



CERAMIC

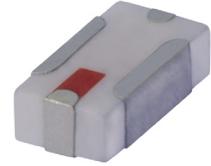
Band Pass Filter

BFCN-5540AT+

50Ω 4620 to 6640 MHz

THE BIG DEAL

- Small Size, 3.2 x 1.6 mm
- Temperature Stable
- Hermetically Sealed
- LTCC Construction
- AEC-Q200 Qualified Component Family



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

APPLICATIONS

- Automotive

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

Features	Advantages
Small Size, 3.2 x 1.6 mm	Saves space in dense circuit boards and minimizes the effects of parasitics.
LTCC Construction	Provides a rugged package well suited for tough environments such as high humidity and temperature extremes.
Wrap-Around Terminations	Provides excellent solderability and easy visual inspection
Wide Operating Temperature Range, -40 to +105°C	Enables reliable performance in extreme environments

REV. B
ECO-028147
BFCN-5540AT+
MCL,NY
260105





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Band Pass Filter

BFCN-5540AT+

50Ω 4620 to 6640 MHz

ELECTRICAL SPECIFICATIONS^{1,2} AT +25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units	
Center Frequency	-	-	-	5540	-	MHz	
Passband	Insertion Loss	F1-F2	4620-6640	-	1.2	4	dB
	VSWR	F1-F2	4620-6640	-	2.1	-	:1
	Insertion Loss	DC-F3	DC-3470	17	22	-	dB
Stop Band, Lower	VSWR	DC-F3	DC-3470	-	25	-	:1
	Insertion Loss	F4-F5	8060-8820	13	30	-	dB
Stop Band, Upper	VSWR	F4-F5	8820-10990	-	17	-	dB
	VSWR	F4-F6	8060-10990	-	25	-	:1

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

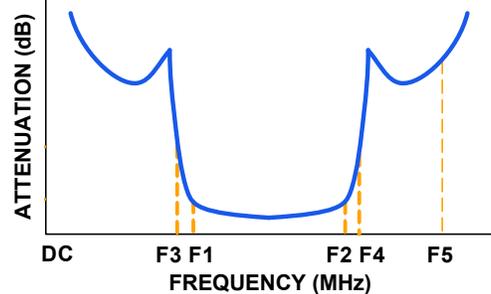
2. This filter is not intended for use as a DC Blocking circuit element. In Application where DC voltage is present at either input or output ports, blocking capacitors are required at the corresponding RF port.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +105°C
RF Power Input ³	1 W at +25°C

³Passband rating, derate linearly to 0.25 W at +105°C ambient
Permanent damage may occur if any of these limits are exceeded.

TYPICAL FREQUENCY RESPONSE





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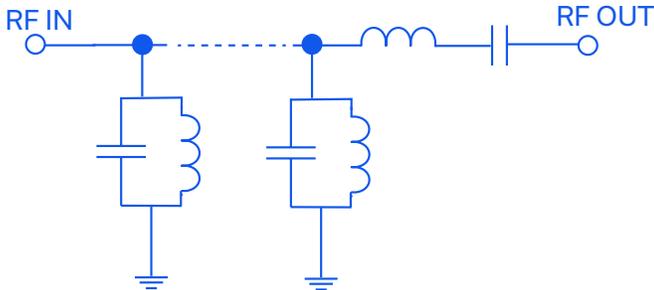
Band Pass Filter

BFCN-5540AT+

Mini-Circuits

50Ω 4620 to 6640 MHz

FUNCTIONAL SCHEMATIC

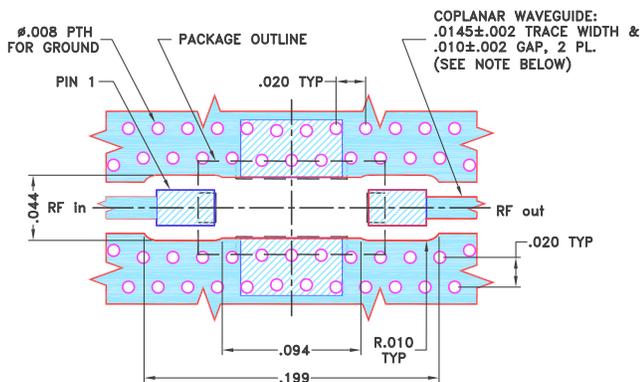


PAD CONNECTIONS

RF IN	1
RF OUT	3
Ground	2,4

PRODUCT MARKING: F6

DEMO BOARD P/N: TB-BFCN-5540+
SUGGESTED PCB LAYOUT (PL-454)

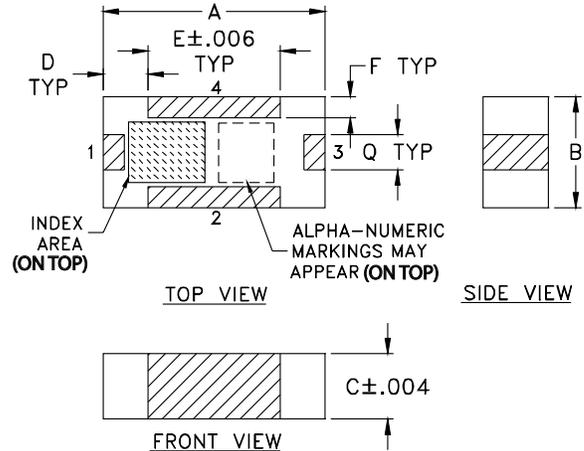


NOTES:

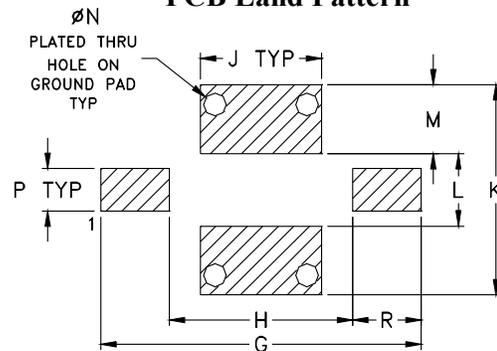
- TRACE WIDTH PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .0066"±.0007". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

CASE STYLE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

OUTLINE DIMENSIONS (Inches 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	

TAPE & REEL INFORMATION: F75





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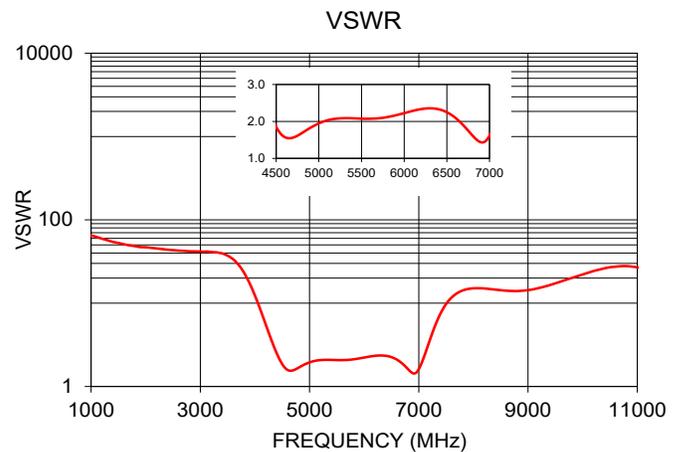
Band Pass Filter

BFCN-5540AT+

50Ω 4620 to 6640 MHz

TYPICAL PERFORMANCE DATA AT +25°C

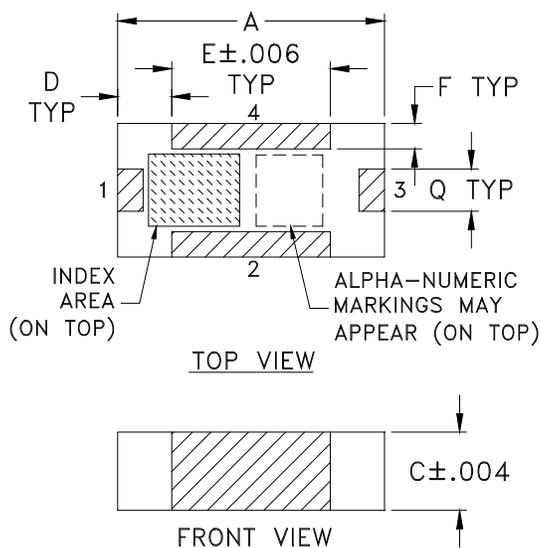
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1000	36.33	65.08
2000	25.57	46.87
3400	37.28	39.50
4600	1.39	1.58
5000	1.48	1.95
6600	2.33	2.10
7000	3.54	1.62
7500	16.69	9.78
8000	38.25	15.07
8600	45.83	14.11
9000	35.68	14.34
9500	30.89	17.30
10000	29.47	22.09
10900	40.64	27.46
11000	38.85	26.92



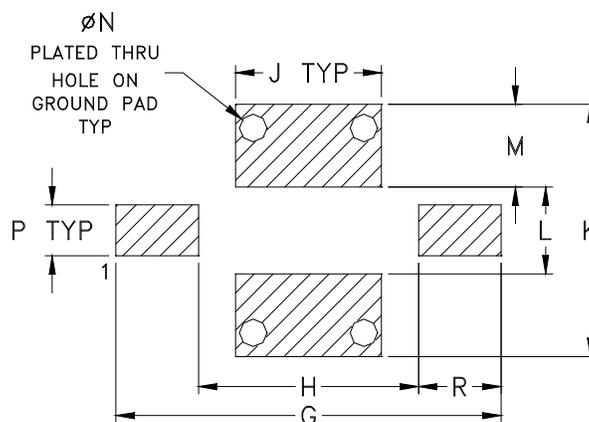
- NOTES**
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 - B. Electrical specifications and performance data contained in this specification document are based 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



Outline Dimensions



PCB Land Pattern



CASE #	A	B	C	D	E	F	G	H	J	K	L	M
FV1206-4	.126 (3.20)	.063 (1.60)	.037 (0.94)	.026 (0.66)	.075 (1.91)	.012 (0.30)	.182 (4.62)	.104 (2.64)	.069 (1.75)	.119 (3.02)	.041 (1.04)	.039 (0.99)

CASE #	N	P	Q	R	WT. GRAM
FV1206-4	.013 (0.33)	.024 (0.61)	.020 (0.51)	.039 (0.99)	.020

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .01$; 3 Pl. $\pm .005$

Notes:

- Open style, ceramic base.
- Termination finish: **as shown below or indicated on Data Sheet.**
 For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
 For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



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RF/IF MICROWAVE COMPONENTS

DEVICE ORIENTATION IN T&R

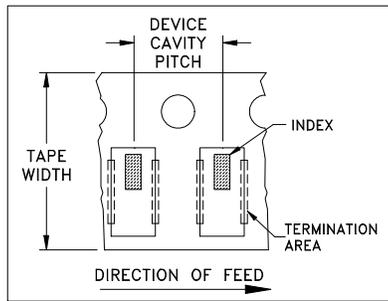


ILLUSTRATION 1

Applicable Case Styles
FV1206-1 FV1206-3

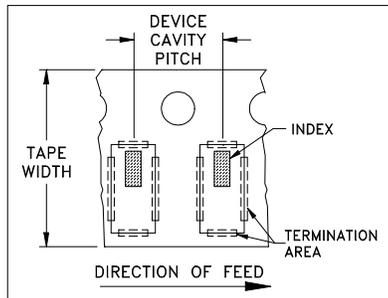


ILLUSTRATION 2

Applicable Case Styles
FV1206-4 FV1206-5 FV1206-6 FV1206-7 FV1206-9

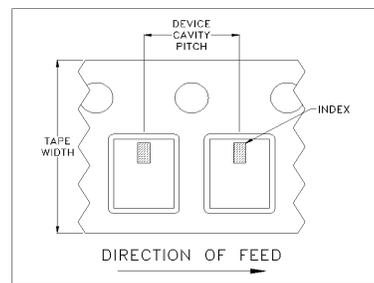


ILLUSTRATION 3

Applicable Case Styles
FV1206-11 FV1206-12 GE0805C-18 NL1008C-6 NL1008C-7 NL1008C-9 NL1008C-10 NL1008C-12

Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	3000

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

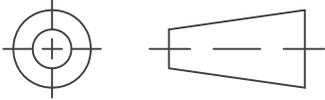


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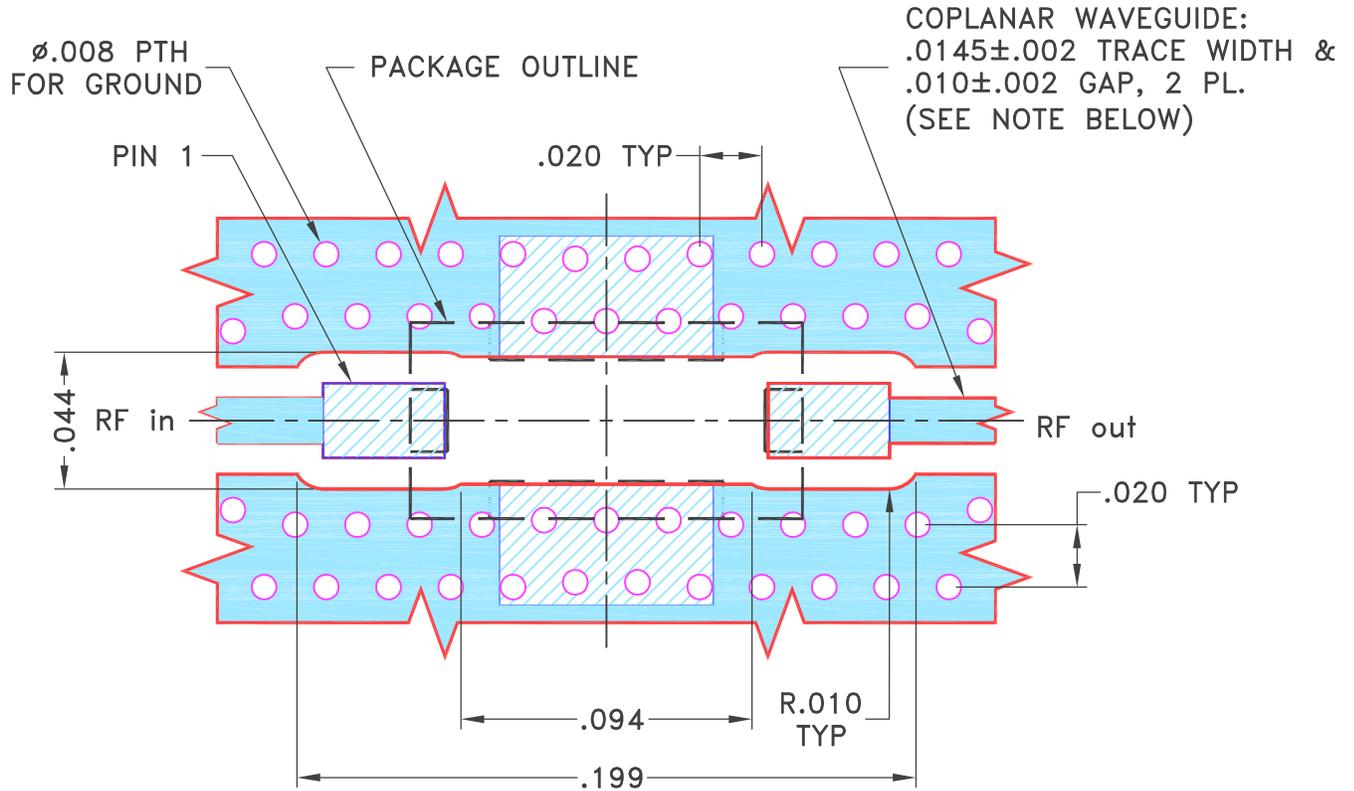
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M152168	NEW RELEASE	07/31/15	ITG	AVB

SUGGESTED MOUNTING CONFIGURATION
FOR FV1206-4 CASE STYLE, "04FL01" PIN CODE



NOTES:

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

UNLESS OTHERWISE SPECIFIED	INITIALS		DATE
DIMENSIONS ARE IN INCHES TOLERANCES ON: 2 PL DECIMALS ± 3 PL DECIMALS ± .005 ANGLES ± FRACTIONS ±	DRAWN	ITG	07/30/15
	CHECKED	GF	07/31/15
	APPROVED	AVB	07/31/15

Mini-Circuits[®] 13 Neptune Avenue
 Brooklyn NY 11235

PL, 04FL01, FV1206-4, TB-824+

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