ChiP and VIA Packages
DCM™ Family
Isolated, Regulated DC-DC Converter Modules

For use in: Industrial and Process Control, Distributed Power, ATE, Communications, Defense/Aerospace, Semiconductor Manufacturing Equipment (SME), Transportation.

Description

The DCM is an isolated, highly efficient, regulated DC-DC converter utilizing high frequency zero-voltage switching (ZVS) topology, operating from an unregulated, wide range input to generate an isolated output. Modular DCM converters and downstream DC-DC products support efficient power distribution, providing superior power system performance and connectivity from a variety of unregulated power sources to the point of load. Leveraging the thermal and density benefits of Vicor's ChiP packaging technology, the DCM ChiP module offers flexible thermal management options with very low top and bottom side thermal impedances while the DCM VIA module additionally provides integrated EMI filtering, tight output voltage regulation, and a secondary-referenced control interface while retaining the fundamental design benefits of the conventional brick architecture.

Features & Benefits

- Up to 600W, 43.5A continuous
- 93% peak efficiency
- Up to 1244W/in^3 power density
- Up to 4,242V_{DC} isolation
- ZVS high frequency switching
- Fully operational current limit
- OV, OC, UV, short circuit and thermal protection
- Integrated filtering, remote or local sense, enhanced thermal management, and tight output voltage regulation over all lines and load conditions for DCM VIA applications



Family of DCM Products

■ = Also Available in VIA package

Nominal Input (V)	Package Size	Power (W) by Nominal Output Voltage (V)								
		3.3	5	12	13.8	15	24	28	36	48
300 (180 – 420)	4623 ChiP or 3714 VIA			**400**	500		**600**	**500**		**500**
290 (160 – 420)	4623 ChiP				600					
275 (120 – 420)	4623 ChiP	110	190	375		375	375	375		375
270 (160 – 420)	4623 ChiP or 3714 VIA	150	**250**	**500**		500	**500**	**500**		500
100 (43 – 154)	3623 ChiP	80	120	240		240	240	240		240
48 (36 – 75)	3623 ChiP or 3414 VIA		**160**	**320**		**320**	**320**	**320**	320	**320**
42 (9 – 75)	3623 ChiP					80				
30 (9 – 50)	3623 ChiP	80	80	160		160	160	160		160
28 (16 – 50)	3623 ChiP or 3414 VIA	120	**180**	**320**		**320**	**320**	**320**		**320**
24 (18 – 36)	3623 ChiP		180	320		320	320	320	320	320

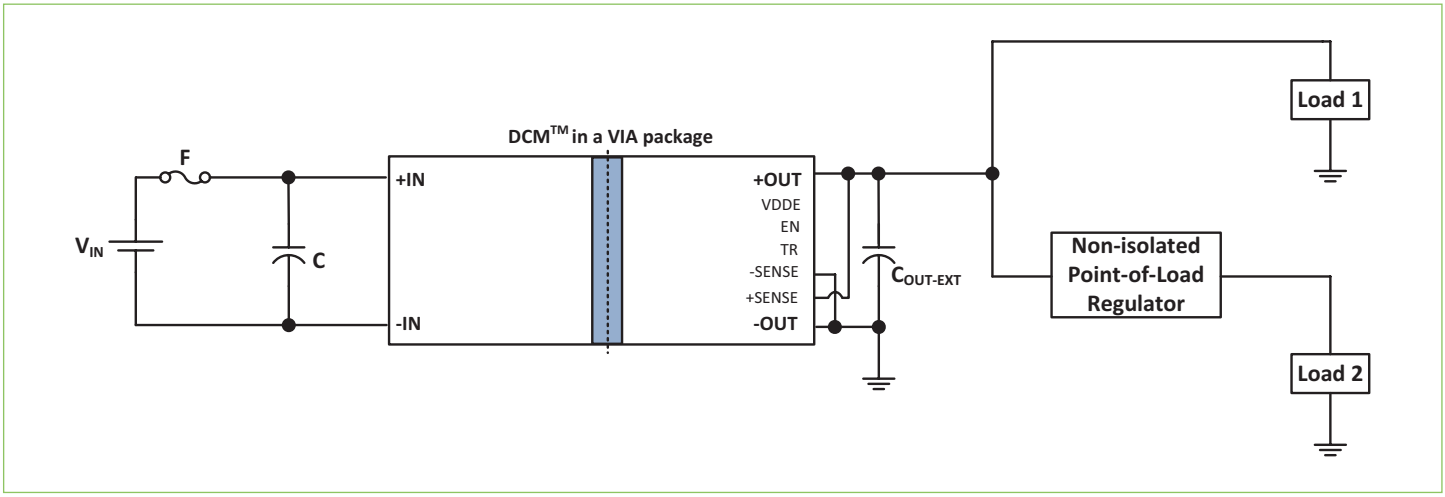
DCM Part Numbering

Product Function			Package Length	Package Width	Package Type	Internal Reference				Product Grade (Case Temperature)	Option Field	
D	C	M	37	14	x	D2	H	26	D7	y	z	z
DCM = DC-DC Converter			ChiP: mm x 10		**T** = Through Hole ChiP	Internal Reference				**T** = -40 to 125°C **M** = -55 to 125°C	**ChiP** **00** = Analog **70** = Enhanced V_{OUT} Regulation [c]	
			VIA: Inches x 10		**B** = Board VIA **V** = Chassis VIA					**C** = -20 to 100°C [a] **T** = -40 to 100°C [a] **M** = -55 to 100°C [a,b]	**VIA** **01** = Chassis/Analog **05** = Short Pin/Analog **09** = Long Pin/Analog	

[a] High temperature power derating may apply.
[b] M-Grade available on selected models. Consult vicorpower.com for details.
[c] ±1% output voltage regulation accuracy on selected models. Consult vicorpower.com for details.

Typical Application

Single DCM3714xD2H26D7yzz in Local Sense Operation, to a non-isolated regulator, and direct to load



Block Diagram

Typical 24V input to point of load.

