

### Sine Amplitude Converter™ (SAC™)

#### Features & Benefits

- 43.2V<sub>DC</sub> to 1.8V<sub>DC</sub> 95A current multiplier
  - Operating from standard 48V or 24V PRM™ regulators
  - Up to 55V<sub>DC</sub> input
  - K of 1/24 provides up to 95A DC output current
- High efficiency (>95%) reduces system power consumption
- High density (994A/in<sup>3</sup>)
- Vicor VTM2313 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 the Intel VR13.0 Processor Specification
- Automated Test Equipment
- High-Density Power Supplies
- Communications Systems

#### Product Ratings

V <sub>IN</sub> = 0 to 55V	I <sub>OUT</sub> = 95A (nom)
V <sub>OUT</sub> = 0 to 2.3V (no load)	K = 1/24

#### Product Description

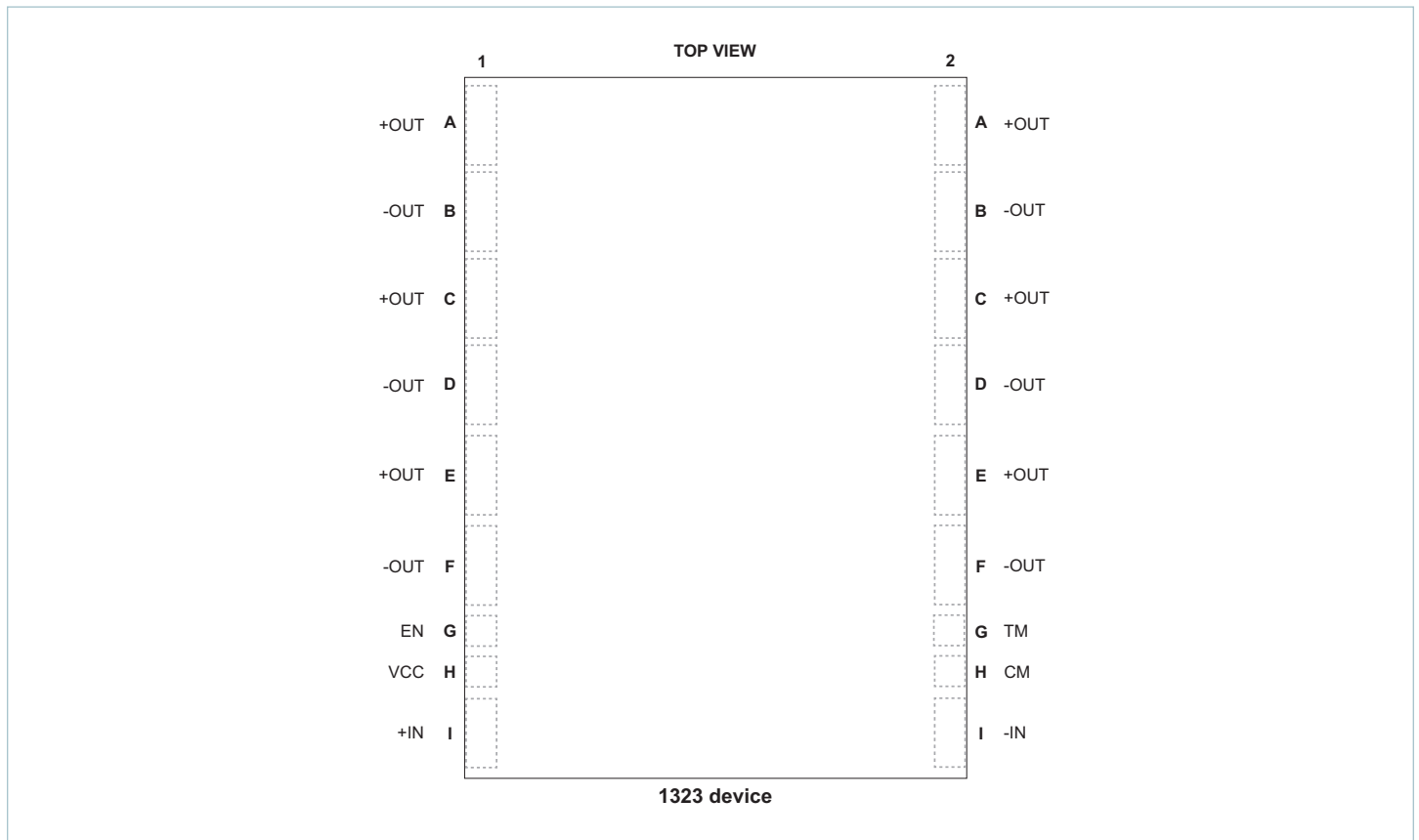
The Vicor VTM2313 ChiP current multiplier is a high-efficiency (>95%) Sine Amplitude Converter™ (SAC™) operating from a 0 – 55V<sub>DC</sub> primary bus to deliver a 0 – 2.3V<sub>DC</sub> low-voltage output. The Sine Amplitude Converter offers a low AC impedance beyond the bandwidth of most downstream regulators; therefore capacitance normally at the load can be located at the input to the Sine Amplitude Converter. Since the K factor of the VTM48KP020T095BA0 is 1/24, the capacitance value can be reduced by a factor of 576, resulting in savings of board area, materials and total system cost.

The VTM48KP020T095BA0 is provided in the Vicor 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 efficiency of the VTM48KP020T095BA0 increases overall system efficiency and lowers operating costs compared to conventional approaches.

The VTM48KP020T095BA0 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.

Note: Product images may not highlight current product markings.

## Pin Configuration



## Pin Numbering and Descriptions

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