LUMPED LC SURFACE MOUNT

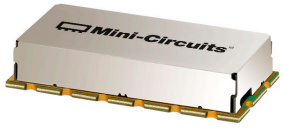
Bandpass Filter

BPF-BV504+

50Ω 478 to 530 MHz

KEY FEATURES

- Low Insertion Loss, 1.7 dB Typ.
- Passband Return Loss, 15dB Typ.
- Miniature Shielded Package

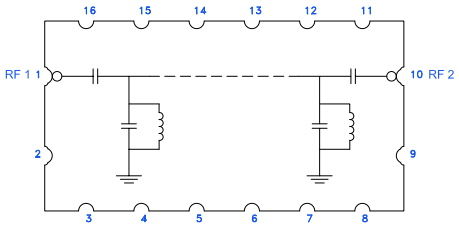


Generic photo used for illustration purposes only

APPLICATIONS

- Police Motor Radio
- Loco Motor Radio
- Wireless Microphone

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' model BPF-BV504+ is a Lumped LC filter that offer a good insertion loss. This bandpass filter covers from 478 to 530 MHz. This filter has high Q capacitors and inductors to achieve a low insertion loss. It has repeatable performance across production lots.

ELECTRICAL SPECIFICATIONS[1,2,3] AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	504	—	MHz
	Insertion Loss	F1-F2	478 - 530	—	1.7	2.5	dB
	Return Loss	F1-F2	478 - 530	12	15	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 400	30	35	—	dB
		F3-F4	400 - 450	18	25	—	
Stopband, Upper	Rejection	F5-F6	560 - 700	15	23	—	dB
		F6-F7	700 - 1200	20	28	—	

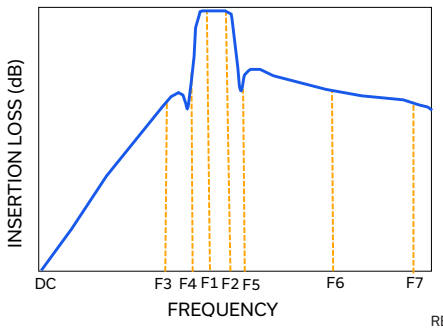
1. Tested in Evaluation Board P/N TB-BPF-BV504+.
2. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.
3. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.

ABSOLUTE MAXIMUM RATINGS[4]

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power[5]	2.5 W at +25°C

4. Permanent damage may occur if any of these limits are exceeded.
5. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 1 W at +85°C.

TYPICAL FREQUENCY RESPONSE AT +25°C



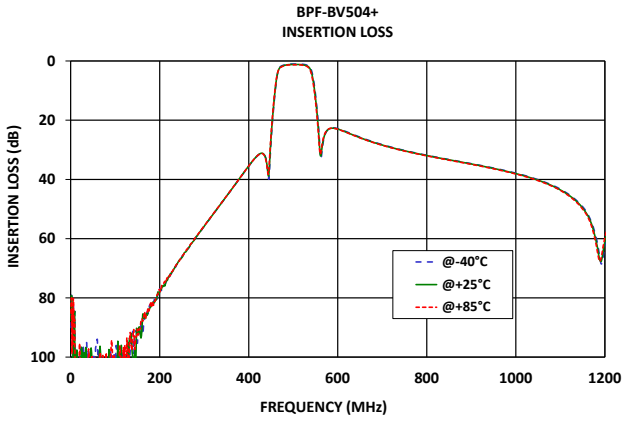
REV. OR
ECO-031166
BPF-BV504+
EDU5535
MCINU
260922

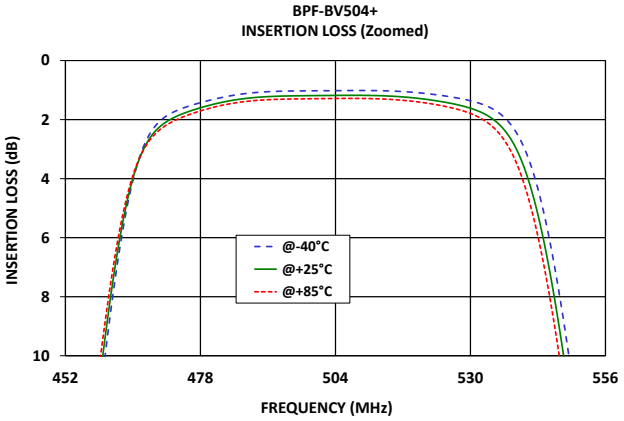
Bandpass Filter

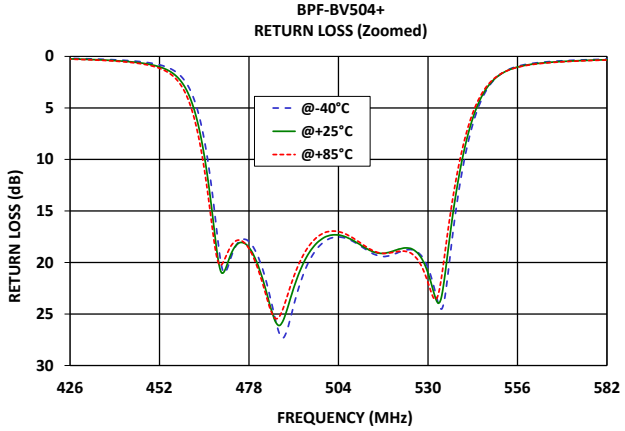
BPF-BV504+

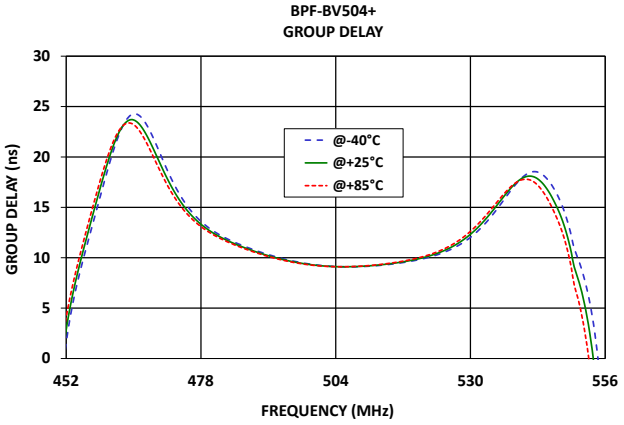
50Ω 478 to 530 MHz

TYPICAL PERFORMANCE GRAPHS









Bandpass Filter

BPF-BV504+

50Ω 478 to 530 MHz

FUNCTIONAL DIAGRAM

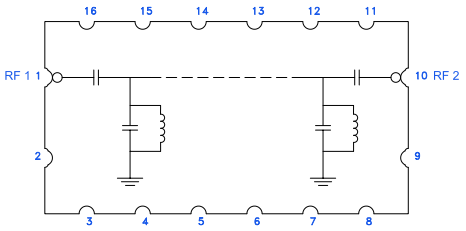
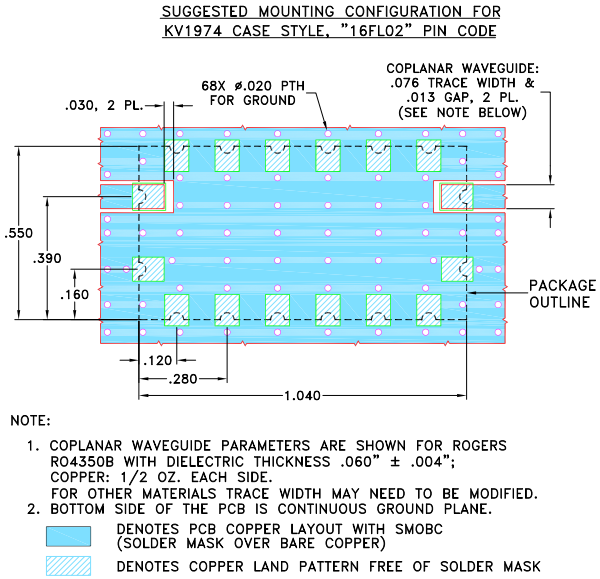


Figure 1. BPF-BV504+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
RF1	1	Connects to RF Input Port
RF2	10	Connects to RF Output Port
GROUND	2-9,11-16	Connects to Ground on PCB, (See drawing PL-507)

SUGGESTED PCB LAYOUT



NOTE:

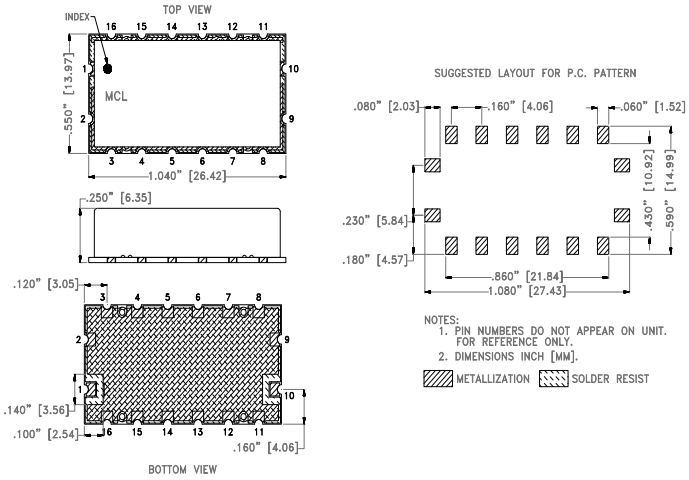
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .060" ± .004"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Figure 2. Suggested PCB Layout

CASE STYLE DRAWING



Unit Weight: 2.5gram

Dimenions are in inches [mm]. Tolerances: 2Pl. ± .03; 3Pl. ± .015

PRODUCT MARKING*: BPF-BV504

*Marking may contain other features or characters for internal lot control.

Bandpass Filter

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50Ω 478 to 530 MHz

ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD. CLICK HERE

Performance Data and Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file) De-embedded to device pads
Case Style	KV1974-1 Lead Finish: Gold over Nickel Plate
RoHS/REACH Status	Compliant
Tape and Reel	F005
Suggested Layout for PCB Design	PL-507
Evaluation Board	TB-BPF-BV504+
	Gerber File
Environmental Rating	ENV02T1
MSL Level	MSL1

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-Circuits' 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/terms/viewterm.html