

# Ceramic Bandpass Filter

## BFCW-542+

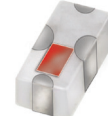
50Ω 4700 to 6000 MHz

### Features

- Wide passband, 4700-6000 MHz
- Low loss, 1.3 dB typ.
- Small size 0603(1.6 x 0.8 mm )
- Temperature stable
- LTCC construction

### Applications

- Wireless communication (ISM)
- Harmonic Rejection
- Transmitters / receivers

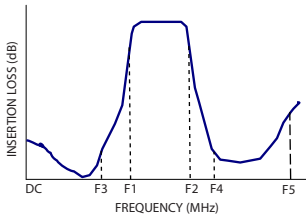


CASE STYLE:JC0603C-1

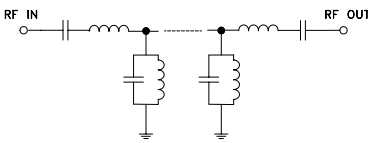
**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Available Tape and Reel at no extra cost  
Reel Size 7" Devices/Reel 20, 50, 100, 200, 500, 1000, 4000

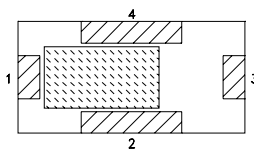
### Specification Definition



### Functional Schematic



### Top View



### Pad Connections

Input	1
Output	3
Ground	2,4

### Electrical Specifications<sup>1,2</sup> at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	5350	—	MHz
	Insertion Loss	F1 - F2	—	1.3	1.8	dB
	VSWR	F1 - F2	4700 - 6000	—	1.5	2.0
Stop Band, Lower	Insertion Loss	DC - F3	30	34	—	dB
Stop Band, Upper	Insertion Loss	F4 - F5	26	34	—	dB

1. Measured on Mini-Circuits Characterization Test Board TB-720+.

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.

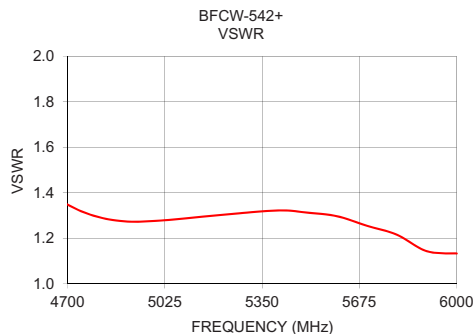
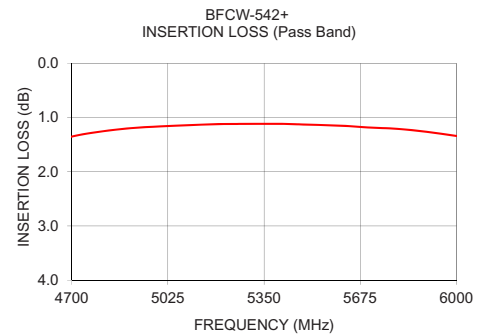
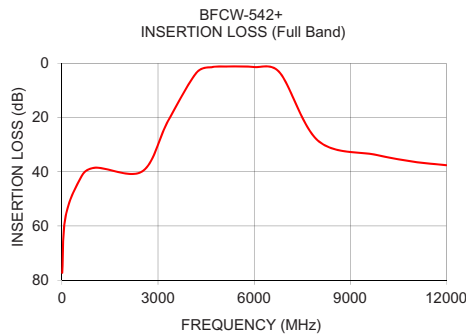
### Maximum Ratings

Operating Temperature	-55°C to +100°C
Storage Temperature*	-55°C to +100°C
RF Power Input**	1W at 25°C

\* 12 months max.

\*\*Passband rating, derate linearly to 0.5W at 100°C ambient

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



### Full Band Performance

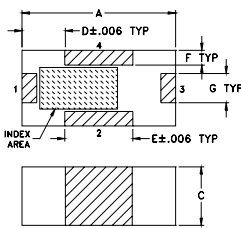
### Pass Band Performance

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	77.28	508.40	4500	1.74	1.61
100	57.45	289.52	4600	1.51	1.45
500	44.18	127.06	4700	1.35	1.35
1000	38.54	85.51	4800	1.26	1.29
2500	39.92	55.73	4900	1.19	1.27
3300	21.56	31.19	5000	1.16	1.28
4200	3.47	2.94	5100	1.14	1.29
4700	1.35	1.35	5200	1.12	1.30
5000	1.16	1.28	5400	1.12	1.32
6000	1.34	1.13	5500	1.13	1.31
6800	3.36	2.06	5600	1.15	1.30
8000	28.56	17.19	5700	1.18	1.26
9800	33.73	23.08	5800	1.21	1.22
11000	36.32	20.32	5900	1.26	1.14
12000	37.56	25.90	6000	1.34	1.13

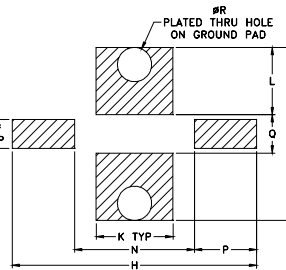
### Pad Connections

Input	1
Output	3
Ground	2,4

### Outline Drawing

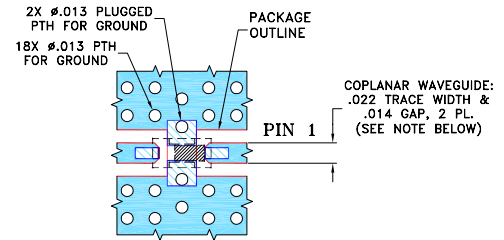


### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

### Demo Board MCL P/N: TB-720+ Suggested PCB Layout (PL-412)



### NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001". 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.

### Outline Dimensions ( $\frac{\text{inch}}{\text{mm}}$ )

A	B	C	D	E	F	G	H	J
.063	.031	.024	.018	.028	.006	.012	.100	.071
1.60	0.79	0.61	0.46	0.71	0.15	0.30	2.54	1.80
K	L	M	N	P	Q	R	wt	
.032	.028	.012	.049	.026	.016	.014	grams	
0.81	0.71	0.30	1.24	0.66	0.41	0.36	0.005	

### Additional Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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](http://www.minicircuits.com/MCLStore/terms.jsp)