

PI31xx Series

High Density, Isolated, DC-DC, ZVS Converters

Thermally Enhanced, Surface-Mount Power-System-in-Package (PSiP) for use in Networking, Industrial, Rugged Defense, Isolated, Board-Level Power and Space Constrained System Applications.

Description

The PI31xx is a family of high density, isolated DC-DC Zero-Voltage Switching (ZVS) converter modules integrating controller, power switches, planar magnetics and support components all within a high density surface-mount package. This complete solution utilizes a high-performance ZVS topology enabling high-switching frequencies and providing best-in-class power density.

The high-switching frequency reduces input- and output-filtering requirements, further decreasing size and cost of the overall solution.

These high-density converter modules are offered in three input voltage operating ranges; $48V_{IN}$ nominal for communication applications, $28V_{IN}$ nominal for rugged high temperature or M-Grade applications and $24V_{IN}$ nominal for industrial applications. All PI31xx converters offer a similar function and feature set.

Fully equipped with a variety of programmable features, the PI31xx includes output voltage trimming, programmable soft start capability and remote on / off ENABLE. There is also a temperature monitor function providing an analog output voltage proportional to the internal module temperature.

The PI31xx is self-protected against fault conditions including: input overvoltage, undervoltage lockout, overtemperature and output overvoltage protection. A constant-current limit threshold is employed to protect against short circuit and overload conditions. All fault conditions have an auto-restart function.

Features & Benefits

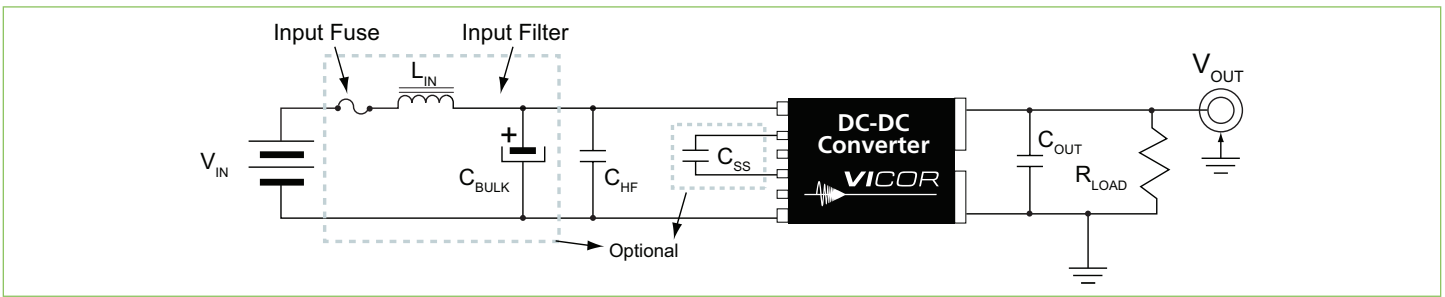
- Complete isolated DC-DC with Zero Voltage Switching Module
- 50W / 60W output power
- Efficiency up to 89% (dependent upon converter model)
- Output voltage sensing without opto coupler use for higher reliability
- Three input-voltage ranges for Communication, Industrial, Rugged/M-Grade Applications
- Communication Converters have max peak input voltage of 100V / 100ms (non-operating)
- Surface Mount 0.87 x 0.65 x 0.265in high-density package
- 900kHz switching frequency, minimizes input filtering and reduces output capacitance
- On / Off control, positive logic ENABLE
- Wide trim range +10 / -20% Trim
- Temperature Monitor (TM) & Overtemperature Protection (OTP)
- Input UVLO & OVLO and output OVP
- Overcurrent protection with auto restart
- Adjustable soft start
- 2,250V input to output isolation

Converter	Input	Output		I _{OUT} Max
		Set	Range	
Communications (-40 to 125°C)				
PI3101-00-HVIZ	36 – 75V _{IN}	3.3V	3.0 – 3.6V	18A
PI3105-00-HVIZ		12V	9.6 – 13.2V	5A
PI3110-01-HVIZ	41 – 57V _{IN}	18V	16.2 – 19.8V	3.3A
Industrial (-40 to 125°C)				
PI3109-01-HVIZ	18 – 36V _{IN}	5V	4.0 – 5.5V	10A
PI3106-01-HVIZ		12V	9.6 – 13.2V	4.2A
M-Grade (-55 to 125°C)				
PI3108-00-HVMZ	16 – 50V _{IN}	3.3V	3.0 – 3.6V	10A
PI3109-00-HVMZ		5V	4.0 – 5.5V	10A
PI3106-00-HVMZ		12V	9.6 – 13.2V	4.2A
PI3111-00-HVMZ		15V	12 – 16.5V	3.3A

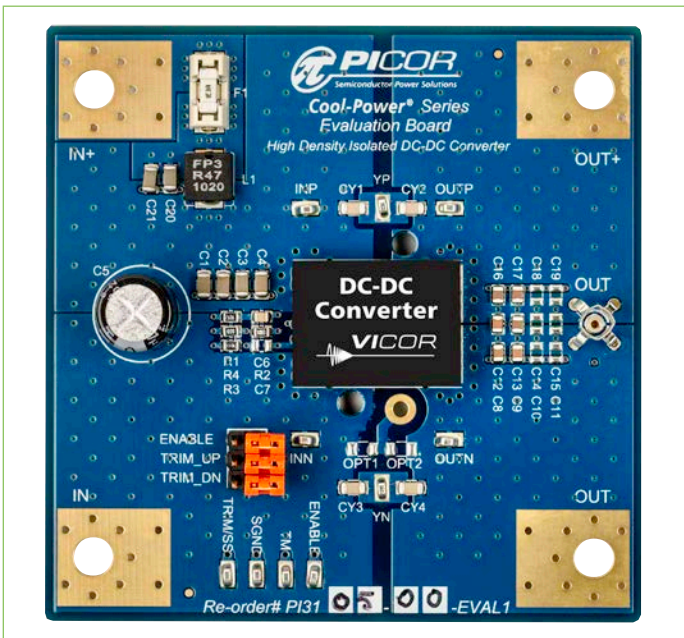


PI31xx
0.87 x 0.65 x 0.265in
[22 x 16.5 x 6.7mm]

Typical Application



Evaluation Board, PI31xx-xx-EVAL1



Recommended Filters

