



**THE DATASHEET OF
BFCV-4085+**



Ceramic

LTCC Bandpass Filter

BFCV-4085+

50Ω

3130 to 5040 MHz



Generic photo used for illustration purposes only

CASE STYLE: JV1210C

The Big Deal

- Small size 3.2mm x 2.5mm
- Wide passband (3130-5040 MHz)
- Low Insertion Loss (1.5 dB typical)
- Wide stopband rejection up to 11 GHz

Product Overview

The BFCV-4085+ 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. These units offer low insertion loss and very good wide band rejection.

Key Features

Feature	Advantages
Small Size (3.20mm x2.5 mm)	Allows for high layout density of circuit boards, while minimizing the effects of parasitics.
Wrap around termination	Provides excellent solderability and easy visual inspection capability.
Wide bandwidth	Enables high data rate in communication systems.
LTCC construction	Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes.

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



Ceramic Bandpass Filter

BFCV-4085+

50Ω 3130 to 5040 MHz



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Features

- Small size
- Temperature stable
- Hermetically sealed
- LTCC construction

Applications

- Software defined radio
- WLAN
- Satellite television broadcast

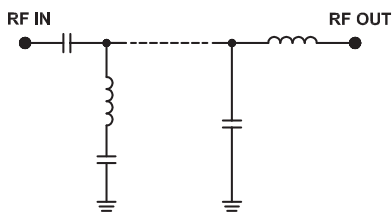
Electrical Specifications^{1,2} at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	4085	—	MHz	
	Insertion Loss	F2-F4	3130-5040	—	1.5	dB	
	VSWR	F3-F4	3330-4840	—	1.5	4.0	dB
Stop Band, Lower	Insertion Loss	F2-F5	3130-5040	—	2.1	:1	
	VSWR	DC-F1	DC-2520	15	17	—	dB
Stop Band, Upper	Insertion Loss	DC-F1	DC-2520	—	20	—	:1
	Insertion Loss	F6	6260	—	17	—	dB
	VSWR	F7-F8	6380-8000	15	20	—	dB
	VSWR	F8-F9	8000-11000	—	14	—	dB
		F7-F8	6380-8000	—	20	—	:1

1. Measured on Mini-Circuits Characterization Test Board TB-946+

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.

Functional Schematic



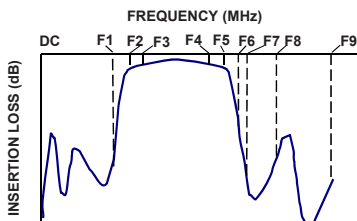
Maximum Ratings	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	5 W max @ +25°C

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

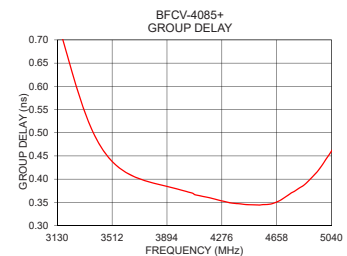
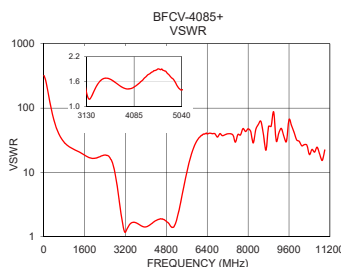
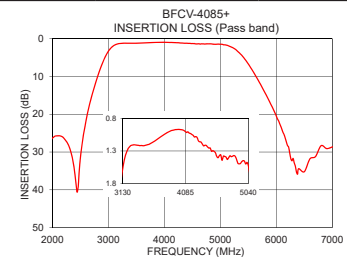
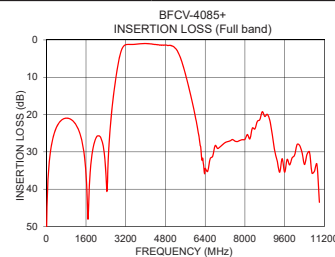
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10	54.23	319.29	3130	0.74
680	21.19	34.38	3330	0.54
2440	40.62	18.55	3430	0.47
2520	28.88	18.18	3550	0.43
2620	20.21	16.09	3650	0.41
2800	10.32	9.33	3710	0.40
3000	3.30	2.73	3810	0.39
3130	1.57	1.33	3850	0.39
3330	1.21	1.49	3950	0.38
4085	1.00	1.47	4085	0.37
4840	1.38	1.68	4160	0.36
5040	1.53	1.40	4220	0.36
5300	3.25	2.60	4440	0.35
5640	10.10	11.77	4540	0.34
6000	20.46	31.21	4640	0.35
6260	31.80	39.57	4840	0.39
6380	35.84	40.68	4940	0.42
8000	26.64	47.60	4980	0.43
10000	30.89	30.46	5000	0.44
11000	43.50	22.32	5040	0.46

Typical Frequency Response



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



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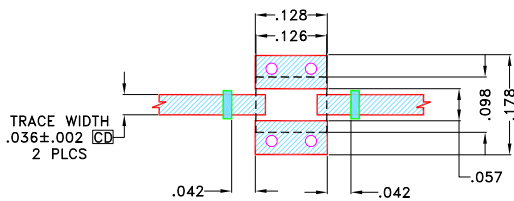


Pad Connections

RF IN	1
RF OUT	3
GROUND	2,4

Product Marking: JC

Demo Board MCL P/N: TB-946+
Suggested PCB Layout (PL-502)



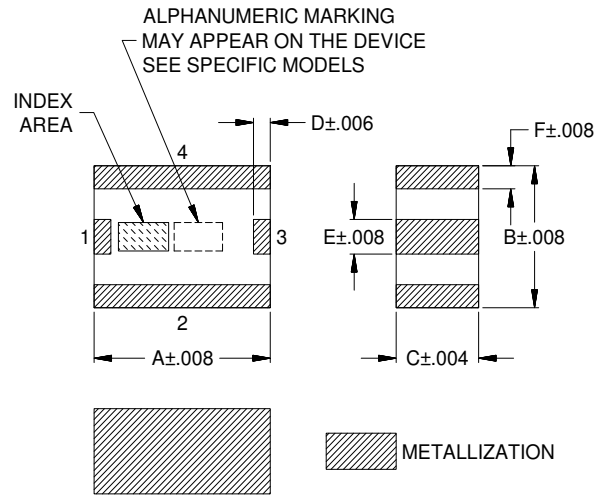
NOTES:

- TRACE WIDTH & SPACE WIDTH IS SHOWN FOR ROGERS (R04350B) WITH DIELECTRIC THICKNESS $.0166 \pm .0015$ ". COPPER 1/2 OZ. EACH SIDE FOR OTHER MATERIALS TRACE WIDTH & SPACE WIDTH 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 SOLDERMASK

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	Wt.
.126	.098	.059	.012	.024	.016	grams
3.2	2.5	1.5	.3	.6	.4	.03

Note: Please refer to case style drawing for details

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