



Sine Amplitude Converter™ (SAC™)

Features & Benefits

- 43.2V_{DC} to 1.8V_{DC} 88A current multiplier
 - Operating from standard 48V or 24V PRM™ regulators
 - Up to 55 Volts DC input
 - K of 1/24 provides up to 88A DC output current
- High efficiency (>95%) reduces system power consumption
- High density (921A/in³)
- 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
- Parallel up to 10 modules

Typical Applications

- Computing and Telecom Systems
 - Optimized for the Intel VR12.5 Processor Specification
- Automated Test Equipment
- High Density Power Supplies
- Communications Systems

| Product Ratings | |
|--|------------------------------|
| V _{IN} = 0 to 55V | I _{OUT} = 88A (nom) |
| V _{OUT} = 0 to 2.3V (no load) | K = 1/24 |

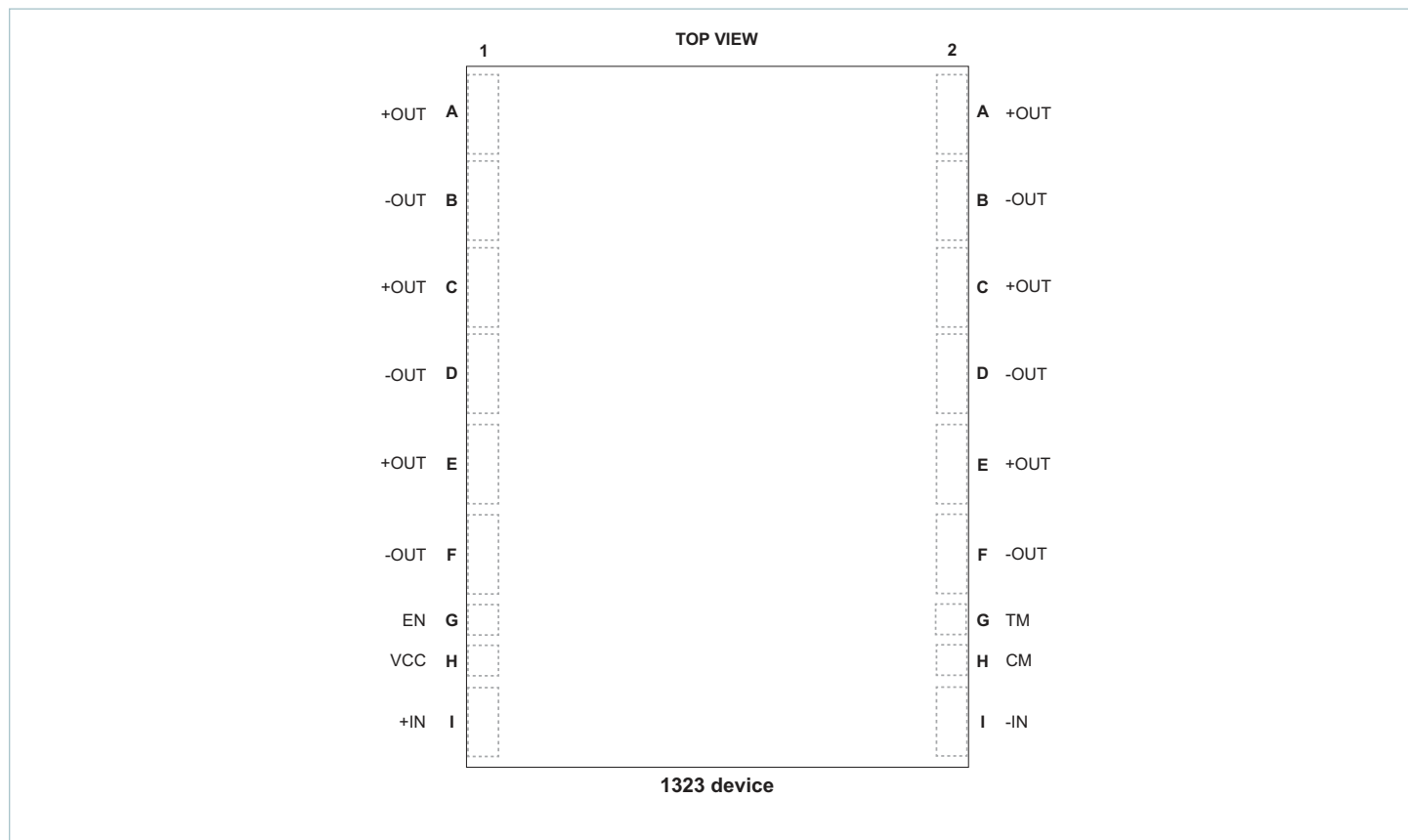
Product Description

The Vicor's 1323 ChiP VTM current multiplier is a high efficiency (>95%) Sine Amplitude Converter™ (SAC™) operating from a 0 to 55V_{DC} primary bus to deliver a 0 to 2.3V_{DC} 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 VTM48KP020x088AA1 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 VTM48KP020x088AA1 is provided in Vicor's 1323 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 VTM48KP020x088AA1 increases overall system efficiency and lowers operating costs compared to conventional approaches.

The VTM48KP020x088AA1 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 |
|----------------------------|-------------|---------------------------|---|
| 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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