



# VTM™ Current Multiplier

## VTM48MP012T130AA0



### Sine Amplitude Converter™ (SACTM)

#### Features

- 40V<sub>DC</sub> to 1V<sub>DC</sub> 130A current multiplier
  - Operating from standard 48V or 24V PRM™ regulators
  - Up to 60 Volts DC input
  - K of 1/40 provides up to 130A DC output current
  - Up to 1600x reduction in output capacitance requirements
- High efficiency (>94%) reduces system power consumption
- High density (1354 A/in<sup>3</sup>)
- 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

$V_{IN} = 0 \text{ to } 60\text{V}$	$I_{OUT} = 130\text{A (nom)}$
$V_{OUT} = 0 \text{ to } 1.5\text{V (no load)}$	$K = 1/40$

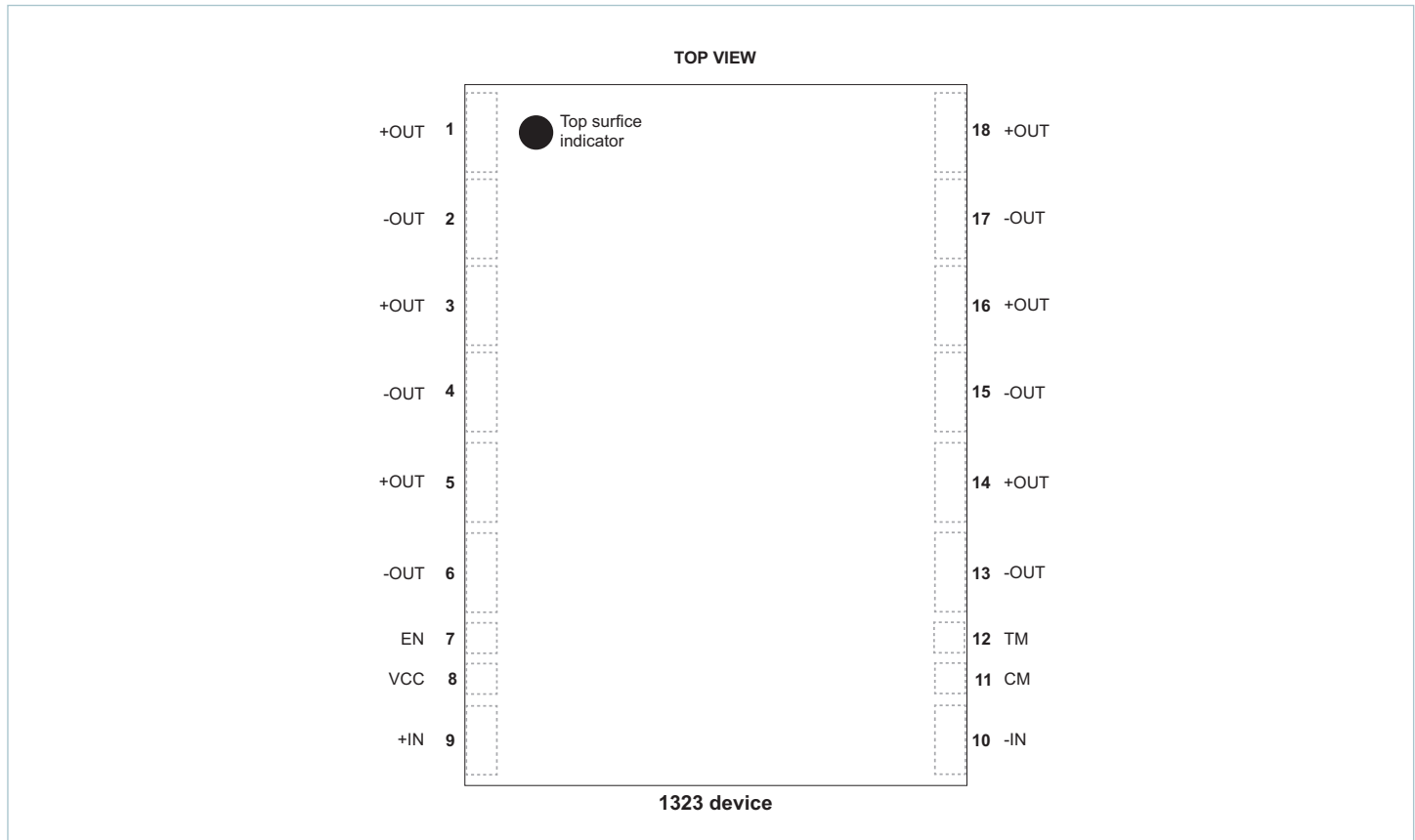
#### Product Description

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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