

SMT06C Series

5 Vin and 12 Vin single output

Total Power: 20W
Input Voltage: 4.5-5.5 Vdc or
10.2 - 13.8 Vdc
of Outputs: Single



Rev. 08.20.08_j93
SMT06C
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Special Features

- 6 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

TÜV Product Service
(EN60950:2000)
CB report and certificate

Electrical Specifications

Output		
Voltage adjustability (see note 6)	5 V input models 12 Vins	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 models 12 V input models	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

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

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. @ 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 ON OFF		Positive logic >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 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 IEC69050, 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	0 °C to +80 °C
	Non-operating	-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 m W ESR max.

Ordering Information

Output Power (max)	Input Voltage	Output Voltage ⁽¹¹⁾	Output Current (min)	Output Current (max)	Maximum Load (typ)	Regulation		Model Numbers ^(12, 13)
						Line	Load	
20 W	4.5-5.5 Vdc	0.9-3.3 V	0 A	6 A	89%	±0.2%	±0.5%	SMT06C-05SADJJ
30 W	10.2 - 13.8 Vdc	0.9-5.0 V	0 A	6 A	91%	±0.2%	±0.5%	SMT06C-12SADJJ

All specifications are typical at nominal input $V_{in} = 12$ V, full load at 25°C unless otherwise stated.

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 A	C = C Series	05 = 4.5 Vdc to 5.5 Vdc 12 = 10.2 Vdc to 13.8 Vdc	SADJ = Single Adjustable Output	J = PB-free (RoHS 6/6 compliant)

Output Voltage Adjustment of the SMT20C 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.

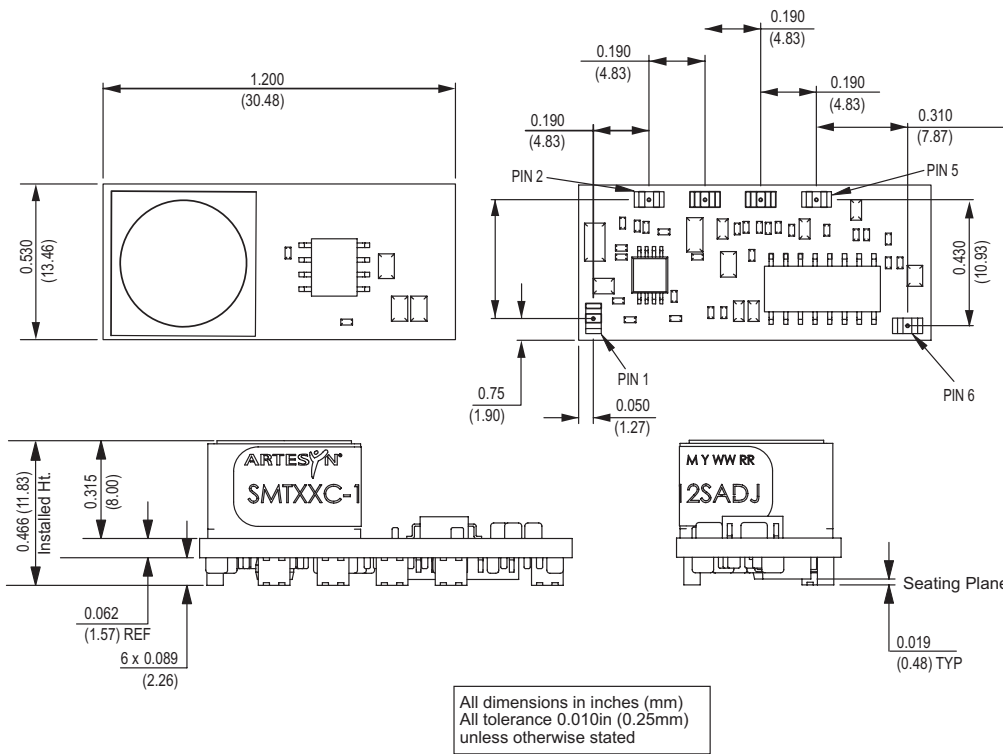
Notes

- 1 $di/dt = 10$ A/ μ s, $V_{in} = \text{Nom}$, $T_c = 25$ °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. $C_{in} = 270$ μ F (20 mW ESR max.). $C_{out} = 680$ μ F (10 mW ESR max.).
- 6 Uses external resistor from trim to ground. Minimum value 485 W for 5 V model, 280 W 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 representative or use the on-line model number search tool at www.powerconversion.com 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

Mechanical Drawing



Pin connections

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

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