

SMT30E Series

E-Class Non-Isolated

Data Sheet

Total Power: 99 Watts
Input Voltage: 8 - 14 Vdc
of Outputs: Single

SPECIAL FEATURES

- 30 A current rating
- Input voltage range: 8 - 14Vdc
- Output voltage range: 0.8 - 3.63 V
- Ultra high efficiency: 91% @ 12 Vin and 3.3 Vout
- Extremely low internal power dissipation
- Minimal thermal design concerns
- Designed in reliability: MTBF of >3.2 million 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
- RoHS compliant
- Two year warranty

SAFETY

- UL, cUL CAN/CSA 22.2 No. E174104
- UL 60950-1 File No. E174104
- TÜV Product Service (EN60950) Certificate No. B05 06 38572 055
- CB report and certificate to IEC60950



Electrical Specifications

Input		
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
Output		
Voltage adjustability		0.8 to 3.63 Vdc
Setpoint accuracy		±1.3% typical
Line regulation		±0.2% typical
Load regulation		±1.5% typical
Total error band		±3.0% typical
Overshoot/undershoot		None
Ripple and noise	5 Hz - 20 MHz	60 mV pk-pk 25 mV rms
Temperature coefficient		±0.01%/ °C
Transient response	Vout = 1.5 V	50% - 75% load step
Slew rate = 0.5 A μs		3% max. deviation; 10 μs recovery to within ±1%

All specifications are typical 12 Vin and 1.5 Vout, full load at 25 °C unless otherwise stated. Cout = 100 μF

General Specifications

Efficiency	@12 Vin, 3.3 Vout	91%
Insulation voltage		Non-isolated
Switching frequency	Fixed	1.3 MHz
Approvals and standards		EN60950, UL/cUL60950
Material flammability		UL94V-0
Dimensions	L x W x H	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)
MTBF	Telcordia SR-332	3,289,053 hours

EMC Characteristics

Electrostatic discharge	EN61000-4-2, IEC801-2
Conducted immunity	EN61000-4-6
Radiated immunity	EN61000-4-3

Environmental Specifications

Thermal performance	Operating ambient temperature	-40 °C to +85 °C
	Non-operating temperature	-40 °C to +125 °C
MSL		Level 3

Protection

Short-circuit	Continuous
Thermal	Automatic recovery

Ordering Information

Model Number	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SMT30E-12W3V3-J	99W	8 - 14 Vdc	0.8 - 3.63 V	0 A	30 A	91%	±0.2%	±1.5%

Part Number System with Options

Product Family	Rated Output Current	Performance	Input Voltage	Type of Outputs	Output Voltage	Packaging Options
SMT	30	E	12	W	3V3	J
SMT = Surface mount	30 = 30 Amp	E = Enhanced performance	12 = 8 - 14 Vdc	W = Wide	0.8 - 3.63 Vdc	No "T" suffix = Pb-free RoHS 6/6 compliant in trays -TJ = Pb-free RoHS 6/6 compliant in tape and reel

Output Voltage Adjustment

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:

- 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

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

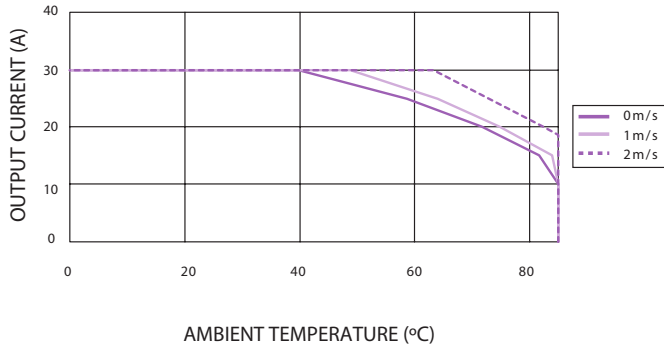


Figure 1 - Derating Curve
 Vin = 12 V, Output Voltage = 1.0 V (See Note A)

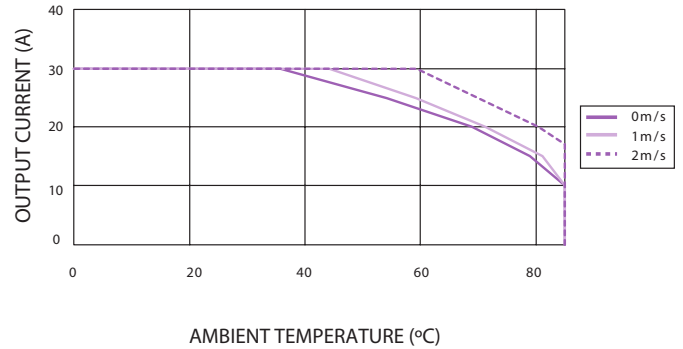


Figure 2 - Derating Curve
 Vin = 12 V, Output Voltage = 1.5 V (See Note A)

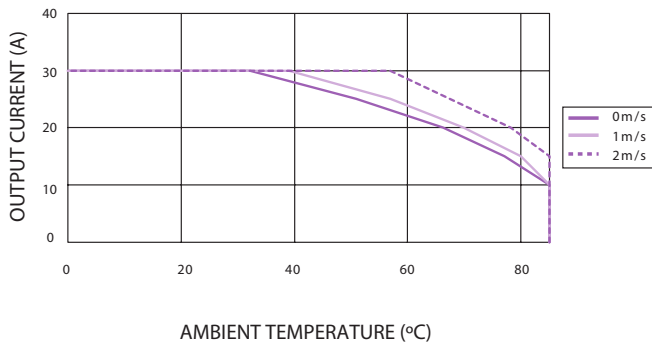


Figure 3 - Derating Curve
 Vin = 12 V, Output Voltage = 1.8 V (See Note A)

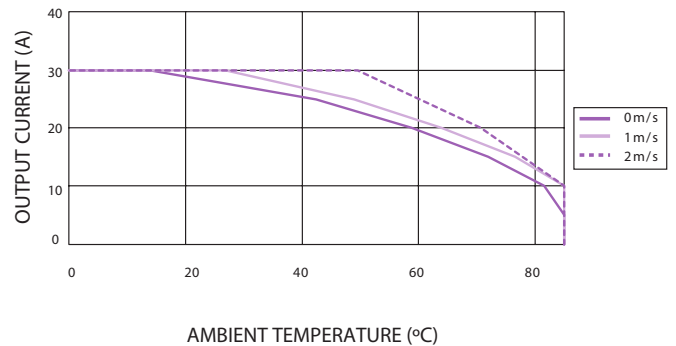


Figure 4 - Derating Curve
 Vin = 12 V, Output Voltage = 2.5 V (See Note A)

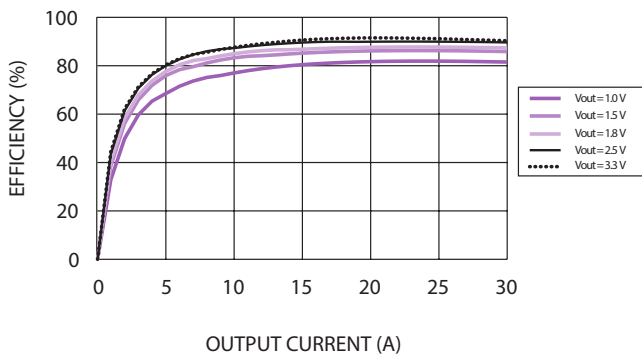


Figure 5 - Efficiency vs Load Current
 Vin = 12 V (See Note B)

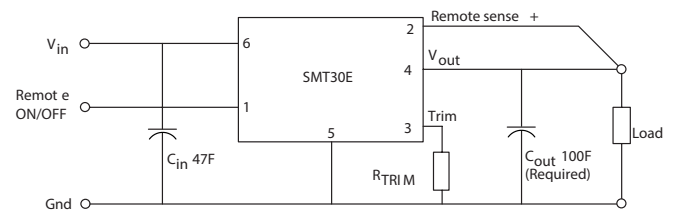
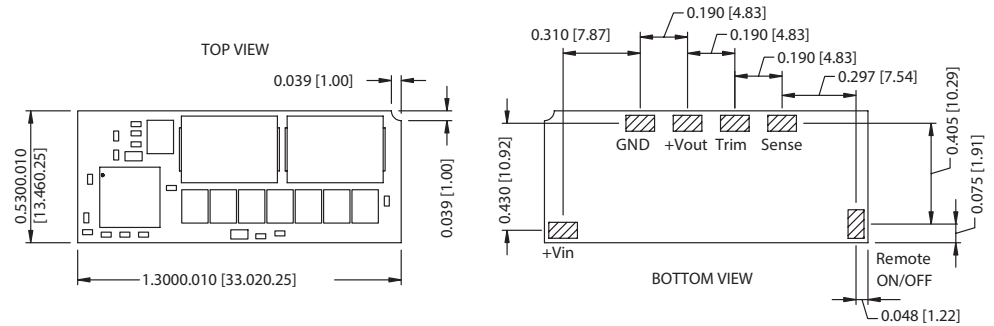


Figure 6 - Standard Application

Mechanical Drawings

Pin Assignments	
Pin	Function
1	Remote ON/OFF
2	Remote Sense
3	Trim
4	+Vout
5	Ground
6	+Vin



All dimensions in inches (mm)
 All tolerance 0.010in (0.25mm)
 unless otherwise stated

WORLDWIDE OFFICES

Americas

2900 S.Diablo Way
 Tempe, AZ 85282
 USA
 +1 888 412 7832

Europe (UK)

Waterfront Business Park
 Merry Hill, Dudley
 West Midlands, DY5 1LX
 United Kingdom
 +44 (0) 1384 842 211

Asia (HK)

14/F, Lu Plaza
 2 Wing Yip Street
 Kwun Tong, Kowloon
 Hong Kong
 +852 2176 3333



www.artesyn.com

While every precaution has been taken to ensure accuracy and completeness in this literature, Artesyn Embedded Technologies assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions. Artesyn Embedded Technologies, Artesyn and the Artesyn Embedded Technologies logo are trademarks and service marks of Artesyn Embedded Technologies, Inc. All other names and logos referred to are trade names, trademarks, or registered trademarks of their respective owners. © 2015 Artesyn Embedded Technologies, Inc.

For more information: www.artesyn.com/power
 For support: productsupport.ep@artesyn.com