DCM™ DC-DC Converter
DCM3735S60D13L0TN1

48V to Point-of-Load Non-Isolated, Regulated DC Converter

Features & Benefits

- Wide input range 40 – 60V_{DC}
- Trimmable output range 10.0 – 12.5V_{DC}
- 96.4% peak efficiency
- Up to 2000W continuous operation
- Up to 2200W or 180A transient peak
- >1MHz switching frequency
- PMBus® compatible telemetry
- Internal voltage, current and temperature shut down
- Array configuration of up to four units

Typical Applications

- Data Center Applications
- High-Performance Computing Systems (HPC)
- Mild-Hybrid and Autonomous Vehicles
- Industrial Systems

Product Ratings	
V_{IN} = 40 – 60V	P_{OUT} = 2000W
V_{OUT} = 12.2V Nominal (10.0 – 12.5V)	I_{OUT} = 164A (Max)

Product Description

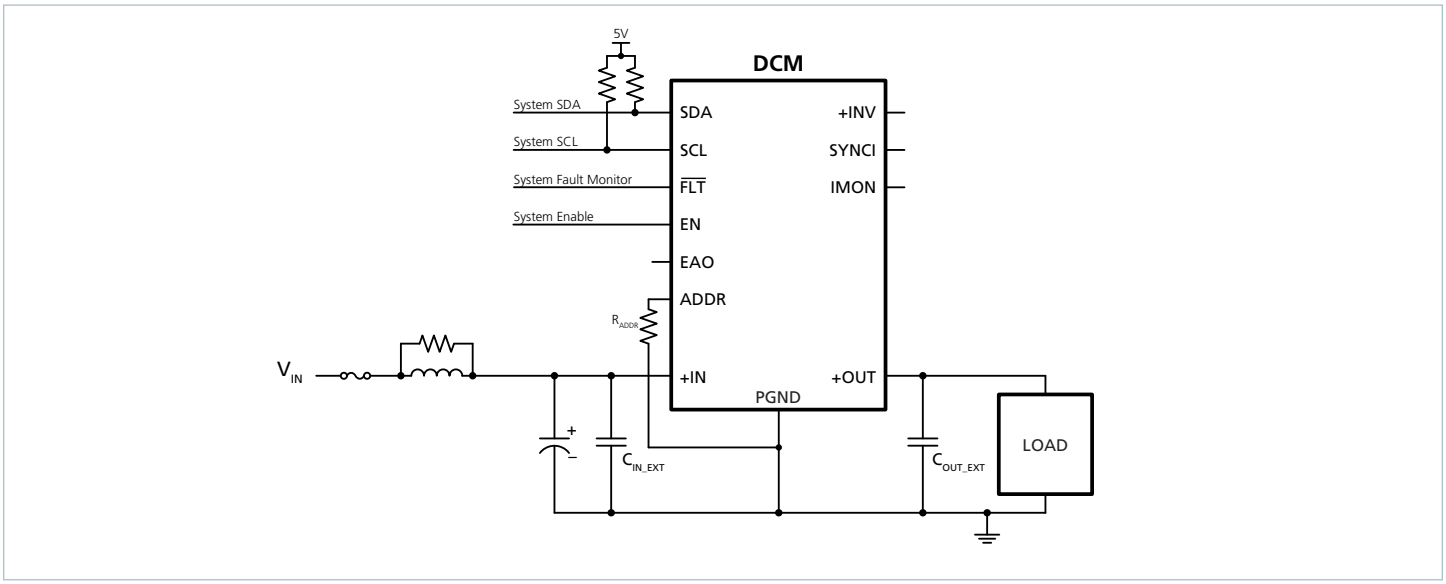
The DCM3735 is a non-isolated, regulated DC-DC converter module that operates from a semi-regulated 40 – 60V input to generate a regulated point-of-load output with a voltage range of 10.0 – 12.5V. The DCM3735 in the SM-ChiP package configuration utilizes the Vicor patented zero-voltage switching (ZVS) buck-boost regulator stage followed by the Sine Amplitude Converter (SAC™).

Leveraging Vicor SM-ChiP packaging technology, the DCM offers flexible thermal management options with low top- and bottom-side thermal impedances. Thermally adept SM-ChiP-based power components enable customers to achieve low-cost power system solutions with previously unattainable system size, weight and efficiency attributes quickly and predictably.

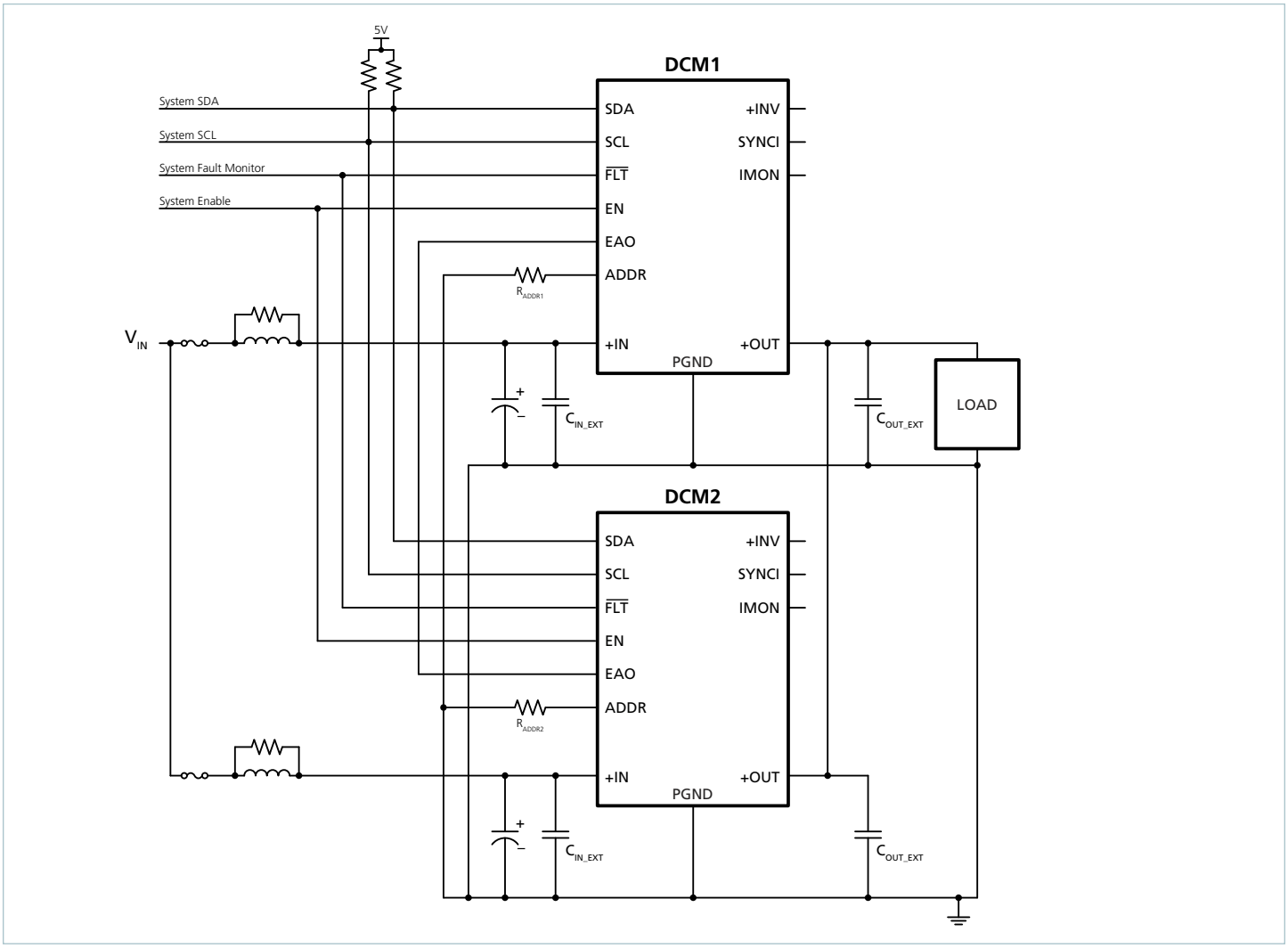
Package Information

- 36.7 x 35.4 x 5.2mm SM-ChiP™
- Weight: 28.6g

Typical Applications



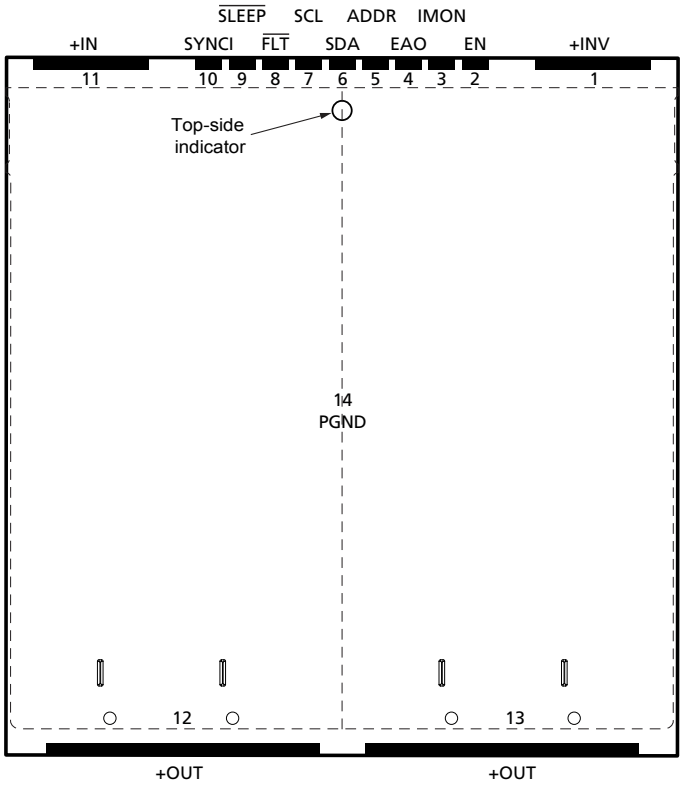
DCM3735 to point-of-load



DCM3735s in a high-power array

Terminal Configuration

Top View



DCM3735 SM-ChiP™

Terminal Descriptions

Signal Name	Terminal Number	Terminal Functions
+INV	1	Positive Intermediate: power terminal
EN	2	Enable: when input asserted active or left floating, regulator is enabled
IMON	3	Factory use only
EAO	4	Transconductance error amplifier output and powertrain modulator control node
ADDR	5	Digital serial communication address assignment
SDA	6	Digital serial communication data terminal
SCL	7	Digital serial communication clock terminal
$\overline{\text{FLT}}$ [a]	8	Fault Flag: pulled low when a fault is detected
$\overline{\text{SLEEP}}$ [a]	9	Factory use only
SYNCI	10	Factory use only
+IN	11	Positive Input: power terminal
+OUT	12, 13	Positive Output: power terminal
PGND	14 [b]	Power Ground: power return for +IN and +OUT current

[a] Overbar ($\overline{\text{FLT}}$, $\overline{\text{SLEEP}}$) or star (FLT*, SLEEP*) marking signify an active low designation.
[b] Terminal 14 represents the package top and bottom conductive plating. Electrical connection to the DCM shall be on the bottom side only. Refer to product outline for additional details.

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.

Information furnished by Vicor is believed to be accurate and reliable. However, no responsibility is assumed by Vicor for its use. Vicor makes no representations or warranties with respect to the accuracy or completeness of the contents of this publication. Vicor reserves the right to make changes to any products, specifications, and product descriptions at any time without notice. Information published by Vicor has been checked and is believed to be accurate at the time it was printed; however, Vicor assumes no responsibility for inaccuracies. Testing and other quality controls are used to the extent Vicor deems necessary to support Vicor's product warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

Specifications are subject to change without notice.

Vicor's Standard Terms and Conditions and Product Warranty

All sales are subject to Vicor's Standard Terms and Conditions of Sale, and Product Warranty which are available on Vicor's webpage (https://www.vicorpower.com/termsconditionswarranty) or upon request.

Life Support Policy

VICOR'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE CHIEF EXECUTIVE OFFICER AND GENERAL COUNSEL OF VICOR CORPORATION. As used herein, life support devices or systems are devices which (a) are intended for surgical implant into the body, or (b) support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in a significant injury to the user. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system or to affect its safety or effectiveness. Per Vicor Terms and Conditions of Sale, the user of Vicor products and components in life support applications assumes all risks of such use and indemnifies Vicor against all liability and damages.

Intellectual Property Notice

Vicor and its subsidiaries own Intellectual Property (including issued U.S. and Foreign Patents and pending patent applications) relating to the products described in this data sheet. No license, whether express, implied, or arising by estoppel or otherwise, to any intellectual property rights is granted by this document. Interested parties should contact Vicor's Intellectual Property Department.

The products described on this data sheet are protected by the following U.S. Patents Numbers:
RE40,072; 6,421,262; 6,930,893; 7,145,786; 7,561,446; 7,782,639; 7,920,391; 8,427,269; 9,516,761; 10,153,704 and other patents pending.

Contact Us: https://www.vicorpower.com/contact-us

Vicor Corporation
25 Frontage Road
Andover, MA, USA 01810
Tel: 800-735-6200
Fax: 978-475-6715
www.vicorpower.com

email
Customer Service: custserv@vicorpower.com
Technical Support: apps@vicorpower.com