

## SMT10E Series

### 13.2 Watts Non-Isolated DC-DC Converters

#### Data Sheet

**Total Power:** 13.2 Watts  
**Input Voltage:** 10 - 14 Vdc  
**# of Outputs:** Single

#### SPECIAL FEATURES

- 10 A current rating
- Input voltage range:  
10 - 14 Vdc
- Output voltage range:  
0.8 - 3.63 V
- Ultra-high efficiency:  
94% @ 12 Vin and 3.3 Vout
- Extremely low internal power dissipation
- Minimal thermal design concerns
- Designed in reliability:  
MTBF of >6,920,000 hours per  
Telcordia SR-322
- Ideal solution where board space is  
at a premium or tighter card pitch  
is required
- Industry standard surface-mount  
footprint
- Available RoHS compliant
- Two year warranty

#### SAFETY

- UL/cUL CAN/CSA 22.2 No. 60950-  
1-03/UL60950-1, File No. E174104
- TÜV Product Service (EN60950)  
Certificate No. B03 10 38572 037
- CB report and certificate to  
IEC60950, Certificate No. DE3-  
51686M1



The SMT10E 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 SMT10E has a wide input range (10 - 14 Vdc) and offers a wide 0.8 - 3.63 Vdc output voltage range with a 10 A load, which allows for maximum design flexibility and a pathway for future upgrades. The SMT10E 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 SMT10E offers compact size and efficiencies of up to 94%.

#### Electrical Specifications

Input		
Input voltage range		10 - 14 Vdc
Input current	No load (max.)	100 mA
Input current (max.)		3 A max. @ Io max. and Vout = 3.63 V
Input reflected ripple		100 mA rms
Remote ON/OFF		See Note 1
Start-up time		20 ms
Output		
Voltage adjustability		0.8 - 3.63 Vdc
Setpoint accuracy		±0.4%
Line regulation		±0.2%
Load regulation		±1.0%
Total error band		±3.0% typical
Minimum load		0 A
Overshoot/undershoot		None
Ripple and noise 5 to 20 MHz		60 mV pk=pk 25 mV rms max.
Temperature co-efficient		±0.01%/ °C
Transient response		100 mV max. deviation 100 µs recovery to within ±1.0%
Remote sense		10% Vo compensation

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

## General Specifications

Efficiency		94%
Insulation voltage		Non-isolated
Switching frequency	Fixed	320 kHz typical
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	L x W x H	33.02 x 13.46 x 8.21 mm 1.3 x 0.53 x 0.323 inches
Weight		6.3 g (0.22 oz)
MTBF	Telcordia SR-332	6,920,000 hours

## Environmental Specifications

Thermal performance	Operating ambient temperature	-40 °C to +85 °C
See Note 2	Non-operating temperature	-40 °C to +125 °C
<b>Protection</b>		
Short-circuit	Continuous	
Thermal	Automatic recovery	

## EMC Characteristics

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

## Ordering Information

Model Number <sup>(3, 4)</sup>	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SMT10E-12W3V3-J	33 W	10 - 14 Vdc	0.8 - 3.63 Vdc	0 A	10 A	94%	±0.2%	±1.0%

## Part Number System with Options

Product Family	Rated Output Current	Performance	Input Voltage	Type of Output	Output Voltage	Packaging Options
<b>SMT</b>	<b>10</b>	<b>E</b>	<b>12</b>	<b>W</b>	<b>3V3</b>	<b>J</b>
SMT - Surface-mount	10 = 10 Amps	E = Enhanced Performance	12 = 10 - 14 Vdc	W = Wide	0.08 - 3.63 Vdc	No '-T' suffix = Pb-free RoHS 6/6 compliant parts in trays -TJ = Pb-free RoHS 6/6 compliant parts in tape and reel

## Output Voltage Adjustment

The ultra-wide output voltage trim range offers major advantages to users who select the SMT10E-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 SMT10E-12W3V3J converter leaves the factory the output has been adjusted to the default voltage of 0.8 V.

## Notes:

- The SMT10E 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.

## Configuration

Remote pin open circuit  
Remote pin pulled low [Von/off < 0.8 V]  
Remote pin pulled high [Von/off > 1.2 V]

## Converter Operation

Unit is ON  
Unit is OFF  
Unit is ON

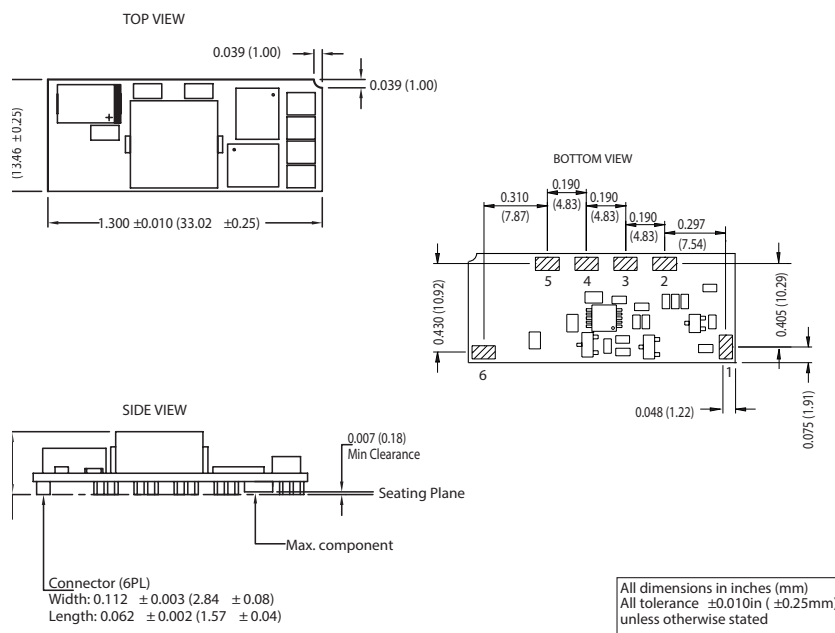
A 'Negative Logic' Remote ON/OFF version is also possible with this converter. To order please place the suffix '-R' at the end of the model number, e.g. SMT10E-12W3V3-RJ.

- Full derating curves available in both the Longform (Technical Reference) and Application Note.
- NOTICE: Some models do not support all options. Please contact your local Artesyn Embedded Power representative or use the on-line model number search tool at <http://www.artesyn.com> to find a suitable alternative.

## Mechanical Drawings

## Pin Connections

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



\*The sense function and the trim function are customer specified options. Please consult factory for details.

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