Ceramic

LTCC Bandpass Filter

BFCN-3085+

50Ω 2800 to 3400 MHz

The Big Deal

- Small size 3.2mm x 1.6mm
- Pass band (2800-3400 MHz)
- Low Insertion Loss (1.65 dB typical)
- Over 50 dB rejection up to 500 MHz

CASE STYLE: FV1206

Product Overview

The BFCN-3085+ 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 600 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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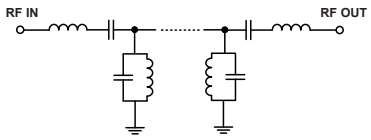
Features

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

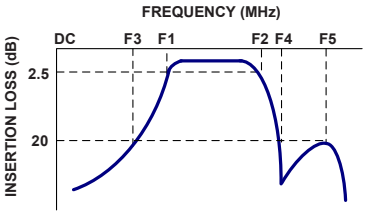
Applications

- Harmonic Rejection
- Transmitters / Receivers
- Military and Avionics

Functional Schematic



Typical Frequency Response



+RoHS Compliant

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

Electrical Specifications[1,2] at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	3085	—	MHz
	Insertion Loss	F1-F2	2800-3400	—	1.65	2.5	dB
	VSWR	F1-F2	2800-3400	—	2.2	3.0	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-1750	20	26	—	dB
	VSWR	DC-F3	DC-1750	—	40	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	4250-7800	20	25	—	dB
	VSWR	F4-F5	4250-7800	—	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

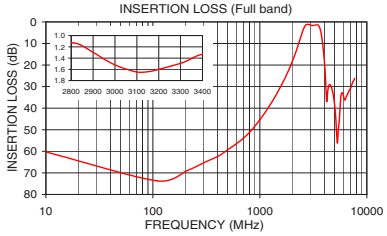
*Passband rating, derate linearly to 0.25W at 100°C ambient

Permanent damage may occur if any of these limits are exceeded.

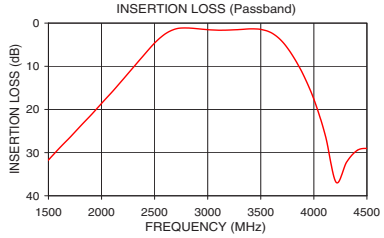
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10.0	60.29	347.44	2800.0	0.862
100.0	74.29	434.30	2830.0	0.840
500.0	59.20	579.06	2860.0	0.817
1000.0	45.39	102.19	2890.0	0.794
1750.0	25.22	43.44	2920.0	0.762
2200.0	13.16	21.20	2950.0	0.733
2450.0	5.95	7.00	2980.0	0.712
2570.0	3.02	3.31	3010.0	0.699
2800.0	1.11	1.19	3040.0	0.690
2900.0	1.31	1.65	3070.0	0.682
3050.0	1.60	2.13	3100.0	0.680
3085.0	1.63	2.15	3130.0	0.678
3350.0	1.40	1.63	3160.0	0.685
3400.0	1.35	1.44	3190.0	0.696
3700.0	4.22	3.76	3220.0	0.708
3800.0	7.48	7.17	3250.0	0.722
4000.0	17.57	17.93	3290.0	0.744
4250.0	35.69	22.87	3330.0	0.772
5300.0	56.71	30.49	3370.0	0.807
7800.0	25.70	16.56	3400.0	0.834

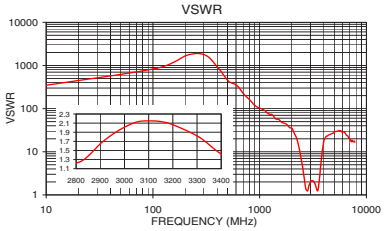
BFCN-3085+
INSERTION LOSS (Full band)



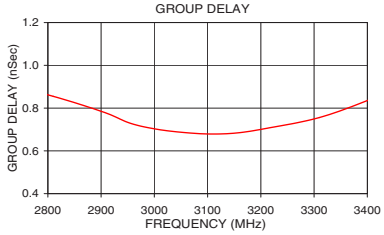
BFCN-3085+
INSERTION LOSS (Passband)



BFCN-3085+
VSWR



BFCN-3085+
GROUP DELAY

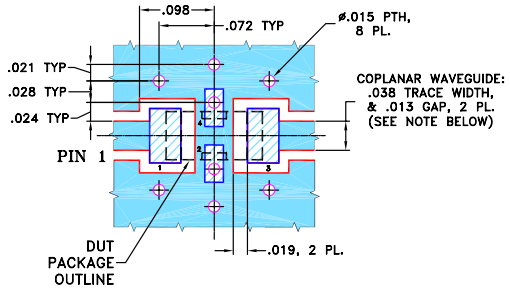


Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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

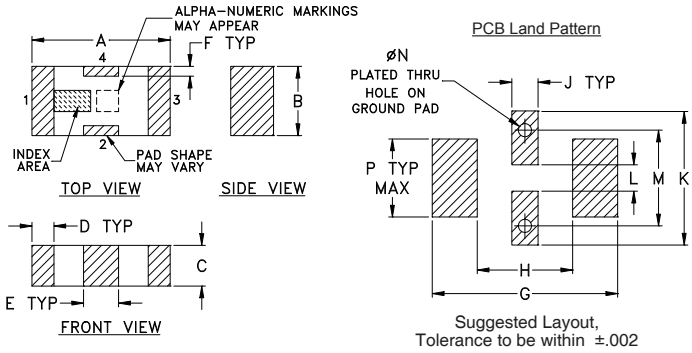


NOTES:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

Mouser Electronics

Authorized Distributor

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BFCN-3085+