

SMT05E Series

12 V Non-Isolated DC-DC Converters

Data Sheet

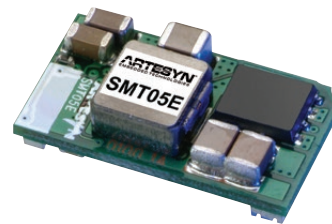
Total Power: 16.5 W
Input Voltage: 10 - 14 Vdc
of Outputs: Single

SPECIAL FEATURES

- 5 A current rating
- Input voltage range: 10 - 14 Vdc
- 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 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. E174104
UL60950 File No. E174104
- TÜV Product Service (EN60950) Certificate No. B 03 10 38572
- CB report and certificate to DE3-51686M1



The SMT05E 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 SMT05E has a wide input range (10 - 14 Vdc) and offers a wide 0.8 - 3.63 Vdc output voltage range with a 5 A load, which allows for maximum design flexibility and a pathway for future upgrades. The SMT05E 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 SMT05E offers compact size and efficiencies of up to 91%.

Electrical Specifications

Input		
Input voltage range		10 - 14 Vdc
Input current	No load (max.)	100 mA
Input current (max.)		1.85 A max. @ Io max. and Vout = 3.3 V
Input reflected ripple		30 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%
Minimum load		0 A
Overshoot/undershoot		None
Ripple and noise 5 Hz to 20 MHz		60 mV pk=pk 25 mV rms
Temperature co-efficient		±0.01%/ °C
Transient response		50 mV max. deviation 50 µs recovery within ±1%

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

General Specifications

Efficiency		91%
Insulation voltage		Non-isolated
Switching frequency	Fixed	330 kHz typical
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	L x W x H	20.32 x 11.43 x 5.97 mm 0.800 x 0.450 x 0.235 inches
Weight		3g (0.11 oz.)
Coplanarity		100 µm
MTBF	Telcordia SR-332	6,920,000 hours

Environmental Specifications

Thermal performance	Operating ambient temperature	-40 °C to +100 °C
See Note 2	Non-operating temperature	-40 °C to +125 °C
Protection		
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 ^(3,4)	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SMT05E-12W3V3J	16.5 W	10 - 14 Vdc	0.8 - 3.63 Vdc	0 A	5 A	91%	±0.2%	±1.0%

Part Number System with Options

Product Family	Rated Output Current	Performance	Input Voltage	Type of Output	Output Voltage	Packaging Options
SMT SMT = Surface Mount	05 05 = 5 Amp	E E = Enhanced Performance	12 12 = 10 - 14 VDC	W S = Single W = Wide	3V3 0.8 - 3.63 Vdc	TJ No '-T' suffix = Pb-free RoHS 6/6 compliant (Trays) -TJ suffix = Pb-free RoHS 6/6 compliant (Tape and Reel)

Output Voltage Adjustment

The ultra-wide output voltage trim range offers major advantages to users who select the SMT05E-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 to 3.63 Vdc.

When the SMT05E-12W3V3J converter leaves the factory, the output has been adjusted to the default voltage of 0.8 V.

Notes:

- The SMT05E features a 'Negative 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 SMT05E:

Configuration

Remote pin open circuit
 Remote pin pulled low [Von/off 0.8 V]
 Remote pin pulled high [Von/off > 1.6 V]

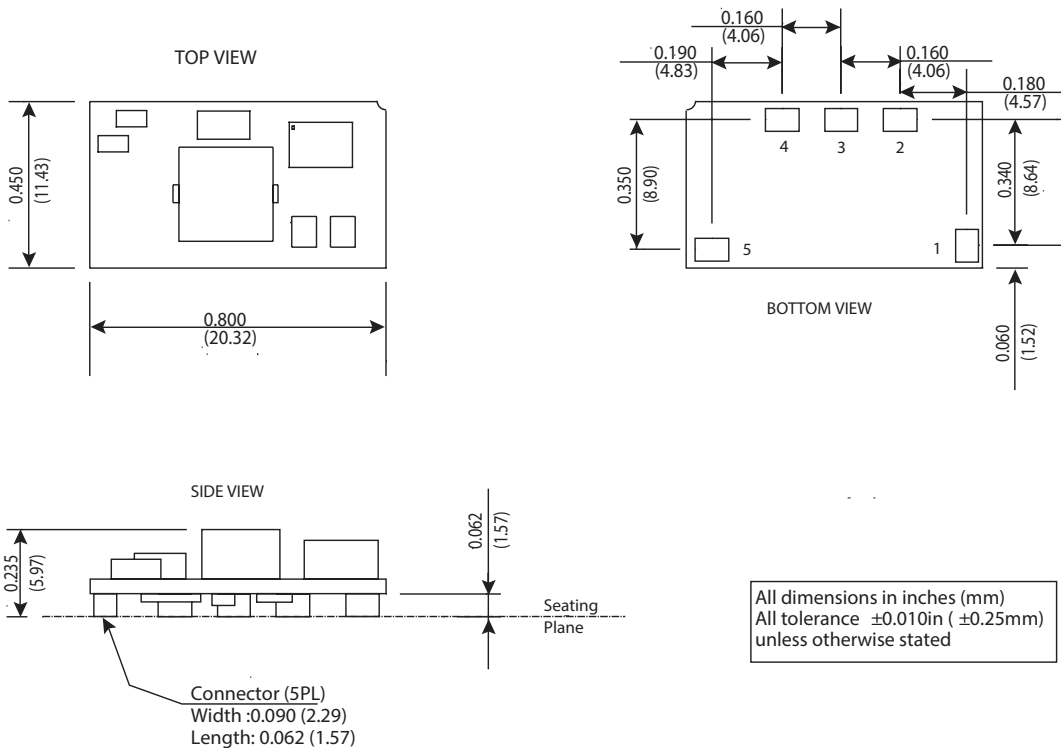
Converter Operation

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 use part number SMT05E-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 Technologies representative or use the on-line model number search tool at <http://www.Artesyn.com/power> to find a suitable alternative.

Mechanical Drawings

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



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