



### THE BIG DEAL

- BNC-Male Connector
- Excellent Return Loss, 26 dB typ.
- Built-in chain to attach to equipment rack

### APPLICATIONS

- Cellular Communications
- Satellite Communications
- Test set-up



Generic photo used for illustration purposes only

|            |            |
|------------|------------|
| Model No.  | BTRM-50CN+ |
| Case Style | LL1188     |
| Connectors | BNC-Male   |

#### +RoHS Compliant

The +Suffix identifies RoHS Compliance.  
See our website for methodologies and qualifications

### PRODUCT OVERVIEW

Mini-Circuits' BTRM-50CN+ is a wideband 50Ω termination capable of absorbing signals up to 0.5W from DC to 4 GHz. This model provides excellent return loss across its entire operating frequency range, effectively dissipating power with minimal signal reflection. The unit features a BNC-Male connector with rugged construction for a long life of use and comes in a Tri-metal plated case measuring only 1.46 (l) x 0.58" (dia.)

### KEY FEATURES

| Features   | Advantages   |
|--|--|
| Wideband, DC to 4 GHz                            | Wide frequency range provides application flexibility and makes this model ideal for broadband and multi-band use.   |
| Good Return Loss, 26 dB typ.                     | Good return loss minimizes signal reflections across multiple-decade frequency range.                                |
| BNC-Male Connector                               | Provides termination for assemblies using BNC connector types without the need for additional adapters.              |
| Power Handling up to 0.5W                        | BTRM-50CN+ meets a wide range of system power requirements in a small device size.                                   |
| Wide Operating Temperature range, -55 to +100 °C | Withstands tough operating conditions and is suitable for use near high power componentry where heat rise is common. |



## ELECTRICAL SPECIFICATIONS AT 25°C

| Parameter                | Condition (GHz) | Min. | Typ. | Max. | Unit |
|--------------------------|-----------------|------|------|------|------|
| Frequency Range          |                 | DC   | —    | 4    | GHz  |
| Impedance                |                 | 50   |      |      | Ohms |
| Return Loss              | DC - 0.5        | 40   | 43   | —    | dB   |
|                          | 0.5 - 1         | 35   | 41   | —    |      |
|                          | 1 - 2           | 30   | 37   | —    |      |
|                          | 2 - 4           | 20   | 26   | —    |      |
| Input Power <sup>1</sup> | DC - 4          | —    | 0.5  | —    | W    |

1. At 70°C, derate linearly at 5mW/°C to 350mW at 100°C

ABSOLUTE MAXIMUM RATINGS<sup>1</sup>

| Parameter             | Ratings           |
|-----------------------|-------------------|
| Operating Temperature | -55 °C to +100 °C |
| Storage Temperature   | -55 °C to +100 °C |

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



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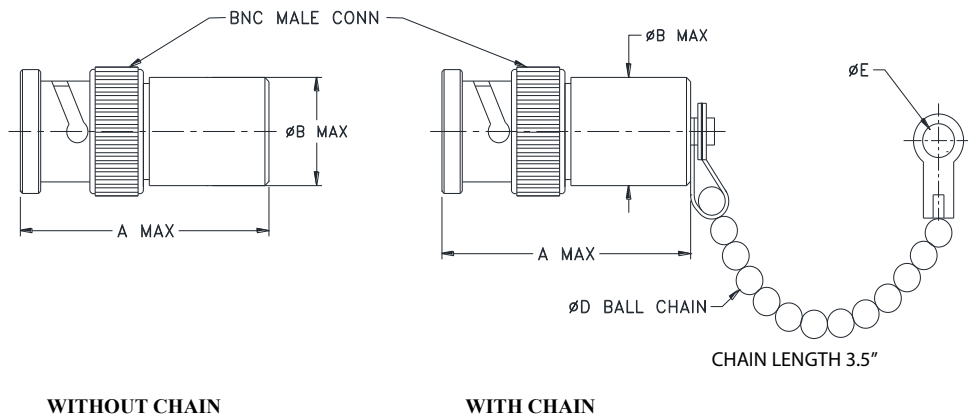
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# Termination

**BTRM-50CN+**

50Ω DC to 4 GHz BNC-Male

## OUTLINE DRAWING



## OUTLINE DIMENSIONS (Inch mm)

| A     | B     | D     | E   | wt grams.         |
|-------|-------|-------|-----|-------------------|
| 1.46  | .58   | 0.126 | .15 | <i>with chain</i> |
| 37.08 | 14.73 | 3.20  | 3.8 | 17.4 20.2         |





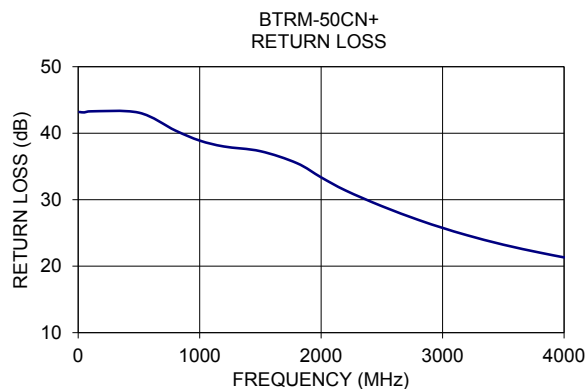
## Termination

BTRM-50CN+

50Ω DC to 4 GHz BNC-Male

## TYPICAL PERFORMANCE DATA

| Frequency (MHz) | Return Loss (dB) |
|-----------------|------------------|
| 10              | 43.19            |
| 100             | 43.29            |
| 500             | 43.09            |
| 800             | 40.40            |
| 1000            | 38.89            |
| 1500            | 37.29            |
| 1800            | 35.50            |
| 2000            | 33.36            |
| 2500            | 29.03            |
| 2800            | 26.96            |
| 3000            | 25.76            |
| 3500            | 23.23            |
| 4000            | 21.32            |



## 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.
- 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)

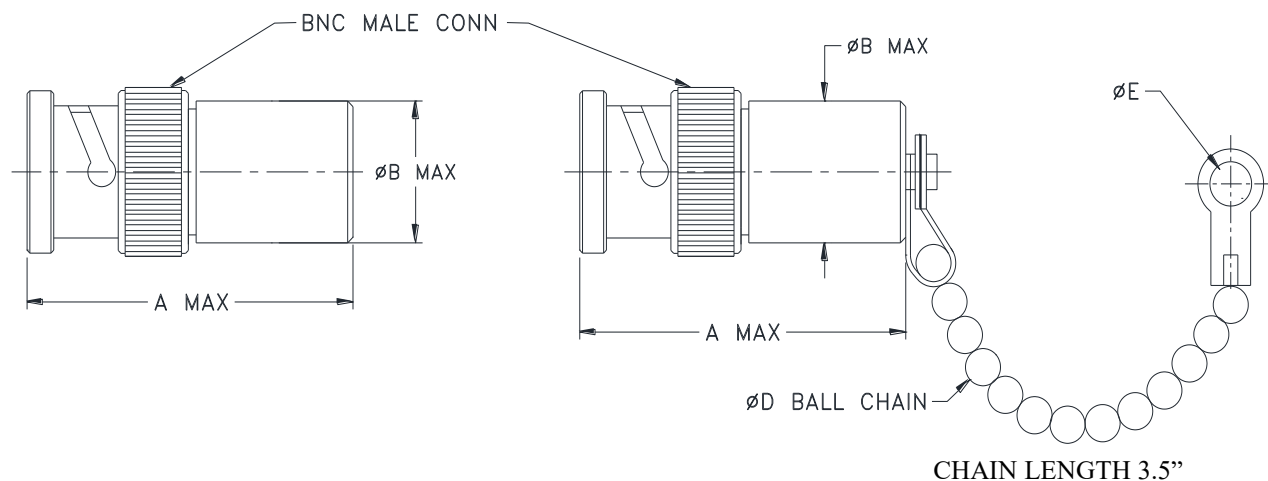
*Typical Performance Data*

| FREQUENCY<br>(MHz) | RETURN LOSS<br>(dB) |
|--------------------|---------------------|
| 10                 | 43.19               |
| 20                 | 43.29               |
| 30                 | 43.11               |
| 40                 | 43.20               |
| 50                 | 43.13               |
| 60                 | 43.08               |
| 70                 | 43.20               |
| 90                 | 43.22               |
| 100                | 43.29               |
| 200                | 44.06               |
| 300                | 43.99               |
| 400                | 43.80               |
| 550                | 42.37               |
| 650                | 41.48               |
| 750                | 40.68               |
| 900                | 39.54               |
| 1000               | 38.89               |
| 1200               | 38.00               |
| 1400               | 37.68               |
| 1600               | 36.95               |
| 1800               | 35.50               |
| 2000               | 33.36               |
| 2200               | 31.40               |
| 2400               | 29.76               |
| 2600               | 28.31               |
| 2800               | 26.96               |
| 3000               | 25.76               |
| 3200               | 24.66               |
| 3400               | 23.69               |
| 3600               | 22.81               |
| 3800               | 22.04               |
| 4000               | 21.32               |

*Typical Performance Curves*

## Outline Dimensions

LL1188



WITHOUT CHAIN

WITH CHAIN

| CASE #. | A               | B              | D              | E             | WT, GRAMS | WT WITH CHAIN, GRAMS |
|---------|-----------------|----------------|----------------|---------------|-----------|----------------------|
| LL1188  | 1.46<br>(37.08) | .58<br>(14.73) | .126<br>(3.20) | .15<br>(3.80) | 17.4      | 20.2                 |

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

### Notes:

1. Case material: Brass.
2. Finish: Trimetal plated.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)

RF/IF MICROWAVE COMPONENTS



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 |