



# (LUMPED LC) SURFACE MOUNT Bandpass Filter

## BPF-BY250+

50Ω 150 to 350 MHz

### KEY FEATURES

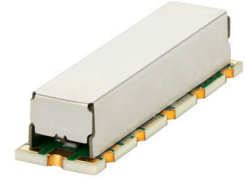
- Low Insertion Loss, 1.5 dB Typ.
- Return Loss, 18 dB Typ.
- Stop Band Rejection, 55 dB Typ.
- Miniature Shielded Package.

### APPLICATIONS

- Test and Measurement.
- Transmitter/Receivers.
- Harmonic Rejection.

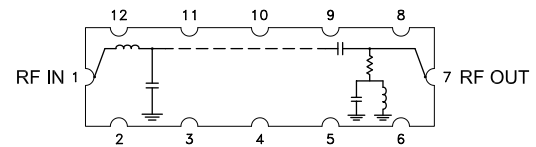
### PRODUCT OVERVIEW

Mini-Circuits' Model-BPF-BY250+ is a Lumped LC filter that offer a good insertion loss and high rejection. This bandpass filter covers from 150 to 350MHz. This filter has high Q capacitors and inductors to achieve a low insertion loss. It has repeatable performance across production lots .



Generic photo used for illustration purposes only

### FUNCTIONAL DIAGRAM



### ELECTRICAL SPECIFICATIONS<sup>1,2</sup> AT +25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units	
Passband	Center Frequency <sup>3</sup>	Fc	—	250	—	MHz	
	Insertion Loss	F1-F2	—	1.5	2.5	dB	
	Return Loss	F1-F2	150 - 350	10	18	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 50	45	58	—	dB
		F3-F4	50 - 75	20	30	—	dB
Stop Band, Upper	Rejection	F5-F6	444 - 500	20	30	—	dB
		F6-F7	500 - 1500	45	55	—	dB
		F7-F8	1500 - 4000	—	30	—	dB

1. Tested in Evaluation Board P/N TB-BPF-BY250+.

2. 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.

3. Typical variation ± 2%

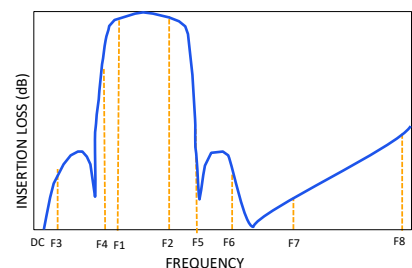
### ABSOLUTE MAXIMUM RATINGS<sup>4</sup>

Parameter	Ratings
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +100 °C
Input Power <sup>5</sup>	0.5 W

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

5. Power rating applies only to signals within the passband.

### TYPICAL FREQUENCY RESPONSE AT +25°C





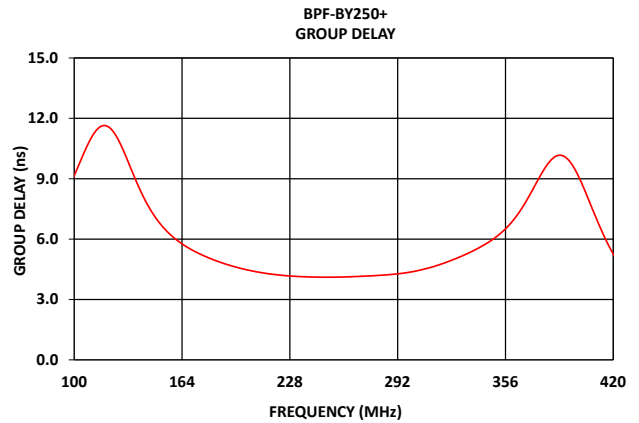
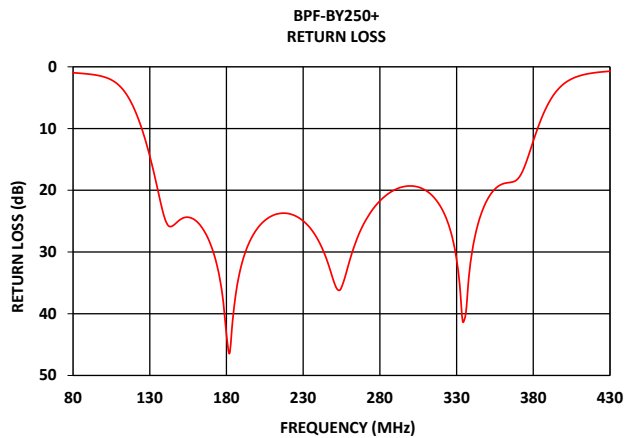
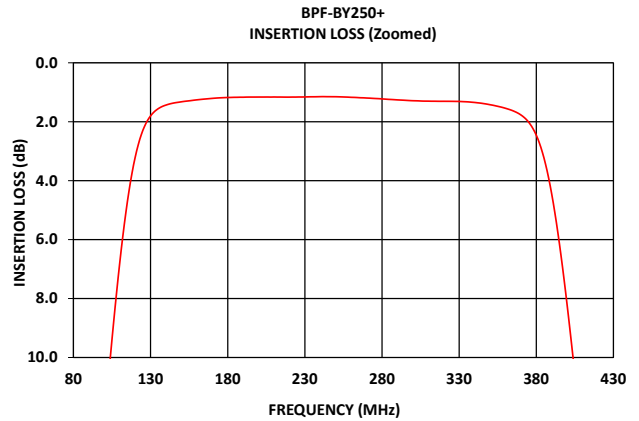
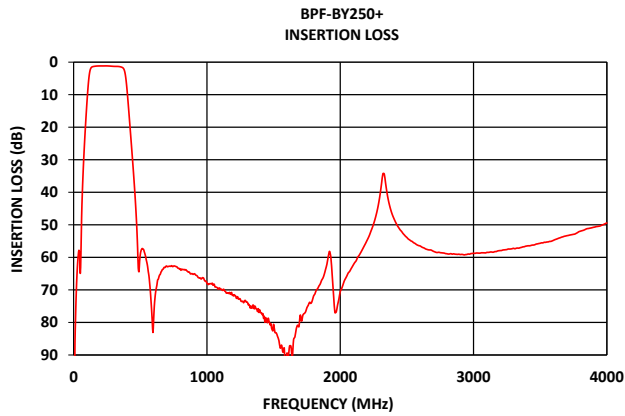
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### TYPICAL PERFORMANCE GRAPHS AT +25°C





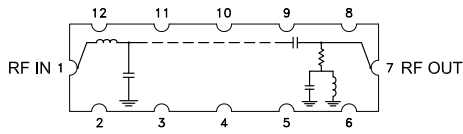
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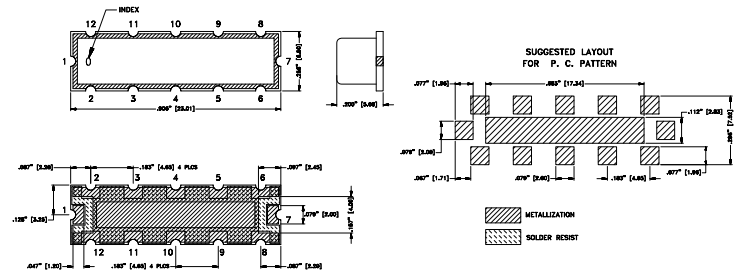
### FUNCTIONAL DIAGRAM



### PAD DESCRIPTION

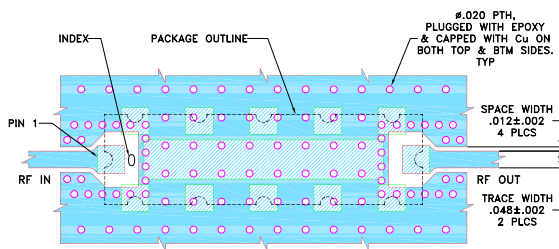
Function	Pad Number	Description
RF1	1	Connects to RF Input Port
RF2	7	Connects to RF Output Port
GROUND	2-6,8-12	Connects to Ground on PCB, (See drawing PL-773)

### CASE STYLE DRAWING



Unit weight: 1.5 grams  
Dimensions are in inches [mm]. Tolerances: 2 Pl.±.03; 3 Pl.±.015

### SUGGESTED PCB LAYOUT (PL-773) SUGGESTED MOUNTING CONFIGURATION FOR ZV3471 CASE STYLE



#### NOTES:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS (R04350B) WITH DIELECTRIC THICKNESS .030±.002. COPPER: 1/2 Oz. EACH SIDE.  
FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
  2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER PATTERN WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
■ DENOTES PCB COPPER PATTERN FREE OF SOLDERMASK

Figure 2. Suggested PCB Layout PL-773



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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASH BOARD.

[CLICK HERE](#)

Performance Data and Graphs	Data
	Graphs
	S-Parameter (S2P Files) Data Set (.zip file) De-embedded to device pads
Case Style	ZV3471 Lead Finish: Gold over Nickel Plate
RoHs Status	Compliant
Tape and Reel	TR-F010
Suggested Layout for PCB Design	PL-773
Evaluation Board	TB-BPF-BY250+
	Gerber File
Environmental Rating	ENV02T1

### 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](http://www.minicircuits.com/terms/viewterm.html)

