SIL30E Series

12 Vin Single Output

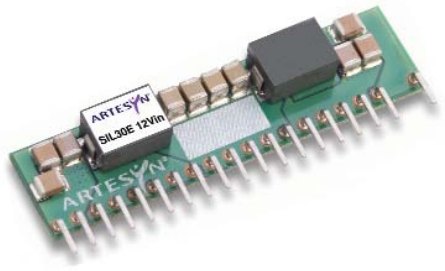
POLA Point-of-Load Alliance

ARTESYN TECHNOLOGIES

DC-DC CONVERTERS | Non-isolated POL Converter | 1

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%.

2 YEAR WARRANTY

SPECIFICATIONS

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

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

Input voltage range		8-14 Vdc
Input current	No load (max.)	250 mA
Input current (max.)		9.2 A max. @ Io 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

Electrostatic discharge	EN61000-4-2, IEC801-2
Conducted immunity	EN61000-4-6
Radiated immunity	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)	50.84 x 7.80 x 12.70 mm 2.000 x 0.307 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, temperature	-40 °C to +85 °C
	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. EI74104

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

SIL30E Series

12 Vin Single Output

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

NEW Product

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

Part Number System with Options

SIL30E-12W3V3-VJ

- **Product Family**: SIL = Single In Line
- **Rated Output Current**: 30 = 30 Amps
- **Performance**: E = Enhanced Performance
- **Packaging Options**: J = Pb-free (RoHS 6/6 compliant) (2)
- **Mounting Option**: V = Vertical
- **Output Voltage**: 0.8 Vdc to 3.63 Vdc
- **Type of Output**: W = Wide
- Input Voltage: 12 = 8 Vdc to 14 Vdc

Output Voltage Adjustment of the SIL30E-12W3V3 Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL30E-12W3V3. 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 0.8 Vdc to 3.63 Vdc. When the SIL30E-12W3V3 converter leaves the factory the output has been adjusted to the default voltage of 0.8 V.

Notes

1 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	Converter Operation
Remote pin open circuit	Unit is ON
Remote pin pulled low [Von/off < 0.8 V]	Unit is OFF
Remote pin pulled high [Von/off >2.8 V]	Unit is ON

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

2 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.

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.

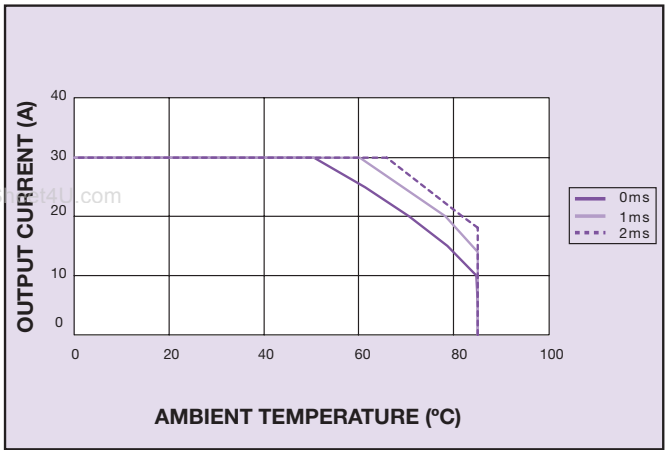


Figure 1 - Derating Curve
Vin = 12 V, Output Voltage = 1.5 V (See Note A)

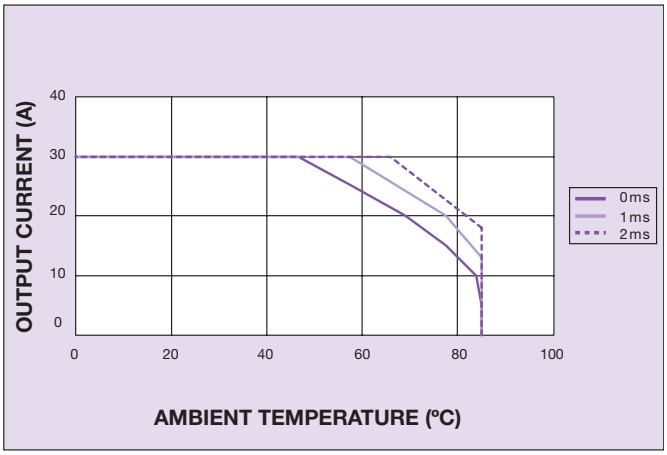


Figure 2 - Derating Curve
Vin = 12 V, Output Voltage = 1.8 V (See Note A)

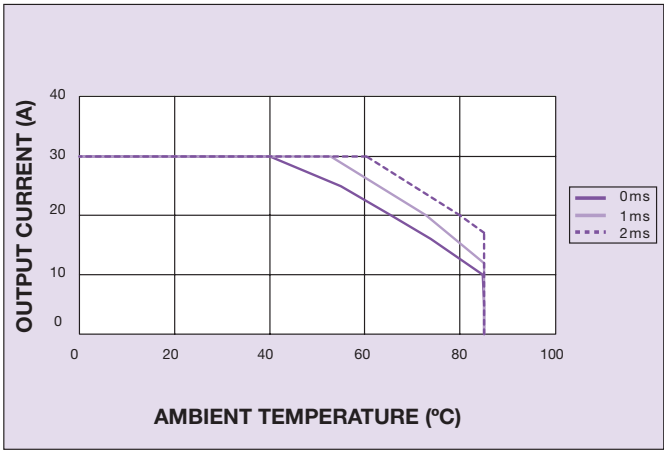


Figure 3 - Derating Curve
Vin = 12 V, Output Voltage = 2.5 V (See Note A)

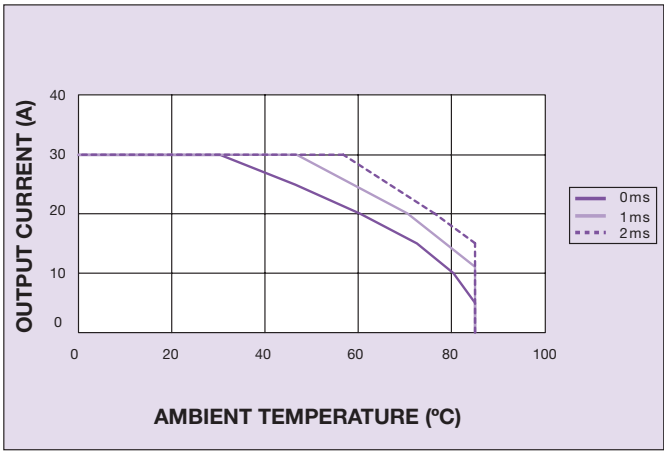


Figure 4 - Derating Curve
Vin = 12 V, Output Voltage = 3.3 V (See Note A)

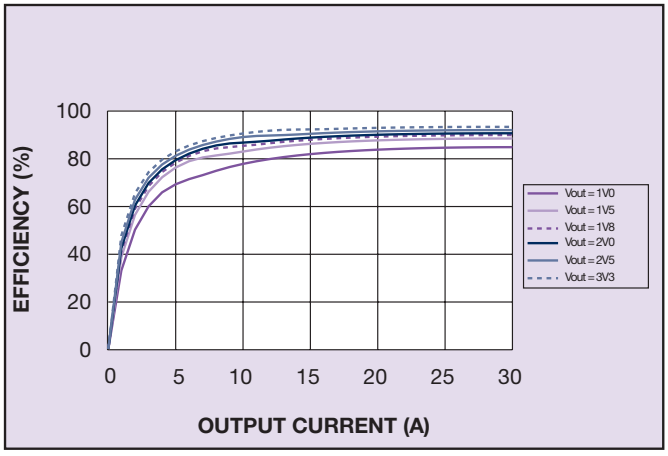


Figure 5 - Efficiency vs Load Current
Vin = 12 V (See Note B)

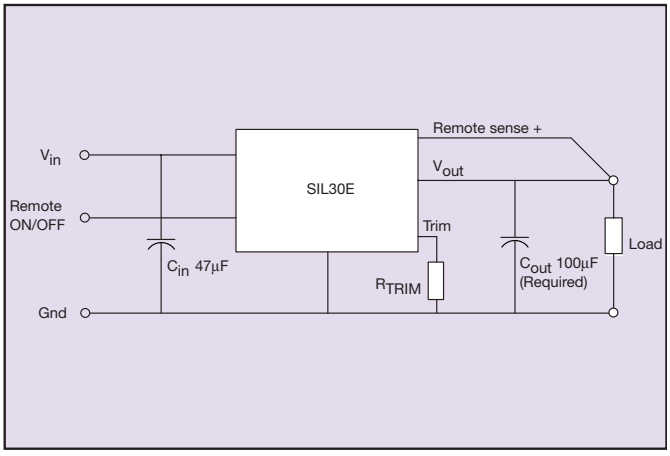
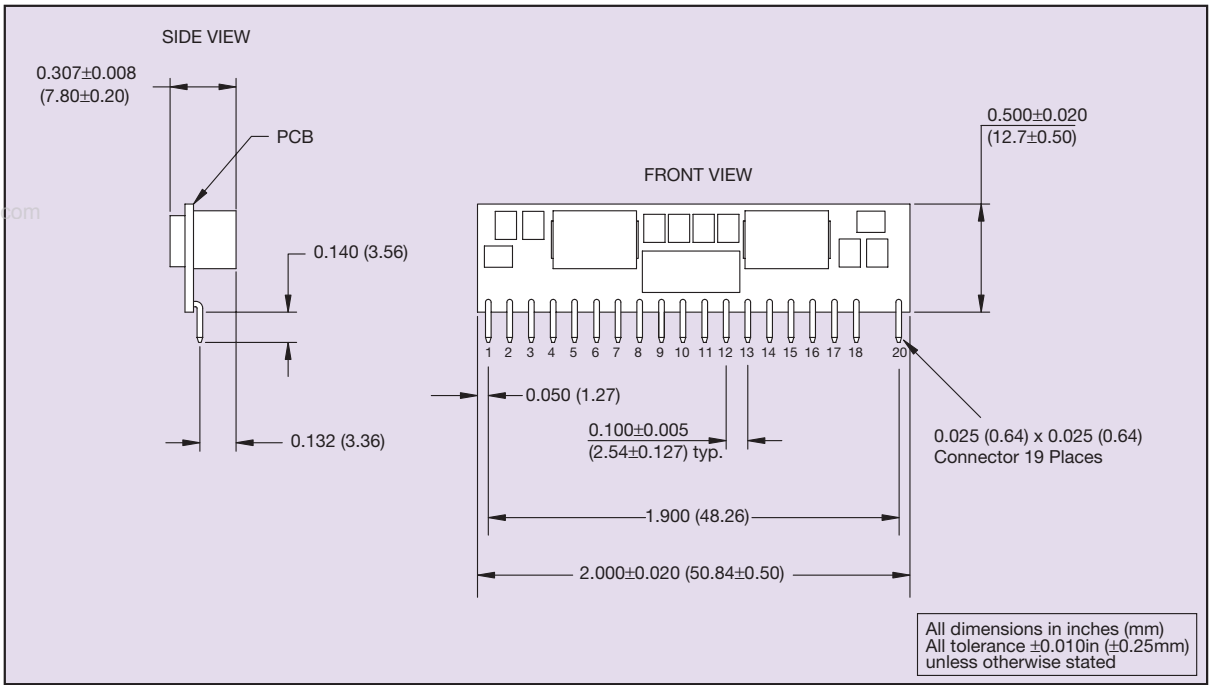


Figure 6 - Standard Application



PIN CONNECTIONS			
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	Vin	11	Vout
2	Vin	12	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