

SMT30C Series

C-Class Non-Isolated

Data Sheet

Total Power: 30 Watts
Input Voltage: 10.2 - 13.8 Vdc
of Outputs: Single

SPECIAL FEATURES

- 30 A current rating
- Input voltage range: 10.2 - 13.8 Vdc
- Output voltage range: 0.9 - 5.0 V
- Industry-leading value
- Cost optimized design
- Excellent transient response
- Output voltage adjustability
- Path for future upgrades
- Supports silicon voltage migration
- Reduced design-in and qual time
- Designed-in reliability: MTBF of >4 million hours per Telcordia SR-332
- Available RoHS compliant
- Two year warranty

SAFETY

- UL, cUL CAN/CSA 22.2 No. 60950
- UL 60690 File No. E139421
- TÜV Product Service (EN60950:2000)
- Certificate No. B 04 08 19870 228
- CB report and certificate to IEC60950-US/6415C/UL



Electrical Specifications

Input		
Input voltage range	Nominal 12 V	10.2 - 13.8 Vdc
Input current	Minimum load Remote OFF	230 mA 30 mA
Input current (max.)	(See Note 4)	13.8 A max. @ I _o max. and V _{in} = 10.8 V
Input reflected ripple	(See Note 2)	150 mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		Positive logic >2.4 Vdc <0.8 Vdc
Start-up time (See Note 5)	Power up Remote ON/OFF	<30 ms <30 ms
Turn ON threshold		9.0 Vdc
Turn OFF threshold		7.6 Vdc
Output		
Voltage adjustability	(See Note 1)	0.9 - 5.0 Vdc
Output setpoint accuracy	1.0% trim resistors	±3%
Line regulation	Low line to high line	±0.2%
Load regulation	Full load to min. load	±1.0%
Min/Max load		0 A/30A
Overshoot	At turn-on	1.0% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise	5 Hz to 20 MHz (See Note 2)	50 mV pk-pk 14 mV rms
Transient response	(See Note 3)	75 mV max. deviation 150 µs recovery to within regulation band
Current share	Full load	±10%

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

General Specifications

Efficiency		91%
Switching frequency	Fixed	300 kHz
Approvals and standards	(See Note 7)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		28.3 g (1 oz)
Coplanarity		150 μ m
MTBF	Telcordia SR-332	4,456,655 hours

Environmental Specifications

Thermal performance	Operating ambient temperature	-0 °C to +80 °C
(See Note 8)	Non-operating temperature	-40 °C to +125 °C
Protection		
Short-circuit	Foldback, non latching	
Over-temperature	Hiccup, non latching	
Recommended System Capacitance		
Input capacitance	(See Note 9)	270 μF / 20 mW ESR max.
Output capacitance	(See Note 9)	680 μF / 10 mW ESR max.

Ordering Information

Model Number ⁽¹⁾	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SMT30C-12SADJJ	150 W	10.2 - 13.8 Vdc	0.9 - 5.0 V	0 A	30 A	91%	±0.2%	±1.0%

Part Number System with Options

Product Family	Rated Output Current	Performance	Input Voltage	Number of Outputs	Packaging Options
SMT	30	C	12	SADJ	J
SMT = Surface Mount	30 = 30 Amps	C = Cost Optimized	12 = 10.2 - 13.8 Vdc	SADJ = Single Adjustable Output	J = Pb free (RoHS 6/6 compliant)

Output Voltage Adjustment

The ultra-wide output voltage trim range offers major advantages to users who select the SMT30C 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 SMT30C series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

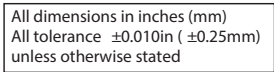
Notes:

1. Uses external resistor from TRIM to ground. See Application Note 170 for details.
2. Measured with external filter. See Application Note 170 for details.
3. $di/dt = 10 \text{ A}/\mu\text{s}$, $V_{in} = \text{Nom}$, $T_c = 25^\circ\text{C}$, load change = 0.50 I_o max. to 0.75 I_o max, and vice versa.
4. External input fusing recommended.
5. Power up is the time from application of dc input to POWER GOOD high. Remote ON/OFF asserted high to POWER GOOD high.
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. See Application Note 170 for operation above 50 °C.
9. See Application Note 170 for more details.
10. For redundant current sharing applications that use ORing diodes to separate the outputs, please add the suffix '-S' to the part number, e.g. SMT30C-12SADJ-SJ. Please refer to Application Note 170 for further details.
11. 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> to find a suitable alternative.

Mechanical Drawings

Pin Assignments	
Pin	Function
1	Current Sense
2	Trim
3	Ground
4	Ground
5	Ground
6	Sense-
7	Sense+
8	Remote ON/OFF
9	Power Good
10	Vin
11	Vin
12	Vout
13	Vout
14	Ground
15	Vout
16	Ground
17	Mechanical Support
18	Mechanical Support

Pin	Function
1	Current Share
2	Trim
3	Ground
4	Ground
5	Ground
6	Sense-
7	Sense+
8	Remote ON/OFF
9	Power Good
10	Vin
11	Vin
12	Vout
13	Vout
14	Ground
15	Vout
16	Ground
17	Mechanical Support
18	Mechanical Support



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