

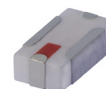
# Bandpass Filter

BFCN-5540AT+

50Ω     4620 to 6640 MHz

## The Big Deal

- LTCC construction
- Temperature stable from -40 to +105°C
- Small size (0.12 x .06 X .03")
- AEC-Q200 qualified component family



CASE STYLE: FV1206-4

## Product Overview

The BFCN-5540AT+ LTCC bandpass filter covers the 4620 to 6640 MHz passband with 1.2 dB passband insertion loss, 22 dB lower stopband rejection, and 30 dB upper stopband rejection. This model handles up to 1W RF input power and provides a wide operating temperature range from -40 to +105°C. Utilizing LTCC construction, the filter achieves excellent repeatability of performance and comes in a tiny 1206 ceramic package with wraparound terminations, minimizing performance variations due to parasitics and saving space in dense PCB layouts.

## Key Features

Feature	Advantages
LTCC Construction	Provides a rugged package well suited for tough environments such as high humidity and temperature extremes.
Tiny size (0.12 x .06 x .03")	Saves space in dense circuit boards and minimizes the effects of parasitics.
Wrap-around terminations	Provides excellent solderability and easy visual inspection
Wide operating temperature range, -40 to +105°C	Enables reliable performance in extreme environments

# Ceramic Bandpass Filter

50Ω 4620 to 6640 MHz

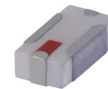
## Features

- Small size
- Temperature stable
- LTCC construction
- AEC-Q200 qualified component family

## Applications

- Automotive

BFCN-5540AT+



Generic photo used for illustration purposes only

CASE STYLE: FV1206-4

## +RoHS Compliant

The +Suffix identifies RoHS Compliance.  
See our website for methodologies and qualifications



Available Tape and Reel  
at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 3000

## Electrical Specifications<sup>(1,2)</sup> at +25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	5540	—	MHz
	Insertion Loss	F1-F2	—	1.2	4	dB
	VSWR	F1-F2	—	2.1	—	:1
Stop Band, Lower	Insertion Loss	DC-F3	17	22	—	dB
	VSWR	DC-F3	—	25	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	13	30	—	dB
		F5-F6	—	17	—	dB
	VSWR	F4-F6	—	25	—	:1

1. Measured on Mini-Circuits Characterization Test Board TB-824+ using BFCN-5540+.

2. This filter is not intended for use as a DC Blocking circuit element. In Application where DC voltage is present at either input or output ports, blocking capacitors are required at the corresponding RF port.

## Maximum Ratings

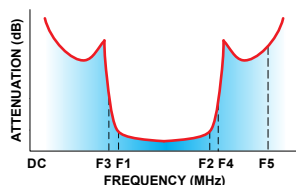
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +105°C
RF Power Input*	1W at +25°C

\*Passband rating, derate linearly to 0.25W at +105°C ambient  
Permanent damage may occur if any of these limits are exceeded.

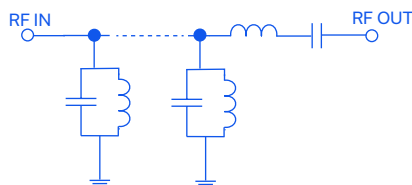
## Typical Performance Data at +25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1000	36.33	65.08
2000	25.57	46.87
3400	37.28	39.50
4600	1.39	1.58
5000	1.48	1.95
6600	2.33	2.10
7000	3.54	1.62
7500	16.69	9.78
8000	38.25	15.07
8600	45.83	14.11
9000	35.68	14.34
9500	30.89	17.30
10000	29.47	22.09
10900	40.64	27.46
11000	38.85	26.92

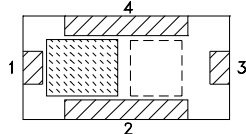
## Specification Definition



## Functional Schematic

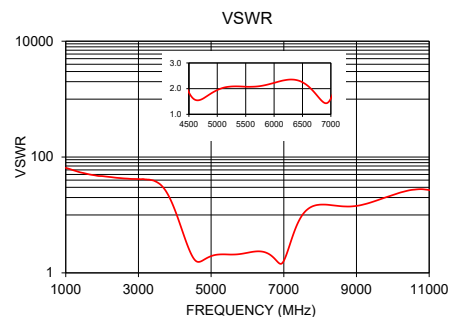
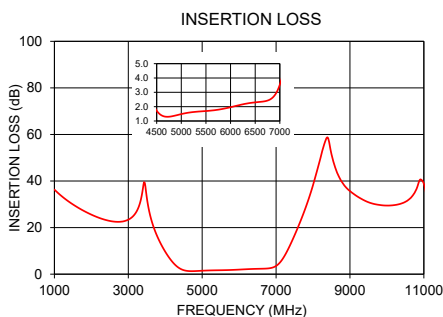


## Top View



## Pad Connections

Input	1
Output	3
Ground	2,4



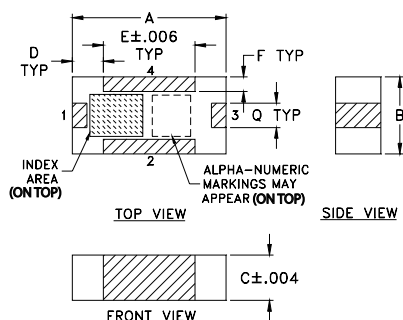
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NPO-005300  
BFCN-5540AT+  
MCL NY  
250606  
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# Bandpass Filter

# BFCN-5540AT+

## Outline Drawing

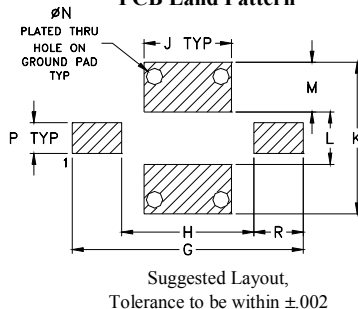


## Pad Connections

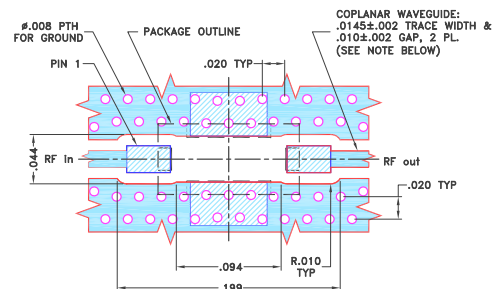
Input	1
Output	3
Ground	2,4

Product Marking: F6



## PCB Land Pattern



Demo Board MCL P/N: TB-824+  
Suggested PCB Layout (PL-454)



## NOTES:

1. TRACE WIDTH PARAMETERS ARE SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .0066"±.0007". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
  2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
-  DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).  
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J
.126	.063	.037	.026	.075	.012	.182	.104	.069
3.20	1.60	0.94	0.66	1.91	0.30	4.62	2.64	1.75
K	L	M	N	P	Q	R		wt
.119	.041	.039	.013	.024	.020	.039		grams
3.02	1.04	0.99	0.33	0.61	0.51	0.99		.020

- NOTES**
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
  - B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
  - C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)

