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

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

Description

The DCM is DC-DC converter capable of operating from an unregulated and wide input voltage range to generate an isolated and regulated output voltage. With its high-frequency zero-voltage switching (ZVS) topology, the DCM converter consistently delivers high efficiency across the input line range. Modular DCM converters and downstream DC-DC products support efficient power distribution and provide 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 ChiP packaging technology, the DCM ChiP module offers flexible thermal management options with very low top and bottom side thermal impedances. Thermally-adept ChiP-based power components enable customers to quickly and predictably achieve cost-effective power system solutions with previously unattainable system size, weight and efficiency attributes. In addition, the DCM VIA modules provide integrated EMI filtering, tight output voltage regulation, a secondary-referenced control interface and flexible thermal management options 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		80	80	80		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

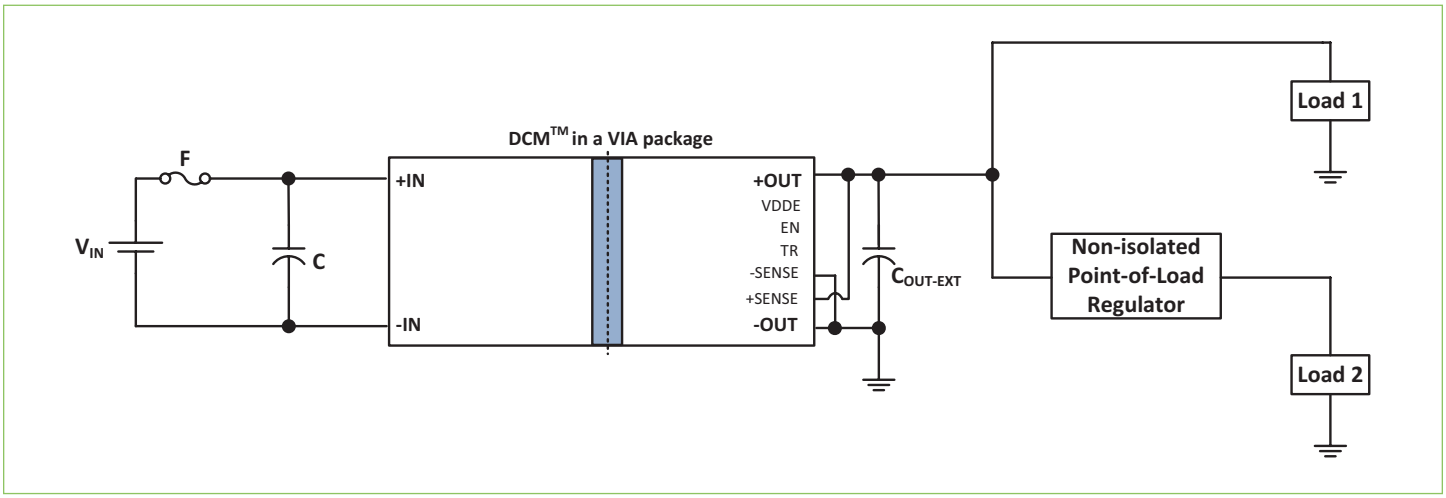
DCM Part Numbering

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™		**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™		**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.