ARTESYN SMT30C SERIES

C-Class Non-Isolated



Advanced Energy's Artesyn SMT30C series surface mount 30 amp non-isolated DC-DC converter is designed for cost- and space-sensitive applications. It accepts a 10.2 to 13.8 Vdc input and provides an output that is adjustable from 0.9 to 5.0 Vdc to accommodate a wide variety of silicon power needs. Rated at 150 watts, the converter has a typical efficiency of 91%. Standard features include remote sense, remote On/Off and remote 'power good' indication.

DATA SHEET

Total Power:

30 Watts

Input Voltage:

10.2 - 13.8 Vdc

# of Outputs:

Single

SPECIAL FEATURES

- 30 A current rating
- Input voltage range: 10.2 - 13.8 Vdc
- Output voltage range: 0.9 - 5.0 V
- Industry-leading value
- Cost optimized design
- Excellent transient response
- Output voltage adjustability
- Path for future upgrades
- Supports silicon voltage migration
- Reduced design-in and qual time
- Designed-in reliability: MTBF of >4 million hours per Telcordia SR-332
- Available RoHS compliant
- Two year warranty

SAFETY

- UL, cUL CAN/CSA 22.2 No. 60950
- UL 60690 File No. E139421
- TÜV Product Service (EN60950:2000)
- Certificate No. B 04 08 19870 228
- CB report and certificate to IEC60950-US/6415C/UL

RoHS 6/6 COMPLIANT

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ELECTRICAL SPECIFICATIONS

Input		
Input voltage range	Nominal 12 V	10.2 - 13.8 Vdc
Input current	Minimum load Remote OFF	230 mA 30 mA
Input current (max.)	(See Note 4)	13.8 A max. @ Io max. and Vin = 10.8 V
Input reflected ripple	(See Note 2)	150 mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		 Positive logic >2.4 Vdc <0.8 Vdc
Start-up time (See Note 5)	Power up Remote ON/OFF	<30 ms <30 ms
Turn ON threshold		9.0 Vdc
Turn OFF threshold		7.6 Vdc
Output		
Voltage adjustability	(See Note 1)	0.9 - 5.0 Vdc
Output setpoint accuracy	1.0% trim resistors	±3%
Line regulation	Low line to high line	±0.2%
Load regulation	Full load to min. load	±1.0%
Min/Max load		0 A/30A
Overshoot	At turn-on	1.0% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise	5 Hz to 20 MHz (See Note 2)	50 mV pk-pk 14 mV rms
Transient response	(See Note 3)	75 mV max. deviation 150 µs recovery to within regulation band
Current share	Full load	±10%

All specifications are typical at nominal input Vin = 12 V, full load at 25 °C unless otherwise stated.

GENERAL SPECIFICATIONS

Efficiency		91%
Switching frequency	Fixed	300 kHz
Approvals and standards	(See Note 7)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		28.3 g (1 oz)
Coplanarity		150 µm
MTBF	Telcordia SR-332	4,456,655 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient temperature	-0 °C to +80 °C
(See Note 8)	Non-operating temperature	-40 °C to +125 °C
Protection		
Short-circuit	Foldback, non latching	
Over-temperature	Hiccup, non latching	
Recommended System Capacitance		
Input capacitance	(See Note 9)	270 µF / 20 mW ESR max.
Output capacitance	(See Note 9)	680 µF / 10 mW ESR max.

ORDERING INFORMATION

Model Number [11]	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SMT30C-12SADJJ	150 W	10.2 - 13.8 Vdc	0.9 - 5.0 V	0 A	30 A	91%	±0.2%	±1.0%

PART NUMBER SYSTEM WITH OPTIONS

Product Family	Rated Output Current	Performance		Input Voltage	Number of Outputs	Packaging Options
SMT	**30**	**C**	-	**12**	**SADJ**	**J**
SMT = Surface Mount	30 = 30 Amps	C = Cost Optimized		12 = 10.2 - 13.8 Vdc	SADJ = Single Adjustable Output	J = Pb free (RoHS 6/6 compliant)

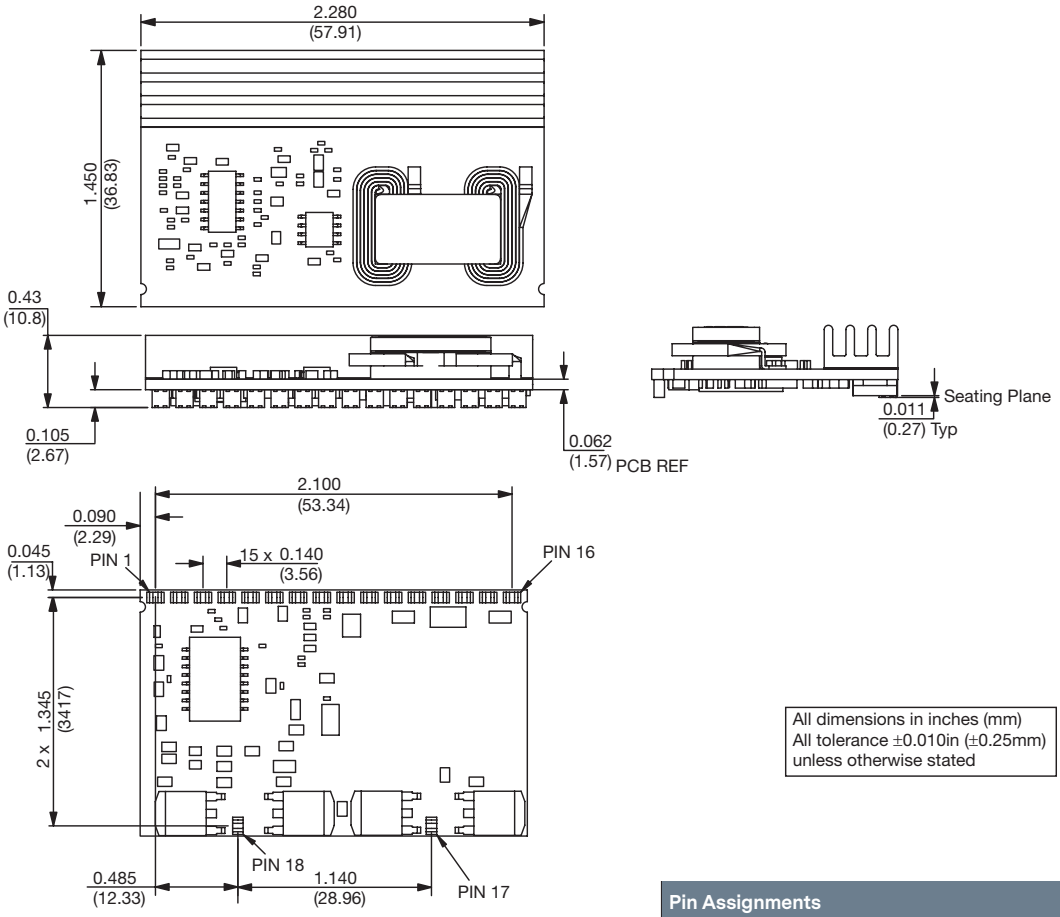
OUTPUT VOLTAGE ADJUSTMENT

The ultra-wide output voltage trim range offers major advantages to users who select the SMT30C series. 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 0.9 Vdc to 5.0 Vdc. When the SMT30C series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

Notes:

1. Uses external resistor from TRIM to ground. See Application Note 170 for details.
2. Measured with external filter. See Application Note 170 for details.
3. di/dt = 10 A/µs, Vin = Nom, Tc = 25 °C, load change = 0.50 Io max. to 0.75 Io max, and vice versa.
4. External input fusing recommended.
5. Power up is the time from application of dc input to POWER GOOD high. Remote ON/OFF asserted high to POWER GOOD high.
6. Signal line assumed <3 m in length.
7. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
8. See Application Note 170 for operation above 50 °C.
9. See Application Note 170 for more details.
10. For redundant current sharing applications that use ORing diodes to separate the outputs, please add the suffix '-S' to the part number, e.g. SMT30C-12SADJ-SJ. Please refer to Application Note 170 for further details.
11. 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 to find a suitable alternative.

MECHANICAL DRAWINGS



All dimensions in inches (mm)
All tolerance ±0.010in (±0.25mm)
unless otherwise stated

Pin Assignments	
Pin	*Function*
1	Current Share
2	Trim
3	Ground
4	Ground
5	Ground
6	Sense-
7	Sense+
8	Remote ON/OFF
9	Power Good
10	Vin
11	Vin
12	Vout
13	Vout
14	Ground
15	Vout
16	Ground
17	Mechanical Support
18	Mechanical Support

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

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