



Mini-Circuits

CERAMIC RESONATOR SURFACE MOUNT

## Bandpass Filter

CBP4-A3R5G+

50Ω

3450 to 3550 MHz

## KEY FEATURES

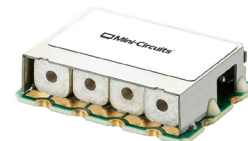
- Good Insertion Loss, 1.6 dB Typ.
- Excellent Rejection, 65 dB Typ.
- Miniature Shielded Package

## APPLICATIONS

- Wireless Communication
- Satellite Communication
- Radar Systems
- Industrial, Scientific and Medical (ISM) Applications
- Radio Astronomy

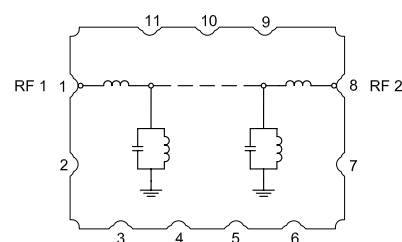
## PRODUCT OVERVIEW

All our coaxial-ceramic resonator filters are built with rugged construction, qualified to withstand multiple demanding reflow cycles. Excellent repeatability across units is achieved through precise tuning and process control.



Generic photo used for illustration purposes only

## FUNCTIONAL DIAGRAM

ELECTRICAL SPECIFICATIONS<sup>1,2,3</sup> AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	—	—	—	3500	—	MHz
	Insertion Loss	F1-F2	3450 - 3550	—	1.6	2.2	dB
	Return Loss	F1-F2	3450 - 3550	10	15	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 3000	58	65	—	dB
		F3-F4	3000 - 3330	20	30	—	
Stopband, Upper	Rejection	F5-F6	3660 - 4050	20	28	—	dB
		F6-F7	4050 - 5500	30	40	—	

1. Tested in Evaluation Board P/N TB-CBP4-A3R5G+.

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.

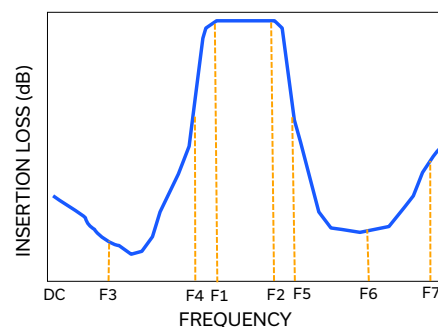
ABSOLUTE MAXIMUM RATINGS<sup>4</sup>

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power <sup>5</sup>	8 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 2 W at +85°C.

## TYPICAL FREQUENCY RESPONSE AT +25°C



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ECO-028461  
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CBP4-A3R5G+  
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260206

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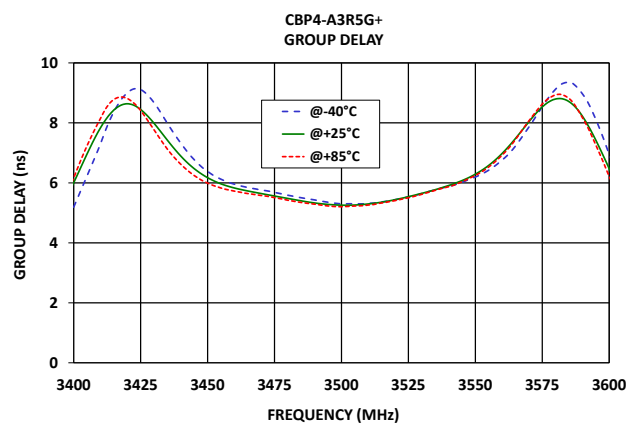
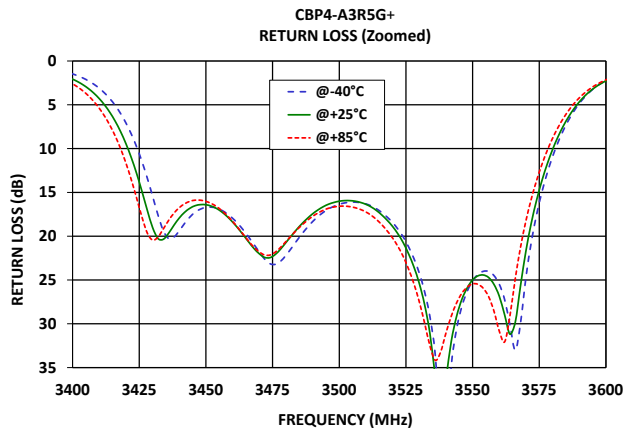
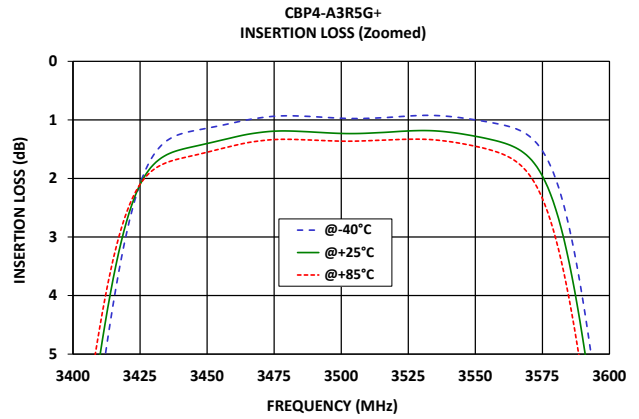
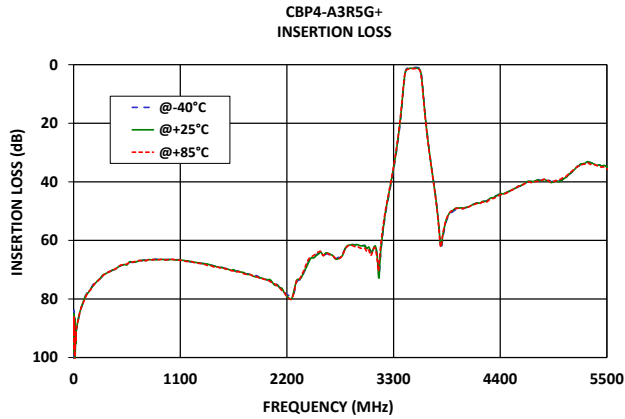
# Bandpass Filter

**CBP4-A3R5G+**

50 $\Omega$

3450 to 3550 MHz

## TYPICAL PERFORMANCE GRAPHS





## FUNCTIONAL DIAGRAM

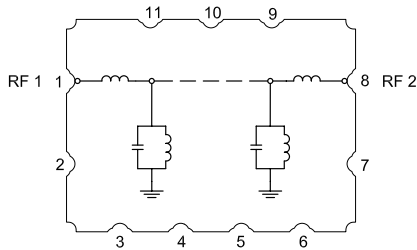
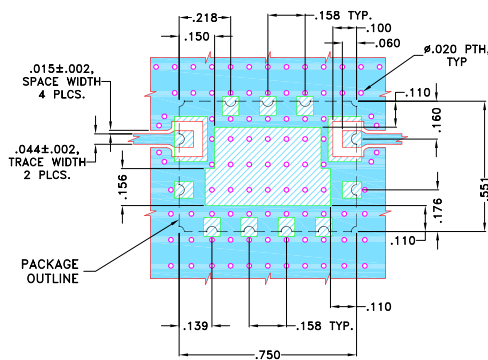


Figure 1. CBP4-A3R5G+ Functional Diagram

## PAD DESCRIPTION

Function	Pad Number	Description
RF1 <sup>2</sup>	1	Connects to RF Input Port
RF2 <sup>2</sup>	8	Connects to RF Output Port
GROUND	2-7, 9-11	Connects to Ground on PCB, (See drawing PL-709)
NC	-	No connection, not used internally. See drawing PL-709 for connection to PCB

## SUGGESTED PCB LAYOUT (PL-709)

SUGGESTED MOUNTING CONFIGURATION FOR  
RZ2511-1 CASE STYLE

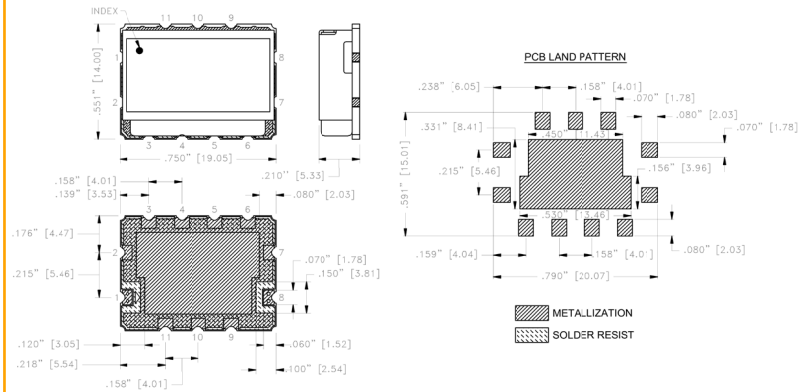
## NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS .023"±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH 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 SOLDERMASK

Figure 2. Suggested PCB Layout PL-709

## CASE STYLE DRAWING



Weight: 2.4 gram

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

## PRODUCT MARKING\*: CBP4-A3R5G

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



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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	RZ2511-1    Lead Finish: Electroless Nickel Immersion Gold
RoHS Status	Compliant
Tape and Reel	F122
Suggested Layout for PCB Design	PL-709
Evaluation Board	TB-CBP4-A3R5G+
	Gerber File
Environmental Rating	ENV54

## 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)

