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Artesyn Embedded Technologies
SIL30C-12SADJ-VJ

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Distributor of Artesyn Embedded Technologies: Excellent Integrated System Limited
Datasheet of SIL30C-12SADJ-VJ - CONV DC/DC 12VIN 30A ADJOUT 150W
Contact us: sales@integrated-circuit.com Website: www.integrated-circuit.com

POWER

# SIL30C Series

## C-Class Non-Isolated

**Data Sheet**

| | |
|---|---|
| **Total Power:** | 30 Amps |
| **Input Voltage:** | 10.2 - 13.8 Vdc |
| **# of Outputs:** | Single |

RoHS 6/6 COMPLIANT

## SPECIAL FEATURES

- 30 A current rating
- Input voltage range: 10.2 - 13.8 Vdc
- Nominal output voltage: 0.9 - 5 V
- Industry-leading value
- Cost optimized design
- Excellent transient response
- Output voltage adjustability
- Pathway for future upgrades
- Supports silicon voltage migration
- Reduced design-in and qual time
- Designed in reliability: MTBF of >3.9 million hours per Telcordia SR-332
- Current share
- RoHS compliant
- Two year warranty

## SAFETY

- UL, cUL CAN/CSA 22.2 No. E139421
- UL60950 File No. E139421
- TÜV Product Service (EN60950) Certificate No. B04 08 19870 228
- CB report and certificate to US/6415C/UL

## Electrical Specifications

| | | |
|---|---|---|
| **Input** | | |
| Input voltage range | Nominal 12 V | 10.2 - 13.8 +Vdc |
| Input current | No load<br>Remote OFF | 230 mA<br>30 mA |
| Input current (max.) | See Note 4 | 13.8 A max. @ Io max. and Vin = 10.8 V |
| Input reflexted ripple | See Note 2 | 150 mA (pk-pk) |
| Remote ON/OFF<br>Logic compatibility<br>ON<br>OFF | | <br>Logic high<br>>2.4 Vdc<br><0.8 Vdc |
| Start-up time | See Note 5 | Power up: 30 ms<br>Remote ON/OFF: 30ms |
| Turn ON threshold | | 9.0 Vdc |
| Turn OFF threshold | | 7.6 Vdc |
| **Output** | | |
| Voltage adjustability | See Note 1 | 0.9 to 5.0 Vdc |
| Output setpoint accuracy | Using 1.0% trim resistors | ±3.0% |
| Line regulation | Low line to high line | ±0.2% |
| Load regulation | Full load to min. load | ±1.5% |
| Min./max. load | | 0 A/30 A |
| Overshoot | At turn-on | 1.0% max. |
| Undershoot | At turn-off | 10 mV max. |
| Ripple and noise<br>5 Hz to 20 MHz | See Note 2 | 50 mV pk-pk<br>15 mV rms |
| Transient response | See Note 3 | 75 mV typical deviation<br>150 µs recovery to within regulation band |
| Current share | Full load | ±10% |

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

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# SIL30C Series Data Sheet

## General Specifications

| | | |
|---|---|---|
| Efficiency | | 91% |
| Switching frequency | Fixed | 300 kHz typ. |
| Approvals and standards | (See Note 7) | TÜV Product Services EN60950, UL/cUL60950 |
| Material flammability | | UL94V-0 |
| Weight | | 28.3 g (1 oz) |
| MTBF | Telcordia SR-332 | 4,456,655 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 | Foldback, non-latching | |
| Over-temperature | Hiccup, non-latching | |
| ***Recommended System Capacitance*** | | |
| Input capacitance | (See Note 9) | 270 µF / 20 mW ESR max. |
| Output capacitance | (See Note 9) | 680 µF / 10 mW ESR max. |

## Ordering Information

| Model Number (10, 12) | Output Power (Max.) | Input Voltage | Output Voltage | Output Current (Min.) | Output Current (Max.) | Efficiency (Typical) | Regulation | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Line | Load |
| **SIL30C-12SADJ-VJ** | 150 W | 10.2 - 13.8 Vdc | 0.9 - 5 V | 0 A | 30 A | 91% | ±0.2% | ±1.5% |

## Part Number System with Options

| Product Family | Rated Output Current | Performance | | Input Voltage | Number of Outputs | Output Voltage | | Mounting Option | Packaging Options |
|---|---|---|---|---|---|---|---|---|---|
| **SIL** | **30** | **C** | **-** | **12** | **S** | **ADJ** | **-** | **V** | **J** |
| SIL = Single In Line | 30 = 30 Amp | C = Cost Optimized | | 12 = 10.2 - 13.8 Vdc | S = Single Output | ADJ = Adjustable Ouput | | V = Vertical<br>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 SIL30C-12SADJ. 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 SIL30C-12SADJ converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

**Notes:**

1. Uses external resistor from TRIM to output ground. See Application Note 132 for details.
2. Measured with external filter. See Application Note 132 for details.
3. 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.
4. External input fusing is recommended.
5. Power up is the time from application of dc input to POWER GOOD high. Remote ON/OFF asserted high to POWER GOOD high.
6. Signal line assumed <3 m.
7. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
8. See Application Note 132 for operation above 50 ºC.
9. See Application Note 132 for ripple current requirements.
10. 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. SIL30C-12SADJ-HJ.
11. This model has a wide trim output of between 0.9 Vdc to 5 Vdc. An external resistor adjusts the output voltage.
12. 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.

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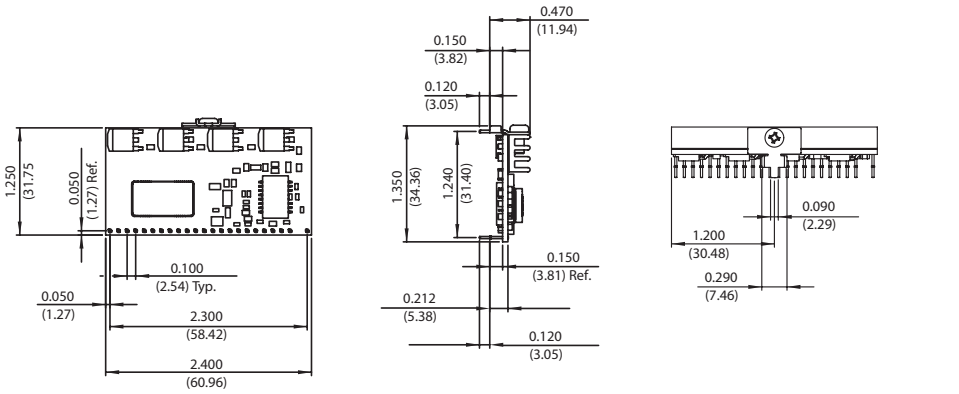
## Mechanical Drawings

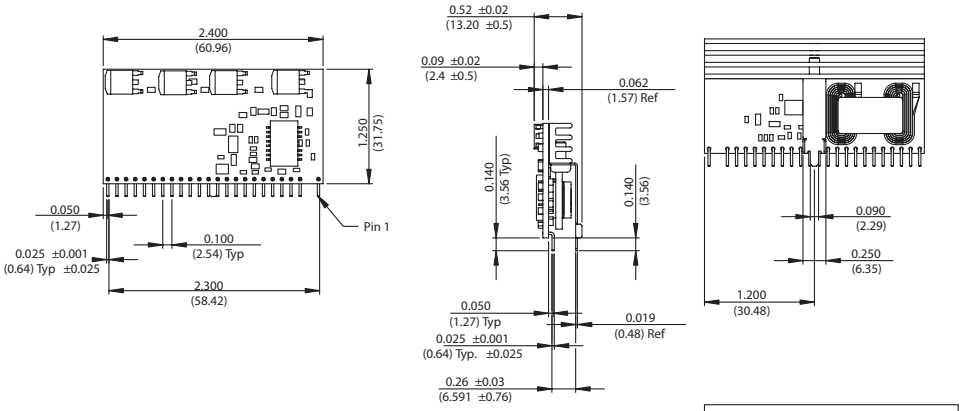
| Pin Assignments | |
|---|---|
| *Pin* | *Function* |
| 1 | Trim |
| 2 | No Pin |
| 3 | Ground |
| 4 | Power Good |
| 5 | Not Connected |
| 6 | Current Share |
| 7 | Ground |
| 8 | Ground |
| 9 | Remote ON/OFF |
| 10 | Remote Sense (GND) |
| 11 | Remote Sense (O/P) |
| 12 | Vin |
| 13 | Vin |
| 14 | Vin |
| 15 | Vout |
| 16 | Vout |
| 17 | Ground |
| 18 | Vout |
| 19 | Ground |
| 20 | Vout |
| 21 | Ground |
| 22 | Vout |
| 23 | Ground |
| 24 | Vout |

### Horizontal Mount




All dimensions in inches (mm)
General tolerance ±0.015in ( ±0.30mm)
except where specified otherwise

### Vertical Mount

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