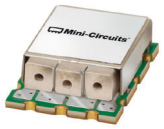
Surface Mount

Bandpass Filter

CBP-1538J+

50Ω 1518 to 1559 MHz



Generic photo used for illustration purposes only
CASE STYLE: MQ1770

The Big Deal

- Good Insertion Loss
- Low VSWR
- Miniature shielded package

Product Overview

CBP-1538J+ is a ceramic coaxial resonator based bandpass filter in a shielded package fabricated using SMT technology. This filter has narrow passband and offers low insertion loss , low VSWR and high power handling for use in satellite communication.

Key Features

Feature	Advantages
High Quality	The CBP-1538J+ filter incorporates High-Q ceramic resonators that enables low insertion loss.
Low VSWR	This filter maintains typical VSWR over passband frequency range making this filter easier to integrate between other components.
Rugged construction	The CBP-1538J+ has been qualified over wide range of thermal, mechanical and environmental conditions including withstanding the stress of extensive solder reflow cycles.

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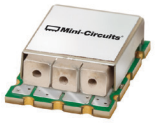


Generic photo used for illustration purposes only
CASE STYLE: MQ1770

Features

- Good Insertion loss
- Low VSWR
- Miniature shielded package

Applications

- Satellite communication
- Test and measurement

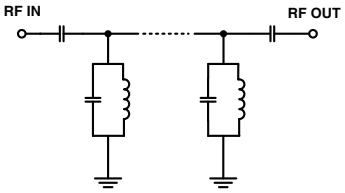
Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	1538	—	MHz
	Insertion Loss	F1-F2	1518-1559	—	1.1	1.7	dB
	VSWR	F1-F2	1518-1559	—	1.6	2.32	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-1390	20	27.4	—	dB
	VSWR	DC-F3	DC-1390	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	1750-3000	20	25.9	—	dB
	VSWR	F4-F5	1750-3000	—	20	—	:1

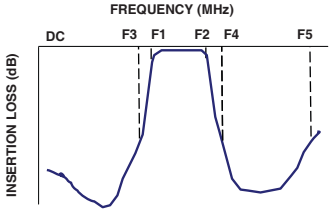
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	8 W

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

Functional Schematic



Typical Frequency Response

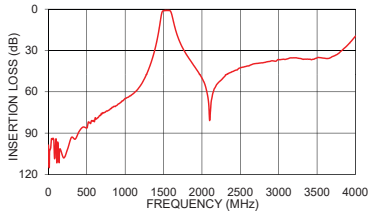


Typical Performance Data at 25°C

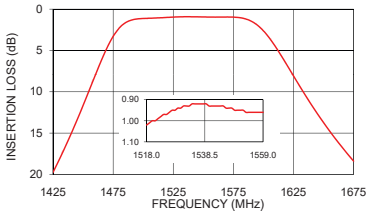
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	98.71	1737.18	1518	5.76
100	94.35	1737.18	1520	5.71
800	72.86	217.15	1522	5.67
1150	59.03	115.81	1524	5.63
1384	30.08	57.91	1526	5.60
1390	28.64	54.29	1528	5.57
1421	20.88	36.97	1530	5.54
1475	3.30	3.08	1534	5.49
1500	1.13	1.23	1538	5.43
1518	1.02	1.23	1540	5.41
1538	0.92	1.09	1542	5.38
1559	0.96	1.29	1544	5.36
1605	3.50	3.92	1546	5.34
1686	20.14	54.98	1548	5.32
1750	28.30	75.53	1550	5.31
1770	30.34	78.97	1552	5.30
1800	33.12	82.73	1554	5.30
2500	42.61	57.91	1556	5.32
3000	36.56	46.96	1558	5.34
4000	19.60	28.49	1559	5.35

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

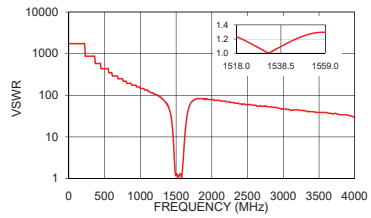
CBP-1538J+
INSERTION LOSS (Full band)



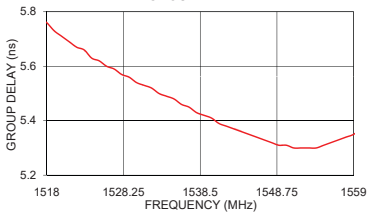
CBP-1538J+
INSERTION LOSS (Pass band)



CBP-1538J+
VSWR



CBP-1538J+
GROUP DELAY

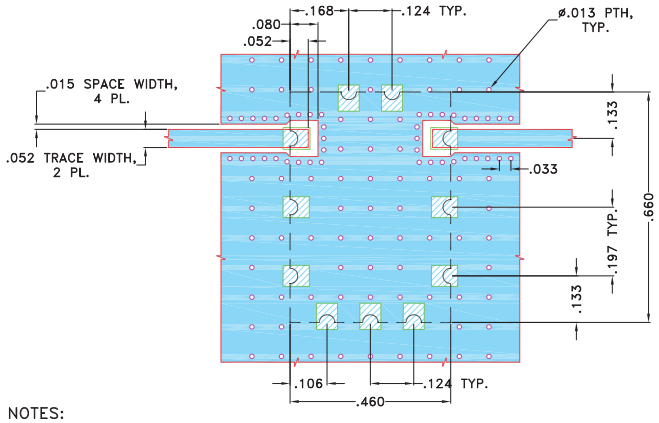


Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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

INPUT	1
OUTPUT	9
GROUND	2,3,4,5,6,7,8,10,11

Demo Board MCL P/N: TB-692+
Suggested PCB Layout (PL-375)



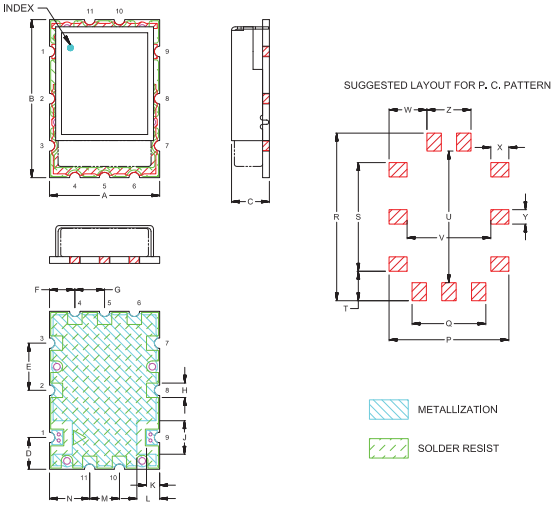
NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS .030"±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE 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	K	L	M	N
.460	**.660**	**.175**	**.133**	**.197**	**.106**	**.124**	**.060**	**.140**	**.055**	**.095**	**.124**	**.168**
11.68	16.76	4.45	3.38	5.00	2.69	3.15	1.52	3.56	1.40	2.41	3.15	4.27

P	Q	R	S	T	U	V	W	X	Y	Z	WT.GRAMS
.500	**.308**	**.700**	**.454**	**.123**	**.550**	**.350**	**.158**	**.075**	**.060**	**.184**	1.8
12.70	7.82	17.78	11.53	3.12	13.97	8.89	4.01	1.91	1.52	4.67	

Note: Please refer to case style drawing for details.