

# SMT40C Series

## 12 Vin single output

**NEW Product**



- **40 A current rating**
- **Input voltage range: 10.2 Vdc - 13.8 Vdc**
- **Output voltage range: 0.9 Vdc - 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 >4 million hours per Telcordia SR-332**
- **Current share**
- **Available RoHS compliant**



The SMT40C Series is a new high density open frame non-isolated converter for space-sensitive applications. Each model has a wide input range of 10.2 Vdc to 13.8 Vdc and offers a wide 0.9 Vdc to 5.0 Vdc output voltage range with a 40 A load. An external resistor adjusts the output voltage from its pre-set value of 0.9 V to any value up to 5 V. Typical efficiencies are 92% at full load conditions. The SMT40C series offers remote ON/OFF and overcurrent protection as standard. With full international safety approval including EN60950 and UL/cUL60950, the SMT40C 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 5)	0.9-5.0 Vdc
Output setpoint accuracy	1.0% trim resistors	$\pm 3.0\%$
Line regulation	Low line to high line	$\pm 0.2\%$ max.
Load regulation	Full load to min. load	$\pm 1.5\%$ max.
Min/max load		0 A/40 A
Overshoot	At turn-on	1.0% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise	(See Note 1)	50 mV pk-pk 15 mV rms
Transient response	(See Note 2)	75 mV max. deviation 50 $\mu\text{s}$ recovery to within regulation band
Current share	Full load	$\pm 10\%$

#### INPUT SPECIFICATIONS

Input voltage range		10.2-13.8 Vdc
Input current	Minimum load Remote OFF	290 mA 30 mA
Input current (max.)		22 A max @ $I_o$ max and $V_{in} = 10.2\text{ V}$
Input reflected ripple	(See Note 4)	150 mA pk-pk
Remote ON/OFF Logic compatibility	ON OFF	Positive logic >2.4 Vdc <0.8 Vdc
Start-up time	Power up Remote ON/OFF	<30 ms <30 ms
Turn ON threshold		9.0 Vdc typ.
Turn OFF threshold		7.6 Vdc typ.

#### GENERAL SPECIFICATIONS

Efficiency		92% typ.
Switching frequency	Fixed	300 kHz typ.
Approvals and standards	(See Note 7)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		28.3 g (1.0 oz)
Coplanarity		150 $\mu\text{m}$
MTBF	Telcordia SR-332, method II @ $40\text{ }^{\circ}\text{C}$	4,585,991 hours

#### ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient, temperature	$0\text{ }^{\circ}\text{C}$ to $+80\text{ }^{\circ}\text{C}$
(See Note 9)	Non-operating	$-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$

#### PROTECTION

Short-circuit	Foldback, non-latching
Over-temperature	Hiccup, non-latching

#### RECOMMENDED SYSTEM CAPACITANCE

Input capacitance	(See Note 10)	$2 \times 270\text{ }\mu\text{F}/20\text{ m}\Omega$ ESR max.
Output capacitance	(See Note 10)	$3 \times 680\text{ }\mu\text{F}/10\text{ m}\Omega$ ESR max.

#### 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 IEC60950-US/6415C/UL

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DC-DC CONVERTERS C Class Non-isolated

2

For the most current data and application support visit [www.artesyn.com/powergroup/products.htm](http://www.artesyn.com/powergroup/products.htm)

**NEW Product**

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE <sup>(11)</sup>	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY	REGULATION		MODEL NUMBER <sup>(13,14)</sup>
							LINE	LOAD	
200 W	10.2-13.8 Vdc	N/A	0.9-5.0 Vdc	0 A	40 A	92%	±0.2%	±1.5%	SMT40C-12SADJJ

### Part Number System with Options

#### SMT40C-12SADJ-SJ

**Product Family**  
SMT = Surface Mount

**Rated Output Current**  
40 = 40Amps

**Performance**  
C = Cost Optimized

**Packaging Options <sup>(13)</sup>**  
J = Pb-free (RoHS 6/6 compliant)

**Current Sharing <sup>(12)</sup>**  
No Suffix = Non-isolated  
Suffix '-S' = Isolated

**Number of Outputs**  
SADJ = Single Adjustable Output

**Input Voltage**  
12 = 10.2 Vdc to 13.8 Vdc

#### Output Voltage Adjustment of the SMT40C Series

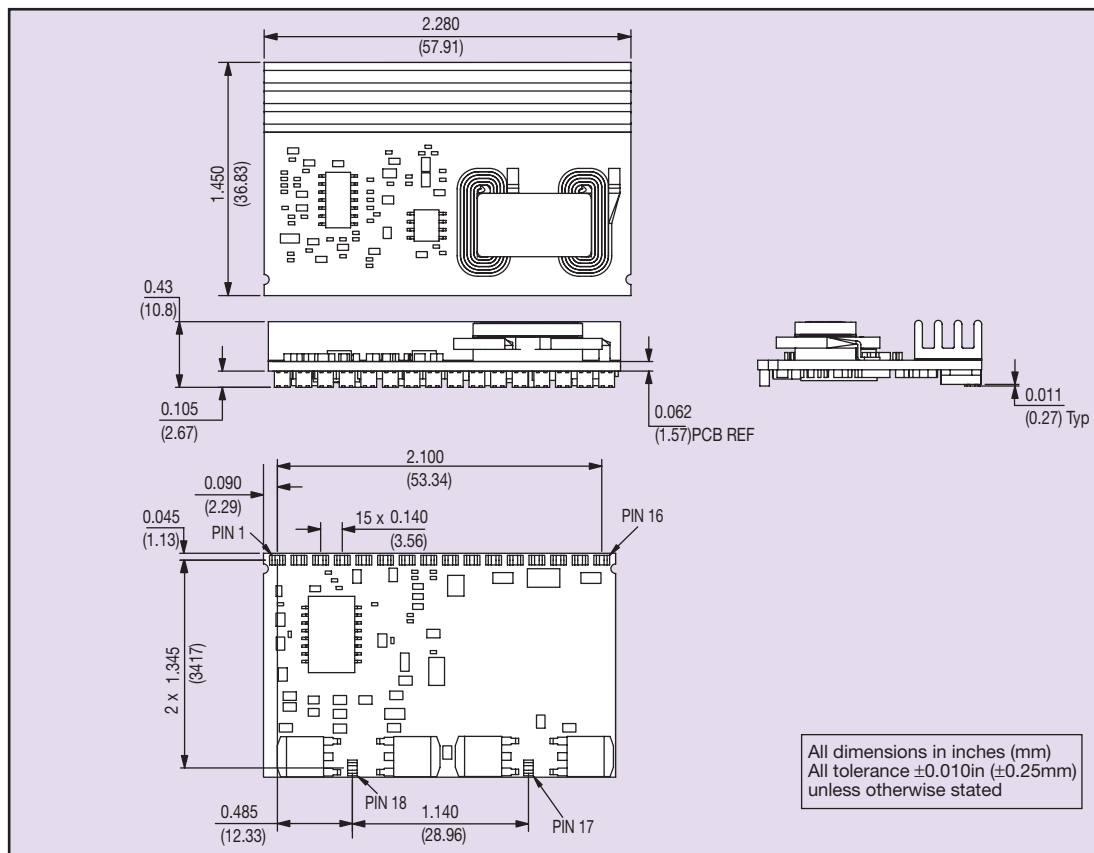
The ultra-wide output voltage trim range offers major advantages to users who select the SMT40C series. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.9 Vdc to 5.0 Vdc. When the SMT40C series converter 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 mΩ ESR max,  $3 \times C_{out} = 680 \mu F$  (10 mΩ ESR max).
- 2  $di/dt = 10 A/\mu s$ ,  $V_{in} = \text{Nom}$ ,  $T_c = 25^\circ C$ , 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.
- 3 External input fusing is recommended.
- 4 Measured with external filter. See Application Note 170 for details.
- 5 Uses external resistor from trim pin to output ground. See Application Note 170 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 170 for operation above  $50^\circ C$ .
- 10 See Application Note 170 for ripple current requirements.
- 11 These models have a wide trim output. The unit has an output of 0.9 Vdc to 5 Vdc. An external resistor adjusts the output voltage.
- 12 For redundant current sharing applications that use ORing diodes to separate the outputs, please add the suffix '-S' to the part number, e.g. SMT40C-12SADJ-SJ. Please refer to Application Note 170 for further details.
- 13 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 14 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.

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PIN CONNECTIONS			
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	Current Share	10	Vin
2	Trim	11	Vin
3	GND	12	Vout
4	GND	13	Vout
5	GND	14	GND
6	Sense-	15	Vout
7	Sense+	16	GND
8	Remote ON/OFF	17	Mechanical Support
9	Power Good	18	Mechanical Support