

SMT06C Series

5 Vin and 12 Vin single output

DC-DC CONVERTERS

C Class Non-isolated

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NEW Product



- **6 A current rating**
- **Input voltage range: 4.5 Vdc to 5.5 Vdc or 10.2 Vdc to 13.8 Vdc**
- **Output voltage range: 0.9 Vdc to 3.3/5.0 Vdc**
- **Industry leading value**
 - Cost optimized design
- **Excellent transient response**
- **Output voltage adjustability**
 - Pathway for future upgrades
 - Supports silicon voltage migration
 - Resulting in reduced design-in and qualification time
- **Designed in reliability: MTBF of >7 million hours per Telcordia SR-332**
- **Available RoHS compliant**



The SMT06C series is a new high density open-frame, non-isolated converter for space sensitive applications. Each model has a wide input range (4.5 Vdc to 5.5 Vdc or 10.2 Vdc to 13.8 Vdc) and offers a wide 0.9 Vdc to 5.0 Vdc output voltage range with a 6 A load. An external resistor adjusts the output voltage from its pre-set value of 0.9 V to any value up to the 5 V maximum. Typical efficiencies for the models are 89% for the 5 V input version and 91% for the 12 V input version. The series offers remote ON/OFF and overcurrent protection as standard. With full international safety approvals including EN60950 and UL/cUL60950, the SMT06C reduces compliance costs and time to market.



2 YEAR WARRANTY

All specifications are typical at nominal input $V_{in} = 12\text{ V}$, full load at $25\text{ }^{\circ}\text{C}$ unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability (See Note 6)	5 Vin 12 Vin	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 Vin 12 Vin	3.0% max. 1.0% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise 5 Hz to 20 MHz	(See Note 2)	See Table on page 2
Transient response (See Note 1)		75 mV max. deviation 150 μs recovery to within regulation band

INPUT SPECIFICATIONS

Input voltage range	5 Vin 12 Vin	4.5-5.5 Vdc 10.2-3.8 Vdc
Input current	Min load Remote OFF	50 mA 5mA
Input current (max.) (See Note 8)	5 Vin 12 Vin	5.1 A max. @ I_o max. 1.6 A @ I_o max.
Input reflected ripple (See Note 2)	5 Vin 12 Vin	52 mA (pk-pk) 56 mA (pk-pk)
Remote ON/OFF Logic compatibility		Positive logic >2.4 Vdc <0.8 Vdc
Start-up time (See Note 3)	Power-up Remote ON/OFF	<20 ms <20 ms

INPUT SPECIFICATIONS (CONTD.)

Turn ON threshold	5 Vin 12 Vin	4.5 Vdc typ. 9.3 Vdc typ.
Turn OFF threshold	5 Vin 12 Vin	4.3 Vdc typ. 7.8 Vdc typ.

GENERAL SPECIFICATIONS

Efficiency		See Table on page 2
Switching frequency	Fixed	200 kHz
Approvals and standards	(See Note 4)	TÜV Product Services IEC60950, 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 (See Note 9)	Operating ambient, temperature Non-operating	0 $^{\circ}\text{C}$ to +80 $^{\circ}\text{C}$ -40 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$
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PROTECTION

Short-circuit	Hiccup, non-latching
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RECOMMENDED SYSTEM CAPACITANCE

Input capacitance	(See Note 10)	270 μF /20 m Ω ESR max.
Output capacitance	(See Note 10)	680 μF /10 m Ω ESR max.

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For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER ^(11,12)
						LINE	LOAD	
20 W	4.5-5.5 Vdc	0.9-3.3 Vdc	0 A	6 A	89%	±0.2%	±0.5%	SMT06C-05SADJJ
30 W	10.2-13.8 Vdc	0.9-5.0 Vdc	0 A	6 A	91%	±0.2%	±0.5%	SMT06C-12SADJJ

Part Number System with Options

SMT06C-12SADJJ

Product Family
SMT = Surface Mount

Rated Output Current
06 = 6 A

Performance
C = Cost Optimized

Packaging Options (11)
J = Pb-free (RoHS 6/6 compliant)

Number of Outputs
SADJ = Single Adjustable Output

Input Voltage
05 = 4.5 Vdc to 5.5 Vdc
12 = 10.2 Vdc to 13.8 Vdc

Output Voltage Adjustment of the SMT06C Series

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.

Notes

- 1 $di/dt = 10 \text{ A}/\mu\text{s}$, $V_{in} = \text{Nom}$, $T_c = 25 \text{ }^\circ\text{C}$, load change = 0.50 I_o max. to 0.75 I_o max. and 0.75 I_o max. to 0.5 I_o 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 Measured as per recommended set-up. $C_{in} = 270 \mu\text{F}$ (20 mΩ ESR max.). $C_{out} = 680 \mu\text{F}$ (10 mΩ ESR max.).
- 6 Uses external resistor from trim to ground. Minimum value 485 Ω for 5 V model, 280 Ω for 12 V model. See Application Note 169 for details.
- 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 169 for more details.
- 11 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 12 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.

Ripple and Noise Specification

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

International Safety Standard Approvals



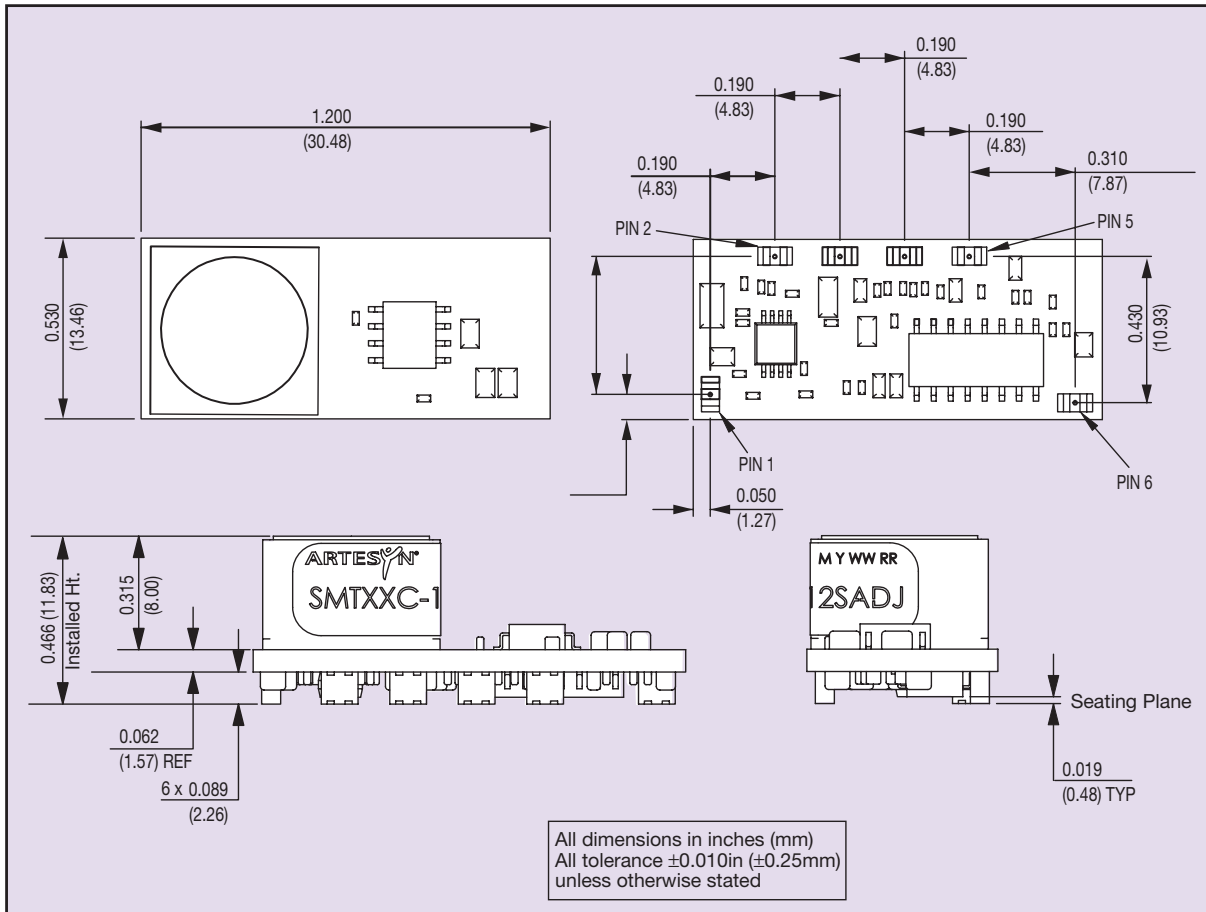
UL/cUL CAN/CSA 22.2 No. 60950
UL 60950 File No. E139421



TÜV Product Service (EN60950:2000)
Certificate No. B 04 08 19870 228
CB report and certificate to US/6415C/UL

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PIN CONNECTIONS

PIN NUMBER	FUNCTION
1	Remote ON/OFF
2	Power Good
3	Trim
4	Vout
5	GND
6	Vin