VTM™ Current Multiplier

VTM48MP010T135AA0

Sine Amplitude Converter™ (SAC™)

Features & Benefits

- 48V_{DC} to 1V_{DC} 135A current multiplier
  - Operating from standard 48V or 24V PRM™ regulators
  - Up to 60 Volts DC input
  - K of 1/48 provides up to 135A DC output current
  - Up to 2304x reduction in ouput capacitance requirements
- High efficiency (>94%) reduces system power consumption
- High density (1948A/in^3)
- Vicor's 1323 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
- Can be used in parallel for high current applications

Typical Applications

- CPU, GPU & ASIC Core Rails
- Computing and Telecom Systems
- Automated Test Equipment
- Communications Systems

Product Ratings	
V_{IN} = 0 to 60V	I_{OUT} = 135A (nom)
V_{OUT} = 0 to 1.25V (no load)	K = 1/48

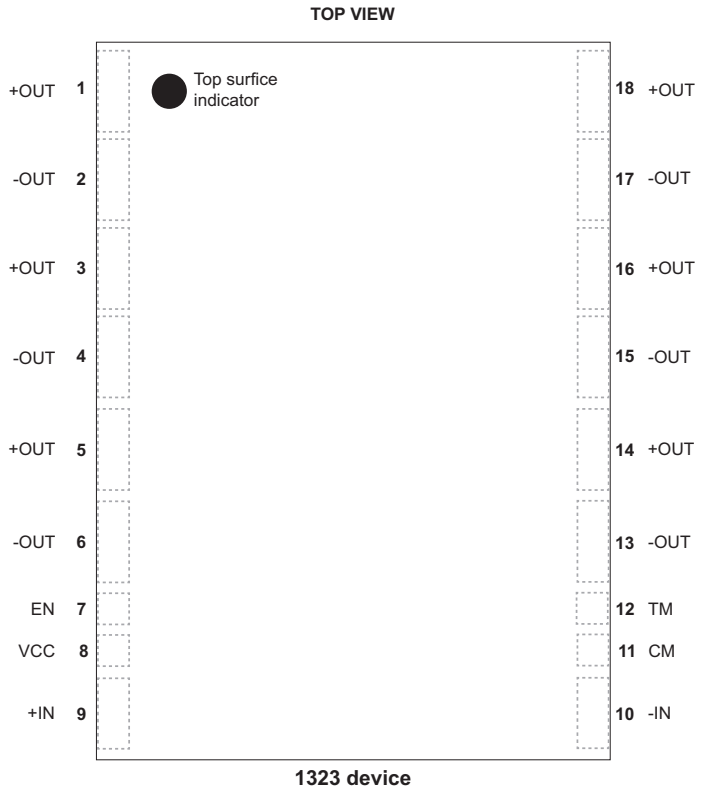
Product Description

Vicor's ChiP VTM current multiplier is a high efficiency Sine Amplitude Converter (SAC) designed to deliver low voltage output. The Sine Amplitude Converter offers 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. Capacitance at the input of the VTM is reflected to the output by a factor of $(1/k)^2$, resulting in savings of board area, materials and total system cost.

Vicor's ChiP packages are 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 efficiency of the VTM increases overall system efficiency and lowers operating costs compared to conventional approaches.

When powered by a PRM, the VTM enables the utilization of Factorized Power Architecture, which provides efficiency and size benefits 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
1, 3, 5, 14,16, 18	+OUT	OUTPUT POWER	Positive output terminal
2, 4, 6, 13, 15, 17	-OUT	OUTPUT POWER RETURN	Negative output terminal
7	EN	INPUT	To disable VTM in system
8	VCC	INPUT	Power train controller supply
9	+IN	INPUT POWER	Positive input terminal
10	-IN	INPUT POWER RETURN	Negative input terminal
11	CM	OUTPUT	Current monitor
12	TM	OUTPUT	Temperature monitor and Power Good Flag

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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