

SMT15E Series

3.0-5.5 Vin single
output

Total Power: 41.25W
Input Voltage: 3.0-5.5 Vdc
of Outputs: Single

Special Features

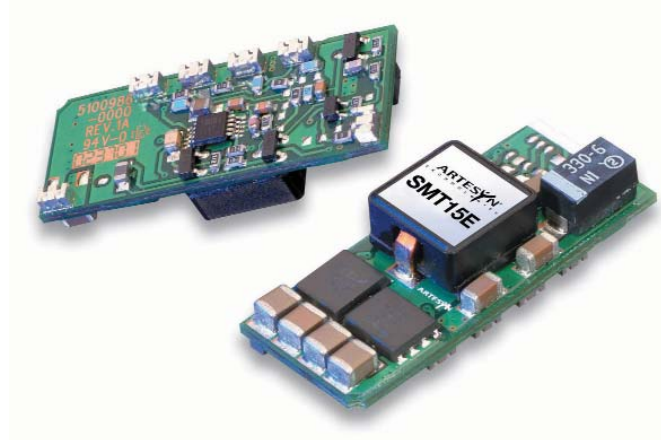
- 15 A current rating
- Input voltage range:
3.0 Vdc to 5.5 Vdc
- Output voltage range:
0.8 Vdc to 3.63 Vdc
- Ultra high efficiency:
96% @ 5 Vin and 3.3 Vout
- Extremely low
internal power dissipation
- Minimal thermal
design concerns
- Designed in reliability:
MTBF of >7 million hours per
Telcordia SR-332
- Ideal solution where board
space is at a premium or
tighter card pitch is required
- Industry standard
surface-mount footprint
- Available RoHS compliant
- 2 year warranty

Safety

UL/cUL CAN/CSA 22.2
No. E174104
UL 60950 File No. E174104

TÜV Product Service (EN60950)
Certificate No. B 03 10 38572

CB report and certificate to
DE3-51686M1



Rev.06.26.07
SMT15E_05
1 of 4

The SMT15E series are non-isolated dc-dc converters packaged in a surface-mount footprint giving designers a cost effective solution for conversion from either a 3.3 Vdc or 5 Vdc input to output voltages of 0.8 Vdc and 3.63 Vdc. The SMT15E offers a range of fixed outputs (and one wide trim output unit) at an industry leading 15 A which allows maximum design flexibility and a pathway for future upgrades. Local voltage conversion by the SMT15E series from existing 3.3 Vdc or 5 Vdc system voltages eliminates the need for redesign of existing power architectures when voltage requirements change. The SMT15E 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 SMT15E offers compact size and efficiencies of up to 96%.



Specifications

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

OUTPUT SPECIFICATIONS

Voltage adjustability (See Note 1)	Fixed output versions Wide trim version	±10% 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 (0 to 20 MHz BW)		60 mV pk-pk 25 mV rms max.
Temperature co-efficient		±0.01%/°C
Transient response		60 mV max. deviation 50 μs recovery to within ±1.0%
Remote sense		10% Vo compensation

INPUT SPECIFICATIONS

Input voltage range		3.0-5.5 Vdc
Input current	No load	70 mA typ.
Input current (max.)		11.8 A max. @ Io max. and Vout = 3.63 V
Input current ripple		110 mA rms
Remote ON/OFF		(See Note 2)
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		See table
Insulation voltage		Non-isolated
Switching frequency	Fixed	300 kHz typ.
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	(LxWxH)	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)
Coplanarity		100 μm
MTBF	Telcordia SR-332 MIL-HDBK-217F	7,042,000 hours 680,000 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 3)	Operating ambient, temperature Non-operating	-40 °C to +100 °C -40 °C to +125 °C
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PROTECTION

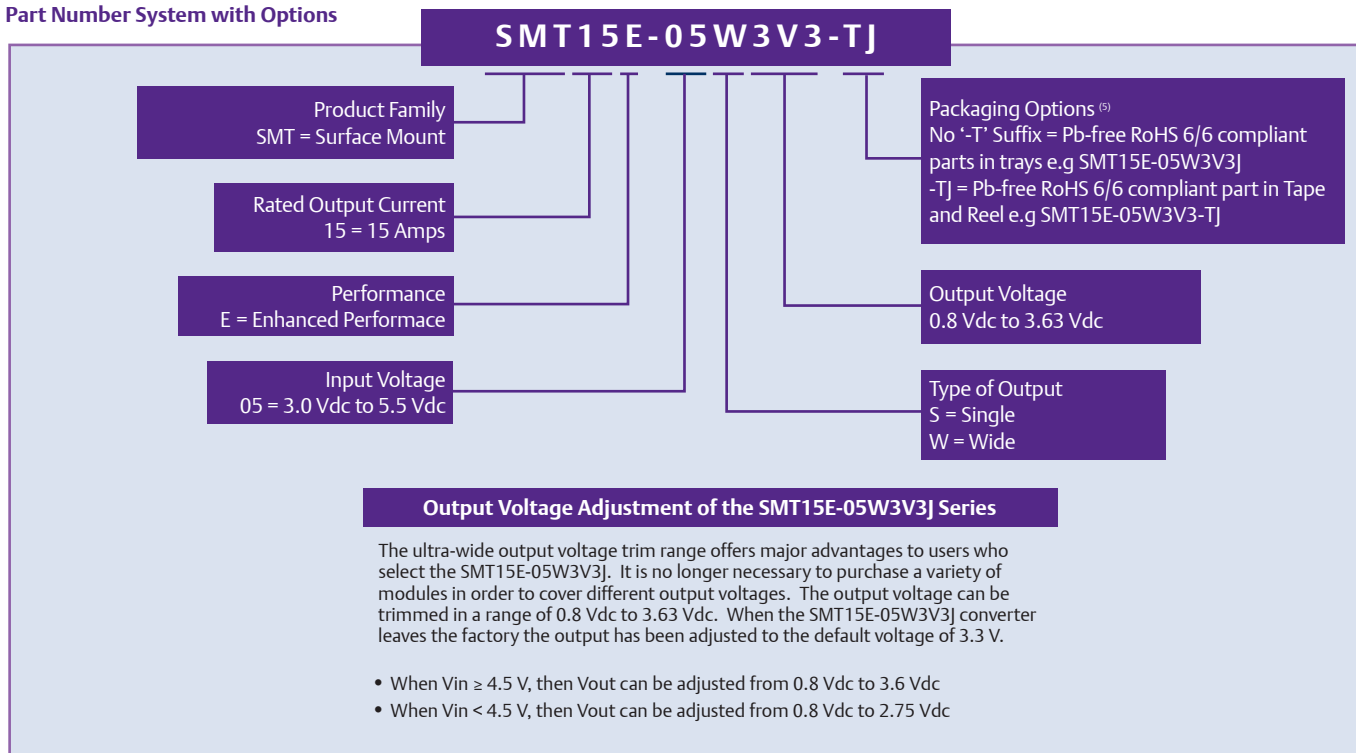
Short-circuit	Continuous
Thermal	Automatic recovery

Specifications

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OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER ^(5,6)
						LINE	LOAD	
41.25 W	3.0-5.5 Vdc	2.5 Vdc	0 A	15 A	93.5%	±0.2%	±1.0%	SMT15E-05S2V5J (EOL)
54.45 W	4.5-5.5 Vdc	3.3 Vdc	0 A	15 A	95%	±0.2%	±1.0%	SMT15E-05S3V3J (EOL)
54.45 W	3.0-5.5 Vdc	0.8-3.63 Vdc	0 A	15 A	95% ⁽⁴⁾	±0.2%	±1.0%	SMT15E-05W3V3J

Part Number System with Options



Notes

- 1 When $V_{in} \geq 4.5$ V, then V_{out} can be adjusted from 0.8 Vdc to 3.6 Vdc. When $V_{in} < 4.5$ V, then V_{out} can be adjusted from 0.8 Vdc to 2.75 Vdc.
- 2 The SMT15E 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 SMT15E:

Configuration

Remote pin open circuit

Remote pin pulled low

Remote pin pulled high [$V_{on/off} > 1.2$ V]

Converter Operation

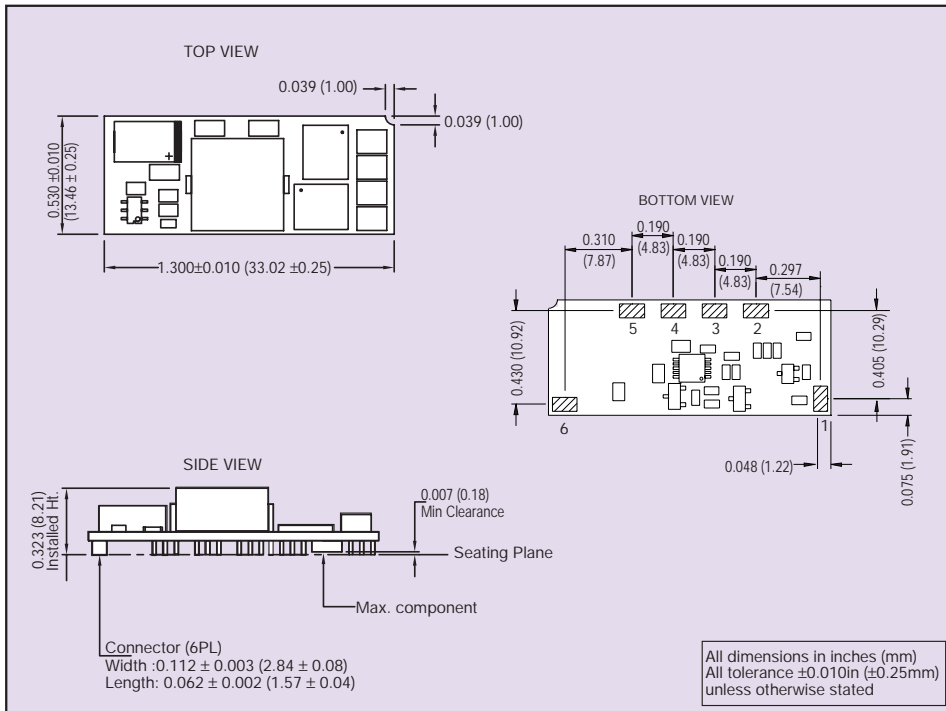
Unit is ON

Unit is ON

Unit is OFF

A 'Positive 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. SMT15E-05S3V3-RJ.

- 3 Full derating curves available in both the Longform Datasheet and Application Note 136.
- 4 When the unit is trimmed down to 0.8 V, the efficiency is 82.5%
- 5 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 6 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.



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

Americas

5810 Van Allen Way
 Carlsbad, CA 92008
 USA
 Telephone: +1 760 930 4600
 Facsimile: +1 760 930 0698

Europe (UK)

Waterfront Business Park
 Merry Hill, Dudley
 West Midlands, DY5 1LX
 United Kingdom
 Telephone: +44 (0) 1384 842 211
 Facsimile: +44 (0) 1384 843 355

Asia (HK)

16th - 17th Floors, Lu Plaza
 2 Wing Yip Street, Kwun Tong
 Kowloon, Hong Kong
 Telephone: +852 2176 3333
 Facsimile: +852 2176 3888

For global contact, visit:

www.powerconversion.com
technicalsupport@powerconversion.com

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