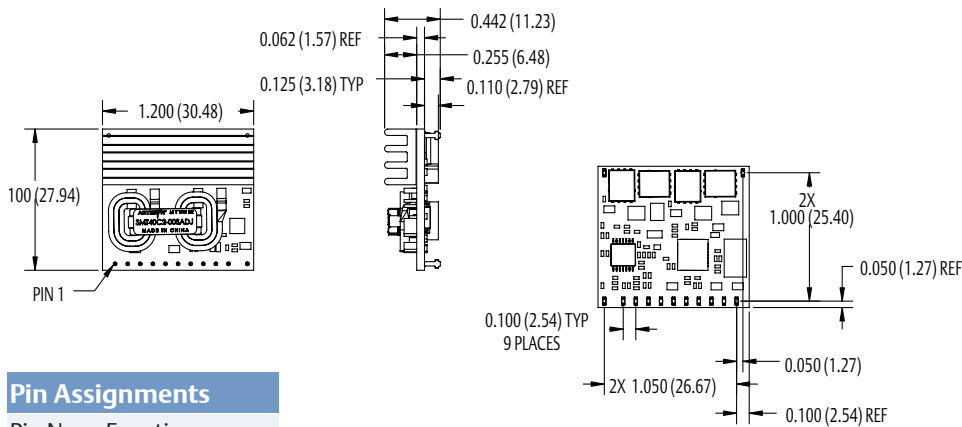
\*Horizontal and SMT version only

### Horizontal Mount



## Surface Mount

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



### 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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