POWER

SMT15C Series

Non-Isolated DC-DC Converter

Data Sheet

Total Power:	50 Watts
Input Voltage:	4.5 - 5.5 Vdc or 10.2 - 13.8 Vdc
# of Outputs:	Single

RoHS 6/6 COMPLIANT

SPECIAL FEATURES

- 15 A current rating
- Input voltage range: 4.5 - 5.5 Vdc or 10.2 - 13.8 Vdc
- Output voltage: 0.9 - 3.3 / 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 >7 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 US/6415C/UL

Electrical Specifications

Input		
Input voltage range		4.5 - 5.5 Vdc 10.2 - 13.8 Vdc
Input current	Minimum load Remote OFF	65 mA 20 mA
Input current (max.) (See Note 9)	5 Vin 12 Vin	11.5 A max. @ Io max. 8.1 A @ Io max.
Input reflected ripple (See Note 2)	5 Vin 12 Vin	200 mA (pk-pk) 200 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 9.3 Vdc
Turn OFF threshold	5 Vin 12 Vin	4.3 Vdc 7.8 Vdc
Output		
Voltage adjustability (See Note 7)	5 Vin 12 Vin	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/15 A
Overshoot (at turn on)	5 Vin 12 Vin	3.0% max. 1.0% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise	5 Hz to 20 MHz (See Note 6)	See table on page 2
Transient response (See Note 1)		100 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.

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General Specifications

Efficiency		See Table below
Switching frequency	Fixed	200 kHz
Approvals and standards	(See Note 4)	TÜV Product Services EN60950, UL/cUL60950
Material flammability		UL94V-0
Weight		14.2 g (0.5 oz)
Coplanarity		150 µm
MTBF	Telcordia SR-332	7,817,294 hours

Environmental Specifications

Thermal performance	Operating ambient temperature	-0 °C to +80 °C
(See Note 10)	Non-operating temperature	-40 °C to +125 °C
Protection		
Short-circuit	Hiccup, non latching	
Recommended System Capacitance		
Input capacitance	(See Note 11)	270 µF / 20 mW ESR max.
Output capacitance	(See Note 11)	680 µF / 10 mW ESR max.

Ordering Information

Model Number [12,13]	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation	
							Line	Load
SMT15C-05SADJJ	50 W	4.5 - 5.5 Vdc	0.9 - 3.3 V	0 A	15 A	89%	±0.2%	±0.5%
SMT15C-12SADJJ	75W	10.2 - 13.8 Vdc	0.9 - 5.0 V	0 A	15 A	91%	±0.2%	±0.5%

Part Number System with Options

Product Family	Rated Output Current	Performance		Input Voltage	Number of Outputs	Packaging Options
SMT	**15**	**C**	**-**	**12**	**SADJ**	**J**
SMT = Surface Mount	15 - 15 A	C = Cost Optimized		05 = 4.5 - 5.5 Vdc 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 SMT15C 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 SMT15C series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

Ripple and Noise Specification

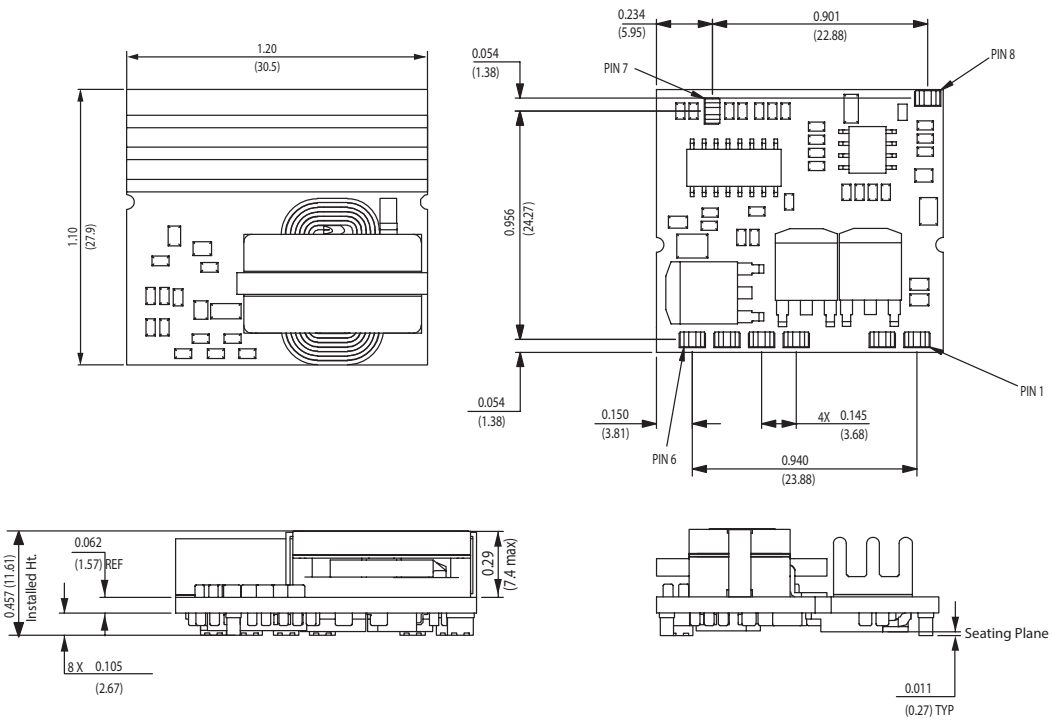
Model	Output Voltage	Pk - Pk	RMS
5 V input models	0.9 - 2.5 Vdc 3.3 Vdc	30 mV 40 mV	15 mV 15 mV
12 V input models	0.9 - 2.5 Vdc 3.3 Vdc	50 mV 50 mV	25 mV 25 mV

Notes:

1. di/dt = 10 A/µs, Vin = Nom, Tc = 25 °C, load change = 0.5 Io max. to 0.75 Io max. and voce versa
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. Reserved.
6. Measured as per recommended set-up. Cin = 270 µF (20 mW ESR max.). Cout = 680 µF (10 mW ESR max.).
7. Uses external resistor from TRIM to ground. Seee Application Note 169 for details. Minimum values 485 µF for 5 V model, 280 µF for 12 V model.
8. Signal line assumed <3 m.
9. External input fusing recommended.
10. See Application Note 169 for operation above 50 ºC.
11. See Application Note 160 for more details.
12. 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	Vout
2	Vout
3	Power Good
4	Ground
5	Ground
6	Vin
7	Trim
8	Remote ON/OFF



All dimensions in inches (mm)
All tolerance ±0.010in (±0.25mm)
unless otherwise stated

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