Sales: 408-778-9952 | General: 408-778-4200 | Fax: 408-778-4300
Sales & Customer Support: sales@markimicrowave.com
Tech Support: support@markimicrowave.com
General Support: info@markimicrowave.com

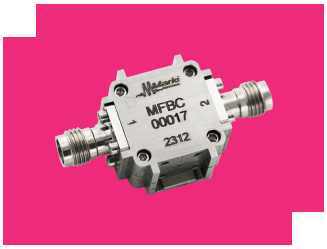
MFBC-00017M

Passive GaAs MMIC 34.5-49.5 Bandpass Filter

DEVICE OVERVIEW

General Description

The MFBC-00017M 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. Low unit-to-unit variation allows for accurate simulations using the provided S2P file taken from measured production units. The MFBC-00017M 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-00017M	Passive GaAs MMIC 34.5-49.5 Bandpass Filter	M	-	RoHS REACH	Released	EAR99

Table Of Contents

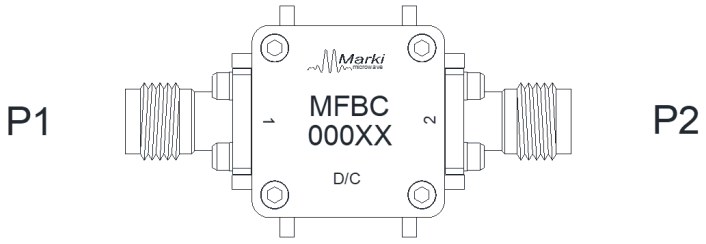
Revision History

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

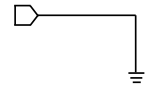
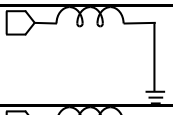
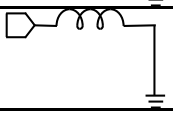
Port Configuration and Functions

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	-	39.98 x 20.83 mm

Electrical Specifications

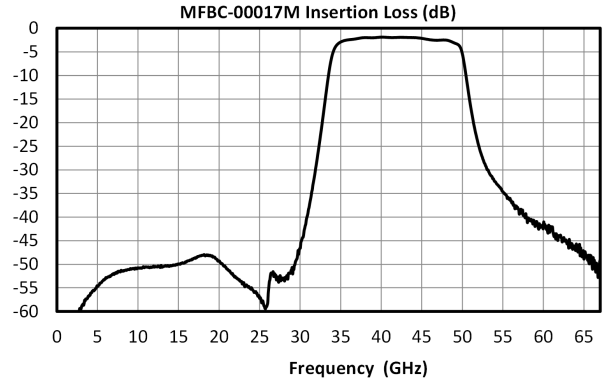
The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data for all filters is shown with a sine wave input applied to port 1. Min and Max limits are guaranteed at TA=+25°C.

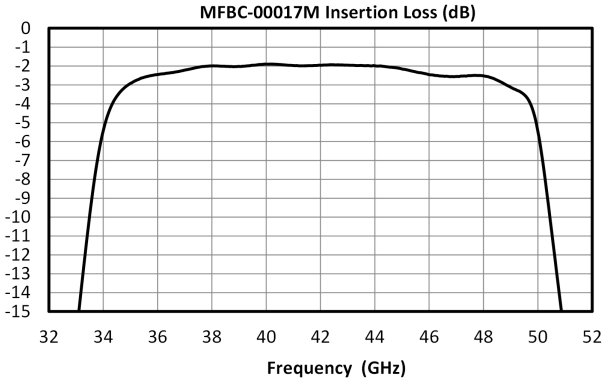
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
1dBc Passband Low Frequency	-	-	-	-	34.5	-	GHz
1dBc Passband High Frequency	-	-	-	-	49.5	-	GHz
3dBc Passband Low Frequency	-	-	-	-	34	-	GHz
3dBc Passband High Frequency	-	-	-	-	50	-	GHz
Passband Return Loss	-	34.5	49.5	-	12	-	dB
Stopband Suppression	-	0	30.5	30	51	-	dB
Stopband Suppression	-	54.5	67	30	47	-	dB
Group Delay	-	-	-	-	269	-	ps
Impedance	-	-	-	-	50	-	Ω
Center Frequency, f_c	-	-	-	-	42	-	GHz
Insertion Loss @ F_c	-	42	42	-	2	-	dB

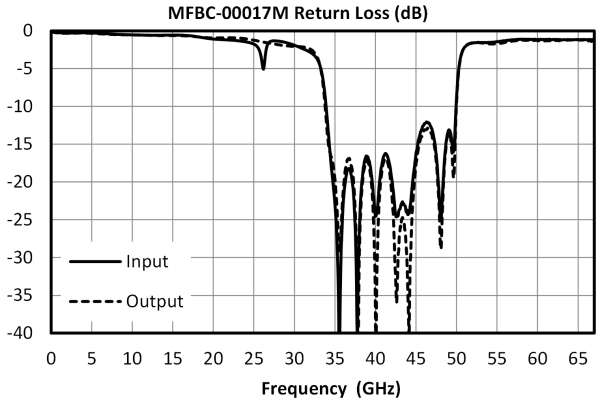
MFBC-00017M

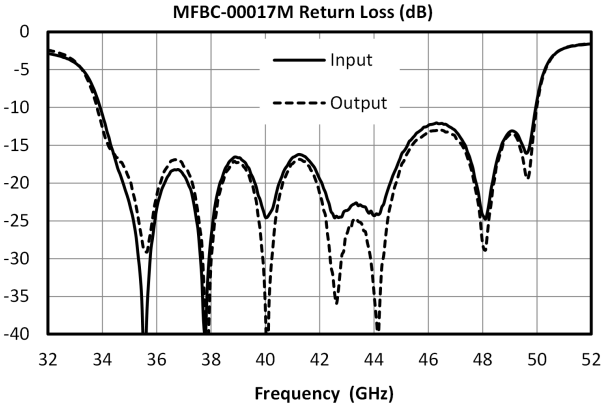
Passive GaAs MMIC 34.5-49.5 Bandpass Filter

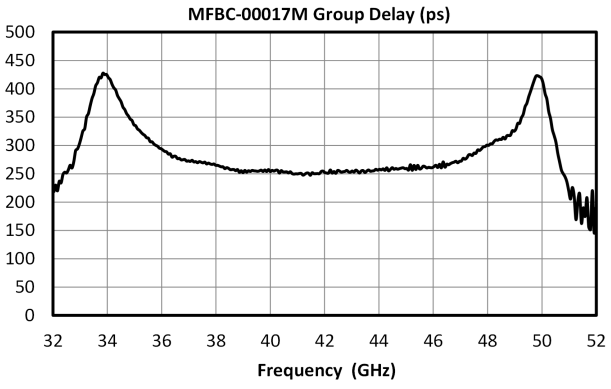
Typical Performance





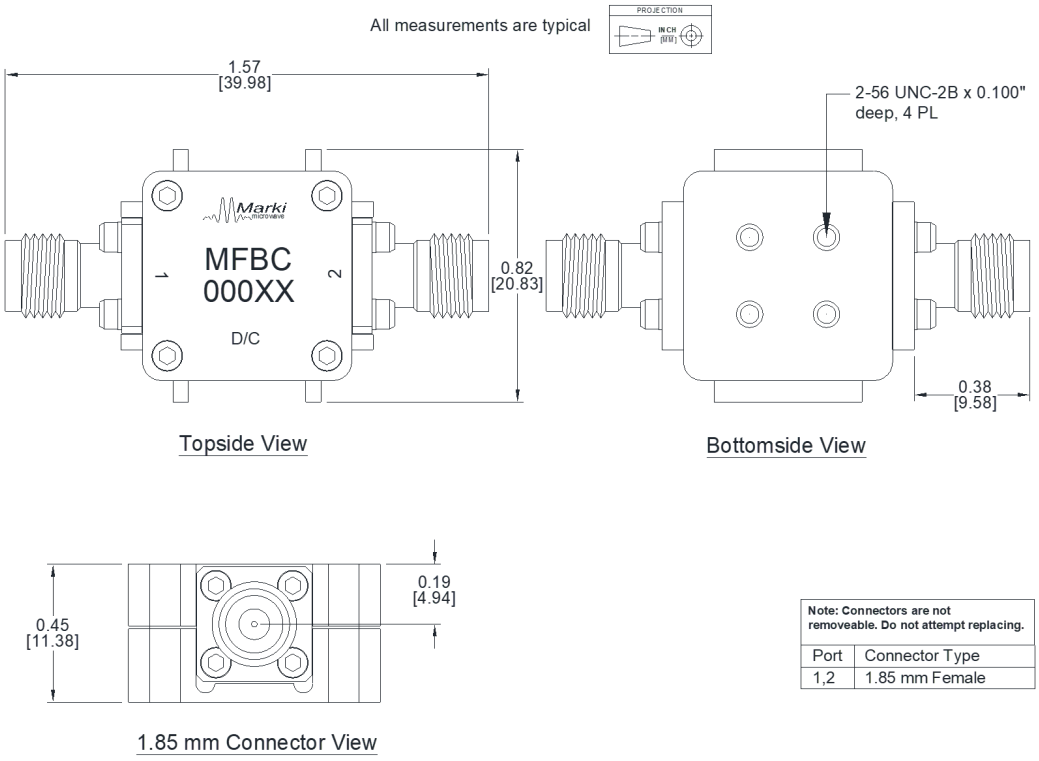






Mechanical Data

Outline Drawing



Note: Connectors are not removeable. Do not attempt replacing.

Port	Connector Type
1,2	1.85 mm Female

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