

MFBC-00018M

Passive GaAs MMIC 44.50-62.50 GHz Bandpass Filter

DEVICE OVERVIEW

General Description

The MFBC-00018M family of passive MMIC bandpass filters are an ideal solution for mmWave, high rejection filtering. Marki employs unique packaging techniques to provide optimal performance in a convenient connectorized module. Tight fabrication tolerances allow for less unit-to-unit variation than traditional filter technologies. The MFBC-00018M is available as a connectorized module.



[Download s-parameters here](#)

Features

- Excellent Return Loss
- High Stop Band Suppression
- Wide Stop Band with Fast Roll-Off

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Packing Size	Green Status	Product Lifecycle	Export Classification
MFBC-00018M	Passive GaAs MMIC 44.50-62.50 GHz Bandpass Filter	M	-	RoHS REACH	Released	EAR99

Table Of Contents

■ Device Overview

General Description
Features
Applications
Functional Block Diagram

■ Port Configuration and Functions

Port Diagram
Port Functions

■ Revision History

■ Specifications

Absolute Maximum Ratings
Package Information
Electrical Specifications
Typical Performance Plots

■ Mechanical Data

Outline Drawing

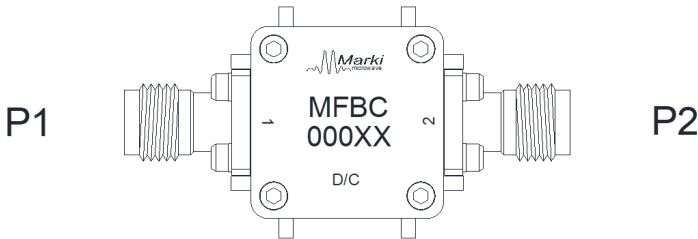
Revision History

Revision Code	Revision Date	Comment
-	2023-03-01	Datasheet Initial Release

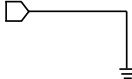
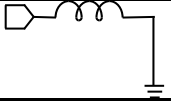
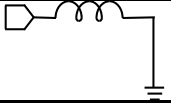
Port Configuration and Functions

Port Diagram

The MMIC bandpass filters are symmetrical allowing Port 1 or Port 2 to be used as the input.



Port Functions

Port	Function	Description	Equivalent Circuit for Package
GND	Ground	M package ground path is provided through the metal housing and outer coax conductor.	
Port 1	Input/Output	Port 1 is DC short to ground for the M package.	
Port 2	Input/Output	Port 2 is DC short to ground for the M package.	

Specifications

Absolute Maximum Ratings

The Absolute Maximum Ratings indicate limits beyond which damage may occur to the device. If these limits are exceeded or met simultaneously, the device may be inoperable or have a reduced lifetime.

Parameter	Maximum Rating	Unit
Maximum Operating Temperature	100	°C
Maximum Storage Temperature	125	°C
Minimum Operating Temperature	-55	°C
Minimum Storage Temperature	-65	°C
Port 1 DC Current	400	mA
Port 2 DC Current	400	mA

Package Information

Parameter	Details	Rating
Dimensions	-	39.98x20.83mm

Electrical Specifications

The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data for all filters is shown with a sine wave input applied to port 1. Min and Max limits are guaranteed at TA=+25°C.

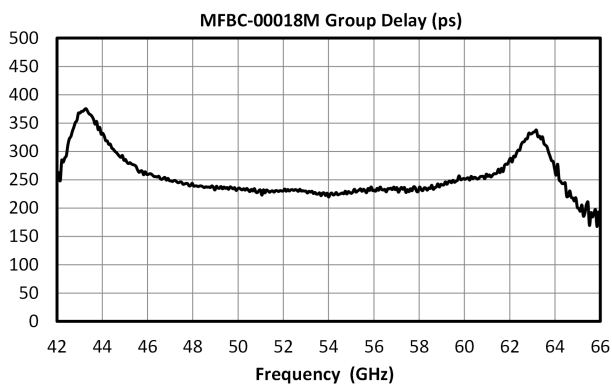
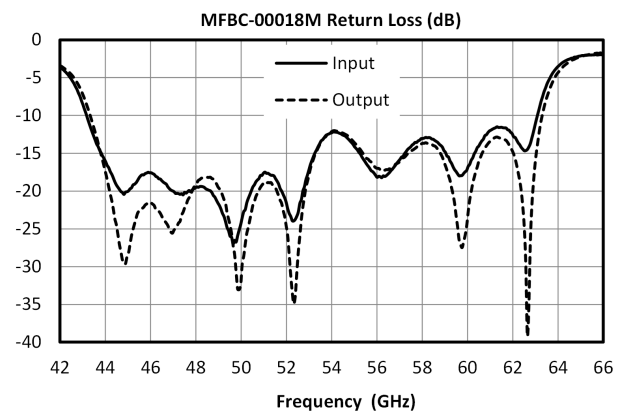
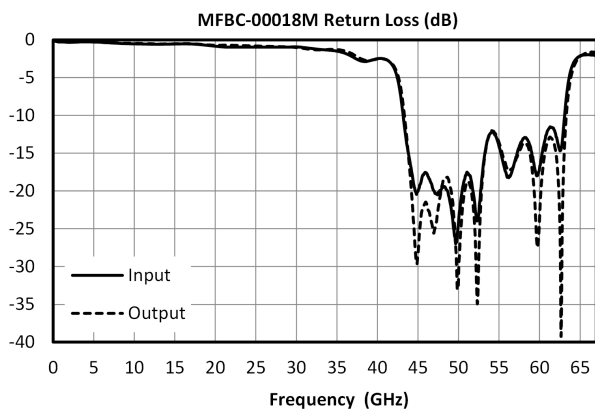
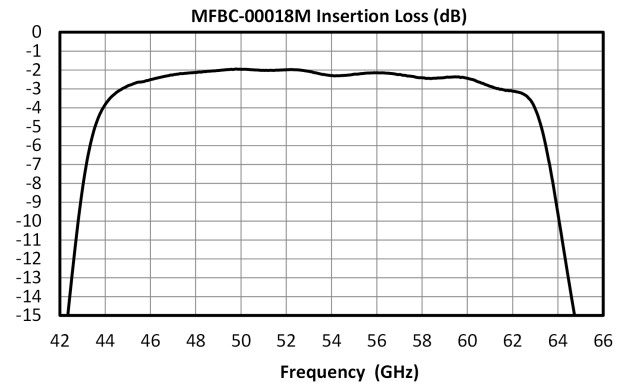
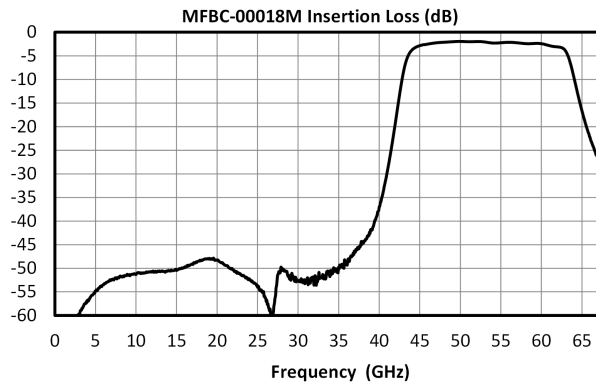
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
1dBc Passband Low Frequency	-	-	-	-	44.5	-	GHz
1dBc Passband High Frequency	-	-	-	-	62.5	-	GHz
3dBc Passband Low Frequency	-	-	-	-	43.5	-	GHz
3dBc Passband High Frequency	-	-	-	-	63.5	-	GHz
Passband Return Loss	-	44.5	62.5	-	10	-	dB
Stopband Suppression	-	0	40	30	52	-	dB
Group Delay	-	-	-	-	242	-	ps
Impedance	-	-	-	-	50	-	Ω
Center Frequency, f_c	-	-	-	-	53.75	-	GHz
Insertion Loss @ F_c	-	53.75	53.75	-	2.15	-	dB

MFBC-00018M

Passive GaAs MMIC 44.50-62.50 GHz

Bandpass Filter

Typical Performance Plots

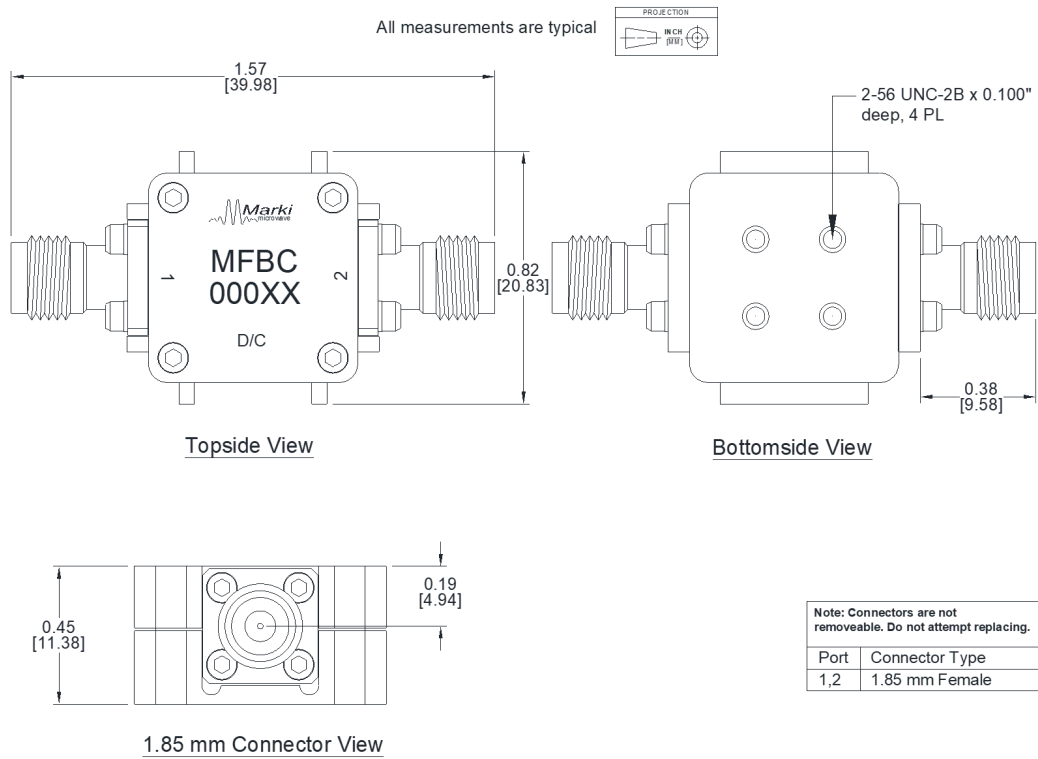


MFBC-00018M

Passive GaAs MMIC 44.50-62.50 GHz
Bandpass Filter

Mechanical Data

Outline Drawing



DISCLAIMER

MARKI MICROWAVE, INC., ("MARKI") PROVIDES TECHNICAL SPECIFICATIONS AND DATA (INCLUDING DATASHEETS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, AND OTHER INFORMATION AND RESOURCES "AS IS" AND WITH ALL FAULTS. MARKI DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

These resources are intended for developers skilled in the art designing with Marki products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards and other requirements. Marki makes no guarantee regarding the suitability of its products for any particular purpose, nor does Marki assume any liability whatsoever arising out of your use or application of any Marki product.

Marki grants you permission to use these resources only for development of an application that uses Marki products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Marki intellectual property or to any third-party intellectual property. Marki reserves the right to make changes to the product(s) or information contained herein without notice.

MARKI MICROWAVE and T3 MIXER are trademarks or registered trademarks of Marki Microwave, Inc. All other trademarks used are the property of their respective owners.

© 2023, Marki Microwave, Inc