

SMT20C Series

5 Vin and 12 Vin
single output

Total Power: 66W
Input Voltage: 4.5-5.5 Vdc
of Outputs: Single



Special Features

- 20 A current rating
- Input voltage range: 4.5 Vdc - 5.5 Vdc or 10.2 Vdc - 13.8 Vdc
- Output voltage range: 0.9 Vdc - 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
- 2 year warranty

Safety

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

The SMT20C 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 3.3/5 V output voltage range with a 20 A load. An external resistor adjusts the output voltage from its pre-set value of 0.9 V to any value up to the maximum allowed value for that model. Typical efficiencies are 87% for the 5 V input version and 91% for the 12 V input version at full load conditions. The SMT20C series offers remote ON/OFF and overcurrent protection as standard. With full international safety approval including EN60950 and UL/cUL60950, the SMT20C reduces compliance costs and time to market

Specifications

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

OUTPUT SPECIFICATIONS		
Voltage adjustability (See Note 5)	5 V input models 12 V input models	0.9-3.3 Vdc 0.9-5.0 Vdc
Output setpoint accuracy	With 1.0% trim resistors	±2.5%
Line regulation	Low line to high line	±0.2% max.
Load regulation		±1.3% max.
Min/max load		0 A/20 A
Overshoot (at turn on)	5 V input models 12 V input models	3.0% max. 1.0% max.
Ripple and noise 5 Hz to 20 MHz	(See Note 1)	See Table on page 2
Transient response (See Note 2)		100 mV max. deviation 200 µs recovery to within regulation band
INPUT SPECIFICATIONS		
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	65 mA 20 mA
Input current (max.) (See Note 3)	5 V input model 12 V input model	15 A @ I _o max. 11 A @ I _o max.
Input reflected ripple	(See Note 4)	200 mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		Positive Logic >2.4 Vdc <0.8 Vdc
Start-up time (See Note 8)	Power up Remote ON/OFF	<20 ms <20 ms

INPUT SPECIFICATIONS (CONT'D.)		
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	275 kHz typ.
Approvals and standards	(See Note 7)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		14.2 g (0.5 oz)
Coplanarity		150 µm
MTBF	Telcordia SR-332	7,963,574 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance (See Note 9)	Operating ambient, temperature Non-operating	0 °C to +80 °C -40 °C to +125 °C
PROTECTION		
Short-circuit protection		Hiccup, non-latching
RECOMMENDED SYSTEM CAPACITANCE		
Input capacitance (See Note 10)	(See Note 10)	270 µF/20 mW ESR max.
Output capacitance (See Note 10)	(See Note 10)	680 µF/10 mW ESR max.

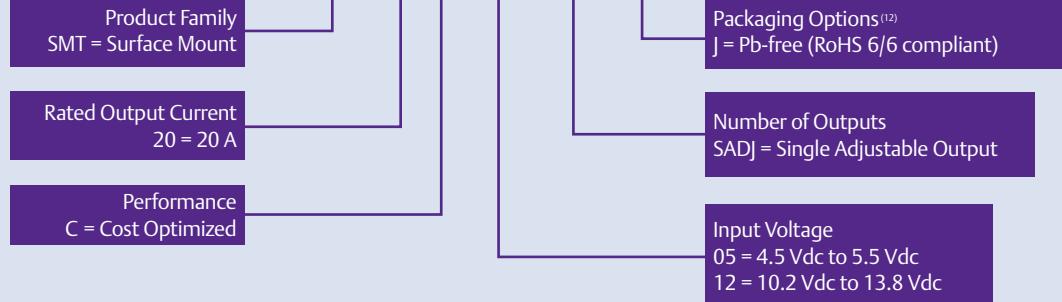
Specifications

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

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE ⁽¹¹⁾	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	MAXIMUM LOAD (TYP.)	REGULATION	MODEL NUMBER ^(12,13)
						LINE	LOAD	
66 W	4.5-5.5 Vdc	N/A	0.9-3.3 V	0 A	20 A	87%	±0.2%	±1.3% SMT20C-05SADJJ
100 W	10.2-13.8 Vdc	N/A	0.9-5.0 V	0 A	20 A	91%	±0.2%	±1.3% SMT20C-12SADJJ

Part Number System with Options

SMT20C-12SADJJ



Output Voltage Adjustment of the SMT20C Series

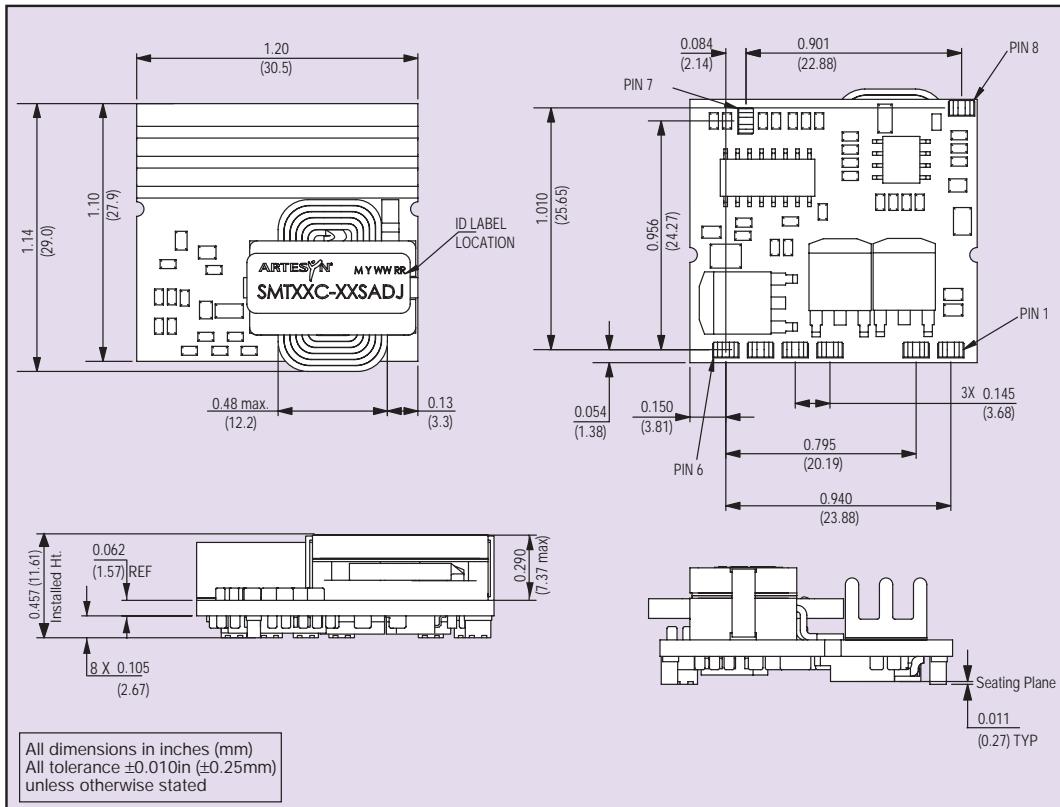
The ultra-wide output voltage trim range offers major advantages to users who select the SMT20C series. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.9 Vdc to 5.0 Vdc. When the SMT20C series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

Notes

- 1 Measured as per recommended set-up. $2 \times C_{in} = 270 \mu F$ (20 mW ESR max, $C_{out} = 680 \mu F$ (10 mW ESR max).
- 2 $di/dt = 10 A/\mu s$, $Vin = \text{Nom}$, $T_c = 25^\circ C$, load change = 0.50 I_o max. to 0.75 I_o max. and 0.75 I_o max. to 0.50 I_o max. At 12 V, 0.9 V_{out} , the max voltage deviation is 200 mV.
- 3 External input fusing is recommended.
- 4 Measured with external filter. See Application Note 169 for details.
- 5 Uses external resistor from trim pin to output ground. Min value = 485 W for 5 V model, 280 W for 12 V model. See Application Note 169 for details.
- 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 Power-up is the time from application of dc input to Power Good enabled. Remote ON/OFF is from ON/OFF asserted high to power good enabled.
- 9 See Application Note 169 for operation above 50 °C.
- 10 See Application Note 169 for ripple current requirements.
- 11 These models have a wide trim output. 5 Vin has an output of 0.9Vdc to 3.3 Vdc and 12 Vin has an output of 0.9 Vdc to 5 Vdc. An external resistor adjusts the output voltage.
- 12 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 13 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	50 mV	25 mV
	3.3 Vdc to 5 Vdc	50 mV	25 mV



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

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