

SMT40C Series

12 Vin single output

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



Rev.06.25.07
smt40c
1 of 4

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.



Specifications

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

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 5 Hz to 20 MHz	(See Note 1)	50 mV pk-pk 15 mV rms
Transient response (See Note 2)		75 mV max. deviation 50 μs 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 $V_{in} = 10.2 V$
Input reflected ripple	(See Note 4)	150 mA pk-pk
Remote ON/OFF Logic compatibility		Positive logic ON OFF
Start-up time (See Note 8)	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 μm
MTBF	Telcordia SR-332, method II @ $40^{\circ}C$	4,585,991 hours

ENVIRONMENTAL SPECIFICATIONS

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

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.

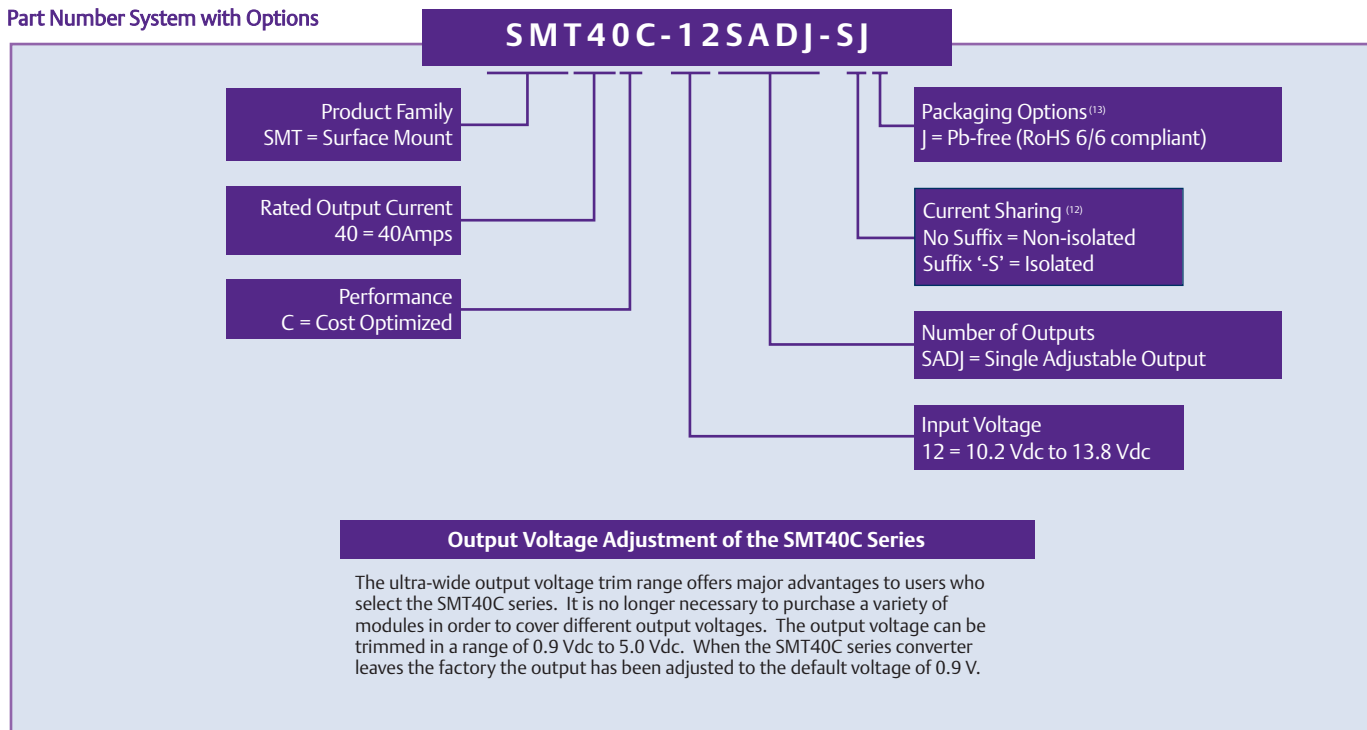
Specifications

Rev.06.25.07
smt40c
3 of 4

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

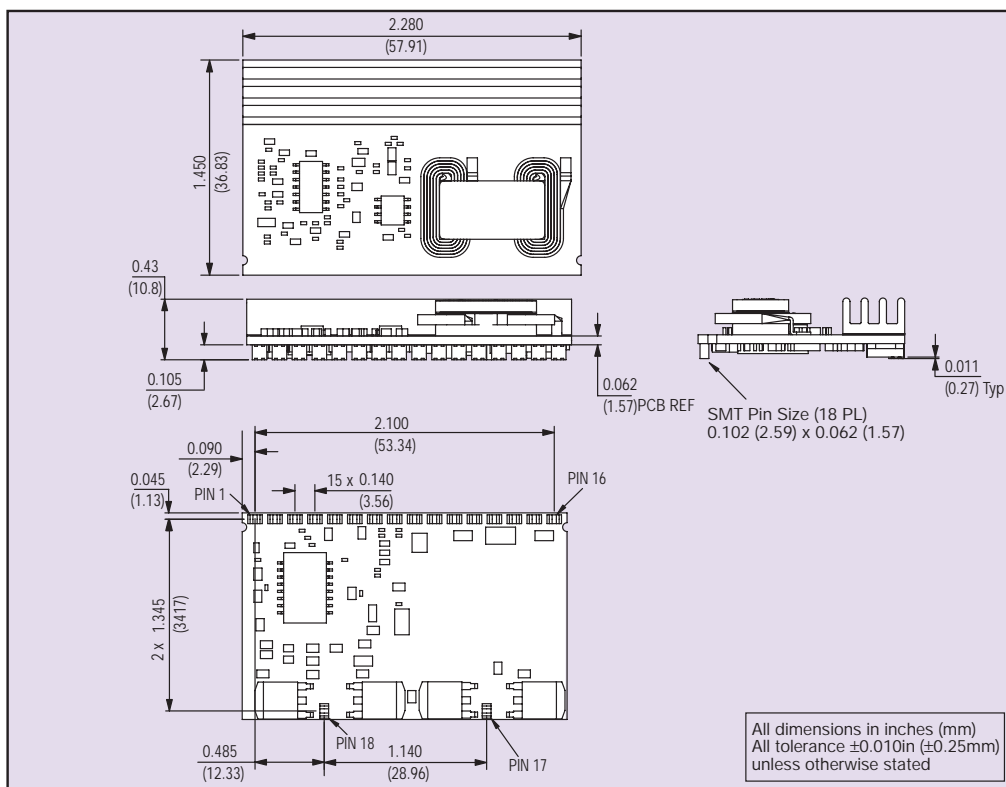
OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE ⁽¹¹⁾	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY	REGULATION		MODEL NUMBER ^(13,14)
							LINE	LOAD	
200 W	10.2-13.8 Vdc	N/A	0.9-5.0 Vdc	0 A	40 A	92%	±0.2%	±1.5%	SMT40C-12SADJJ

Part Number System with Options



Notes

- 1 Measured as per recommended set-up. $2 \times C_{in} = 270 \mu F$ (20 mW ESR max, $3 \times C_{out} = 680 \mu F$ (10 mW ESR max).
- 2 $di/dt = 10 A/\mu s$, $V_{in} = \text{Nom}$, $T_c = 25^\circ C$, load change = 0.50 Io max. to 0.75 Io max. and 0.75 Io max. to 0.50 Io 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 0.9Vdc 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.



Americas

5810 Van Allen Way
Carlsbad, CA 92008
USA
Telephone: +1 760 930 4600
Facsimile: +1 760 930 0698

Europe (UK)

Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
Telephone: +44 (0) 1384 842 211
Facsimile: +44 (0) 1384 843 355

Asia (HK)

16th - 17th Floors, Lu Plaza
2 Wing Yip Street, Kwun Tong
Kowloon, Hong Kong
Telephone: +852 2176 3333
Facsimile: +852 2176 3888

For global contact, visit:

www.powerconversion.com

technicalsupport@powerconversion.com

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

PIN CONNECTIONS			
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	Current Sense	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

Emerson Network Power.

The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Power**
- Inbound Power
- Integrated Cabinet Solutions
- Outside Plant
- Precision Cooling
- Site Monitoring and Services

EmersonNetworkPower.com

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co.
©2007 Emerson Electric Co.