VTM™ Current Multiplier

VTM48RP015x050AB1

Sine Amplitude Converter™ (SAC™)

Features

- 38.4 Vdc to 1.2 Vdc 50 A current multiplier
  - Operating from standard 48 V or 24 V PRM™ regulators
  - Up to 52 Volts DC input
  - K of 1/32 provides up to 50 A DC output current
- High efficiency (>93%) reduces system power consumption
- High density (962 A/in^3)
- Vicor's 0623 ChiP package enables low impedance interconnect to system board
- Provides enable / disable control, internal temperature monitoring, internal current monitoring
- ZVS / ZCS resonant Sine Amplitude Converter topology
- Parallel up to 10 modules

Typical Applications

- Computing and Telecom Systems
  - Optimized for Memory and High Power ASICs
- Automated Test Equipment
- High Density Power Supplies
- Communications Systems

Product Ratings	
V_{IN} 0 to 52 V	I_{OUT} 50 A (nom)
V_{OUT} 0 to 1.63 V (no load)	1/32

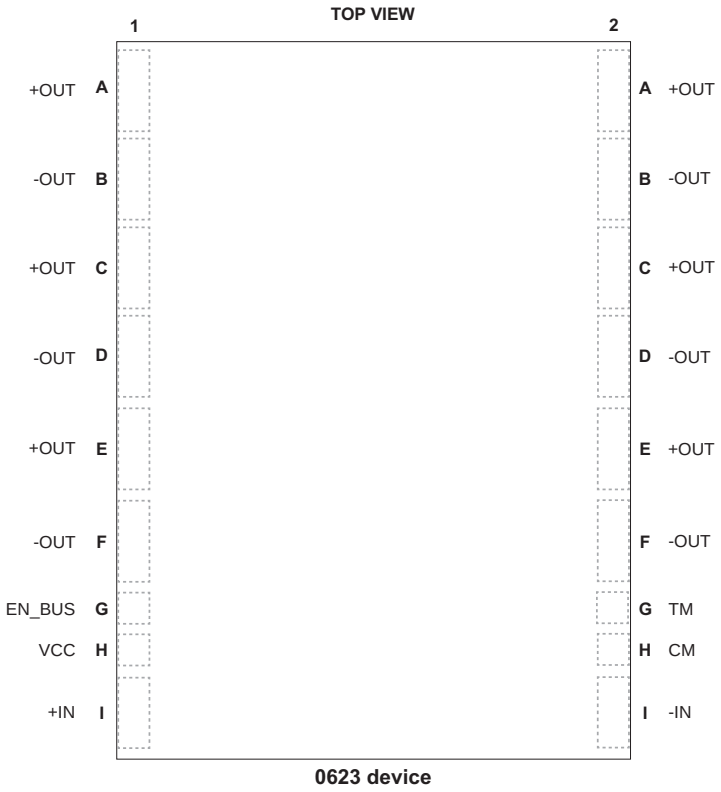
Product Description

The Vicors 0623 ChiP VTM current multiplier is a high eciency (3) Sine Amplitude Converter (SAC) operating from a 0 to 52 Vdc primary bus to deliver a 0 to 1.63 Vdc low voltage output. The Sine Amplitude Converter oers a low AC impedance beyond the bandwidth of most downstream regulators therefore capacitance normally at the load can be located at the input to the Sine Amplitude Converter. Since the factor of the VTM48RP015x050AB1 is 1/32, the capacitance value can be reduced by a factor of 1024, resulting in savings of board area, materials and total system cost.

The VTM48RP015x050AB1 is provided in Vicors 0623 ChiP package compatible with standard pick-and-place assembly processes. The co-molded ChiP package provides enhanced thermal management due to a large thermal interface area and superior thermal conductivity. The high conversion eciency of the VTM48RP015x050AB1 increases overall system eciency and lowers operating costs compared to conventional approaches.

The VTM48RP015x050AB1 enables the utilization of Factorized Power Architecture which provides eciency and size benets by lowering conversion and distribution losses and promoting high density point of load conversion.

Pin Configuration



Pin Numbering and Descriptions

Pin Number	Signal Name	Type	Function
A1, A2 C1, C2 E1, E2	OUT	OUTPUT POER	Positive output terminal
B1, B2 D1, D2 F1, F2	-OUT	OUTPUT POER RETURN	Negative output terminal
G1	EN_BUS	INPUT	ENABLE, DISABLE and VTM Ready
G2	TM	OUTPUT	Temperature monitor and Power Good Flag
H1	VCC	INPUT	Power train controller supply
H2	CM	OUTPUT	Current monitor
I1	IN	INPUT POER	Positive input terminal
I2	-IN	INPUT POER RETURN	Negative input terminal

Vicor's comprehensive line of power solutions includes high density AC-DC and DC-DC modules and accessory components, fully configurable AC-DC and DC-DC power supplies, and complete custom power systems.

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