

SIL30E Series ART



12 Vin Single Output

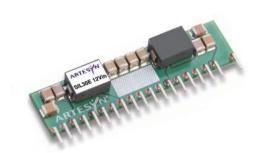
DC-DC CONVERTERS

Non-isolated POL Converter

NEW Product

- 30 A current rating
- Input voltage range: 8 Vdc to 14 Vdc
- Output voltage range: 0.8 Vdc to 3.63 Vdc
- Ultra high efficiency: 93% @ 12 Vin and 3.3 Vout
- Extremely low internal power dissipation
- Minimal thermal design concerns
- Designed in reliability: MTBF of 4,435,000 hours per Telcordia SR-332
- Ideal solution where board space is at a premium or tighter card pitch is required
- Available RoHS compliant

The SIL30E series are non-isolated dc-dc converters packaged in a single-in-line footprint giving designers a cost effective solution for conversion from a 12 V source. The SIL30E has a wide input range (8 Vdc to 14 Vdc) and offers a wide 0.8 Vdc to 3.63 Vdc output voltage range with a 30 A load, which allows for maximum design flexibility and a pathway for future upgrades. The SIL30E is designed for applications that include distributed power, workstations, optical network and wireless applications. Implemented using state of the art surface-mount technology and automated manufacturing techniques, the SIL30E offers compact size and efficiencies of up to 93%.





All specifications are typical at 12 Vin and 1.5 Vout, full load at 25 °C unless otherwise stated $C_{out} = 100 \, \mu F$

SPECIFICATIONS

OUTPUT SPECIFICATIONS

| Voltage adjustability | | 0.8-3.63 Vdc |
|--|----------------|--|
| Setpoint accuracy | | ±1.3% typ. |
| Line regulation | | ±0.2% typ. |
| Load regulation | | ±1.5% typ. |
| Total error band | | ±3.0% typ. |
| Minimum load | | 0 A |
| Overshoot/undershoot | | None |
| Ripple and noise | 5 Hz to 20 MHz | 50 mV pk-pk 25 mV rms |
| Temperature coefficient | | ±0.01%/°C |
| Transient response Slew rate = 0.5 A/μs | Vout = 1.5 V | 50% to 75% load step 3% max. deviation 10 μs recovery to within ±1.0% |
| Remote sense | | 10% Vo compensation |

INPUT SPECIFICATIONS

| IN OT OF LOW IDAMON | 9 | |
|------------------------|----------------|--|
| Input voltage range | | 8-14 Vdc |
| Input current | No load (max.) | 250 mA |
| Input current (max.) | | 9.2 A max. @ lo max. and Vout = 3.3 V |
| Input reflected ripple | | 220 mA rms |
| Remote ON/OFF | | (See Note 1) |
| Start-up time | | 20 ms |

EMC CHARACTERISTICS

| EN61000-4-2, IEC801-2 |
|-----------------------|
| EN61000-4-6 |
| EN61000-4-3 |
| |

GENERAL SPECIFICATIONS

| Efficiency | @ 12 Vin, 3.3 Vout | | 93% typ. |
|-------------------------|--------------------|--------|---|
| Insulation voltage | | | Non-isolated |
| Switching frequency | Fixed | | 1.3 MHz typ. |
| Approvals and standards | | | EN60950-1 UL/cUL60950-1 |
| Material flammability | | | UL94V-0 |
| Dimensions | (LxWxH) | | x 7.80 x 12.70 mm 307 x 0.500 inches |
| Pin length | | | 0.140 in (3.56 mm) |
| Weight | | | 7.0 g (0.25 oz) |
| MTBF | Telcordia | SR-332 | 4,435,000 hours |

ENVIRONMENTAL SPECIFICATIONS

| Thermal performance | Operating ambient, | -40 °C to +85 °C |
|---------------------|--------------------|-------------------|
| | temperature | |
| | Non-operating | -40 °C to +125 °C |

PROTECTION

| Short-circuit | Continuous |
|---------------|--------------------|
| Thermal | Automatic recovery |

International Safety Standard Approvals



UL/cUL CAN/CSA 22.2 No. EI74104 UL 60950 File No. El74104

TÜV Product Service (EN60950) Certificate No. B05 06 38572 055 CB report and certificate to IEC60950







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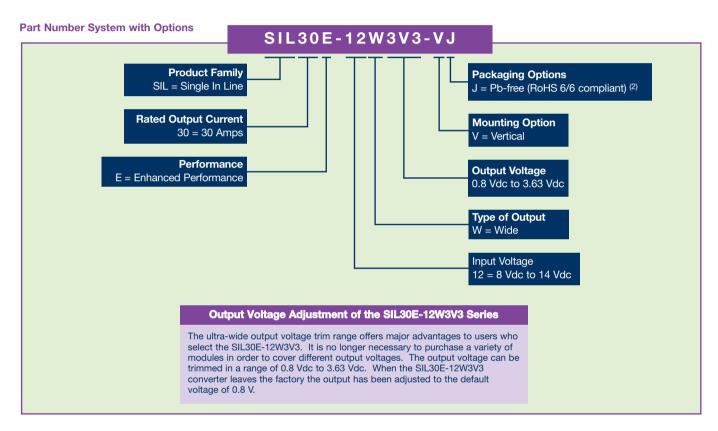
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For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

| OUTPUT POWER | INPUT | OUTPUT | OUTPUT CURRENT | OUTPUT CURRENT | EFFICIENCY | REGU | LATION | MODEL |
|-----------------|----------|--------------|-------------------|-------------------|------------|-------|--------|------------------|
| (MAX.) | VOLTAGE | VOLTAGE | (MIN.) | (MAX.) | (TYP.) | LINE | LOAD | NUMBER (2,3) |
| 99 W | 8-14 Vdc | 0.8-3.63 Vdc | 0 A | 30 A | 93% | ±0.2% | ±1.5% | SIL30E-12W3V3-VJ |



Notes

The SIL30E features a 'Positive Logic' Remote ON/OFF operation. If not using the Remote ON/OFF pin, leave the pin open (the converter will be on). The Remote ON/OFF pin is referenced to ground.

The following conditions apply for the SIL30E:

Configuration

Remote pin open circuit
Remote pin pulled low [Von/off < 0.8 V]
Remote pin pulled high [Von/off >2.8 V]

Converter Operation

Unit is ON Unit is OFF Unit is ON

A 'Negative Logic' Remote ON/OFF version is also possible with this converter. Please consult the factory for details.

TSE ROHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
NOTICE: Some models do not support all options. Please contact your

3 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/powergroup/products.htm to find a suitable alternative.

Notes

- A The derating curve represents the condition at which internal components are within the Artesyn derating guidelines.
- B Characteristic data has been developed from actual products tested at 25 °C. This data is considered typical data for the converter.



LA SIL30E Series ART



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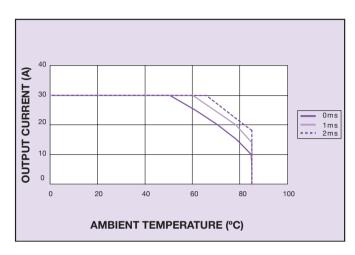


Figure 1 - Derating Curve Vin = 12 V, Output Voltage = 1.5 V (See Note A)

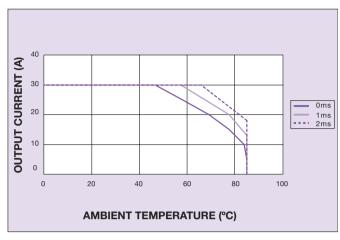


Figure 2 - Derating Curve Vin = 12 V, Output Voltage = 1.8 V (See Note A)

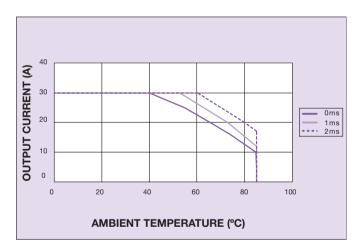


Figure 3 - Derating Curve Vin = 12 V, Output Voltage = 2.5 V (See Note A)

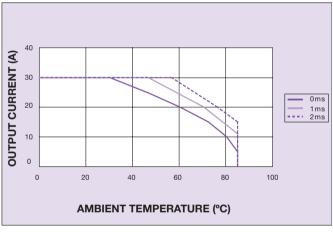


Figure 4 - Derating Curve Vin = 12 V, Output Voltage = 3.3 V (See Note A)

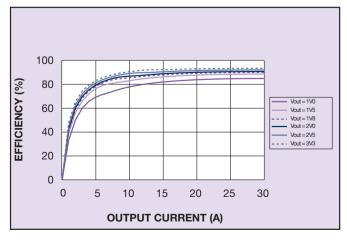


Figure 5 - Efficiency vs Load Current Vin = 12 V (See Note B)

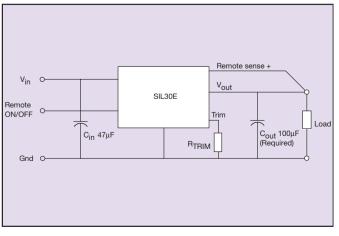


Figure 6 - Standard Application



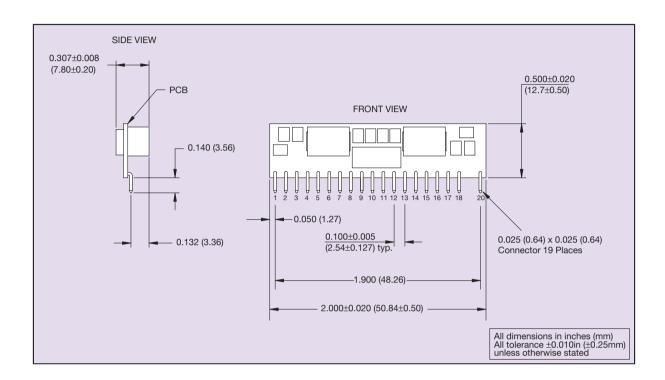


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NEW Product



| PIN CONNECTIONS | | | | | | | |
|-----------------|---------------|---------|---------------|--|--|--|--|
| PIN NO. | FUNCTION | PIN NO. | FUNCTION | | | | |
| 1 | Vin 11 | | Vout | | | | |
| 2 | Vin | | Vout | | | | |
| 3 | Ground | 13 | Remote ON/OFF | | | | |
| 4 | Ground | 14 | Ground | | | | |
| 5 | Trim | 15 | Ground | | | | |
| 6 | Remote Sense+ | 16 | Ground | | | | |
| 7 | Ground | 17 | Ground | | | | |
| 8 | Ground | 18 | Vin | | | | |
| 9 | Vout | 19 | N/C | | | | |
| 10 | Vout | 20 | Vin | | | | |

Figure 7 - Mechanical Drawing and Pinout Table

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