

SMT10E Series

13.2 Watts Non-Isolated DC-DC Converters

Data Sheet

Total Power: 13.2 Watts
Input Voltage: 3.0 - 5.5 Vdc
of Outputs: Single

SPECIAL FEATURES

- 10 A current rating
- Input voltage range: 3.0 - 5.5 Vdc
- Output voltage range: 0.8 - 3.63 V
- 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-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. E186249
- TÜV Product Service (EN60950) Certificate No. B 08 05 51485 378
- CB report and certificate to DE3-51686M1



Electrical Specifications

Input		
Input voltage range		3.0 - 5.5 Vdc
Input current	No load	70 mA
Input current (max.)		8 A max. @ Io max. and Vout = 3.63 V
Input reflected ripple		110 mA rms
Remote ON/OFF		See Note 2
Start-up time		20 ms
Output		
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

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

General Specifications

Efficiency		See table
Insulation voltage		Non-isolated
Switching frequency	Fixed	300 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 MIL-HDBK-217F	7,042,000 hours 680,000 hours

Environmental Specifications

Thermal performance	Operating ambient temperature	-40 °C to +100 °C
See Note 3	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
SMT10E-05W3V3-J	36.3 W	4.5 - 5.5 Vdc	0.8 - 3.63 Vdc	0 A	10 A	96%	±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	10 10 = 10 Amps	E E = Enhanced Performance	05 05 = 3.0 - 5.5 V	W W = Wide	3V3 3.3 = 3.3 V	J J = Pb-free RoHS 6/6 compliant

Output Voltage Adjustment

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 $V_{in} \geq 4.5$ V, then V_{out} can be adjusted from 0.8 - 3.6 Vdc
- When $V_{in} < 4.5$ V, then V_{out} can be adjusted from 0.8 - 2.75 Vdc

Notes:

- 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.
- 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.

Configuration

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

Converter Operation

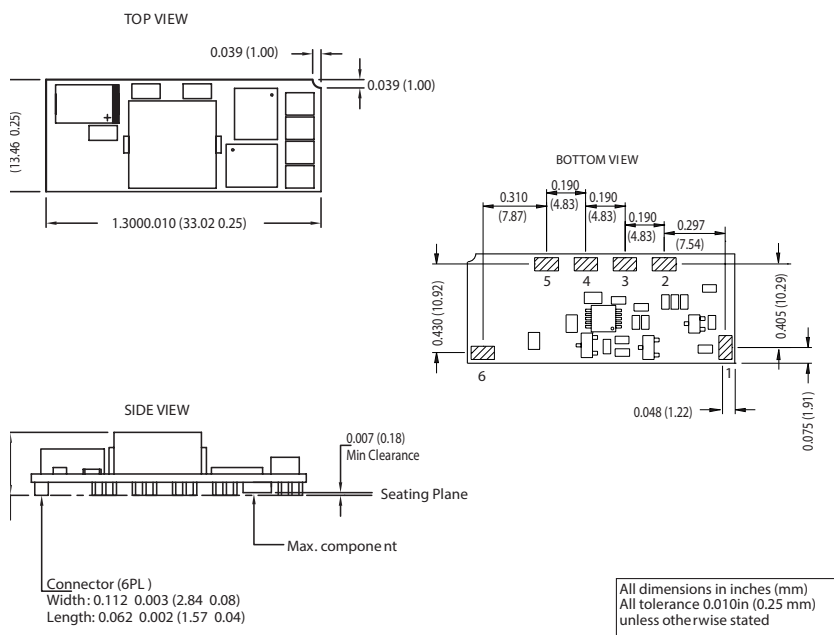
Unit is ON
Unit is ON
Unit is OFF

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. SMT10E-05W3V3-RJ.

- Full derating curves available in both the Longform (Technical Reference) and Application Note 168.
- 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



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