ARTESYN SMT06C SERIES

C-Class Non-Isolated

XXXX

DATA SHEET

Total Power:

20 Watts

Input Voltage:

4.5 - 13.8 Vdc

# of Outputs:

Single

SPECIAL FEATURES

- 6 A current rating
- Input voltage range: 4.5 - 5.5 Vdc or 10.2 - 13.8 Vdc
- Output voltage: 0.9 - 3.3 / 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 7 million hours per Telcordia SR-332
- Available RoHS compliant
- Two years warranty

SAFETY

- UL, cUL CAN/CSA 22.2 No. 60950
- TÜV Product Service (EN60950:2000)
- CB report and certificate

RoHS 6/6 COMPLIANT

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ELECTRICAL SPECIFICATIONS

Input		
Input voltage range	5 V input model 12 V input model	4.5 - 5.5 Vdc 10.2 - 13.8 Vdc
Input current	Minimum load Remote OFF	50 mA 5 mA
Input current (max.) (See Note 8)	5 V input model 12 V input model	5.1 A max. @ Io max. 1.6 A @ Io max.
Input reflected ripple (See Note 2)	5 V input model 12 V input model	52 mA (pk-pk) 56 mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		 Active high >2.4 Vdc <0.8 Vdc
Start-up time (See Note 3)	Power up Remote ON/OFF	<20 ms <20 ms
Turn ON threshold	5 Vin 12 Vin	4.5 Vdc 9.3 Vdc
Turn OFF threshold	5 Vin 12 Vin	4.3 Vdc 7.8 Vdc
Output		
Voltage adjustability (See Note 6)	5 V input model 12 V input model	0.9 - 3.3 Vdc 0.9 - 5.0 Vdc
Output setpoint accuracy	1.0% trim resistors	±2.5%
Line regulation	Low line to high line	±0.2%
Load regulation	Full load to min. load	±0.5%
Min/Max load		0 A/6 A
Overshoot (at turn on)	5 V input model 12 V input model	3.0% max. 1.0% max.
Undershoot		100 mV max.
Ripple and noise	5 Hz to 20 MHz (See Note 2)	See table on page 3
Transient response (See Note 1)	Deviation	75 mV; 150 µs recovery to within regulation band

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

GENERAL SPECIFICATIONS

Efficiency		See Table below
Switching frequency	Fixed	200 kHz
Approvals and standards	(See Note 4)	TÜV Product Services EN60950, UL/cUL60950
Material flammability		UL94V-0
Weight		9.3 g (0.3 oz)
Coplanarity		150 µm
MTBF	Telcordia SR-332	7,562,142 hours

ENVIRONMENTAL SPECIFICATIONS

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

ORDERING INFORMATION

Model Number [3,4]	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SMT06C-05SADJJ	20 W	4.5 - 5.5 Vdc	0.9 - 3.3 V	0 A	6 A	89%	±0.2%	±0.5%
SMT06C-12SADJJ	30 W	10.2 - 13.8 Vdc	0.9 - 5.0 V	0 A	6 A	91%	±0.2%	±0.5%

PART NUMBER SYSTEM WITH OPTIONS

Product Family	Rated Output Current	Performance		Input Voltage	Number of Outputs	Packaging Options
SMT	06	C	-	12	SADJ	J
SMT = Surface Mount	06 = 6 Amp	C = C Series		05 = 4.5 - 5.5 Vdc 12 = 10.2 - 13.8 Vdc	SADJ = Single Adjustable Output	J = Pb free (RoHS 6/6 compliant)

OUTPUT VOLTAGE ADJUSTMENT

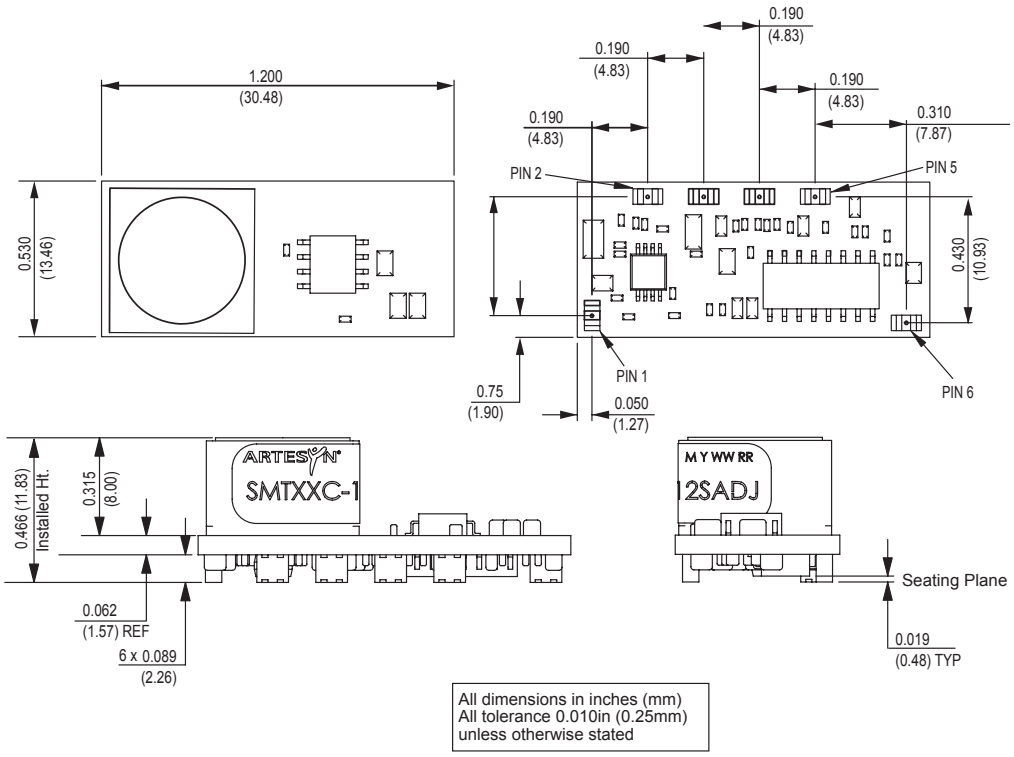
The ultra-wide output voltage trim range offers major advantages to users who select the SMT06C series. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.9 Vdc to 5.0 Vdc. When the SMT06C series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

RIPPLE AND NOISE SPECIFICATION

Model	Output Voltage	Pk - Pk	RMS
5 V input models	0.9 - 2.5 Vdc 3.3 Vdc	30 mV 40 mV	15 mV 15 mV
12 V input models	0.9 - 2.5 Vdc 3.3 Vdc	40 mV 50 mV	20 mV 20 mV

Notes:
1. di/dt = 10 A/µs, Vin = Nom, Tc = 25 °C, load change = 0.5 Io max. to 0.75 Io max. and 0.75 Io max to 0.5 Io max.
2. Measured with external filter. See Application Note 169 for details.
3. Power up is the time from application of dc input to Power Good high. Remote ON/OFF asserted high to Power Good high.
4. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand-alone product.
5. The standard unit with the suffix '-V' is for vertical mounting. To order a unit with horizontal mounting, please add the suffix '-H' to the model number, e.g. SIL06C-05SADJ-HJ.6. Airflow dependent, 300 LFM minimum required.
6. Measured as per recommended set-up. Cin = 270 µF (20 mW ESR max.). Cout = 680 µF (10 mW ESR max.).
7. Signal line assumed <3 m.
8. External input fusing recommended.
9. See Application Note 169 for operation above 50 °C.
10. See Application Note 160 for more 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



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

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.

PRECISION | POWER | PERFORMANCE

For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832

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