COAXIAL

# DC Block BNC

# BLK-222+

50Ω 10 to 2200 MHz

## THE BIG DEAL

- Low Insertion Loss
- Rugged Unibody Construction
- Off-the-shelf availability

*Generic photo used for illustration purposes only*

| Model No. | BLK-222+ |
|---|---|
| Case Style | FF747 |
| Connectors | BNC Female<br>BNC Male |

***+RoHS Compliant***
*The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications*

## APPLICATIONS

- CATV
- Test and Measurement Instrumentation
- Communication Systems
- Defense Systems

## PRODUCT OVERVIEW

Mini-Circuits' BLK-222+ is a coaxial DC Block supporting a wide range of applications from 10 MHz to 2200 MHz including test and measurement. This model provides low insertion loss, excellent return loss and voltage handling upto 100V. This unit features BNC-Female connector at one end and BNC-Male at another end and comes in rugged unibody.

## KEY FEATURES

| Features | Advantages |
|---|---|
| Wideband, 10 MHz to 2200 MHz | Wide frequency range up to 2200 MHz provides application flexibility and makes this model ideal for broad- band and multi-band use. |
| Excellent Return Loss, 33 dB typ at 1000 MHz | Provides good matching for 50Ω systems and minimizes signal reflections across wide frequency range enabling its use in test and measurement. |
| Low insertion loss, 0.22 dB typ at 2200 MHz | Provides excellent signal power transmission from input to output. |
| Very wide operating temperature range, -55 to +100˚C | Withstands wide operating conditions |

## ELECTRICAL SPECIFICATIONS AT 25°C

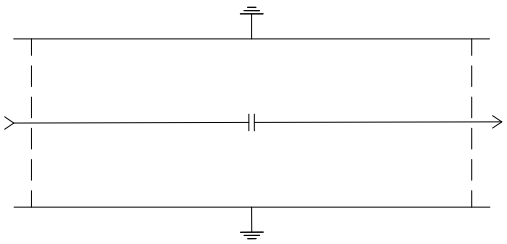
| Parameter | Condition (MHz) | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|
| Frequency Range | | 10 | — | 2200 | MHz |
| Insertion Loss | 10 - 100 | — | 0.04 | 0.15 | dB |
| | 100 - 500 | — | 0.10 | 0.35 | |
| | 500 - 1000 | — | 0.16 | 0.45 | |
| | 1000 - 2200 | — | 0.22 | 0.70 | |
| Return Loss | 10 - 100 | 30 | 40 | — | dB |
| | 100 - 500 | 24 | 33 | — | |
| | 500 - 1000 | 22 | 33 | — | |
| | 1000 - 2200 | 14 | 27 | — | |

## MAXIMUM RATINGS

| Parameter | Ratings |
|---|---|
| Operating Case Temperature | -55 °C to +100 °C |
| Storage Temperature | -55 °C to +100 °C |
| DC Input Voltage at inner/outer conductor | 100V max. |
| RF Input Power | 10W max at 25 °C |

Permanent damage may occur if any of these limits are exceeded. Derate linearly to 5W at 100°C ambient.

## ELECTRICAL SCHEMATIC



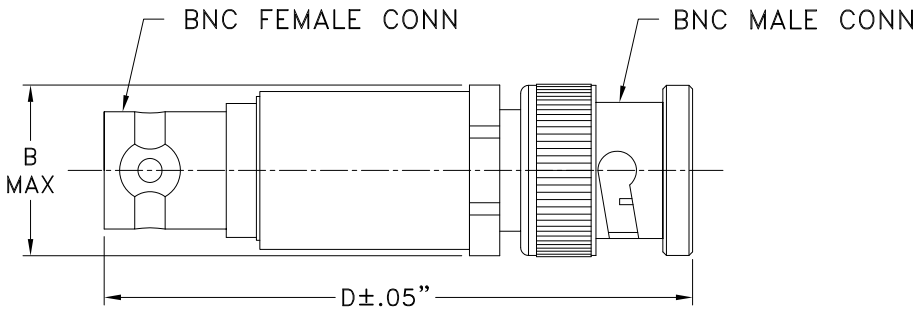
# DC Block BNC

# BLK-222+

## COAXIAL CONNECTIONS

| | |
|---|---|
| **PORT 1** | BNC-Female |
| **PORT 2** | BNC-Male |

## OUTLINE DRAWING




## OUTLINE DIMENSIONS (Inch / mm)

| | B | D | Weight Grams |
|---|---|---|---|
| inches | .62 | 1.94 | |
| mm | 15.75 | 49.28 | 30.0 |

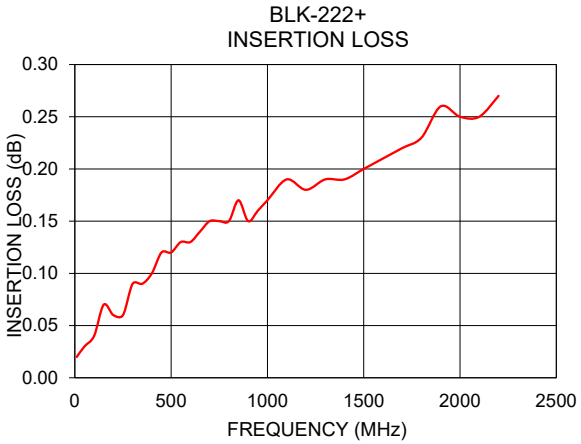
Note. Please refer to case style drawing for details

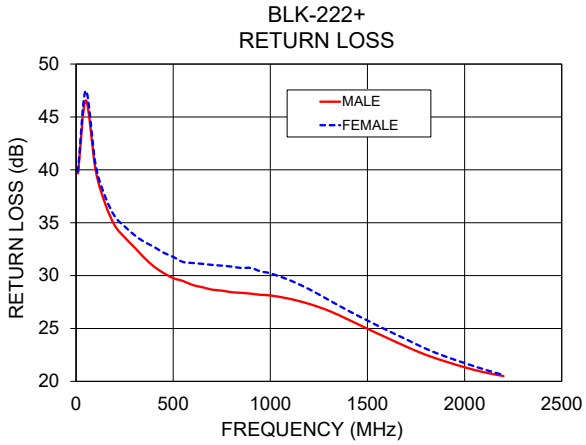
# DC Block BNC

# BLK-222+

## TYPICAL PERFORMANCE DATA

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | |
|---|---|---|---|
| | | Male | Female |
| 10 | 0.02 | 39.66 | 39.85 |
| 50 | 0.03 | 46.56 | 47.48 |
| 100 | 0.04 | 40.04 | 40.53 |
| 250 | 0.06 | 33.62 | 34.65 |
| 400 | 0.10 | 30.87 | 32.73 |
| 500 | 0.12 | 29.76 | 31.77 |
| 600 | 0.13 | 29.11 | 31.19 |
| 750 | 0.15 | 28.58 | 30.94 |
| 900 | 0.15 | 28.29 | 30.72 |
| 1000 | 0.17 | 28.12 | 30.21 |
| 1200 | 0.18 | 27.32 | 28.71 |
| 1400 | 0.19 | 25.85 | 26.69 |
| 1500 | 0.20 | 24.97 | 25.75 |
| 1600 | 0.21 | 24.12 | 24.84 |
| 1800 | 0.23 | 22.51 | 23.09 |
| 1900 | 0.26 | 21.89 | 22.36 |
| 2200 | 0.27 | 20.50 | 20.60 |




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-Circuit's applicable established test performance criteria and measurement instructions.

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# DC Block, BNC BLK-222+

## *Typical Performance Data*

| FREQUENCY (MHz) | INSERTION LOSS (dB) | MALE RETURN LOSS (dB) | FEMALE RETURN LOSS (dB) |
|---|---|---|---|
| 1 | 0.07 | 18.73 | 18.74 |
| 10 | 0.02 | 39.66 | 39.85 |
| 50 | 0.03 | 46.56 | 47.48 |
| 100 | 0.04 | 40.04 | 40.53 |
| 150 | 0.07 | 36.79 | 37.46 |
| 200 | 0.06 | 34.71 | 35.58 |
| 250 | 0.06 | 33.62 | 34.65 |
| 300 | 0.09 | 32.68 | 33.84 |
| 350 | 0.09 | 31.70 | 33.20 |
| 400 | 0.10 | 30.87 | 32.73 |
| 450 | 0.12 | 30.25 | 32.17 |
| 500 | 0.12 | 29.76 | 31.77 |
| 550 | 0.13 | 29.49 | 31.29 |
| 600 | 0.13 | 29.11 | 31.19 |
| 650 | 0.14 | 28.90 | 31.11 |
| 700 | 0.15 | 28.67 | 31.01 |
| 750 | 0.15 | 28.58 | 30.94 |
| 800 | 0.15 | 28.43 | 30.85 |
| 850 | 0.17 | 28.37 | 30.72 |
| 900 | 0.15 | 28.29 | 30.72 |
| 950 | 0.16 | 28.18 | 30.40 |
| 1000 | 0.17 | 28.12 | 30.21 |
| 1100 | 0.19 | 27.80 | 29.56 |
| 1200 | 0.18 | 27.32 | 28.71 |
| 1300 | 0.19 | 26.68 | 27.70 |
| 1400 | 0.19 | 25.85 | 26.69 |
| 1500 | 0.20 | 24.97 | 25.75 |
| 1600 | 0.21 | 24.12 | 24.84 |
| 1700 | 0.22 | 23.28 | 23.97 |
| 1800 | 0.23 | 22.51 | 23.09 |
| 1900 | 0.26 | 21.89 | 22.36 |
| 2000 | 0.25 | 21.33 | 21.73 |
| 2100 | 0.25 | 20.86 | 21.13 |
| 2200 | 0.27 | 20.50 | 20.60 |
| 2300 | 0.27 | 20.19 | 20.15 |
| 2400 | 0.28 | 19.93 | 19.80 |
| 2500 | 0.28 | 19.72 | 19.54 |
| 2600 | 0.31 | 19.59 | 19.32 |
| 2700 | 0.32 | 19.53 | 19.20 |
| 2800 | 0.32 | 19.51 | 19.09 |
| 2900 | 0.33 | 19.50 | 19.12 |
| 3000 | 0.34 | 19.57 | 19.19 |

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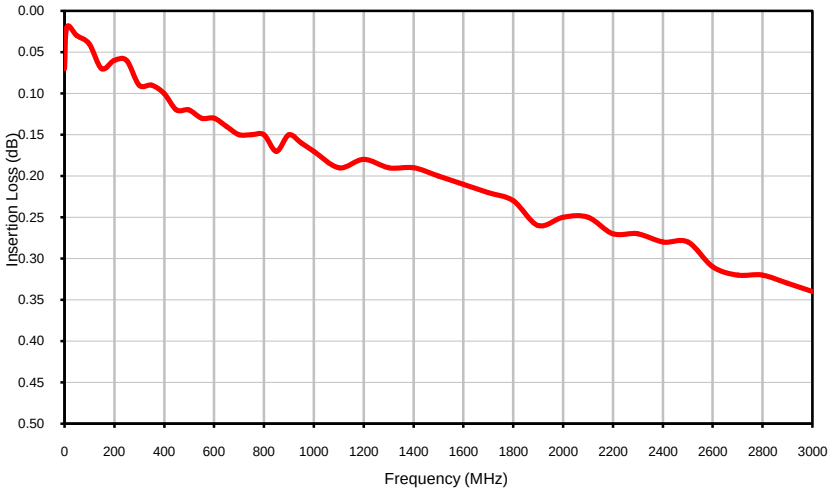
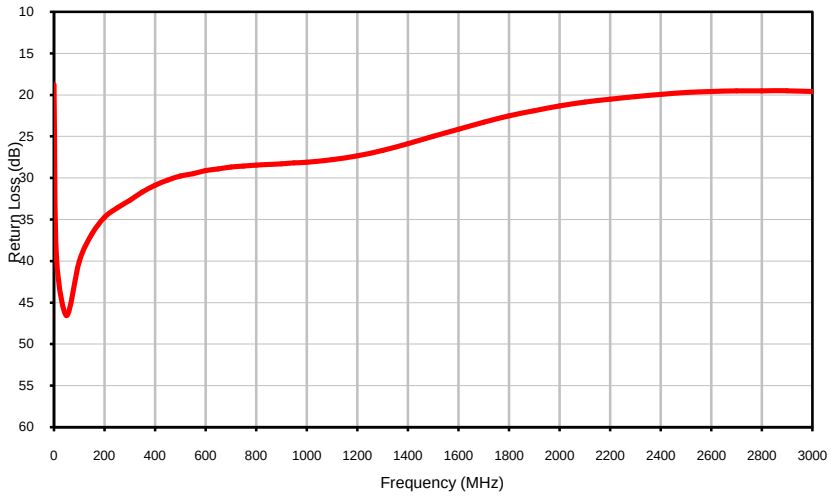
# DC Block, BNC BLK-222+

## *Typical Performance Curves*

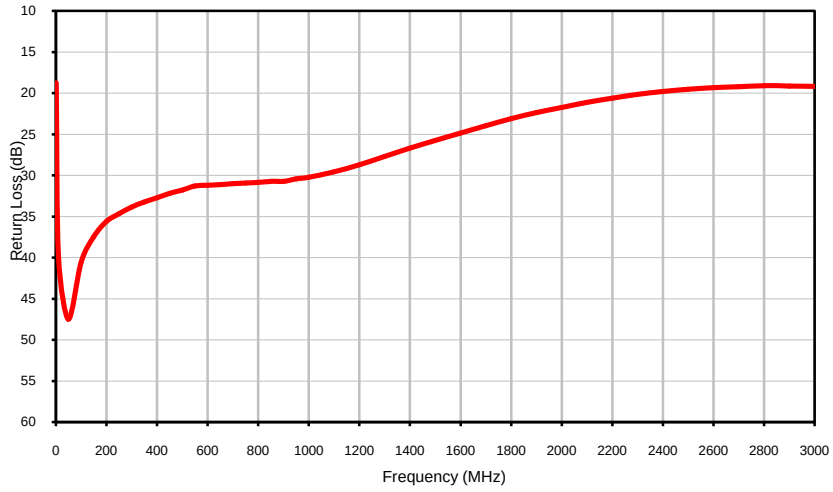
**Insertion Loss**




**Male Return Loss**




**Female Return Loss**

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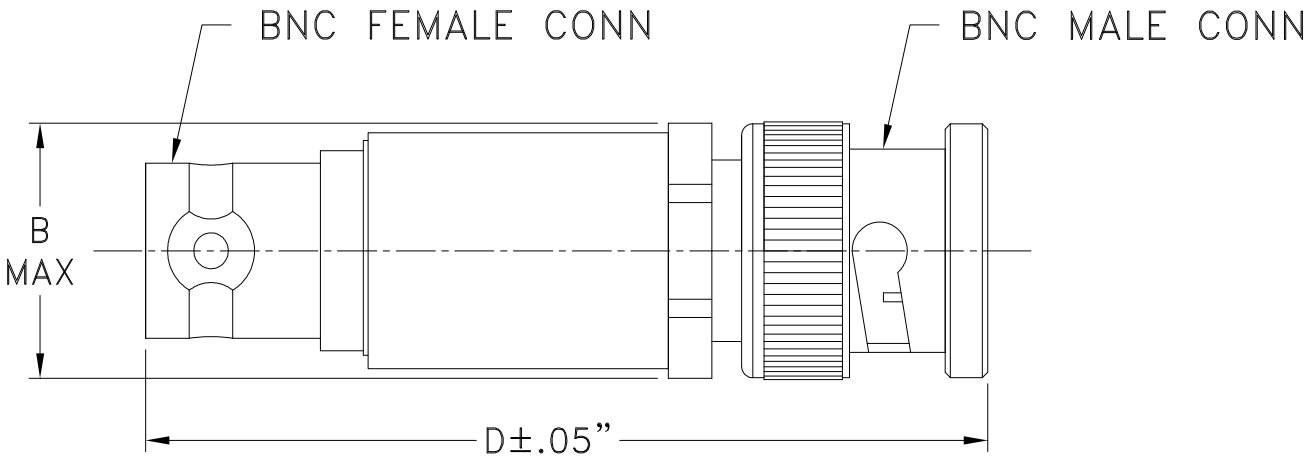
# Case Style FF

## Outline Dimensions FF747




| CASE #. | A | B | C | D | E | WT GRAMS |
|---|---|---|---|---|---|---|
| FF747 | --<br>-- | .62<br>(15.75) | --<br>-- | 1.94<br>(49.28) | --<br>-- | 30.0 |

**Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030**

**Notes:**

1. Case material: Brass.
2. Case finish: Nickel plate.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# Environmental Specifications ENV28

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification | Test/Inspection Condition | Reference/Spec |
|---|---|---|
| Operating Temperature | -55° to 100°C<br>Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 100° C<br>Ambient Environment | Individual Model Data Sheet |
| Barometric Pressure | 100,000 Feet | MIL-STD-202, Method 105, Condition D |
| Humidity | 90% RH, 65°C<br>Units may require bake-out after humidity to restore full performance. | MIL-STD-202, Method 103 |
| Thermal Shock | -65° to 125°C, 5 cycles | MIL-STD-202, Method 107, Condition B |
| Vibration (High Frequency) | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36) | MIL-STD-202, Method 204, Condition D |
| Mechanical Shock | 100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18) | MIL-STD-202, Method 213, Condition I |


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