SMT30E Series

12 Vin Single Output

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: 91% @ 12 Vin and 3.3 Vout**
- **Extremely low internal power dissipation**
- **Minimal thermal design concerns**
- **Designed in reliability: MTBF of 3,289,053 hours per Telcordia SR-332**
- **Ideal solution where board space is at a premium or tighter card pitch is required**
- **Industry standard surface-mount footprint**
- **Available RoHS compliant**



The SMT30E series are non-isolated dc-dc converters packaged in a surface-mount footprint giving designers a cost effective solution for conversion from a 12 V source. The SMT30E 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 SMT30E 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 SMT30E offers compact size and efficiencies of up to 91%.

Patent No. 6,786,736

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	60 mV pk-pk 25 mV rms
Temperature coefficient		±0.01%/°C
Transient response Slew rate = 0.5 A/µs	1.5 Vout	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

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

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	91% 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)	33.02 x 13.46 x 8.10 mm 1.3 x 0.53 x 0.319 inches
Weight		6.3 g (0.22 oz)
Coplanarity		100 µm
MTBF	Telcordia SR-332	3,289,053 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient, temperature	-40 °C to +85 °C
	Non-operating	-40 °C to +125 °C
MSL	JEDEC J-STD-020C	Level 3

PROTECTION

Short-circuit	Continuous
Thermal	Automatic recovery

SMT30E 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 (MAX.)	REGULATION		MODEL NUMBER (2, 3)
						LINE	LOAD	
99 W	8-14 Vdc	0.8-3.63 Vdc	0 A	30 A	91%	±0.2%	±1.5%	SMT30E-12W3V3J

Part Number System with Options

SMT30E-12W3V3-TJ

Product Family
SMT = Surface Mount

Rated Output Current
30 = 30 Amps

Performance
E = Enhanced Performance

Packaging Options (2)
No '-T' Suffix = Pb-free RoHS 6/6 compliant parts in trays e.g SMT30E-12W3V3J
-TJ = Pb-free RoHS 6/6 compliant part in Tape and Reel e.g SMT30E-12W3V3-TJ

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 SMT30E-12W3V3J Series

The ultra-wide output voltage trim range offers major advantages to users who select the SMT30E-12W3V3J. 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 SMT30E-12W3V3J converter leaves the factory the output has been adjusted to the default voltage of 0.8 V.

Notes

1 The SMT30E 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 SMT30E:

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. To order please place the suffix 'R' towards the end of the model number, e.g. SMT30E-12W3V3-TRJ.

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 curves represent 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.

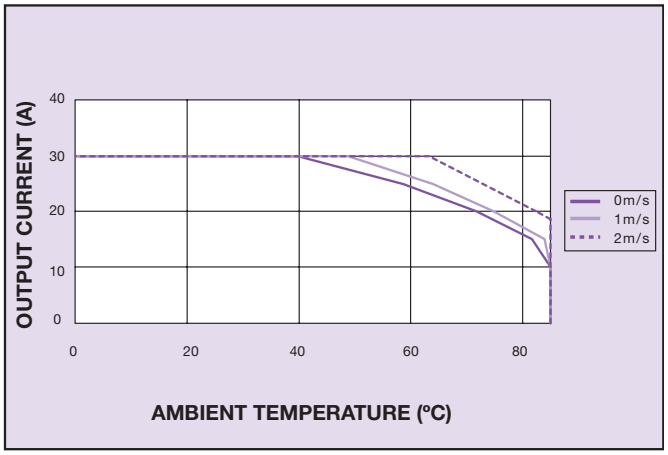


Figure 1 - Derating Curve
Vin = 12 V, Output Voltage = 1.0 V (See Note A)

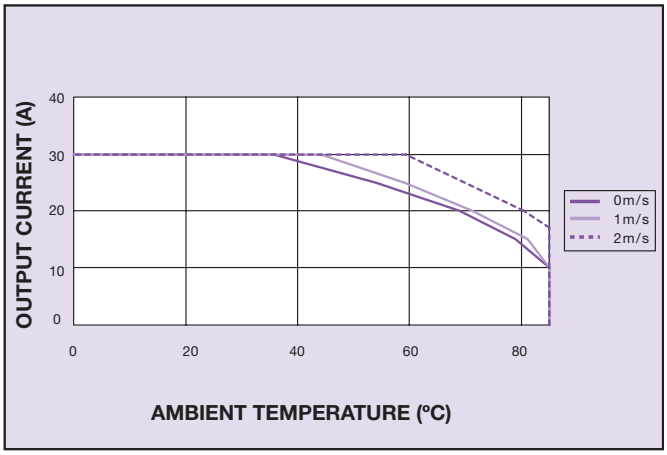


Figure 2 - Derating Curve
Vin = 12 V, Output Voltage = 1.5 V (See Note A)

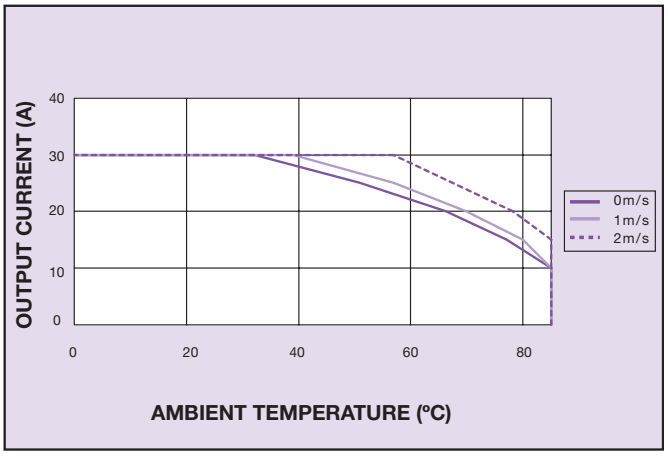


Figure 3 - Derating Curve
Vin = 12 V, Output Voltage = 1.8 V (See Note A)

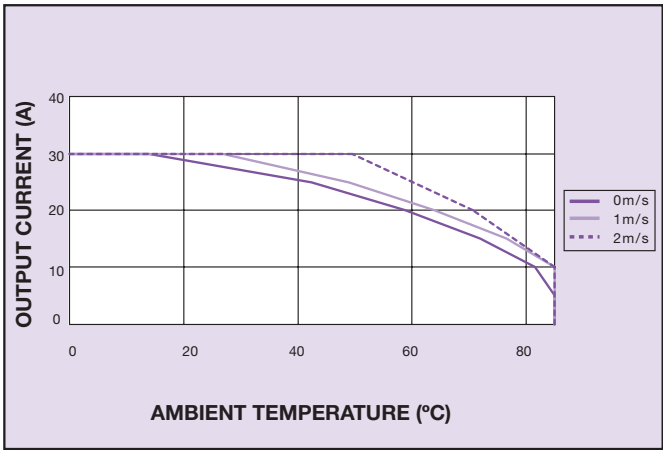


Figure 4 - Derating Curve
Vin = 12 V, Output Voltage = 2.5 V (See Note A)

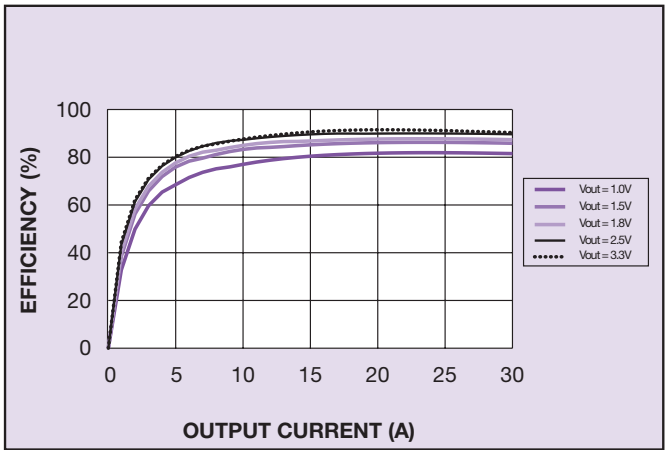


Figure 5 - Efficiency vs Load Current
Vin = 12 V (See Note B)

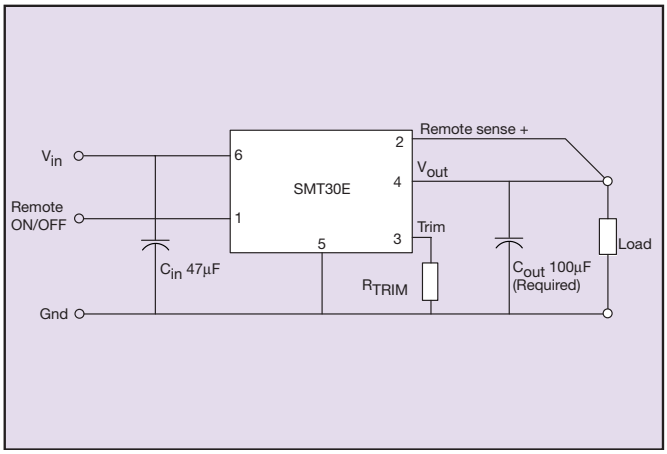
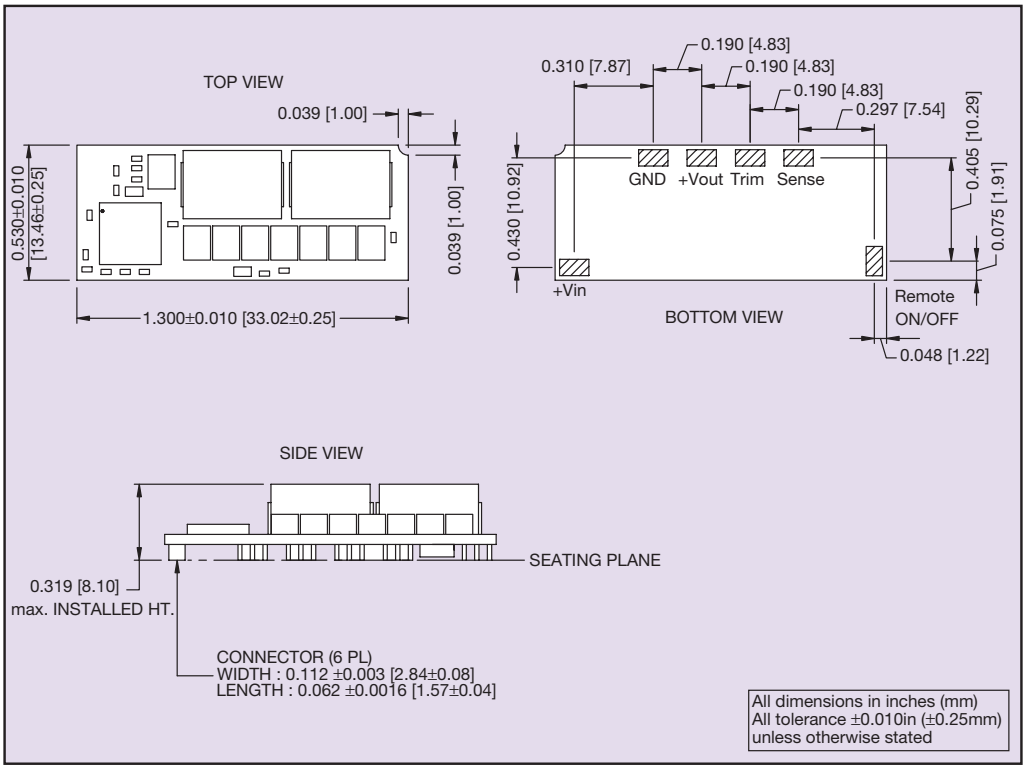


Figure 6 - Standard Application



PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	Remote ON/OFF
2	Remote Sense +
3	Trim
4	+Vout
5	Ground
6	+Vin

Figure 7 - Mechanical Drawing and Pinout Table

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