

Ceramic Bandpass Filter

BFCN-5100+

50Ω 3100 to 7100 MHz

Features

- Extremely wide passband, 3100-7100 MHz
- Low loss <1.3 dB typ.
- Small size (0.126"x0.063"x0.037")
- Temperature stable
- Hermetically sealed

Applications

- Harmonic Rejection
- Transmitters / receivers
- EW



Generic photo used for illustration purposes only

CASE STYLE: FV1206-6

+RoHS Compliant

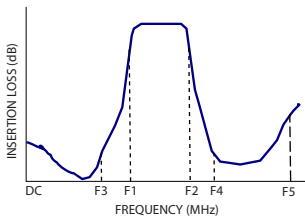
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 3000

Specification Definition



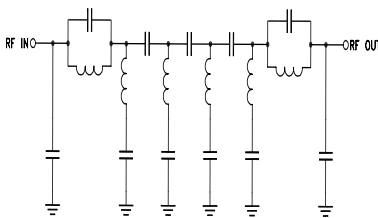
Electrical Specifications^{1,2} at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band Center Frequency	—	—	—	5100	—	MHz
Insertion Loss	F1 - F2	3100 - 7100	—	1.5	2.1	dB
VSWR	F1 - F2	3100 - 7100	—	2.0	—	:1
Stop Band, Lower Insertion Loss	DC - F3	DC - 2100	—	25	—	dB
VSWR	DC - F3	DC - 2100	—	20	—	:1
Stop Band, Upper Insertion Loss	F4 - F5	9500 - 17000	—	20	—	dB
VSWR	F4 - F5	9500 - 17000	—	30	—	:1

1. Measured on Mini-Circuits Characterization Test Board TB-712+.

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

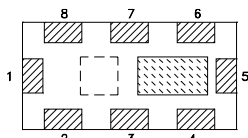
Operating Temperature	-40°C to +85°C
Storage Temperature*	-55°C to +100°C
RF Power Input**	2W at 25°C

* 12 months max.

**Passband rating, derate linearly to 0.5W at 85°C ambient

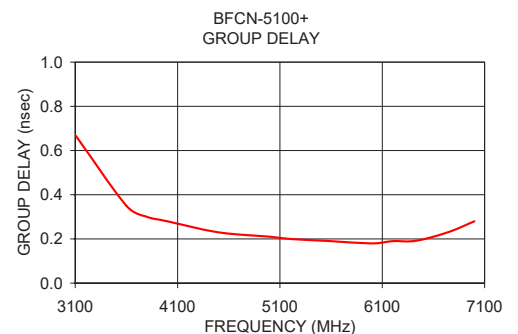
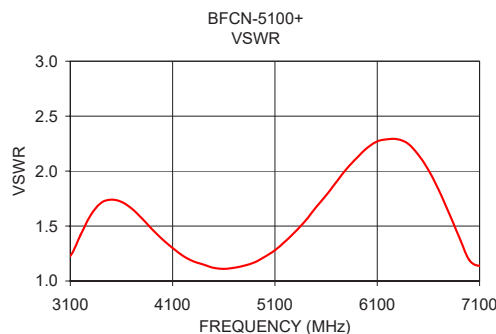
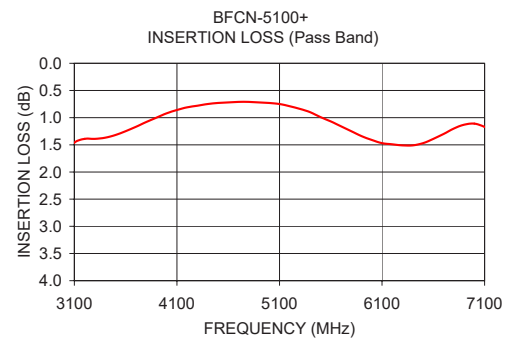
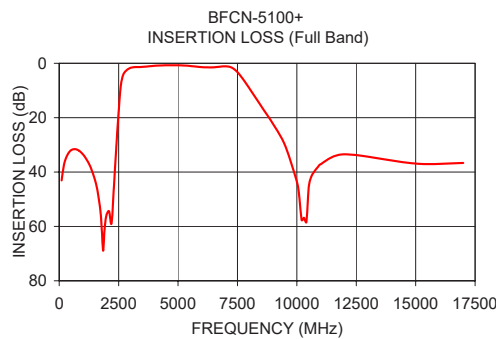
Permanent damage may occur if any of these limits are exceeded.

Top View



Pad Connections

Input	1
Output	5
Ground	2,3,4,6,7,8



Full Band Performance

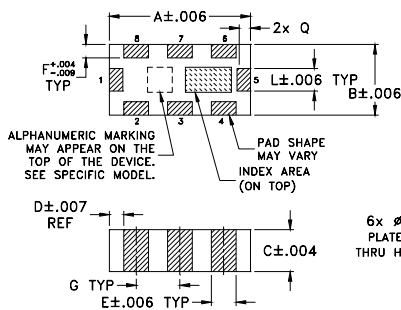
Pass Band Performance

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Insertion Loss (dB)	Group Delay (nsec)
100.00	43.08	331.23	3100.00	1.46	0.67
1000.00	33.50	69.18	3600.00	1.25	0.35
2000.00	55.46	29.88	3800.00	1.08	0.30
2100.00	54.46	25.43	4000.00	0.92	0.28
3100.00	1.46	1.23	4500.00	0.73	0.23
5000.00	0.73	1.22	5000.00	0.73	0.21
6000.00	1.41	2.21	5200.00	0.79	0.20
7000.00	1.11	1.19	5600.00	1.07	0.19
7100.00	1.17	1.14	6000.00	1.41	0.18
9000.00	22.35	32.17	6200.00	1.49	0.19
9500.00	30.15	38.73	6400.00	1.51	0.19
11000.00	37.13	57.48	6600.00	1.39	0.21
12000.00	33.46	102.12	6800.00	1.20	0.24
15000.00	36.89	39.53	7000.00	1.11	0.28
17000.00	36.67	54.34	7100.00	1.17	0.31

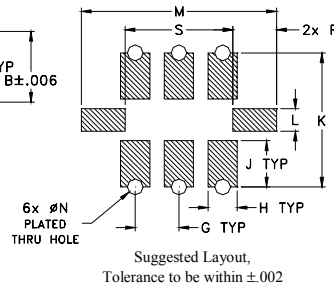
Pad Connections

Input	1
Output	5
Ground	2,3,4,6,7,8

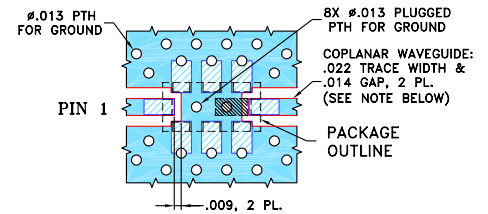
Outline Drawing



PCB Land Pattern



Demo Board MCL P/N: TB-712-D+ Suggested PCB Layout (PL-393)



- NOTE:**
- 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 (inch/mm)

A	B	C	D	E	F	G	H	J	
.126	.063	.037	.013	.022	.012	.039	.026	.041	
3.20	1.60	0.94	0.33	0.56	0.30	0.99	0.66	1.04	
K	L	M	N	P	Q	R	S	wt	
.119	.020	.174	.014	--	.012	.039	.096	grams	
3.02	0.51	4.42	0.36	--	0.30	0.99	2.44	.017	

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.
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