CERAMIC RESONATOR SURFACE MOUNT

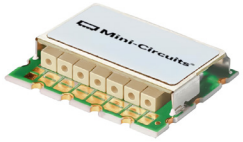
# Band Pass Filter

# CBP2-1962BV+

50Ω 1837 to 2087 MHz

## THE BIG DEAL

- Good Insertion Loss, 1.8 dB Typ.
- Excellent Rejection, 70 dB Typ.
- Good Return Loss, 15 dB Typ.
- Miniature Shielded Package

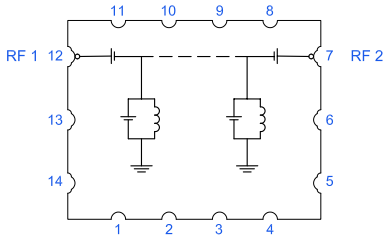


*Generic photo used for illustration purposes only*

## APPLICATIONS

- Aerospace
- General
- Satellite
- Telecommunications and Mobile Networks

## FUNCTIONAL DIAGRAM




## 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 tunning and process control.

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

| Parameter | | F# | Frequency (MHz) | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| Passband | Center Frequency | — | — | — | 1962 | — | MHz |
| | Insertion Loss | F1-F2 | 1837 - 2087 | — | 1.8 | 2.5 | dB |
| | Return Loss | F1-F2 | 1837 - 2087 | 10 | 15 | — | dB |
| Stopband, Lower | Rejection | DC-F3 | DC - 1300 | 60 | 70 | — | dB |
| | | F3-F4 | 1300 - 1720 | 20 | 30 | — | |
| Stopband, Upper | Rejection | F5-F6 | 2210 - 2350 | 20 | 30 | — | dB |
| | | F6-F7 | 2350 - 3400 | 40 | 50 | — | |

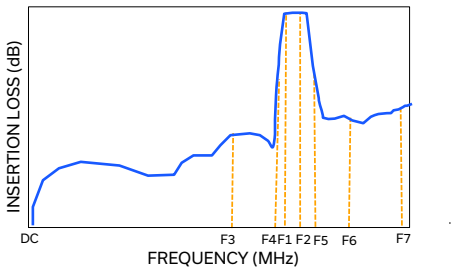
1. Tested in Evaluation Board P/N TB-CBP2-1962BV+.
2. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.

## ABSOLUTE MAXIMUM RATINGS[3]

| | |
|---|---|
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -55°C to +100°C |
| Input Power[4] | 10 W at +25°C |

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




REV. OR
ECO-027744
EDU5205
CBP2-1962BV+
URJ
251122

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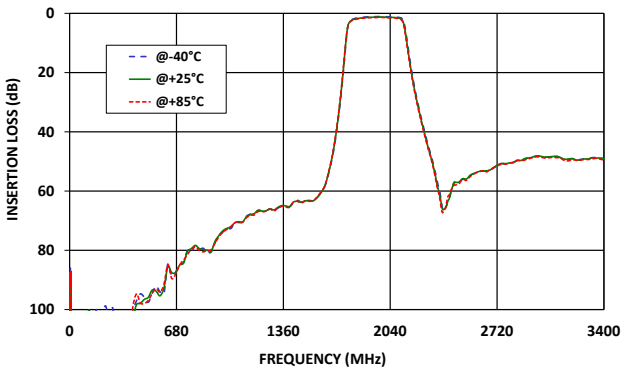
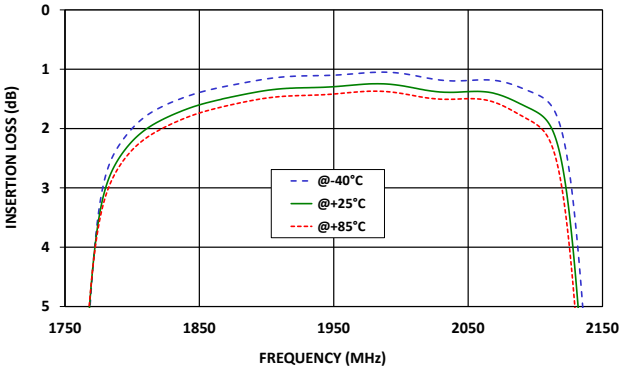
## TYPICAL PERFORMANCE GRAPHS

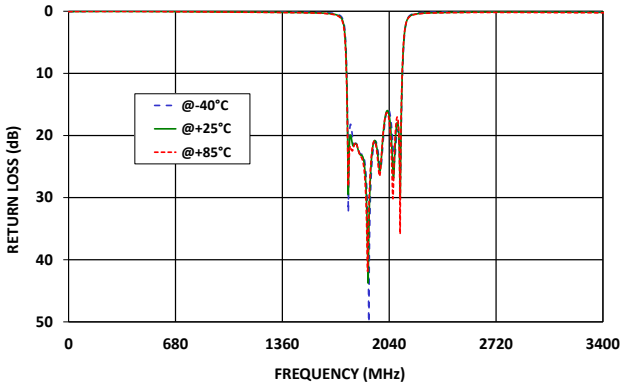
CBP2-1962BV+
INSERTION LOSS



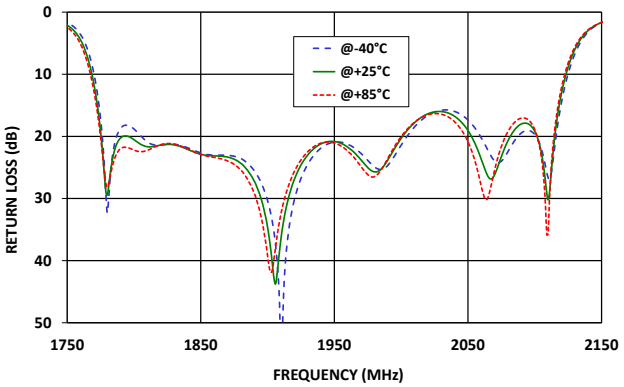

CBP2-1962BV+
INSERTION LOSS (Zoomed)



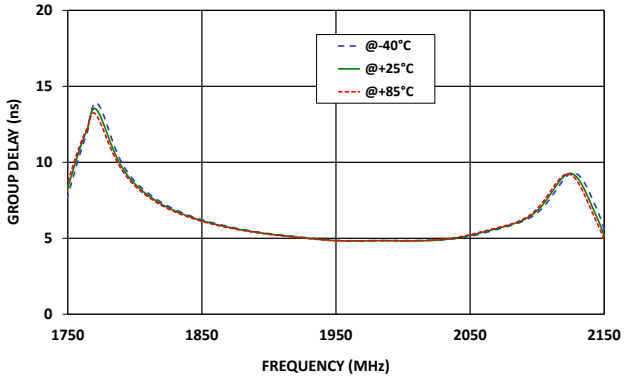

CBP2-1962BV+
RETURN LOSS




CBP2-1962BV+
RETURN LOSS (Zoomed)




CBP2-1962BV+
GROUP DELAY



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## FUNCTIONAL DIAGRAM

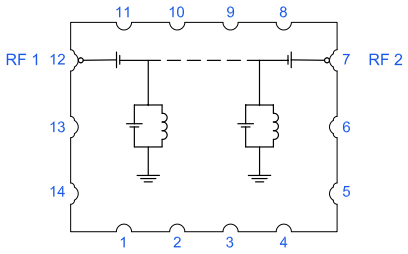


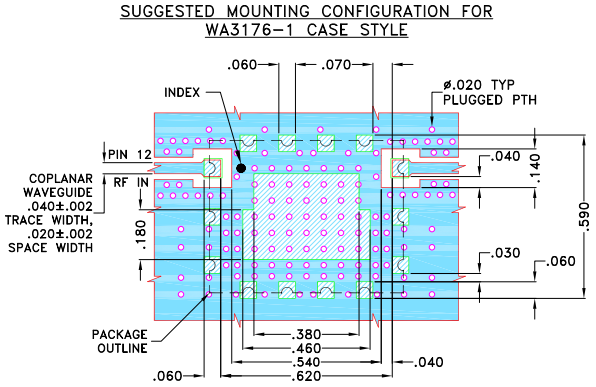

Figure 1. CBP2-1926BV+ Functional Diagram

## PAD DESCRIPTION

| Function | Pad Number | Description |
|---|---|---|
| RF1[5] | 12 | Connects to RF Input Port |
| RF2[5] | 7 | Connects to RF Output Port |
| GROUND | 1-6,8-11,13,14 | Connects to Ground on PCB, (See drawing PL-722) |

5. This filter is bi-directional; RF1 and RF2 ports may be interchanged, see S-parameters for actual performance.

## SUGGESTED PCB LAYOUT



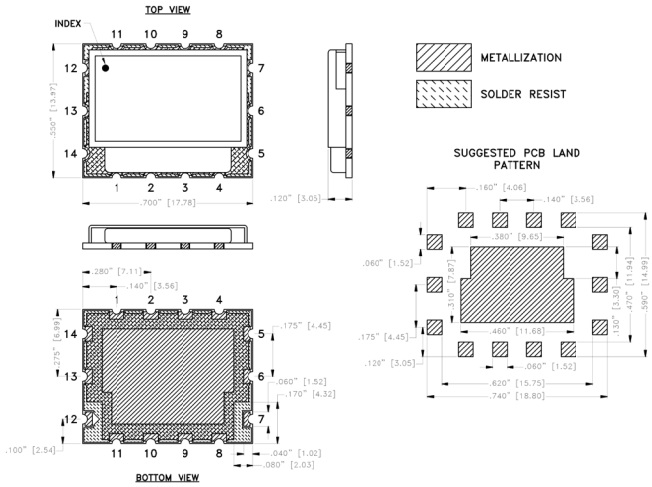

NOTES:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS .020±.0015. COPPER: 1/2 Oz. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Figure 2. Suggested PCB Layout

## CASE STYLE DRAWING




Weight: 1.3 grams
Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

## PRODUCT MARKING*: CBP2-1962BV

*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 & Graphs** | Data<br>Graphs<br>S-Parameter (S2P Files) Data Set (.zip file) De-embedded to device pads |
| **Case Style** | WA3176-1 Lead Finish: Gold over Nickel Plate |
| **RoHS/REACH Status** | Compliant |
| **Tape and Reel** | F122 |
| **Suggested Layout for PCB Design** | PL-722 |
| **Evaluation Board** | TB-CBP2-1962BV+<br>Gerber File |
| **Environmental Rating** | ENV54 |
| **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.

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