



### THE BIG DEAL

- Low Insertion Loss, 1.5 dB Typ.
- High Rejection, 70 dB Typ.
- Fractional Bandwidth from <1 to 25%
- Power Handling: 10 Watts
- Compact Size, 19.05 x 14 mm

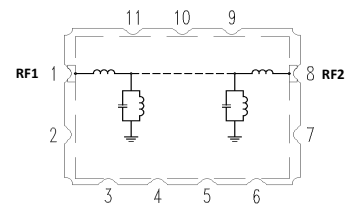


Generic photo used for illustration purposes only

### APPLICATIONS

- Aerospace and Defense
  - S-band Radar
- Satellite
  - S-band Communication Systems

### FUNCTIONAL DIAGRAM



### PRODUCT OVERVIEW

All our Surface Mount 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.

### KEY FEATURES

Features	Advantages
Low Insertion Loss, 1.5 dB Typ.	Low signal loss results in better SNR in signal chain.
Fast roll-off (98%, 0.29dB/MHz at 20dB point)	Higher selectivity results in better adjacent channel rejection and dynamic range.
Excellent power handling, 10W	Well suited for transmitter applications.
Rugged Construction	These filter assemblies have been qualified over a wide range of thermal, mechanical and environmental conditions including withstanding the stress of extensive solder reflow cycles.
Small Size, 19.05 x 14 mm	Very well suited for high performance applications where size is a constraint.



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

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	—	—	—	3180	—	MHz
	Insertion Loss	F1-F2	3126 - 3234	—	1.5	2.2	dB
	Return Loss	F1-F2	3126 - 3234	10	15	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 2600	55	70	—	dB
		F3-F4	2600 - 2990	20	30	—	
Stop Band, Upper	Rejection	F5-F6	3360 - 3460	20	30	—	dB
		F6-F7	3460 - 4000	37	50	—	
		F7-F8	4000 - 6300	—	35	—	

1. Tested in Evaluation Board P/N TB-CBP4-3180AG+.

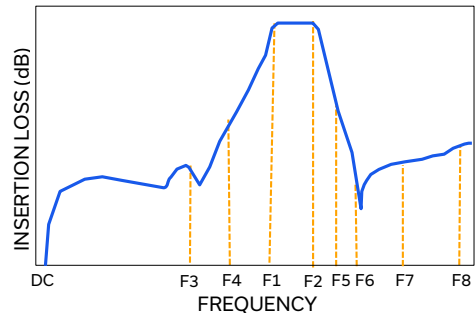
### ABSOLUTE MAXIMUM RATINGS<sup>2</sup>

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power <sup>3</sup>	10W at 25°C

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

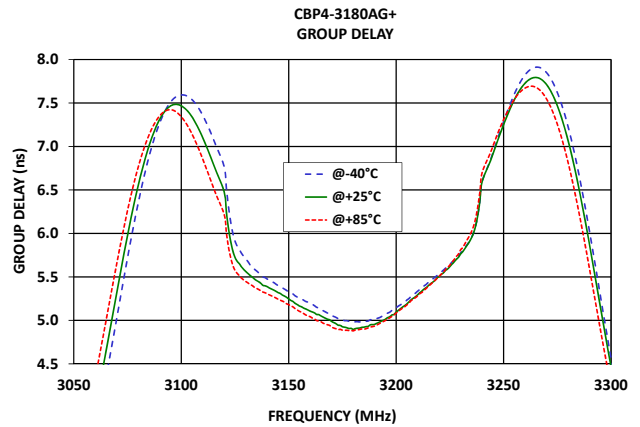
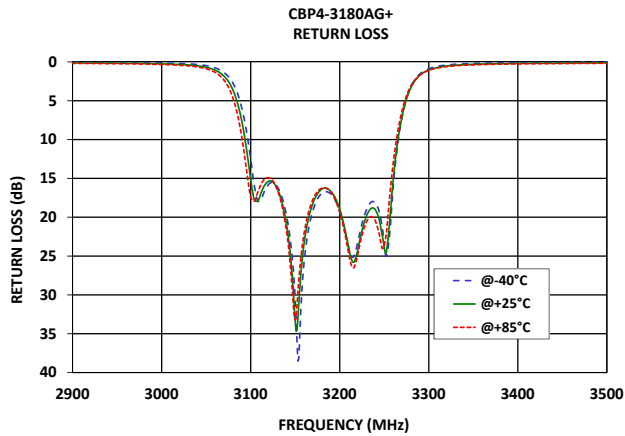
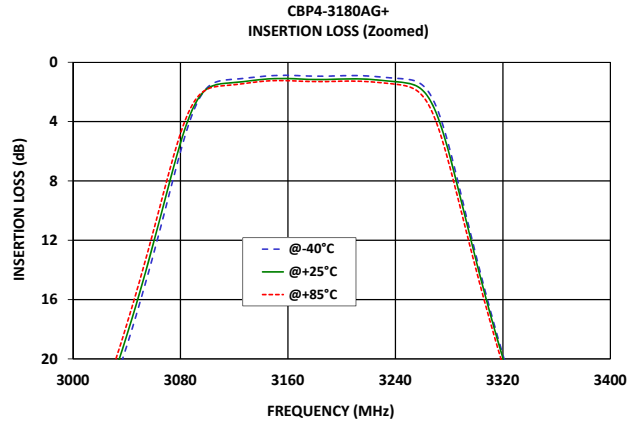
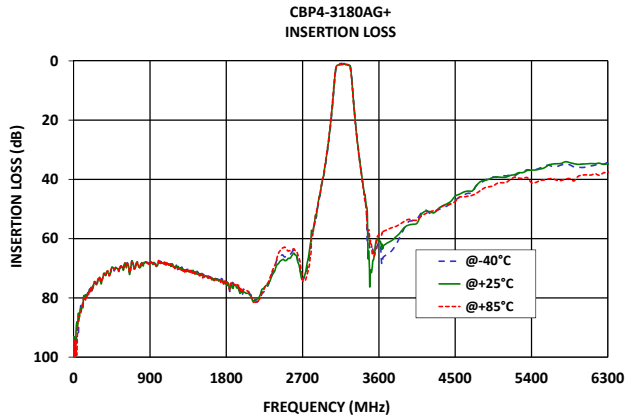
3. Passband rating

### TYPICAL FREQUENCY RESPONSE



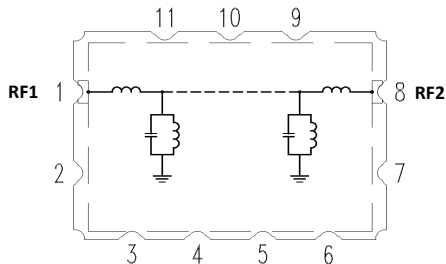


### TYPICAL PERFORMANCE GRAPHS





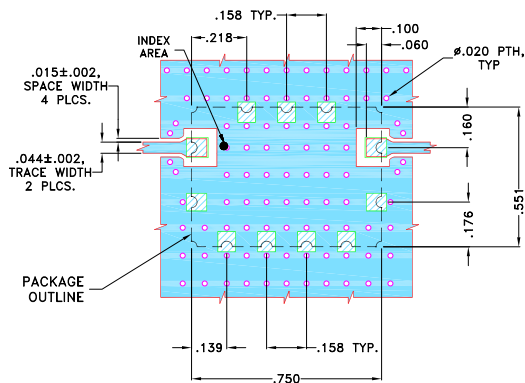
### FUNCTIONAL DIAGRAM



### PAD DESCRIPTION

Function	Pad Number	Description
RF1	1	Connects to RF Input Port
RF2	8	Connects to RF Output Port
GROUND	2,3,4,5,6,7 9,10,11	Connects to Ground on PCB, (See drawing PL-581)
NC	—	No connection, not used internally. See drawing PL-581 for connection to PCB

### SUGGESTED PCB LAYOUT (PL-581)

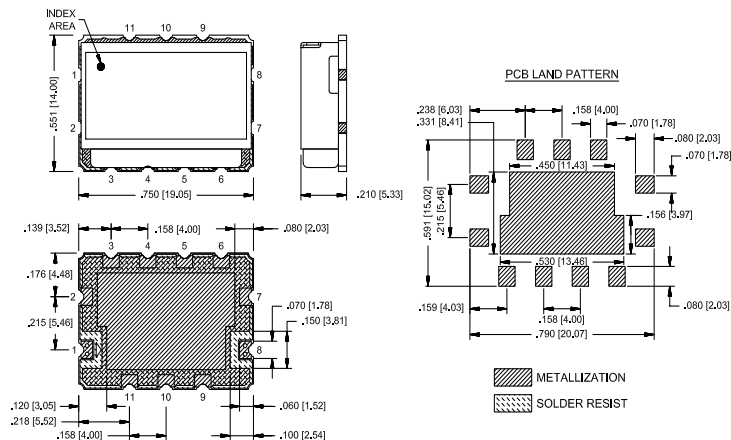


NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS (R04350B) 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

### CASE STYLE DRAWING



Weight: 2.5 grams  
Dimensions are in inches(mm). Tolerance: 2PL, ±.03; 3PL, ±.015

### PRODUCT MARKING\*: CBP4-3180AG

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



CERAMIC RESONATOR SURFACE MOUNT

# Bandpass Filter

## CBP4-3180AG+

Mini-Circuits

50Ω 3126 to 3234 MHz

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	RZ2511-1 Lead Finish: Electroless Nickel Immersion Gold
RoHs Status	Compliant
Tape and Reel	TR-F122
Suggested Layout for PCB Design	PL-581
Evaluation Board	TB-CBP4-3180AG+
	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)

