

Ceramic

LTCC Bandpass Filter

BFCV-4085+

50Ω

3130 to 5040 MHz



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

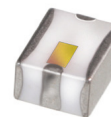
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Features

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

Applications

- Software defined radio
- WLAN
- Satellite television broadcast

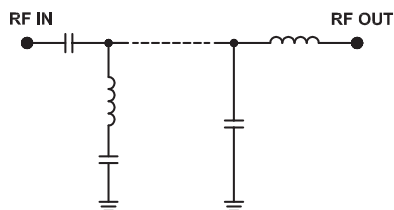
Electrical Specifications^{1,2} at 25°C

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

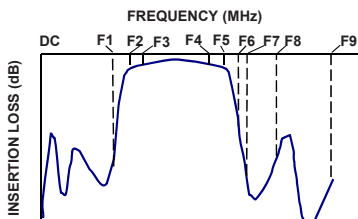
*Passband rating, derate linearly to 0.25W at 100°C ambient

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

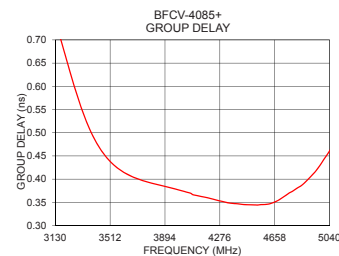
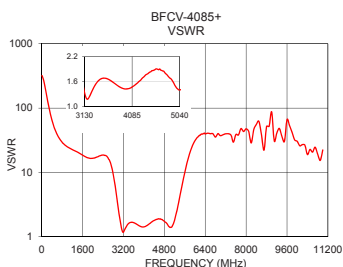
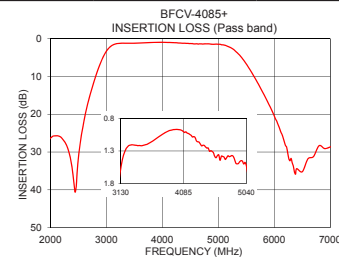
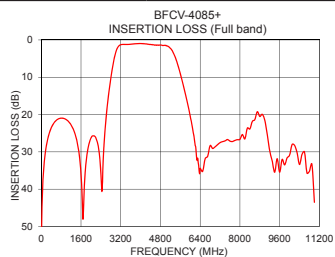
Typical Performance Data at 25°C

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



Notes

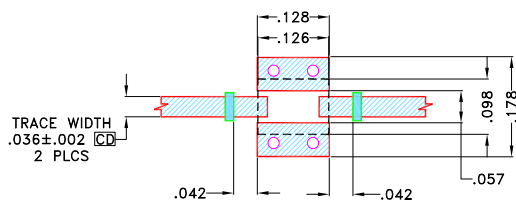
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Pad Connections

RF IN	1
RF OUT	3
GROUND	2,4

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

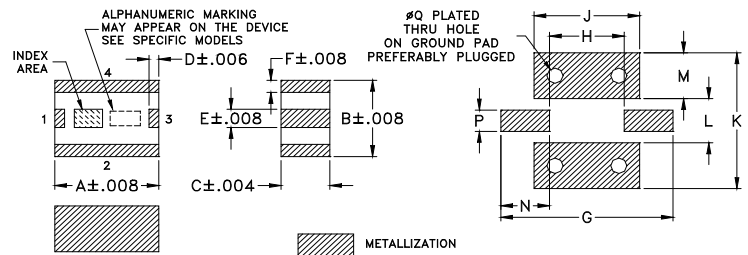


NOTES:

1. TRACE WIDTH & SPACE WIDTH IS SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS $.0168 \pm .0015$ ". COPPER 1/2 OZ. EACH SIDE FOR OTHER MATERIALS TRACE WIDTH & SPACE WIDTH 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 SOLDERMASK

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
.126	.098	.059	.012	.024	.016	.209	.091	.128
3.2	2.5	1.5	.3	.6	.4	5.3	2.3	3.25
K	L	M	N	P	Q	Wt.		
.175	.057	.059	.059	.028	.020	grams		
4.45	1.45	1.5	1.5	.7	.5	.03		

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