Ceramic

LTCC Bandpass Filter

BFCN-3115+

50Ω 2720 to 3570 MHz

The Big Deal

- Small size 3.2mm x 1.6mm
- Pass band (2720-3570 MHz)
- Low Insertion Loss (1.7 dB typical)

CASE STYLE: FV1206

Product Overview

The BFCN-3115+ LTCC Band Pass Filter is constructed with multiple layers in order to achieve a miniature size and high repeatability of performance. Wrap-around terminations minimize variations in performance due to parasitics. Covering 850 MHz passband, these units offer low insertion loss and good rejection.

Key Features

Feature	Advantages
Small Size (3.20mm x1.6 mm)	Allows for high layout density of circuit boards, while minimizing affects of parasitics.
Wrap around termination	Provides excellent solderability and easy visual inspection capability.
LTCC construction	Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes.

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CASE STYLE: FV1206
PRICE: $3.95 ea. QTY (20)

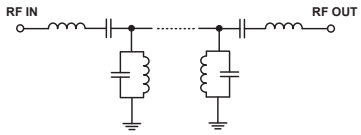
Features

- Small size (0.126"x0.063"x0.037")
- Temperature stable
- Hermetically sealed
- LTCC construction

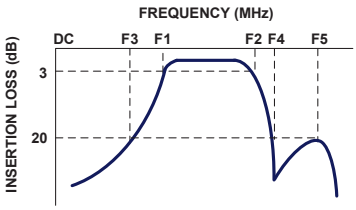
Applications

- Harmonic Rejection
- Transmitters / Receivers
- Military and Avionics

Functional Schematic



Typical Frequency Response



Electrical Specifications[1,2] at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	3115	—	MHz
	Insertion Loss	F1-F2	2720-3570	—	1.7	3.0	dB
	VSWR	F1-F2	2720-3570	—	2.2	3.0	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-1850	20	24	—	dB
	VSWR	DC-F3	DC-1850	—	40	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	4300-8160	20	23	—	dB
	VSWR	F4-F5	4300-8160	—	24	—	:1

1. Measured on Mini-Circuits Characterization Test Board TB-270.
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.

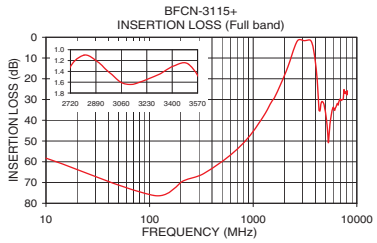
Maximum Ratings	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	1.5W max @ +25°C

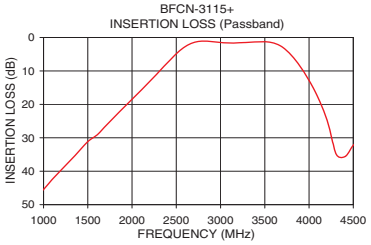
*Passband rating, derate linearly to 0.25W at 100°C ambient
Permanent damage may occur if any of these limits are exceeded.

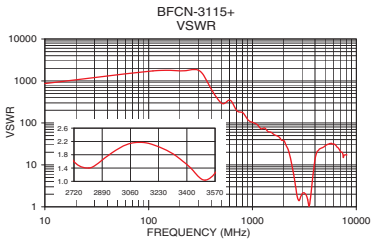
Typical Performance Data at 25°C

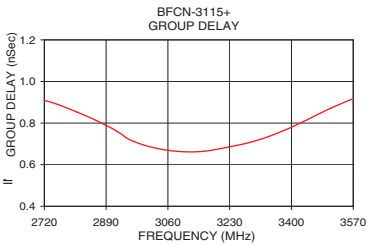
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10.0	58.24	868.59	2720.0	0.909
100.0	75.15	868.59	2760.0	0.888
500.0	59.90	434.30	2800.0	0.861
1000.0	45.50	96.51	2840.0	0.829
1850.0	22.47	42.38	2880.0	0.798
2300.0	10.28	16.11	2920.0	0.757
2500.0	4.87	5.75	2960.0	0.716
2720.0	1.32	1.60	3000.0	0.690
2850.0	1.12	1.50	3050.0	0.672
3000.0	1.46	2.02	3100.0	0.663
3115.0	1.65	2.17	3150.0	0.663
3300.0	1.46	1.87	3200.0	0.675
3570.0	1.45	1.27	3250.0	0.693
3730.0	3.48	3.12	3300.0	0.714
3850.0	6.86	6.42	3350.0	0.745
4000.0	12.76	13.60	3400.0	0.780
4300.0	33.88	22.00	3440.0	0.815
5300.0	50.34	31.03	3480.0	0.847
7000.0	30.23	21.20	3520.0	0.880
8160.0	26.12	16.26	3570.0	0.919

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications







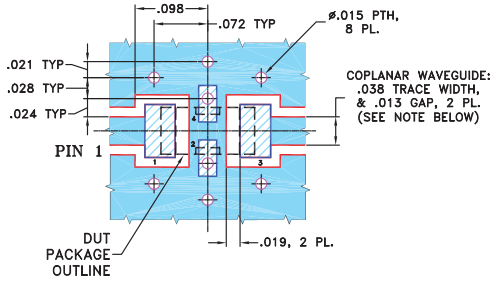


Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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/MCLStore/terms.jsp

Pad Connections

RF IN	1
RF OUT	3
GROUND	2,4

Demo Board MCL P/N: TB-270
Suggested PCB Layout (PL-137)



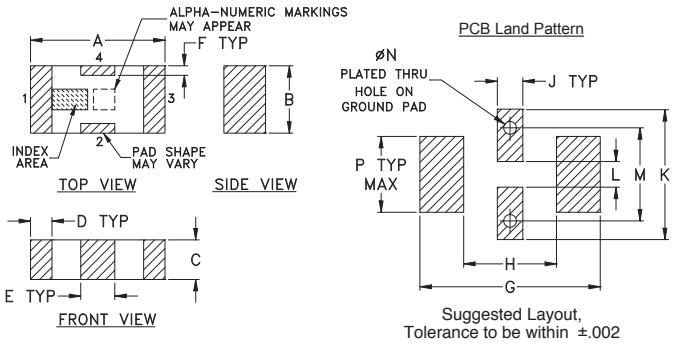
NOTES: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.

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 Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.126	.063	.037	.020	.032	.009	.169
3.20	1.60	0.94	0.51	0.81	0.23	4.29

H	J	K	L	M	N	P	wt
.087	.024	.122	.024	.087	.012	.071	grams
2.21	0.61	3.10	0.61	2.21	0.30	1.80	.020