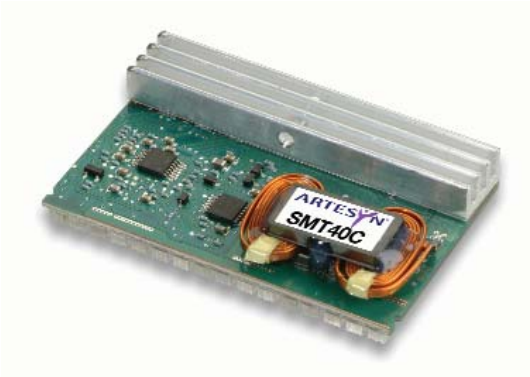
Rev.06.25.07
smt40c


# SMT40C Series
## 12 Vin single output

**Total Power:** 200W
**Input Voltage:** 10.2-13.8 Vdc
**# of Outputs:** Single




## Special Features

- 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
- 2 year warranty

## Safety

UL/cUL : 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

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.

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# 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) | 0.9-5.0 Vdc |
| Output setpoint accuracy | 1.0% trim resistors | ±3.0% |
| Line regulation | Low line to high line | ±0.2% max. |
| Load regulation | Full load to min. load | ±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<br>5 Hz to 20 MHz | (See Note 1) | 50 mV pk-pk<br>15 mV rms |
| Transient response<br>(See Note 2) | | 75 mV max. deviation<br>50 µs recovery to<br>within regulation band |
| Current share | Full load | ±10% |

## INPUT SPECIFICATIONS

| | | |
|---|---|---|
| Input voltage range | | 10.2-13.8 Vdc |
| Input current | Minimum load<br>Remote OFF | 290 mA<br>30 mA |
| Input current (max.) | | 22 A max @ lo max<br>and Vin = 10.2 V |
| Input reflected ripple | (See Note 4) | 150 mA pk-pk |
| Remote ON/OFF<br>Logic compatibility<br>ON<br>OFF | | <br>Positive logic<br>>2.4 Vdc<br><0.8 Vdc |
| Start-up time<br>(See Note 8) | Power up<br>Remote ON/OFF | <30 ms<br><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<br>IEC60950, UL/cUL60950 |
| Material flammability | | UL94V-0 |
| Weight | | 28.3 g (1.0 oz) |
| Coplanarity | | 150 µm |
| MTBF | Telcordia SR-332,<br>method II @ 40 ºC | 4,585,991 hours |

## ENVIRONMENTAL SPECIFICATIONS

| | | |
|---|---|---|
| Thermal performance<br>(See Note 9) | Operating ambient,<br>temperature | 0 °C to +80 °C |
| | Non-operating | -40 °C to +125 °C |

## PROTECTION

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

## RECOMMENDED SYSTEM CAPACITANCE

| | | |
|---|---|---|
| Input capacitance | (See Note 10) | 2 x 270 µF/20 mW ESR max. |
| Output capacitance | (See Note 10) | 3 x 680 µF/10 mW ESR max. |

# Specifications



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

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OVP | OUTPUT VOLTAGE [11] | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY | REGULATION | | MODEL NUMBER [13,14] |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 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**

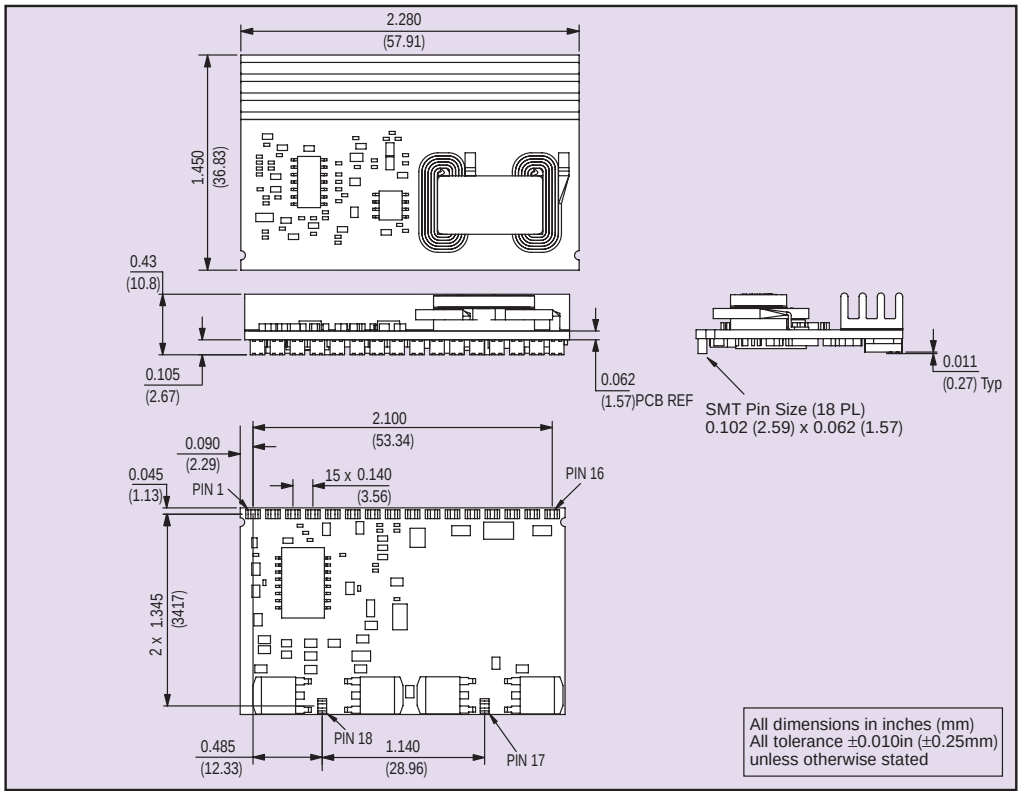
- Product Family: SMT = Surface Mount
- Rated Output Current: 40 = 40Amps
- Performance: C = Cost Optimized
- Packaging Options [13]: J = Pb-free (RoHS 6/6 compliant)
- Current Sharing [12]: No Suffix = Non-isolated; Suffix '-S' = Isolated
- Number of Outputs: SADJ = Single Adjustable Output
- Input 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 x Cin = 270 µF (20 mW ESR max, 3 x Cout = 680 µF (10 mW ESR max).
2 di/dt = 10 A/µs, Vin = Nom, Tc = 25 °C, load change = 0.50 lo max. to 0.75 lo max. and 0.75 lo max. to 0.50 lo 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 °C.
10 See Application Note 170 for ripple current requirements.
11 These models have a wide trim output. The unit has an output of 0.9Vdc 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.




| 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 |

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