



Actual size:
 2.28 x 2.2 x 0.5in
 [57,9 x 55,9 x 12,7mm]



Filter Input Attenuator Module

Features & Benefits

- RoHS Compliant (with F or G pin style)
- EMI filtering – Class B ^[a]
- Transient protection
- Low-profile mounting options
- 10 and 20 Ampere versions
- UL, CSA, EN compliance
- Mini-size package
- Inrush current limiting

Product Highlights

The FIAM is a DC front-end module providing transient protection, inrush current limiting and Class B EMI filtering in a Mini-size package. The FIAM enables designers using Vicor 48V_{IN} Mini, Micro or Maxi DC-DC converters to meet the transient immunity and EMI requirements of Bellcore, FCC, ETSI and European Norms and protect system hardware from inrush current. The FIAM accepts an input voltage of 36 – 76V_{DC}, is available in 10 or 20A versions and provides reverse polarity protection and remote on/off control.

The FIAM is housed in an industry-standard “half brick” module measuring 2.28 x 2.2 x 0.5in and, depending upon model selected, may be mounted onboard or inboard for height-critical applications.

^[a] EMI performance is subject to a wide variety of external influences such as PCB construction, circuit layout etc. As such, external components in addition to those listed herein may be required in specific instances to gain full compliance to the standards specified.

Compatible Products

- Mini, Micro, Maxi 48V Input DC-DC converters

Absolute Maximum Rating

| Parameter | Rating | Unit | Notes |
|---------------------------|-------------|-----------------|---------------------|
| +IN to –IN | 80 | V _{DC} | Continuous |
| | 100 | V | 100ms |
| +OUT to –OUT | 75 | V _{DC} | Continuous |
| Mounting torque | 5 [0.57] | in-lbs [N·m] | 6 each, #4-40 or M3 |
| Operating temperature | –40 to +100 | °C | T- and H-Grade |
| Storage temperature | –55 to +125 | °C | H-Grade |
| Pin soldering temperature | 500 [260] | °F [°C] | <5sec; wave solder |
| | 750 [390] | °F [°C] | <7sec; hand solder |

Thermal Resistance

| Parameter | Min | Typ | Max | Unit |
|-------------------------|-----|------|------|---------|
| Baseplate to sink | | | | |
| | | | 0.16 | °C/Watt |
| flat, greased surface | | | | |
| thermal pad (P/N 20264) | | 0.14 | | °C/Watt |
| Baseplate to ambient | | | | |
| | | | 8.0 | °C/Watt |
| Free Convection | | | | |
| 1000LFM | | 1.9 | | °C/Watt |

Part Numbering



^[b] Not intended for socket or Surfmate mounting

Note: Product images may not highlight current product markings.

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 |
|-----------------|-----|-----|-------|------------------|------------------------|
| Input voltage | 36 | 48 | 76 | V_{DC} | Continuous |
| Inrush limiting | | | 0.014 | A/ μF | Capacitor C1. Figure 6 |

Output Specifications

| Parameter | Min | Typ | Max | Unit | Notes |
|----------------------|------|------|-----|---------------|--|
| Output current | | | | | |
| FIAM1xxx | | | 10 | A | |
| FIAM2xxx | | | 20 | A | |
| Efficiency | 96.0 | 97.5 | | % | Internal voltage drop is 1.4 max. @ 20A, 100°C baseplate |
| External capacitance | | | | | See illustration on page 3, Figure 6. |
| FIAM1xxx | 10 | | 150 | μF | 100V |
| FIAM2xxx | 100 | | 330 | μF | 100V |

Control Pin Specifications

| Parameter | Min | Typ | Max | Unit | Notes |
|------------------|-----|-----|-----|----------|---|
| ON / OFF control | | | | | |
| Enable (ON) | 0.0 | | 1.0 | V_{DC} | Referenced to $-V_{OUT}$ |
| Disable (OFF) | 3.5 | | 5.0 | V_{DC} | 100k Ω internal pull-up resistor |

Electromagnetic Compatibility

| Parameter | Min | Typ | Max | Unit | Notes |
|------------------------|-----|-----|-----|------|--|
| Transient immunity | | | | | |
| Bellcore TR-NWT-000499 | | | 200 | V | 1 μsec duration |
| ETS 300 386-1 Class 2 | | | 200 | V | 5.0 μsec rise time, 50 μsec duration surge |
| | | | 250 | V | 1 – 100nsec burst |

Safety Specifications

| Parameter | Min | Typ | Max | Unit | Notes |
|---|-----|-------|-----|-----------|-------|
| Dielectric withstand (I/O to baseplate) | | 1,500 | | V_{RMS} | |
| | | 2,121 | | V_{DC} | |

Specifications (Cont.)

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

Agency Approvals

| Safety Standards | Markings | Notes |
|---|----------|---|
| UL1950, CSA 22.2-950, EN60950 | | |
| Conducted Emission (Figures 2&3) ^[c] | | |
| Bellcore GR-001089-Core | | Issue 2 |
| EN55022 | | Level B; When used with Vicor Mini, Maxi, Micro 48V _{IN} DC-DC converter |
| FCC Part 15 | | Level B |

General Specifications

| Parameter | Min | Typ | Max | Unit | Remarks |
|-----------------------------|-----|-------------|------------|-------------------|---|
| Reverse polarity protection | | | | | No damage to module, external fuse required |
| Weight | | 3.1 [88] | 4 [113] | ounces [grams] | |
| Warranty | | | 2 | years | |

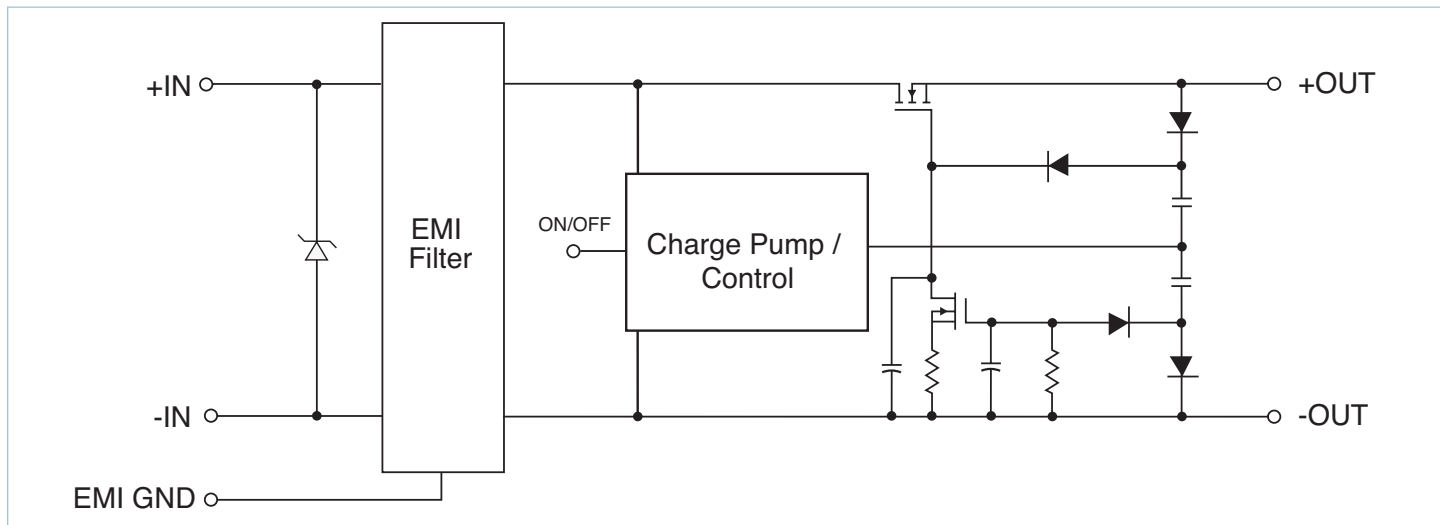


Figure 1 — FIAM block diagram

^[c] EMI performance is subject to a wide variety of external influences such as PCB construction, circuit layout etc.

As such, external components in addition to those listed herein may be required in specific instances to gain full compliance to the standards specified.

Conducted Noise



Figure 2 — FIAM and model V48A12C500 DC-DC converter



Figure 3 — FIAM and model V48B24C250 DC-DC converter

Inrush Limiting



Figure 4 — Inrush limiting: inrush current with 330μF external capacitance

Transient Immunity



Figure 5 — Transient immunity: FIAM output response to an input transient

Transient and Surge Protection

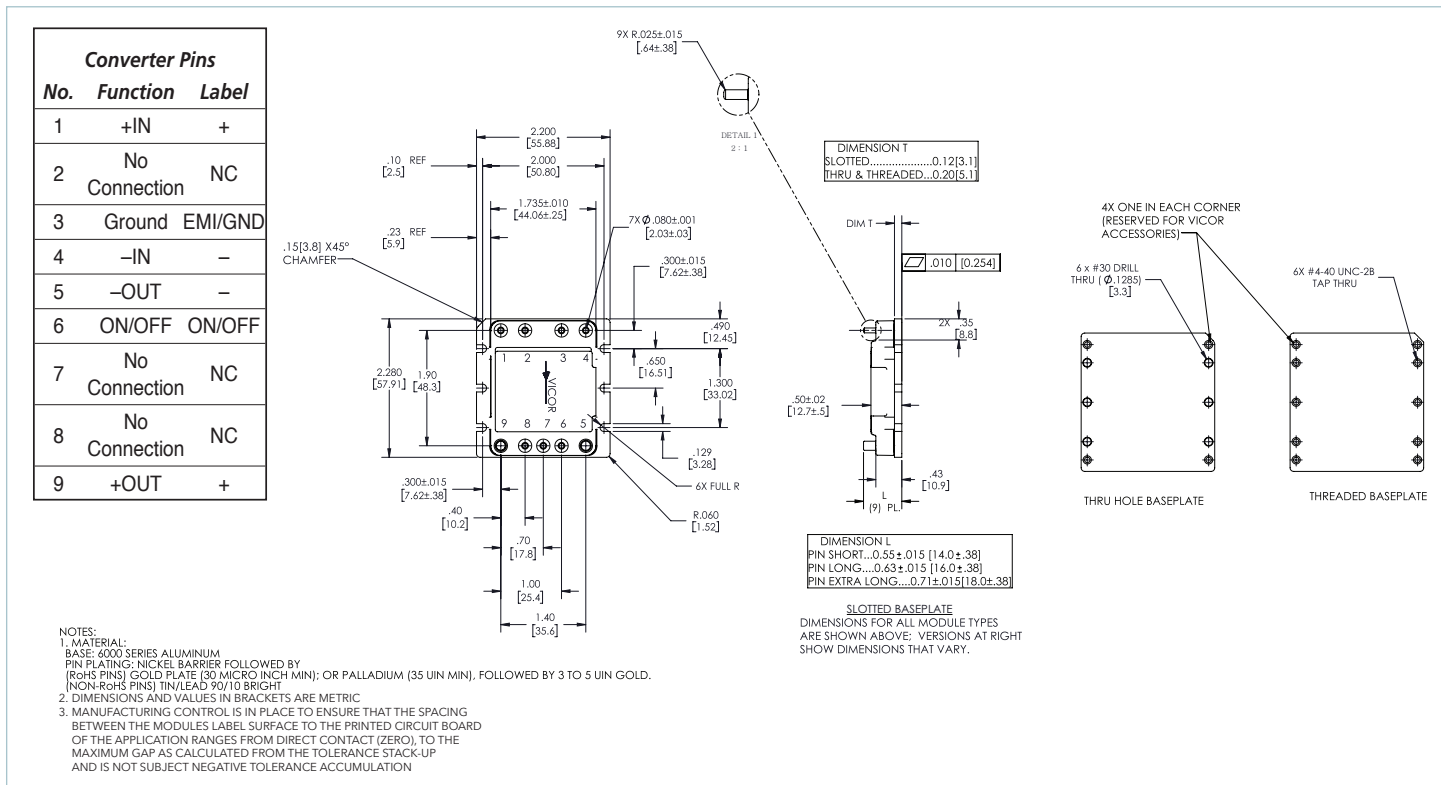


Figure 6 — Typical connection diagram

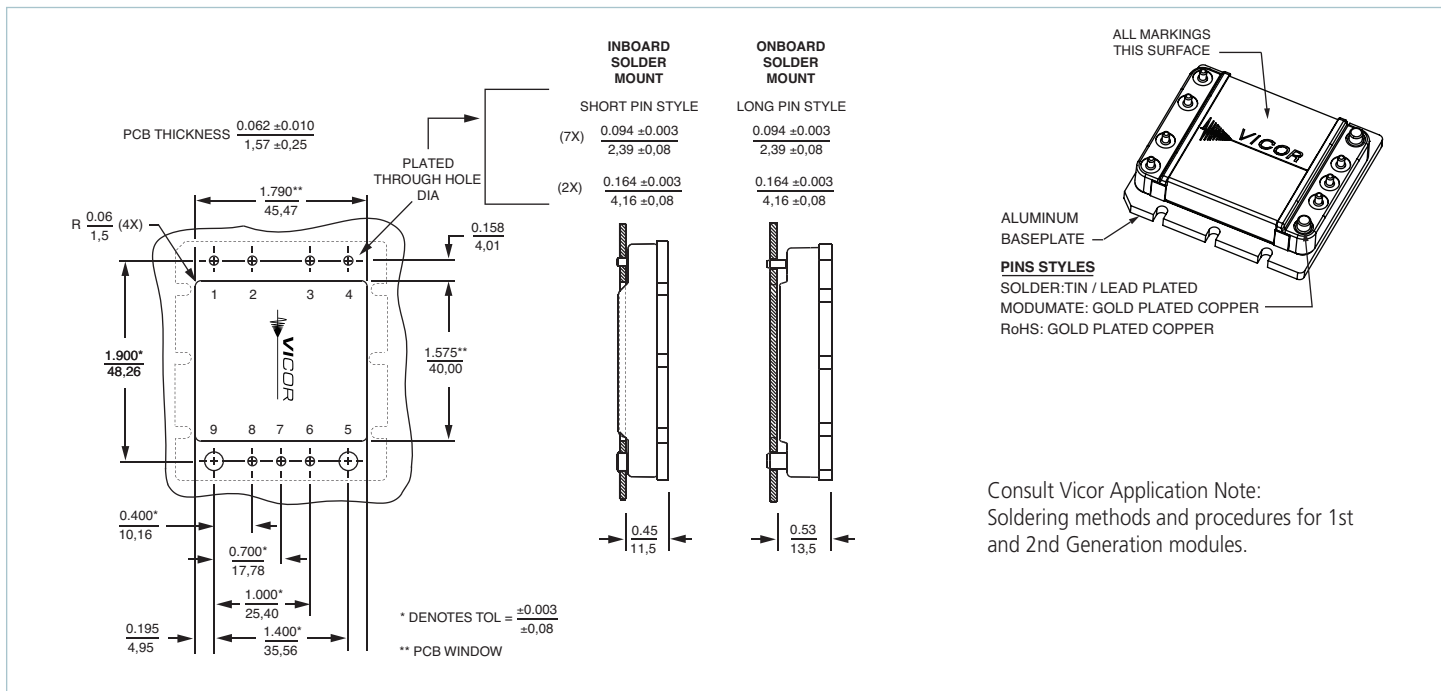
Storage

Vicor products, when not installed in customer units, should be stored in ESD safe packaging in accordance with ANSI/ESD S20.20, "Protection of Electrical and Electronic Parts, Assemblies and Equipment" and should be maintained in a temperature controlled factory/warehouse environment not exposed to outside elements controlled between the temperature ranges of 15°C and 38°C. Humidity shall not be condensing, no minimum humidity when stored in an ESD compliant package.

Mechanical Diagram



PCB Mounting Specifications



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.

Visit http://www.vicorpower.com/dc-dc_filters/fiam-filter_input_attenuator_module for the latest product information.

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 (<http://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.

Contact Us: <http://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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Vicor:

[FIAM1CG3](#) [FIAM2T21](#) [FIAM1T11](#) [FIAM1HG3](#) [FIAM2CS1](#) [FIAM1T12](#) [FIAM2CF2](#) [FIAM1C22](#) [FIAM2CG3](#)
[FIAM2T13](#) [FIAM2T11](#) [FIAM2T22](#) [FIAM1TN2](#) [FIAM2HG2](#) [FIAM2C23](#) [FIAM2T23](#) [FIAM1C21](#) [FIAM1M21](#) [FIAM2H22](#)
[FIAM2CF3](#) [FIAM1TF3](#) [FIAM1C11](#) [FIAM2TG1](#) [FIAM2E11](#) [FIAM2CN1](#) [FIAM2C13](#) [FIAM1TG1](#) [FIAM2TN1](#)
[FIAM2C11](#) [FIAM1T21](#) [FIAM1MS3](#) [FIAM1TF1](#) [FIAM1CF1](#) [FIAM1CG2](#) [FIAM2CG2](#) [FIAM2H21](#) [FIAM1TS1](#)
[FIAM1C23](#) [FIAM1T23](#) [FIAM1H21](#) [FIAM1HG1](#) [FIAM2HF3](#) [FIAM1CS1](#) [FIAM1C12](#) [FIAM1T22](#) [FIAM1C13](#) [FIAM2E22](#)
[FIAM1CN1](#) [FIAM2HG3](#) [FIAM2C22](#) [FIAM1CN2](#) [FIAM1TN1](#) [FIAM2H23](#) [FIAM1CG1](#) [FIAM2HG1](#) [FIAM2TS1](#)
[FIAM2H11](#) [FIAM1TG3](#) [FIAM2CG1](#) [FIAM2C21](#) [FIAM2TF1](#) [FIAM1CF2](#) [FIAM2CF1](#) [FIAM1H11](#)

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А