



Alternating Input Module

VI-AIM™



Actual size:
2.28 x 2.4 x 0.5in
57,9 x 61,0 x 12,7mm



Universal AC Input Front End Module

Features & Benefits

- RoHS compliant (VE versions)
- Universal input: 85 – 264V_{AC}
- Output power: 250W
- Operating temperature: 100°C
- Efficiency: 97%
- Integral EMI filtering
- Input transient protection
- Inrush limiting
- CE Marked

Product Highlights

The AIM (Alternating Input Module) is an AC front-end module which interfaces directly with worldwide AC mains. The AIM provides line rectification, EMI/RFI filtering, transient protection and inrush limiting in a half brick package measuring 2.28" x 2.4" x 0.5".

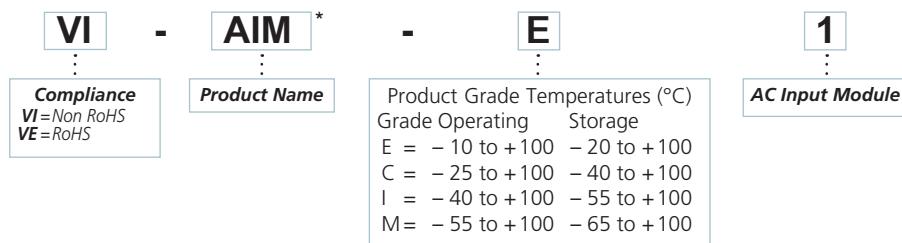
The AIM is used in conjunction with Vicor VI-200 or VI-J00 DC-DC converters to realize a universal AC input, high-density, low-profile switching power supply with outputs from 1 – 95V_{DC} and a total power rating up to 200W. An external capacitor is used to satisfy system hold-up requirements. Internal EMI filtering meets EN55022 and FCC Part 15, Class A emissions limits.

Absolute Maximum Ratings

Parameter	Rating	Unit	Notes
Maximum value of hold-up capacitance	1200	μF	
Thermal resistance	0.4	°C/Watt	Baseplate-to-sink
Operating temperature	-55 to +100	°C	M-Grade
Storage temperature	-65 to 100	°C	M-Grade
Transient surge withstand			
Common mode	1.2/50μS, 2kV pulse, 2 joules 0 to 360 degree phase angle		EN61000-4-5 IEC 801-5
Normal mode	1.2/50μS, 1kV pulse, 2 joules 0 to 360 degree phase angle		With external MOV

VI-AIM Input Voltage	Compatible DC-DC Converter	Notes
85 – 132 Vac	VI-x5-xx	Used with a 100 – 200V _{IN} converter
180 – 264 Vac	VI-x6-xx	Used with a 200 – 400V _{IN} converter
85 – 264 Vac	VI-x7-xx	Used with a 100 – 375V _{IN} converter

Part Numbering



* For Mega Module packaging option add an L before the product name.
Example: Vx-LAIM-xx

Specifications

(typical at $T_{BP} = 25^\circ\text{C}$, nominal line and 75% load, unless otherwise specified)

INPUT SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
AC line input		85 – 264 ^[1]		V_{AC}	No strapping; no damage below low line
		47 – 440		Hz	
Inrush current		<40A at peak line (264V _{RMS})			

^[1] Dependent upon input range of compatible DC-DC converter.

OUTPUT SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
Output voltage	120 – 373			V_{DC}	Peak of AC line
Output power	250			W	Delivered to converter(s)
Hold-up time		Application specific			A function of external capacitance and power
Efficiency		97%		%	

SAFETY SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
Dielectric withstand					
Input to output		None			Provided by DC-DC converter
Input/output to baseplate	1,500			V_{RMS}	

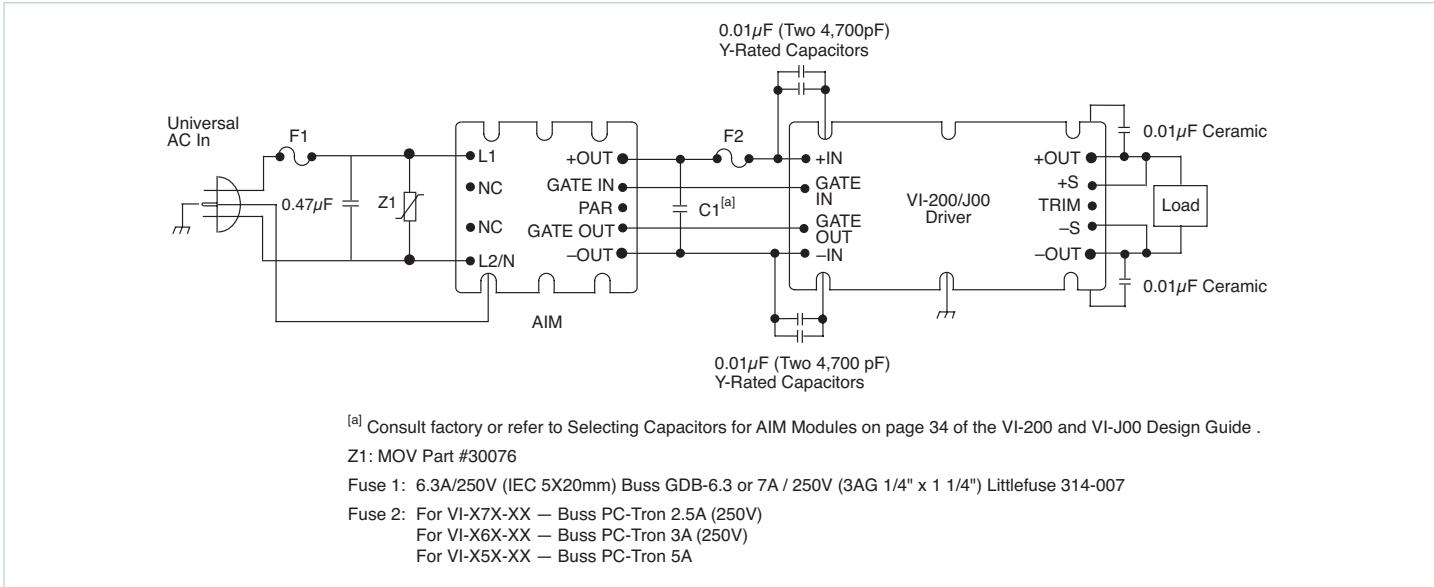
AGENCY APPROVALS

Safety Standards	Agency Markings	Notes
Conducted EMI/RFI	VDE 0871/FCC Part 15, Class A EN55022, Class A	With compatible DC-DC converter modules External 0.47 μF capacitor required
UL1950, CSA 22.2-950, EN60950		

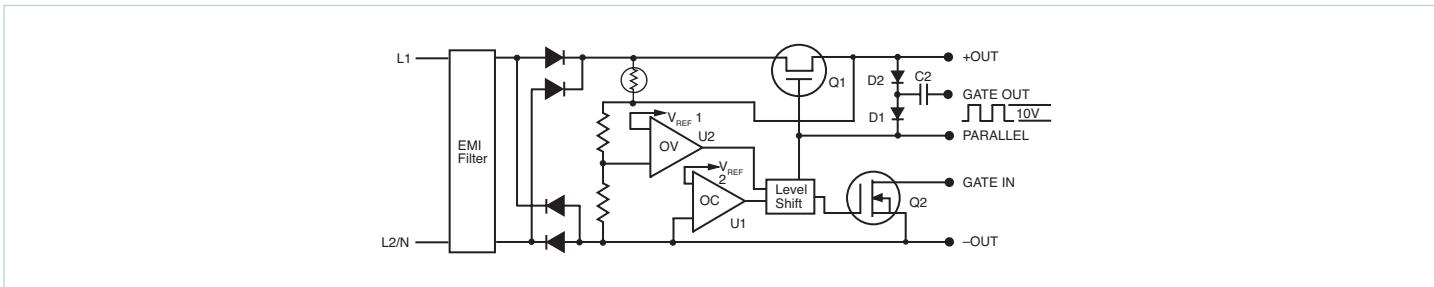
GENERAL SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
Size	2.28" x 2.4" x 0.5" (57,9 x 61,0 x 12,7)			in (mm)	Mega Module, SlimMod and FinMod packages available
Weight	3.0 (85)			Ounces (Grams)	

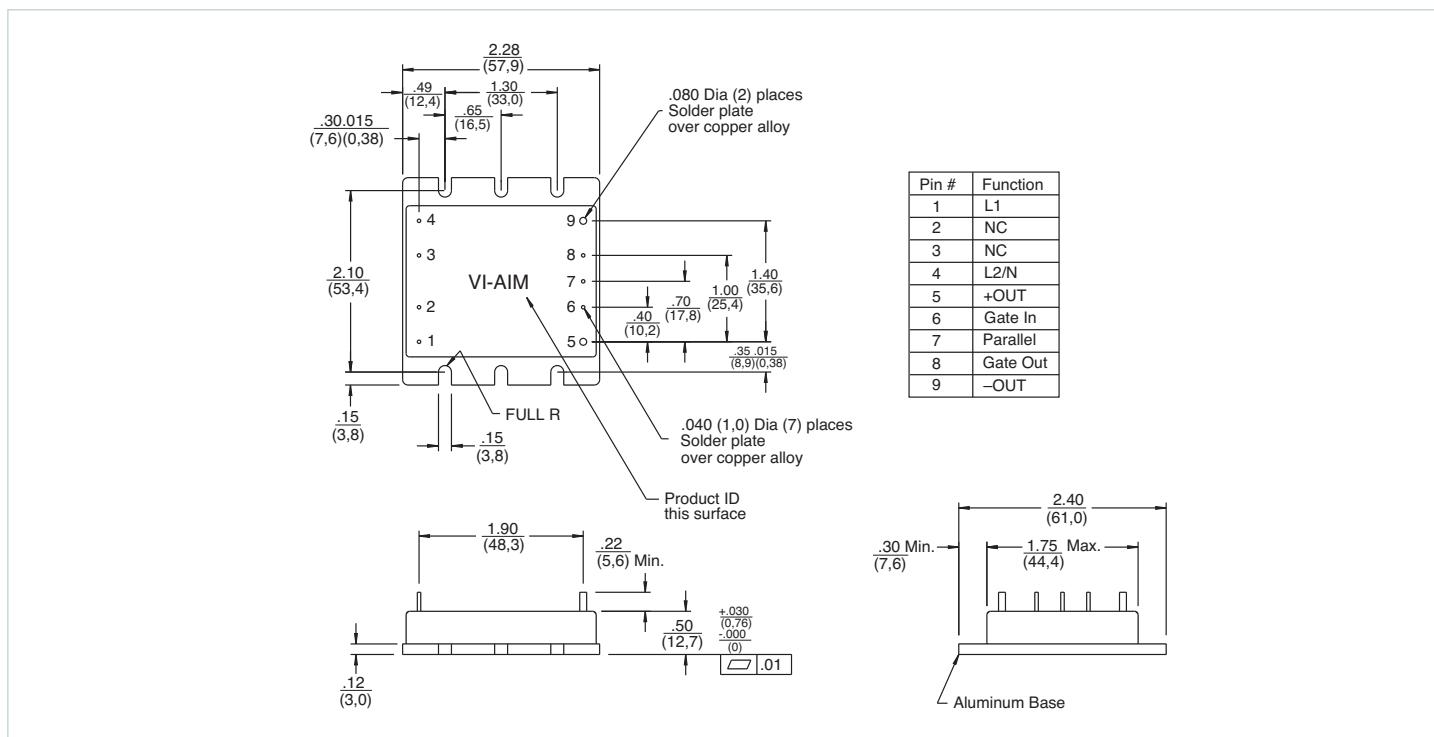
VI-AIM Connection Diagram, Typical Application



VI-AIM Block Diagram



Mechanical Diagram



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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