

Embedded Power for
Business-Critical Continuity

SMT15F Series

12 Vin single fixed output

Total Power: 15.0 W
Input Voltage: 10.8-13.2 Vdc
of Outputs: Single

Special Features

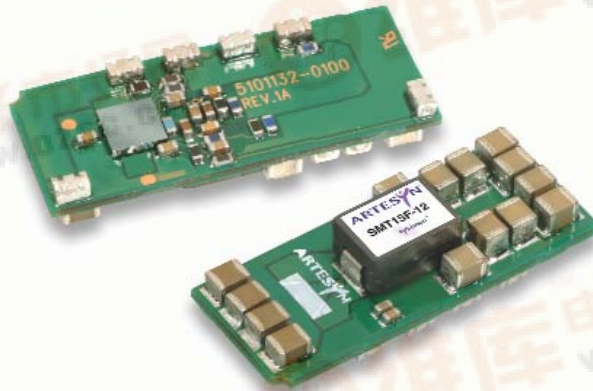
- Designed to meet ultra fast transient requirements: 300 A/ μ s step load transients
- 15 A Current rating
- Input voltage range: 10.8 Vdc to 13.2 Vdc
- Output voltage range: 1.0 Vdc to 1.8 Vdc
- Extremely low internal power dissipation
- Minimal thermal design concerns
- Ideal solution where board space is at a premium or tighter card pitch is required
- Industry standard surface-mount footprint
- Available RoHS compliant
- 2 year warranty

Safety

UL/cUL CAN/CSA 22.2
No. E174104
UL 60950 File No. E174104

TÜV Product Service (EN60950)
Certificate No. B 04 04 38572

CB report and certificate to
IEC60950 DE3-52484



The SMT15F-12 series are non-isolated dc-dc converters packaged in a surface-mount footprint giving designers a cost effective solution for conversion from a 12 V source. The SMT15F-12 has an input range of 10.8 Vdc to 13.2 Vdc and offers an output voltage range from 1.0 Vdc to 1.8 Vdc with a 15 A load, which allows for maximum design flexibility and a pathway for future upgrades. The SMT15F-12 is designed for applications that include distributed power, workstations, optical network and wireless applications. Implemented using state of the art surface-mount technology and automated manufacturing techniques, the SMT15F-12 offers compact size and efficiencies of up to 88% at 1.8 Vout.

Rev.06.28.07
SMT15F_12_FIXED
1 of 5

Specifications

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

OUTPUT SPECIFICATIONS

Voltage adjustability	(Trimmable)	±10%
Setpoint accuracy		±2.5% typ.
Line regulation		±1.0% typ.
Load regulation		±1.0% typ.
Total error band		±3.0% typ.
Minimum load		0 A
Overshoot/undershoot		None
Ripple and noise	5 Hz to 20 MHz	40 mV pk-pk 25 mV rms
Temperature co-efficient		±0.01%/°C
Transient response (1.2 Vout)	di/dt 200 A/μs (See Note 3)	7.5 A load step 50 mV max. deviation <10 μs recovery to within ±1.0%
Remote sense		10% Vo compensation

INPUT SPECIFICATIONS

Input voltage range		10.8 Vdc to 13.2 Vdc
Input current	No load	100 mA
Input current (max.)		2.0 A max. @ Io max. and Vout = 1.2 V
Input reflected ripple		100 mA rms
Remote ON/OFF		(See Note 1)
Start-up time		5 ms

EMC CHARACTERISTICS

Electrostatic discharge	EN61000-4-2, IEC801-2
Conducted immunity	EN61000-4-6
Radiated immunity	EN61000-4-3

GENERAL SPECIFICATIONS

Efficiency	Vin = 12 V, Vout = 1.8 V	88% typ.
Insulation voltage		Non-isolated
Switching frequency	Variable	700 kHz typ.
	Vin = 12 V, Vout = 1.2 V	
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	(LxWxH)	33.02 x 13.46 x 7.57 mm 1.3 x 0.53 x 0.298 inches
Weight		7 g (0.25 oz)
Coplanarity		100 μm
MTBF	Telcordia SR-332	16,529,000 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Figure 1)	Operating ambient, temperature	-40 °C to +85 °C
	Non-operating	-40 °C to +125 °C

PROTECTION

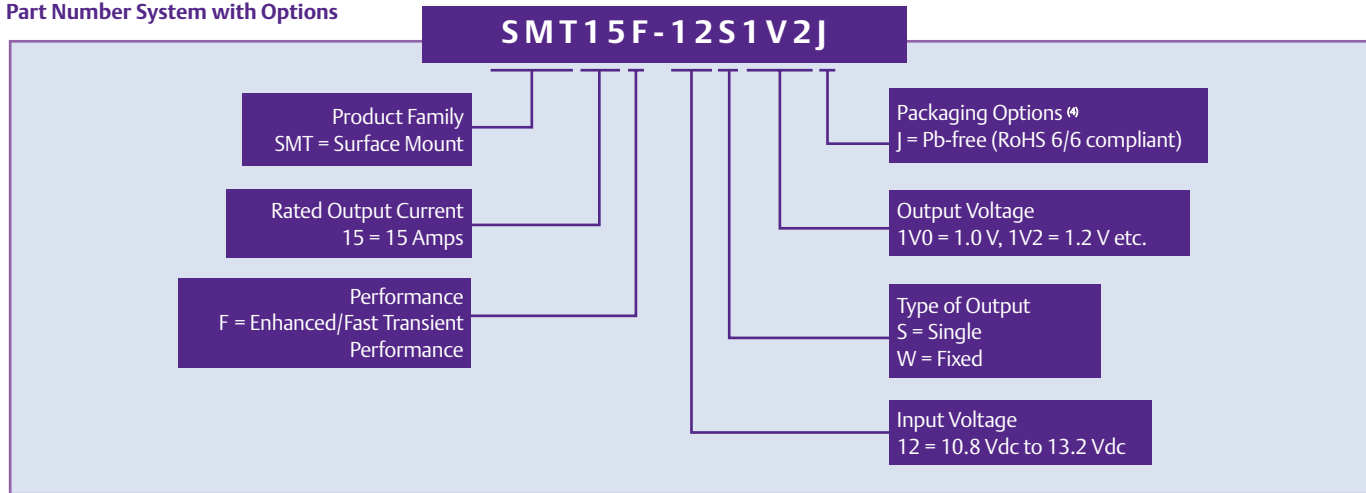
Short-circuit	Continuous
Thermal	Automatic recovery

Specifications

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OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER ^(1,4,5)
						LINE	LOAD	
15.0 W	10.8-13.2 Vdc	1 Vdc	0 A	15 A	85%	±1.0%	±1.0%	SMT15F-12S1V0J
18.0 W	10.8-13.2 Vdc	1.2 Vdc	0 A	15 A	86%	±1.0%	±1.0%	SMT15F-12S1V2J
22.5 W	10.8-13.2 Vdc	1.5 Vdc	0 A	15 A	87%	±1.0%	±1.0%	SMT15F-12S1V5J
27.0 W	10.8-13.2 Vdc	1.8 Vdc	0 A	15 A	88%	±1.0%	±1.0%	SMT15F-12S1V8J

Part Number System with Options



Notes

- The SMT15F-12 features an 'Active High' Remote ON/OFF operation. If not using the Remote ON/OFF pin, leave the pin open (the converter will be on). The Remote ON/OFF pin is referenced to ground.

The following conditions apply for the SMT15F-12:

Configuration	Converter Operation
Remote pin open circuit	Unit is ON
Remote pin pulled low	Unit is OFF
Remote pin pulled high	Unit is ON

An 'Active Low' Remote ON/OFF version is also possible with this converter. To order please place the Suffix 'R' towards the end of the part number, e.g. SMT15F-12S1V8RJ.

- A 270 µF electrolytic input capacitor maybe required for test purposes only.
- An external output capacitor is not required for basic operation. Adding distributed capacitance at the load will improve the transient response.
- TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 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.

Specifications

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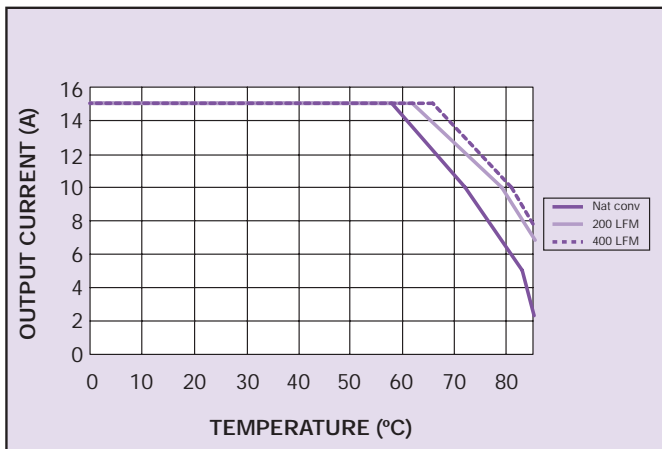


Figure 1 - Derating Curve
Vin = 12 V, Output Voltage = 1.2 V (See Note A)

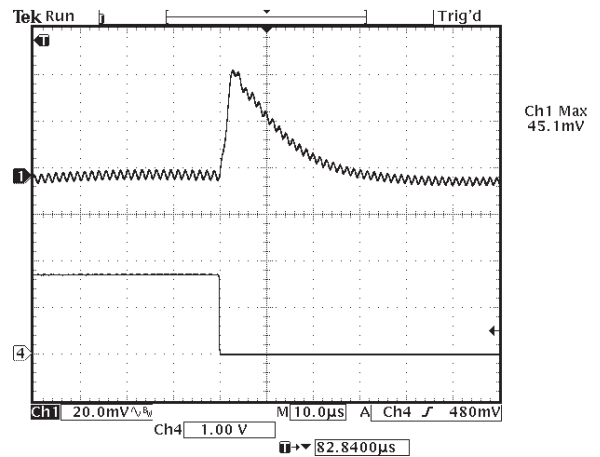


Figure 2 - Typical Transient Response,
(Vin = 12 V, Output Current = 1.2 V),
7.5 A Load Step Change; Slew Rate = 200 A/µs
Channel 1: Voltage Deviation = 45 mV; Recovery Time = 10 µs

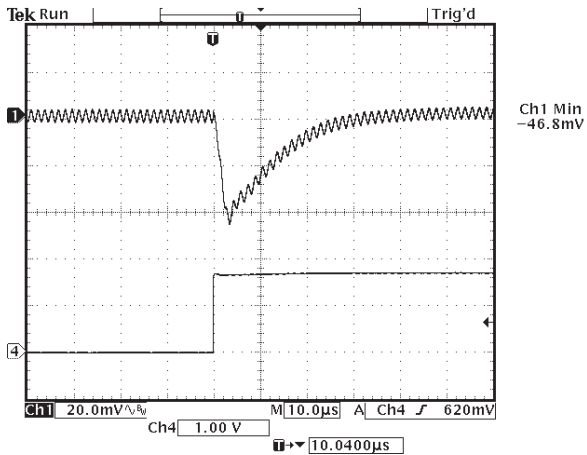


Figure 3 - Typical Transient Response,
(Vin = 12 V, Output Current = 1.2 V),
7.5 A Load Step Change; Slew Rate = 200 A/µs
Channel 1: Voltage Deviation = 46.8 mV; Recovery Time = 10 µs

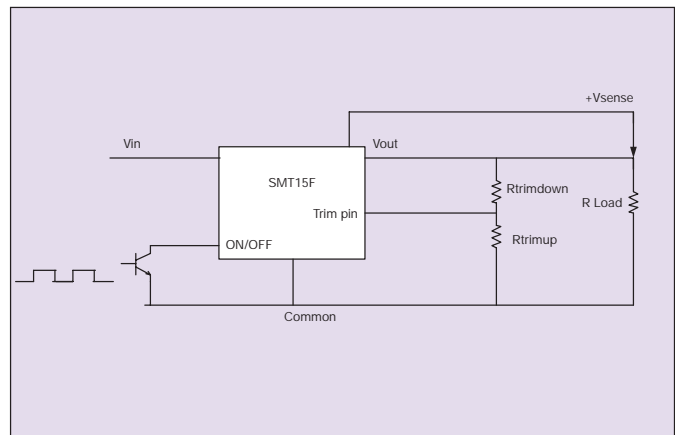


Figure 4 - Standard Application

Notes

- A The derating curve represents the conditions at which internal components are within the Artesyn derating guidelines.

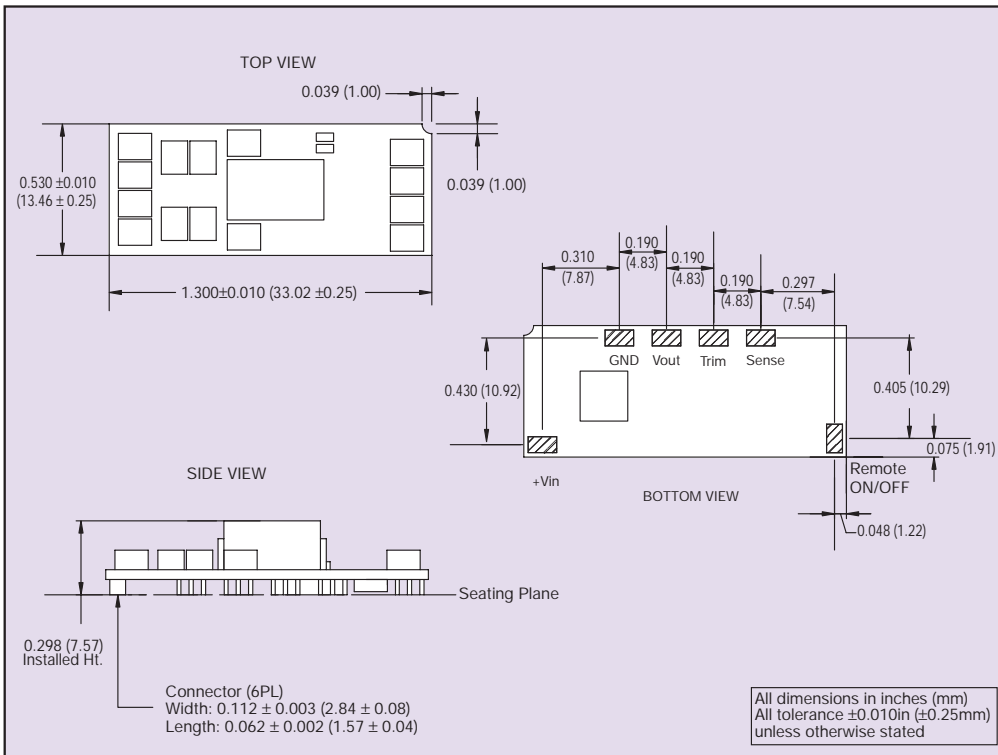


Figure 5 - Mechanical Drawing

PIN CONNECTIONS	
PIN NUMBER	FUNCTION
1	+Vin
2	GND
3	+Vout
4	Trim
5	+Vsense
6	Remote ON/OFF

Figure 5 - Mechanical Drawing and Pinout Table

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

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