FIAM™
48V Input

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				
flat, greased surface		0.16		°C/Watt
thermal pad (P/N 20264)		0.14		°C/Watt
Baseplate to ambient				
Free Convection		8.0		°C/Watt
1000LFM		1.9		°C/Watt

Part Numbering

FIAM	1	C	1	1
Product	Type 1 = 10A 2 = 20A	Product Grade Temperatures (°C) Grade = Operating / Storage E = –10 to +100 / –20 to 125 C = –20 to +100 / –40 to 125 T = –40 to +100 / –40 to 125 H = –40 to +100 / –55 to 125	Pin Style 1 = Short 2 = Long S = Short ModuMate N = Long ModuMate F = Short RoHS G = Long RoHS K = Extra Long RoHS [b]	Baseplate 1 = Slotted 2 = Threaded 3 = Thru hole

[b] Not intended for socket or Surfmate mounting

Note: Product images may not highlight current product markings.

Specifications

(Typical at T_{BP} = 25°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}	100kΩ internal pull-up resistor

Electromagnetic Compatibility

Parameter	Min	Typ	Max	Unit	Notes
Transient immunity					
Bellcore TR-NWT-000499			200	V	1µsec duration
ETS 300 386-1 Class 2			200	V	5.0µsec rise time, 50µsec 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°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	

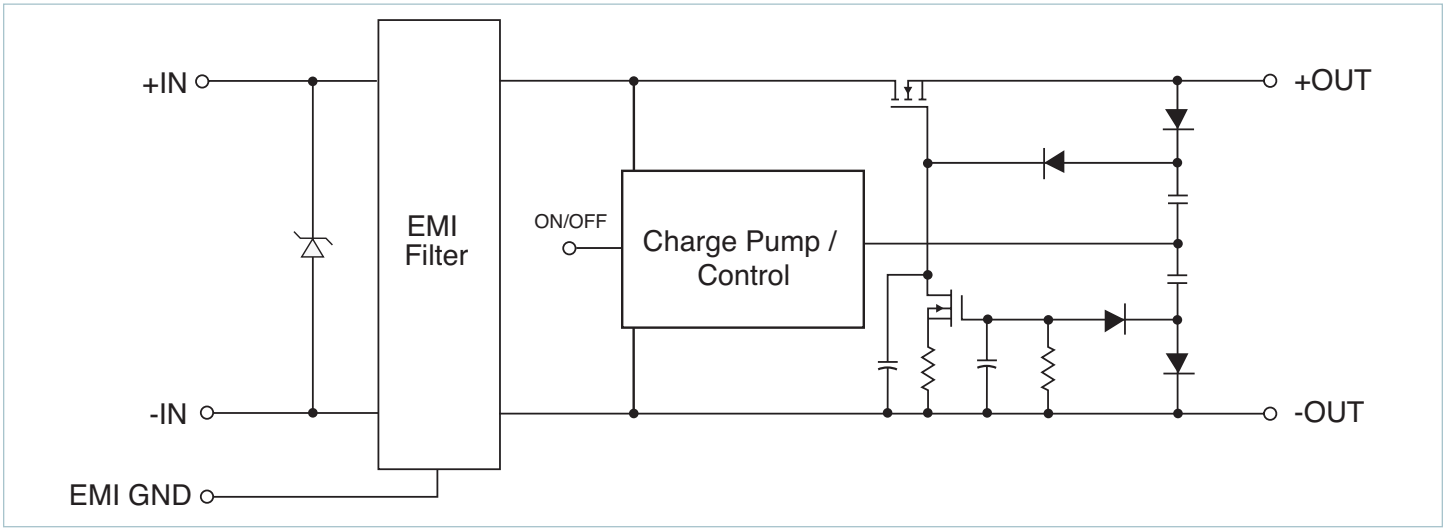


Figure 1 — *FIAM block diagram*

[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

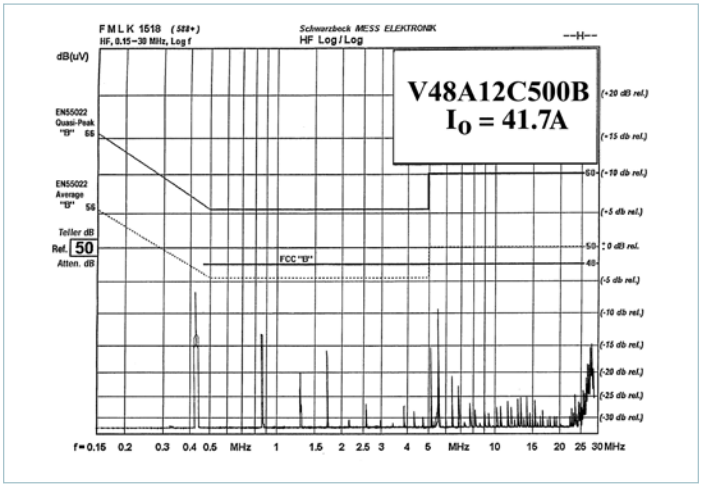


Figure 2 — *FIAM and model V48A12C500 DC-DC converter*

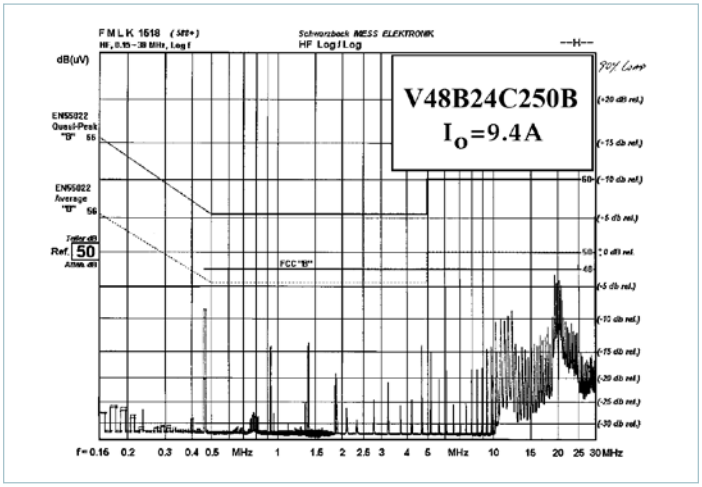


Figure 3 — *FIAM and model V48B24C250 DC-DC converter*

Inrush Limiting

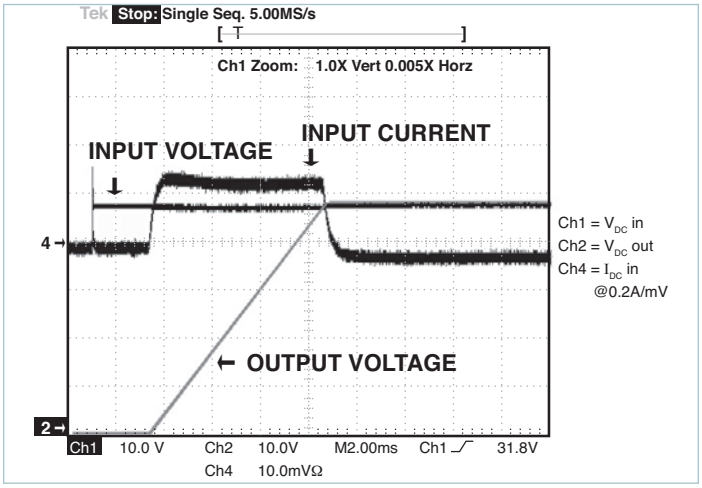


Figure 4 — *Inrush limiting: inrush current with 330µF external capacitance*

Transient Immunity

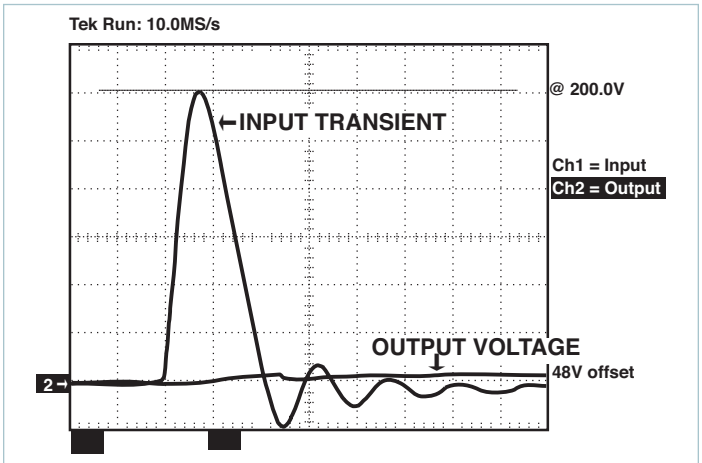


Figure 5 — *Transient immunity: FIAM output response to an input transient*

Transient and Surge Protection

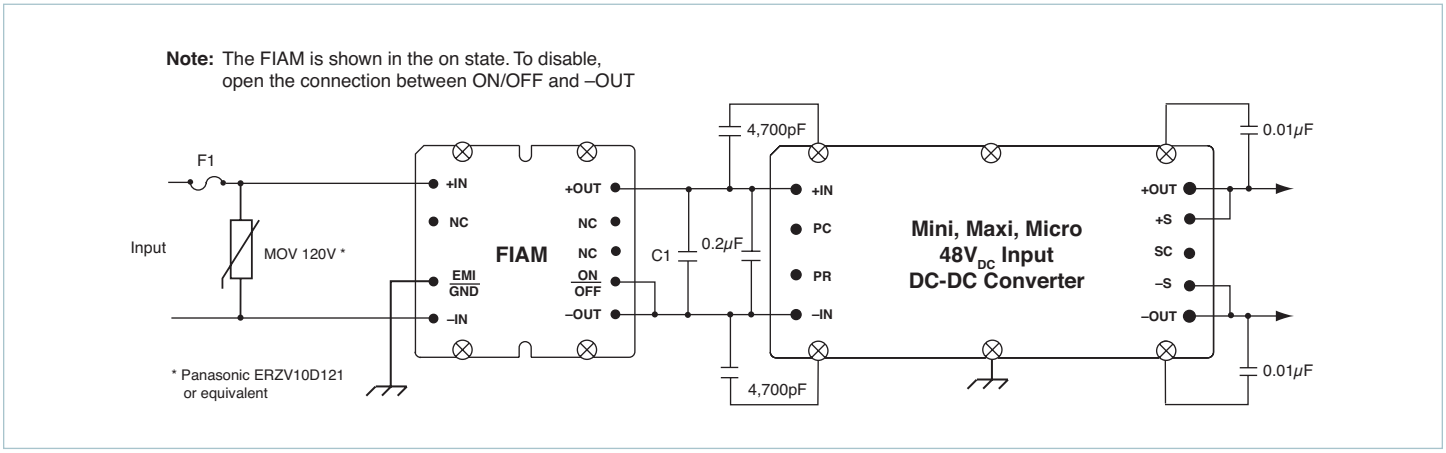


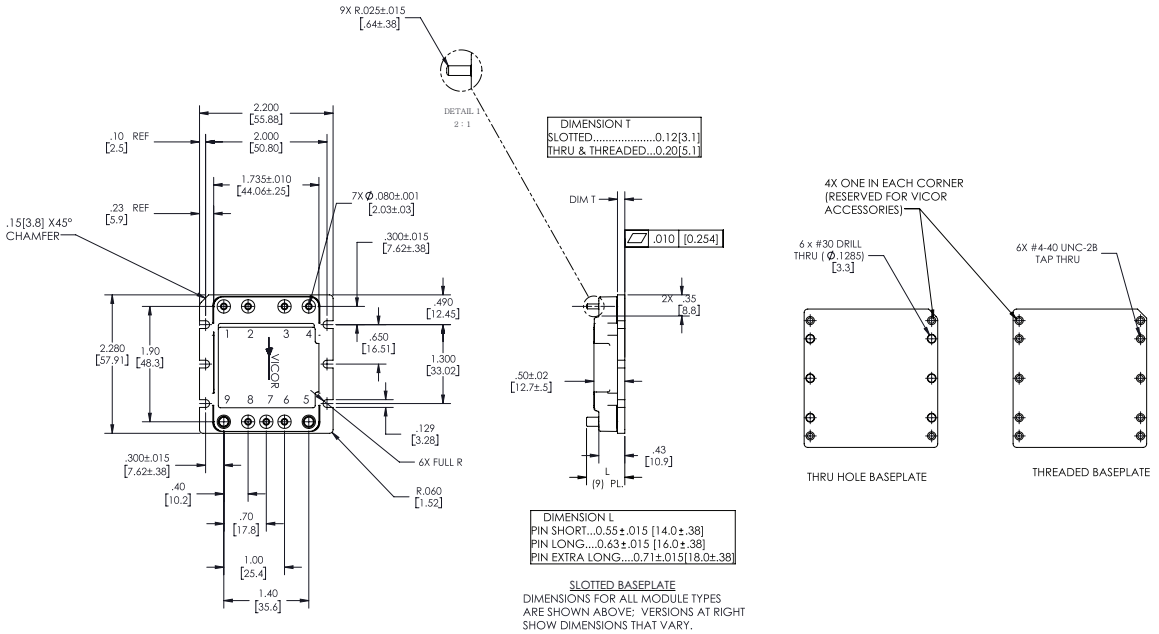
Figure 6 — *Typical connection diagram*

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.

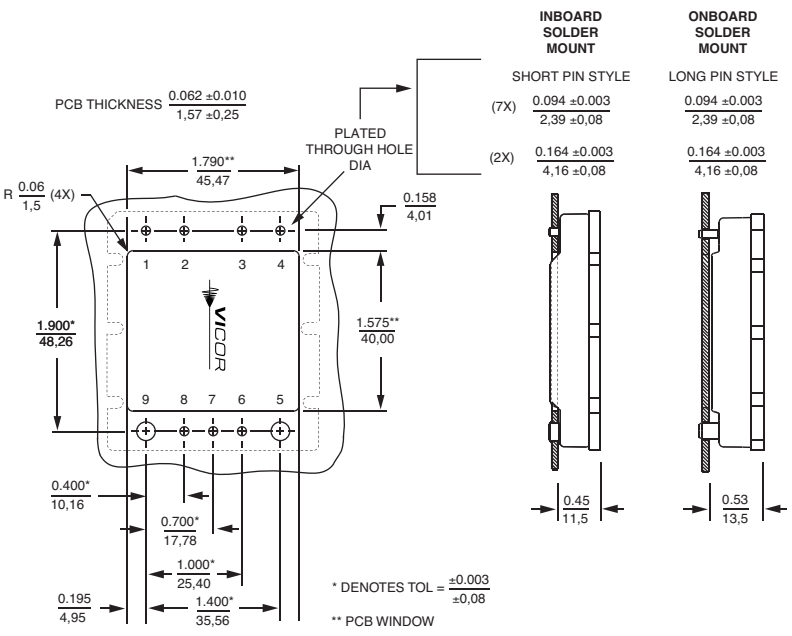
Mechanical Diagram

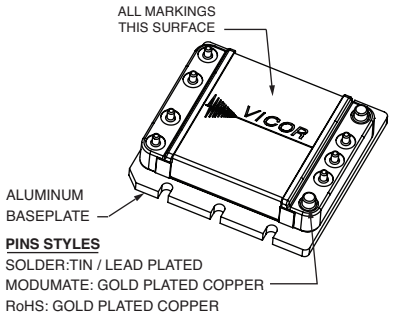
Converter Pins		
No.	*Function*	*Label*
1	+IN	+
2	No Connection	NC
3	Ground	EMI/GND
4	–IN	–
5	–OUT	–
6	ON/OFF	ON/OFF
7	No Connection	NC
8	No Connection	NC
9	+OUT	+



NOTES:
1. MATERIAL:
   BASE: 6000 SERIES ALUMINUM
   PIN PLATING: NICKEL BARRIER FOLLOWED BY
   (RoHS PINS) GOLD PLATE (30 MICRO INCH MIN); OR PALLADIUM (35 UIN MIN), FOLLOWED BY 3 TO 5 UIN GOLD.
   (NON-RoHS PINS) TIN/LEAD 90/10 BRIGHT
2. DIMENSIONS AND VALUES IN BRACKETS ARE METRIC
3. MANUFACTURING CONTROL IS IN PLACE TO ENSURE THAT THE SPACING BETWEEN THE MODULES LABEL SURFACE TO THE PRINTED CIRCUIT BOARD OF THE APPLICATION RANGES FROM DIRECT CONTACT (ZERO), TO THE MAXIMUM GAP AS CALCULATED FROM THE TOLERANCE STACK-UP AND IS NOT SUBJECT NEGATIVE TOLERANCE ACCUMULATION

PCB Mounting Specifications





Consult Vicor Application Note: Soldering methods and procedures for 1st and 2nd Generation modules.

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

OCEAN CHIPS
Океан Электроники
Поставка электронных компонентов

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**».

AVIC 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).

FORSTAR®

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