

Product Overview

TEAM • CUSTOM • COMPONENTS • SUPPORT
TIME • FLEXIBILITY • VISION • PERFORMANCE
EXPERTISE • EFFICIENCY • CONFIGURABLE
WORK • SOLUTIONS • RELIABILITY • LONGEVITY
OVEN • DENSITY • QUALIFIED • COMPETITIVE
UE • INTEGRATION • OPPORTUNITY • POWER

The Power Behind Performance



OVERVIEW

V-I Chip, VI BRICK, Cool-Power, Power Management & Filter Solutions

AC-DC Products

85 – 264 Vin  **FEM** **COMING SOON** **PFM** Isolated AC-DC Converter with PFC • 48 Vout, Up to 330 W

DC-DC Products

330 – 365 Vin **BCM** High Voltage Bus Converter • 42 – 45.6 Vout, Up to 325 W

240 – 330 Vin **BCM** High Voltage Bus Converter • 45 – 50 Vout, Up to 325 W

38 – 55 Vin **BCM** Bus Converter 1.2 – 55 Vout, Up to 300 W

38 – 55 Vin **QPI** **PRM** Regulator Up to 400 W

36 – 75 Vin **QPI** **PRM** Regulator Up to 240 W

18 – 60 Vin **QPI** **PRM** Regulator Up to 120 W

16 – 50 Vin **MQPI** **M-PRM** MIL-COTS Regulator Up to 120 W

16 – 50 Vin **MIL-COTS FILTER** **M-PRM** 28 V MIL-COTS Filter

36 – 75 Vin **QPI** **PI310x** Cool-Power Up to 60 W

330 – 365 Vin **BCM** High Voltage Bus Converter • 10.3 – 13 Vout, Up to 300 W

360 – 400 Vin **BCM** High Voltage Bus Converter • 11.3 – 12.5 Vout, Up to 300 W

240 – 330 Vin **M-BCM** High Voltage MIL-COTS Bus Converter • 30 – 55 Vout, Up to 270 W

Cool-ORing Cool-Switch μ R_{DS(on)}FET*

Active ORing and/or Smart Circuit Breaker (IC or SiP) and μ R_{DS(on)}FET

Active ORing and/or Smart Circuit Breaker (IC or SiP) and μ R_{DS(on)}FET

VI-200 & VI-J00 Series, Power Management & Filter Solutions

AC-DC Products

Universal 85 – 264 Vac **HAM** Harmonic Attenuator Module Unity Power Factor Up to 675 W per module

Universal 85 – 264 Vac **AIM / MI-AIM** Rectifier / EMI Filter Up to 250 W

Autoranging 90 – 132 Vac 180 – 264 Vac **FARM** Filter / Autoranging Rectifier Module Up to 1,000 W

Autoranging 90 – 132 Vac 180 – 264 Vac **ARM** Autoranging Rectifier Module Up to 1,500 W

DC-DC Products

10 – 400 Vdc **IAM / MI-IAM** EMI Filter / Transient Protection Up to 400 W

24, 28, 48 Vdc Active ORing: (48 V bus or lower) Discrete Controller **QPI** Active EMI Filter Up to 576 W @ 48 V

DC-DC Products

VI-200 / MI-200 DC-DC Converter 25 – 200 W per module 1 – 95 Vdc **More Power? Add a Booster.**

VI-200 / MI-200 **RAM** **MicroRAM** Output Ripple Attenuation Module combines active and passive filtering.

Another Output? Add a Driver. **QPO** QPO provides active filtering to achieve differential noise attenuation.

BatMod Programmable Current Source

VI-J00 / MI-J00 DC-DC Converter 10 – 100 W per module **Active ORing: (48, 12 V bus or lower) Discrete Controller & Full-Function Solutions μ R_{DS(on)}FET***

Maxi, Mini, Micro & VI BRICK Series, Power Management & Filter Solutions

AC-DC Products

Universal 85 – 264 Vac **HAM High-Boost** Harmonic Attenuator Module Unity Power Factor Up to 675 W per module

Autoranging 90 – 132 Vac 180 – 264 Vac **FARM** Filter / Autoranging Rectifier Module Up to 1,000 W

Autoranging 90 – 132 Vac 180 – 264 Vac **ARM** Autoranging Rectifier Module Up to 1,500 W

Autoranging 115 – 230 Vac **FARM3** **MINIHAM** Front-end System for EN Compliance Up to 550 W

DC-DC Products

Nominal Input 9 – 425 Vdc **FIAM / M-FIAM** Transient Protection, Inrush Current Limiting EMI Filter Up to 25 A

28, 48, 270 Vdc Active ORing: (48 V bus or lower) Discrete Controller **QPI** Active EMI Filter Up to 576 W @ 48 V

DC-DC Products

MAXI DC-DC Converter Single wire paralleling for high power, fault tolerant arrays. Up to 600 W per module 1 – 54 Vdc

MINI DC-DC Converter **MicroRAM** Output Ripple Attenuation Module combines active and passive filtering. Up to 300 W per module 1 – 48 Vdc **QPO** QPO provides active filtering to achieve differential noise attenuation.

MICRO DC-DC Converter Up to 150 W per module, 1 – 48 Vdc

48 Vin VI BRICK Up to 220 W per module, 1 – 48 Vdc

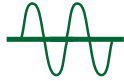
Active ORing: (48, 12 V bus or lower) Discrete Controller & Full-Function Solutions μ R_{DS(on)}FET*

*Optional

Configurable Power Solutions

VIPAC Power Systems

90 – 132 Vac
180 – 264 Vac

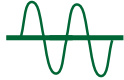


1 – 3 Outputs using
Maxi, Mini & Micro
Series Modules

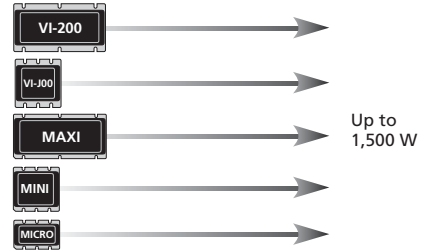


LoPAC Family

85 – 264 Vac
100 – 380 Vdc



1 – 6 Outputs using
VI-200, VI-J00 Series or
Maxi, Mini & Micro
Series Modules

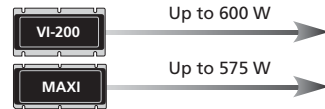


FlatPAC Family

90 – 132 Vac
180 – 264 Vac
85 – 264 Vac (PFC)



1 – 3 Outputs using
VI-200 / Maxi
Series Modules



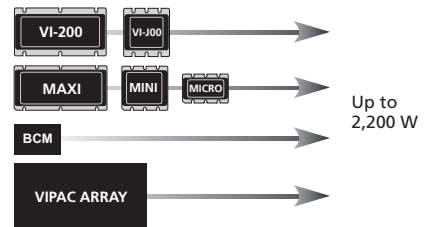
PFC FrontEnd

85 – 264 Vac
100 – 380 Vdc



1 – 4 Outputs using
VI-200, VI-J00 Series or
Maxi, Mini & Micro
Series Modules

Can also be used
with VIPAC Array,
V-I Chip BCM,
and more

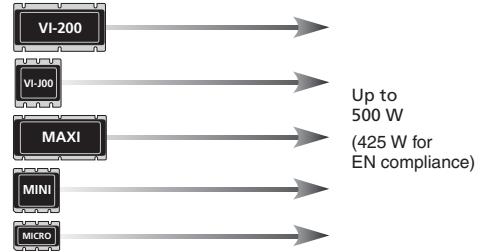


FlatPAC-EN

90 – 132 Vac
180 – 264 Vac
250 – 380 Vdc



1 – 4 Outputs using
VI-200, VI-J00 Series or
Maxi, Mini & Micro
Series Modules

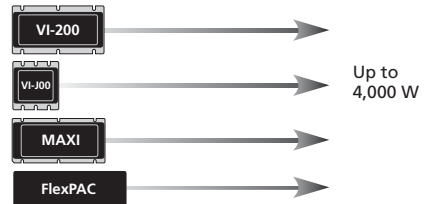


MegaPAC Family

85 – 264 Vac
3ø 208/240 Vac
100 – 380 Vdc



1 – 40 Outputs using
VI-200, VI-J00, and
Maxi Series Modules
and FlexPACs

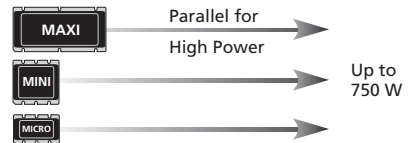


VIPAC Arrays

DC Inputs
24, 28, 48, 72, 110,
150, 300, 375 Vdc



1 – 4 Outputs using
Maxi, Mini & Micro
Series Modules

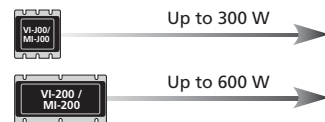


MegaMod Family (Chassis Mount)

DC Inputs
10 – 400 Vdc



1 – 3 Outputs using
VI-200 / MI-200 or
VI-J00 / MI-J00
Series Modules



CompAC Family

DC Inputs
24, 28, 48, 270,
300 Vdc



1 – 3 Outputs using
VI-200 / MI-200
Series Modules



Front-end filtering optimized for communication and defense applications



Vicor's product line of modular power components and complete power systems includes thousands of combinations of input voltages, output voltages, and power levels, complete with accessory components that integrate other power system functions. Together, these products

allow designers around the world to meet their unique power requirements by selecting and interconnecting standard modular parts. The benefits for you are rapid, flexible design of complete power systems at any power level.

Prototype quantities now available for purchase at vicorpower.com

GO online **CONFIGURE** your power supply **BUY NOW!** **ADD TO CART**



PICOR® SOLUTIONS

Cool-Power® Series



- Isolation, regulation & voltage transformation in single stand-alone package
- Novel Power-System-in-Package (PSiP) platform
- Addresses isolated power requirements up to 60 W
- Very small footprint 3.6 cm² (0.57 in²), enabling >50% space savings
- Achieves 16.5 W/cm² (105 W/in²) & 25 W/cm³ (400 W/in³), up to three times the density of conventional solutions
- Platform to address both 24 V & 48 V, 60 W applications with a variety of output voltages
- PI3101: 36 – 75 Vin, regulated 3.3 Vout, 60 W output, 900 kHz

Cool-ORing® Series



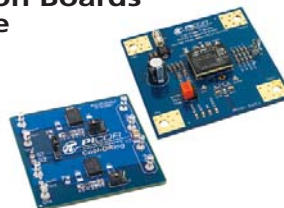
Controllers

- Fast dynamic response
- 4 A gate discharge current
- Accurate MOSFET voltage sensing
- Master / Slave I/O for paralleling

Full-Function Solutions

- Combines a high-speed ORING MOSFET controller and a very low on-state resistance ORING MOSFET
- Very small, high density optimized solution
- Fast dynamic response

Evaluation Boards Available

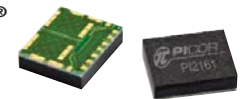


μR_{DS(on)} FET™ Series



- Ultra low 360μΩ R_{DS(on)}
- Extremely low gate charge
- Very low gate resistance
- High density, low profile
- Very low package inductance
- Low thermal resistance

Cool-Switch® Series



- Integrated high performance 12 A, 8.5 mΩ MOSFET
- Very small, high density fully-optimized solution with simple PCB layout
- Programmable latching overcurrent detection
- Fast 120 ns disconnect response to load failures
- Low loss current sensing
- Fast disable via EN pin, typically 200 ns
- Load status output (VO scaled load voltage)
- Low thermal impedance R_{θJ-PCB} < 10°C/W

PRM™ Regulator

MIL-COTS
Version
Available



- ZVS buck / boost regulator
- Input voltages:
 - 24 V (18 – 36 V)
 - 36 V (18 – 60 V)
 - 45 V (38 – 55 V)
 - 48 V (36 – 75 V)
- Output voltage: 48 V (5 – 55 V)
- Output power: Up to 400 W
- Efficiency: Up to 97%
- 400 W in 1.1 in² package
- 200 W in 0.56 in² footprint
- Power density >1,300 W/in³
- ~1 MHz switching frequency
- Very low profile
- Pick & place / SMD compatible
- Through-hole option available, full-chip only
- Mix and match full and half-chip products

48 V BCM™ Bus Converter



- High frequency ZVS / ZCS isolated Sine Amplitude Converter™
- Input voltage: 48 V (38 – 55 V)
- Output voltage: 1.19 – 55.0 V
- Output power: Up to 300 W
- Output current: 8.2 – 90 A
- Efficiency: Up to 96%
- 300 W in a 1.1 in² package
- 120 W in a 0.56 in² footprint
- High density: >1,000 W/in³
- Low AC impedance: Bulk capacitance elimination
- Low noise: no output filtering required
- Pick & place / SMD compatible
- Through-hole option available, full-chip only
- Mix and match full and half-chip products

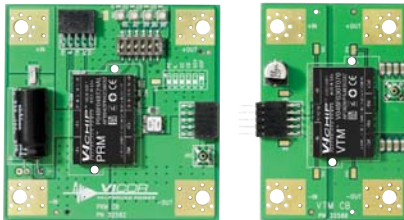
VTM™ Current Multiplier



MIL-COTS
Version
Available

- High frequency ZVS / ZCS isolated Sine Amplitude Converter
- Input voltage: 26 – 55 V
- Output voltage: 0.8 – 55 V
- Output current: 6 – 100 A
- Efficiency: Up to 96%
- Up to 100 A in a 1.1 in² package
- Up to 50 A in a 0.56 in² footprint
- Low AC impedance: Bulk capacitance elimination
- Fast dynamic response and low noise: No output filtering required
- 2,250 V of isolation
- Contains built-in protection features
- Pick & place / SMD compatible
- Through-hole option available, full-chip only
- Mix and match full and half-chip products

Evaluation Boards Available



VI BRICK

Thermally enhanced packaging option available for PFM, PRM, VTM, BCM products



High Voltage BCM Bus Converter

MIL-COTS
Version
Available



- High frequency ZVS / ZCS isolated Sine Amplitude Converter
- Input voltages:
 - 350 V (330 – 365 V)
 - 380 V (360 – 400 V)
- Output voltage: 10.3 - 13 V, 42 – 50 V
- Output power: 240 – 325 W
- Output current: 7.0 – 30.4 A
- Efficiency: Up to 95%
- Small footprint: 1.1 in²
- High density: >1,100 W/in³
- Low AC impedance: Bulk capacitance elimination
- Low noise: no output filtering required
- Pick & place / SMD compatible
- Through-hole option available
- Mix and match full and half-chip products

High Current VTM Current Multiplier

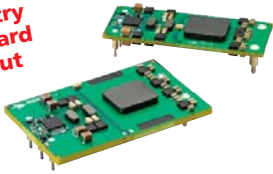


- High frequency ZVS / ZCS isolated Sine Amplitude Converter
- Input voltage: 26 – 55 V
- Output voltage: 0.7 – 1.7 V
- Output current: 115 – 130 A
- Efficiency: Up to 91.5%
- Up to 130 A in a 1.1 in² package
- Low AC impedance: Bulk capacitance elimination
- Low noise: No output filtering required
- Contains built-in protection features
- Provides enable / disable control, internal temperature monitoring, current monitoring
- Pick & place / SMD compatible
- Mix and match full and half-chip products

DC-DC Converters

Intermediate Bus Converters

Industry
Standard
Pinout



VI BRICK

- Input voltage: 38 – 55 Vdc or 36 – 60 Vdc
- Output voltage: 9.6 or 12 Vdc at 48 Vin
- Output current: Up to 70 A
- Output power: Up to 750 W
- 1,500 Vdc isolation for 38 – 55 Vin models
- 2,250 Vdc isolation for 36 – 60 Vin models
- 98% peak efficiency
- Low profile: 0.38" height above board
- Sine Amplitude Converter
- Low noise 1 MHz ZVS/ZCS

VI-200, VI-J00 Family

MIL-COTS
Version
Available



- Input voltage: 10 – 400 Vdc
- Output voltage: 1 – 95 Vdc
- Output power (per module):
VI-200: 50 – 200 W • VI-J00: 25 – 100 W
- Parallelable for higher power
- 100°C operation: 85°C for VI-200
- Efficiency: Up to 90%

Maxi, Mini, Micro Family

- Input voltage: 9 – 425 Vdc
- Output power: 50 – 600 W
- 100°C, no derating
- High efficiency
- Low-noise ZCS / ZVS
- High power density: Up to 120 W/in³
- Parallelable for higher power

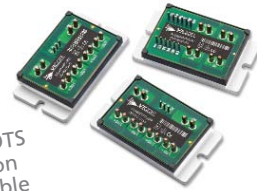


MIL-COTS
Version
Available

Brick Solution for Factorized Power

VI BRICK

MIL-COTS
Version
Available



- Thermally enhanced package – baseplate and through-hole pin
- 100°C baseplate operation
- Small footprint: 2.08 in²
- Low profile: 0.37 inches above board
- Efficiency: Up to 97%
- High power density: Up to 390 W/in³

Filters and Front Ends

Input Filter Modules

IAM – Input Attenuator Module
FIAM – Input Filter Attenuator Module

- 24, 48 and 300 V models
- Efficiency: Up to 98%
- Agency approvals:
CE Marked, cTUVus, cULus
- Operating temperature:
–55°C to +100°C
- Designed to meet EN Class B,
Bellcore and FCC transient
and immunity



MIL-COTS
Version
Available

Active EMI Input Filters

QPI Family • QuietPower®

- Up to 60 dB CM attenuation at 250 kHz
- Up to 80 dB DM attenuation at 250 kHz
- Up to 14 A
- Efficiency: >99% at full load
- High density, low profile LGA package
- Designed to support EN Class B
- Integrated Hot-Swap in select models
- Current rating supports ATCA® blades
- 40°C to +100°C PCB temperature
- Compatible with most industry standard DC-DC converters as well as 24 V and 48 V V-I Chip and VI BRICK products



Front-end Modules

HAM – AC Harmonic Attenuator Module
AIM – AC Input Front-end Module
FARM - Filter / Autoranging Rectifier Module

- Up to 1,000 W power output
- 85 – 264 Vac input
- Efficiency: 90 – 98%
- Agency approvals:
CE Marked, cTUVus, cULus
- Operating temperature:
–55°C to +100°C
- Inrush current limiting



MIL-COTS
Version
Available

Output Filter Modules

MicroRAM – Output Ripple Attenuator Module
RAM – Ripple Attenuator Module

- 5 – 50 V, Up to 20 A
- 3 – 30 V, Up to 30 A
- Efficiency: Up to 98%
- Up to 40 dB attenuation from 60 Hz to 1 MHz
- Operating temperature:
–55°C to +100°C



MIL-COTS
Version
Available

Active Output Ripple Attenuators

QPO Family

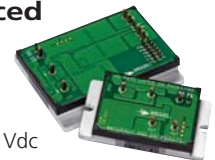
- >30 dB PARD attenuation, 1 kHz to 500 kHz
- 3 – 30 Vdc and 0.3 – 5.5 Vdc input models
- Up to 20 A
- Supports precise point-of-load regulation
- Reduces required number of output capacitors to support dynamic loads
- Selectable optimization of attenuation, power dissipation, transient load response
- Compatible with most industry standard DC-DC converters



MIL-COTS VI BRICK™ Filter and Filter with PRM Thermally Enhanced

Filter

- Input voltages:
Filter: 16 – 50 Vdc
Filter with PRM: 16 – 50 Vdc
- Output voltages:
Filter: 16 – 50 Vdc
Filter with PRM: 26 – 50 Vdc
- Output power: 120 W / 8 A
- Transient compliance filter:
MIL-STD-704A-F; MIL-STD-1275A/B/D;
DO-160E, Sec. 16, Cat. z
- Flanged baseplate (height above board)
– Filter: 1.91" x 1.09" x 0.37"
(48.6 x 27.7 x 9.5 mm)
– Filter with PRM: 2.19" x 1.91" x 0.37"
(55.7 x 48.6 x 9.5 mm)
- EMI compliance filter: MIL-STD-461E/F



CONFIGURABLE POWER SUPPLIES

Chassis-mount Converter

MegaMod

- Output power: Up to 600 W
- Single, dual, or triple outputs
- Efficiency: 80 – 90%
- Low-noise ZCS power architecture

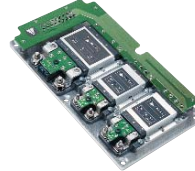


MIL-COTS Version Available

DC Input Power System

VIPAC Arrays

- Input voltage: 18 – 425 Vdc
- Output voltage: 2 – 54 Vdc
- Output power: 50 – 600 W
- Single, dual, triple or quad outputs
- Rugged, low profile, coldplate chassis
- High-temperature capability



MIL-COTS Version Available

DC-DC Power System

ComPAC

- Input voltages: 24, 48 and 300 Vdc
- Output voltage: 1 – 95 Vdc
- Efficiency: 80 – 90%
- Power density: Up to 10 W/in³
- Low-noise ZCS / ZVS power architecture
- Conduction or convection cooled



MIL-COTS Version Available

AC-DC Power Solution

FlatPAC

- Input voltage: 115 / 230 Vac input, autoranging
- Output voltage: 1 – 95 Vdc
- Output power: 50 – 600 W
- Single, dual, or triple outputs
- Low-noise ZCS / ZVS power technology



AC-DC or DC-DC Power Solution

VIPAC

- Input voltage ranges: 115/230 Vac, 28 Vdc (MIL-COTS)
- Output voltages: 2 – 48 Vdc
- Output power: Up to 900 W
- Single, dual, or triple outputs
- Efficiency: 80 – 90%
- Local or remote control
- Coldplate or heat sink option



AC-DC Power Solution

FlatPAC-EN

- Input voltage ranges: 90 – 132 / 180 – 264 Vac; 250 – 380 Vdc
- Output voltages: 2 – 95 Vdc
- Output power: Up to 500 W
- Up to 4 user-specifiable outputs



MIL-COTS Version Available

PFC FrontEnd

375 Vdc Output Front End

- Input voltage ranges: 85 – 264 Vac and 100 – 380 Vdc
- Output power: Up to 2,200 W
- Up to 4 non-isolated outputs
- Operating temperature: –20°C to +45°C (full power)
- DIN rail mountable



AC-DC Switcher Power Supplies

LoPAC Family

- Input voltage ranges: 85 – 264 Vac and 100 – 380 Vdc
- Output voltages: 2 – 95 Vdc (higher voltage available with series arrays)
- Output power: 25 – 1,500 W
- Up to 6 user-specifiable outputs
- Power density: Up to 11 W/in³



MIL-COTS Version Available

User-Configured

MegaPAC Power Supply

- Input voltage ranges: 85 – 264 Vac and 100 – 380 Vdc
- Output voltage: 2 – 95 Vdc (higher voltage available with series arrays)
- Output power: 25 – 4,000 W
- Up to 20 outputs
- High power density



MIL-COTS Version Available

VICOR CUSTOM SOLUTIONS

Don't see what you need...

Vicor Custom Power specializes in the design and manufacture of turnkey custom power systems for electronic equipment manufacturers in markets such as telecom, industrial, automated test equipment, medical, information technology and defense. Utilizing Vicor power "building blocks", we can build a power supply to your unique specifications with lower cost, quick turnaround and reliable performance.



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