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SMT10E Series

3.0 - 5.5 Vin single output

Total Power: **13.2W**
Input Voltage: **3.0 - 5.5 Vdc**
# of Outputs: **Single**

Special Features

- 10 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

The SMT10E 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 SMT10E offers a range of fixed outputs (and one wide trim output unit) at an industry leading 10 A which allows maximum design flexibility and a pathway for future upgrades. Local voltage conversion by the SMT10E series from existing 3.3Vdc or 5 Vdc system voltages eliminates the need for redesign of existing power architectures when voltage requirements change. 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 96%.

ARTESYN®

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Specifications

All specifications are typical at 5Vin and 3.3 Vout, 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	50 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.)		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	-40 °C to +100 °C
	Non-operating	-40 °C to +125 °C

PROTECTION

Short-circuit	Continuous
Thermal	Automatic recovery

Specifications

All specifications are typical at 5Vin and 3.3 Vout, full load at 25°C unless otherwise stated.

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER [2,4,5]
						LINE	LOAD	
13.2 W	3.0-5.5 Vdc	1.2 Vdc	0 A	10 A	89%	±0.2%	±1.0%	SMT10E-05S1V2J
16.5 W	3.0-5.5 Vdc	1.5 Vdc	0 A	10 A	90%	±0.2%	±1.0%	SMT10E-05S1V5J
19.8 W	3.0-5.5 Vdc	1.8 Vdc	0 A	10 A	92%	±0.2%	±1.0%	SMT10E-05S1V8J
27.5 W	3.0-5.5 Vdc	2.5 Vdc	0 A	10 A	95%	±0.2%	±1.0%	SMT10E-05S2V5J
36.3 W	4.5-5.5 Vdc	3.3 Vdc	0 A	10 A	96%	±0.2%	±1.0%	SMT10E-05S3V3J
36.3 W	3.0-5.5 Vdc	0.8-3.63 Vdc	0 A	10 A	96%	±0.2%	±1.0%	SMT10E-05W3V3J

Part Number System with Options

SMT10E-05S3V3J

- Product Family: SMT = Surface-mount
- Rated Output Current: 10 = 10 Amps
- Performance: E = Enhanced Performance
- Packaging Options [4]: J = Pb-free (RoHS 6/6 compliant)
- Output Voltage: 1V2 = 1.2 V, 1V5 = 1.5 V, 1V8 = 1.8 V, 2V5 = 2.5 V, 3V3 = 3.3 V
- Type of Output: S = Single, W = Wide
- Input Voltage: 05 = 3.0 Vdc to 5.5 Vdc

Output Voltage Adjustment of the SMT10E-05W3V3J Series

The ultra-wide output voltage trim range offers major advantages to users who select the SMT10E-05W3V3J. 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-05W3V3J converter leaves the factory the output has been adjusted to the default voltage of 3.3V.

- When Vin ≥ 4.5 V, then Vout can be adjusted from 0.8 Vdc to 3.6 Vdc
- When Vin < 4.5 V, then Vout can be adjusted from 0.8 Vdc to 2.75 Vdc

Notes

1 When Vin ≥ 4.5 V, then Vout can be adjusted from 0.8 Vdc to 3.6 Vdc. When Vin < 4.5 V, then Vout can be adjusted from 0.8 Vdc to 2.75 Vdc.

2 The SMT10E 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 SMT10E:

Configuration	Converter Operation
Remote pin open circuit	Unit is ON
Remote pin pulled low	Unit is ON
Remote pin pulled high [Von/off >1.2 V]	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. SMT10E-05W3V3-RJ.

Notes Cond.

3 Full derating curves available in both the Longform Datasheet and Application Note 168.

4 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.

5 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.

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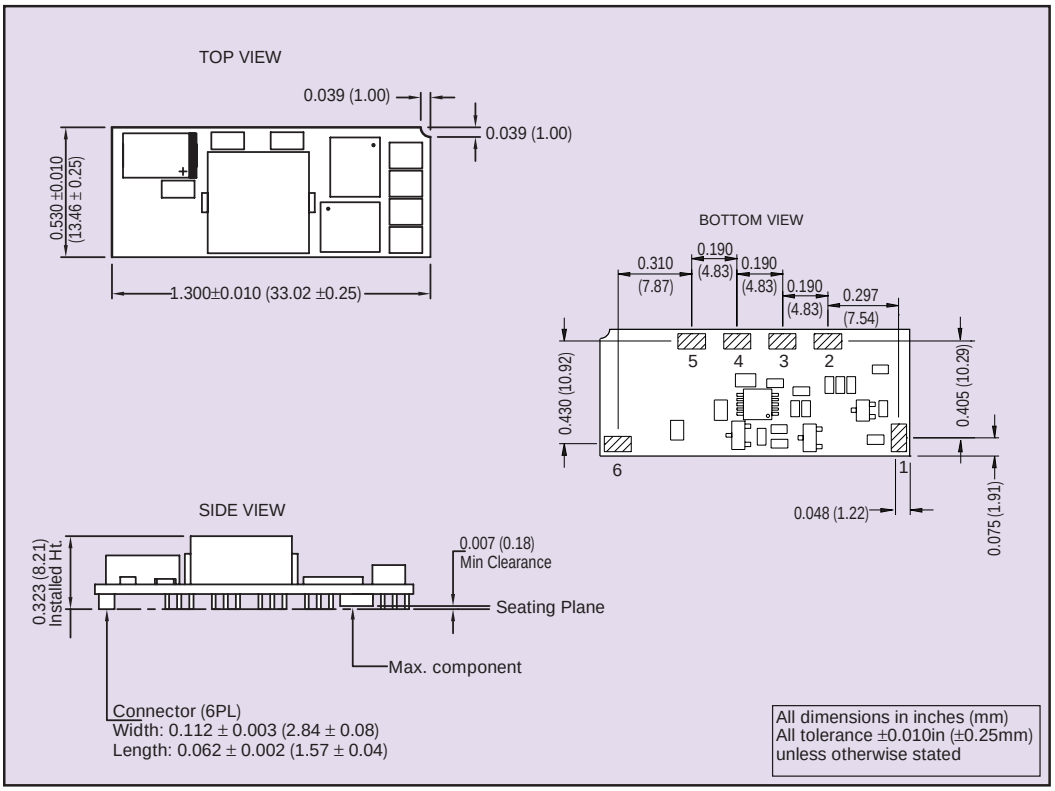

PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	Remote ON/OFF
2	Remote Sense +
3	Trim
4	+Vout
5	Ground
6	+Vin

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