FLEX TEST™

# Test Cable

# CBL-3FT-SMSM+

50Ω 3FT DC to 18 GHz SMA Male

## FEATURES

- Wideband Coverage, DC to 18 GHz
- Extra Rugged Construction with Strain Relief for Longer Life
- Stainless steel SMA Connectors for Long Mating-cycle Life
- Useful Over Temperature Range, -55 °C to +105 °C
- Triple Shield Cable for Excellent Shielding Effectiveness
- Flexible for Easy Connection & Bend Radius
- Superior Stability of Insertion Loss, VSWR & Phase vs. Flexing
- 6 Month Guarantee*



*Generic photo used for illustration purposes only*

| Model No. | CBL-3FT-SMSM+ |
|---|---|
| Case Style | GM1006-3 |
| Connectors | SMA Male |

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

## APPLICATIONS

- High Volume Production Test Stations
- Research & Development Labs
- Environmental & Temperature Test Chambers
- Replacement for OEM Test Port Cables
- Field RF Testing
- Cellular Infrastructure Site Testing

## ELECTRICAL SPECIFICATIONS AT +25 °C

| Parameter | Frequency (GHz) | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|
| Frequency Range | | DC | | 18 | GHz |
| Length[1] | | | 3 | | FT |
| Insertion Loss | DC - 2.5 | — | 0.6 | 0.8 | dB |
| | 2.5 - 6 | — | 1.0 | 1.3 | |
| | 6 - 12 | — | 1.5 | 1.9 | |
| | 12 - 18 | — | 1.9 | 2.45 | |
| Return Loss | DC - 2.5 | 23 | 30 | — | dB |
| | 2.5 - 6 | 20 | 30 | — | |
| | 6 - 12 | 17 | 27 | — | |
| | 12 - 18 | 17 | 22 | — | |

1. Custom sizes available, consult factory.

## ABSOLUTE MAXIMUM RATINGS[2]

| Parameter | Ratings |
|---|---|
| Operating Temperature | -55 °C to +105 °C |
| Storage Temperature | -55 °C to +105 °C |
| Shielding Effectiveness | >100 dB |
| Power Handling at 25 °C | 891 W Max. at 0.4 GHz<br>539 W Max. at 1 GHz<br>363 W Max. at 2 GHz<br>180 W Max. at 6 GHz<br>117 W Max. at 12 GHz<br>88 W Max. at 18 GHz |

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

**Product Guarantee***
Mini-Circuits® will repair or replace your test cable at its option if the connector attachment fails within six months of shipment. This guarantee excludes cable or connector interface damage from misuse or abuse.

REV. K
ECO-019380
CBL-3FT-SMSM+
MCL NY
260520

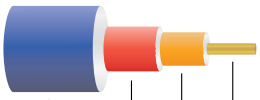
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# CBL-3FT-SMSM+

50Ω 3FT DC to 18 GHz SMA Male

## CABLE CONSTRUCTION



Inner Conductor: Solid Silver Plated Copper Clad Steel

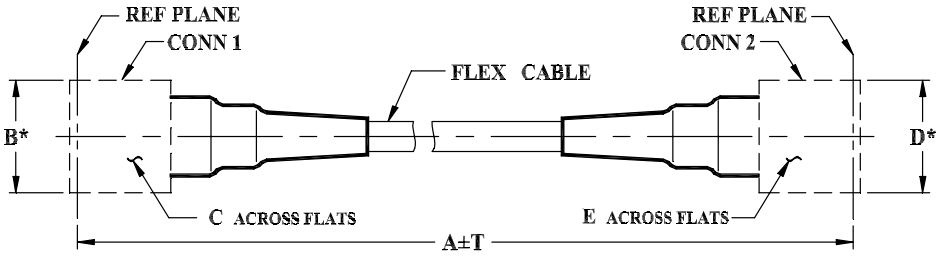
Dielectric: Solid PTFE

Shield: Silver-Plated Copper Flat Ribbon Braid
Aluminum-Polymide Tape Interlayer 36 GA
Silver-Plated Copper Braid (90%k)

Jacket: Blue FEP

Connectors:
- Passivated stainless steel
- Captive contact
- Thick wall interface
- Gold plated beryllium copper center contacts
- PTFE dielectric

## OUTLINE DRAWING




*OVERALL CONNECTOR OR CABLE & BOOT DIMENSION
(CONNECTOR SHAPE MAY VARY)

## OUTLINE DIMENSIONS (Inch / mm)

| A | | B | C | D | E | T | | wt |
|---|---|---|---|---|---|---|---|---|
| Feet | Meters | 0.42 | 0.312 | 0.42 | 0.312 | Feet | Meters | grams |
| 3 | 0.91 | 10.67 | 7.92 | 10.67 | 7.92 | 0.09 | 0.03 | 87 |

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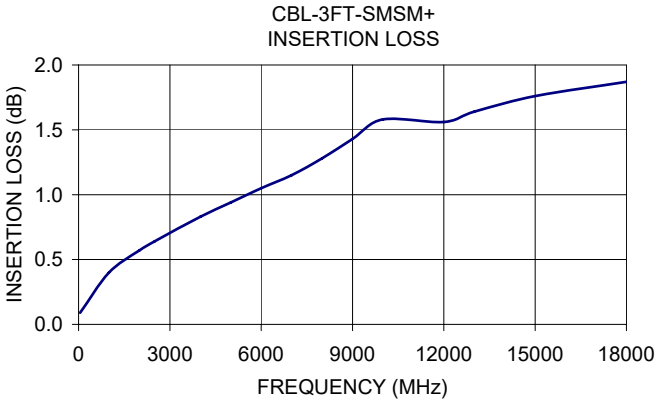
# Test Cable

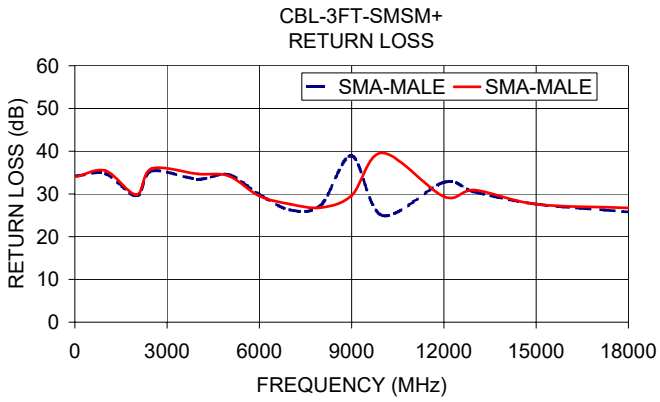
# CBL-3FT-SMSM+

50Ω 3FT DC to 18 GHz SMA Male

## TYPICAL PERFORMANCE DATA

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | |
|---|---|---|---|
| | | SMA Male | SMA Male |
| 50.0 | 0.09 | 34.21 | 34.07 |
| 1000.0 | 0.40 | 34.72 | 35.42 |
| 2000.0 | 0.57 | 29.57 | 29.83 |
| 2500.0 | 0.64 | 35.35 | 35.95 |
| 4000.0 | 0.83 | 33.48 | 34.69 |
| 5000.0 | 0.94 | 34.54 | 34.21 |
| 6000.0 | 1.05 | 29.92 | 29.51 |
| 7000.0 | 1.15 | 26.25 | 27.62 |
| 8000.0 | 1.28 | 27.41 | 26.81 |
| 9000.0 | 1.43 | 38.90 | 29.65 |
| 10000.0 | 1.58 | 24.98 | 39.62 |
| 12000.0 | 1.56 | 32.73 | 29.39 |
| 13000.0 | 1.64 | 30.47 | 30.91 |
| 15000.0 | 1.76 | 27.62 | 27.59 |
| 18000.0 | 1.87 | 25.79 | 26.72 |




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

# Test Cable, SMA-Male/SMA-Male CBL-3FT-SMSM+

*Typical Performance Data*

| FREQUENCY (MHz) | INSERTION LOSS (dB) | SMA-MALE 1 RETURN LOSS (dB) | SMA-MALE 2 RETURN LOSS (dB) |
|---|---|---|---|
| 50 | 0.09 | 34.21 | 34.07 |
| 100 | 0.12 | 37.15 | 36.89 |
| 300 | 0.22 | 32.04 | 31.90 |
| 500 | 0.28 | 52.86 | 44.43 |
| 700 | 0.33 | 31.01 | 31.35 |
| 900 | 0.38 | 30.43 | 30.84 |
| 1000 | 0.40 | 34.72 | 35.42 |
| 1300 | 0.46 | 30.57 | 30.55 |
| 1500 | 0.50 | 29.45 | 30.03 |
| 1700 | 0.52 | 40.50 | 57.61 |
| 1900 | 0.56 | 31.59 | 31.76 |
| 2000 | 0.57 | 29.57 | 29.83 |
| 2300 | 0.61 | 36.74 | 45.48 |
| 2500 | 0.64 | 35.35 | 35.95 |
| 2700 | 0.67 | 32.95 | 34.11 |
| 2900 | 0.69 | 36.84 | 45.64 |
| 3000 | 0.71 | 37.31 | 50.31 |
| 3500 | 0.77 | 36.39 | 42.04 |
| 4000 | 0.83 | 33.48 | 34.69 |
| 4500 | 0.88 | 36.63 | 33.81 |
| 5000 | 0.94 | 34.54 | 34.21 |
| 5500 | 1.00 | 28.45 | 30.02 |
| 6000 | 1.05 | 29.92 | 29.51 |
| 6500 | 1.13 | 33.33 | 30.63 |
| 7000 | 1.15 | 26.25 | 27.62 |
| 7500 | 1.23 | 32.39 | 30.19 |
| 8000 | 1.28 | 27.41 | 26.81 |
| 8500 | 1.35 | 25.97 | 28.07 |
| 9000 | 1.43 | 38.90 | 29.65 |
| 9500 | 1.55 | 26.12 | 25.87 |
| 10000 | 1.58 | 24.98 | 39.62 |
| 11000 | 1.53 | 28.49 | 26.70 |
| 12000 | 1.56 | 32.73 | 29.39 |
| 13000 | 1.64 | 30.47 | 30.91 |
| 14000 | 1.76 | 24.16 | 23.33 |
| 15000 | 1.76 | 27.62 | 27.59 |
| 16000 | 1.81 | 32.80 | 31.06 |
| 17000 | 1.85 | 24.33 | 22.79 |
| 18000 | 1.87 | 25.79 | 26.72 |

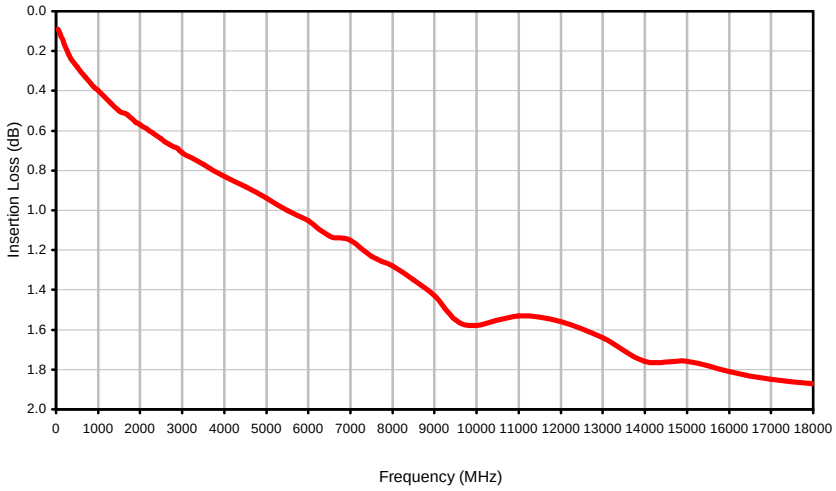


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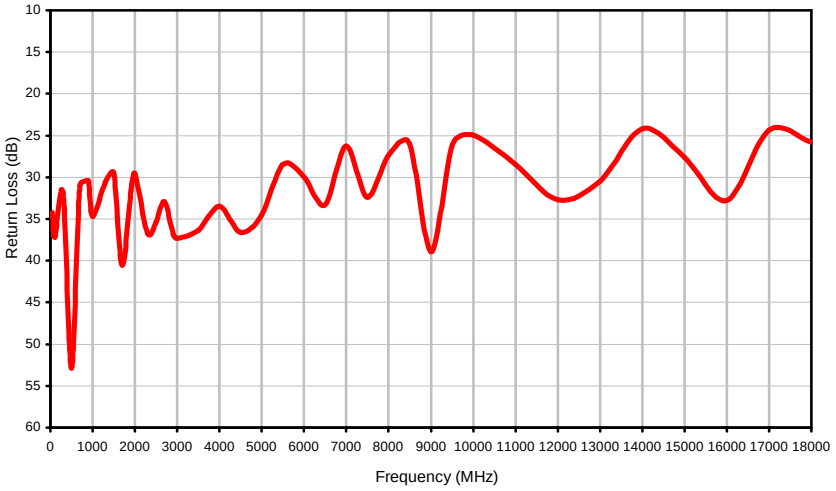
# Test Cable, SMA-Male/SMA-Male CBL-3FT-SMSM+

## *Typical Performance Curves*

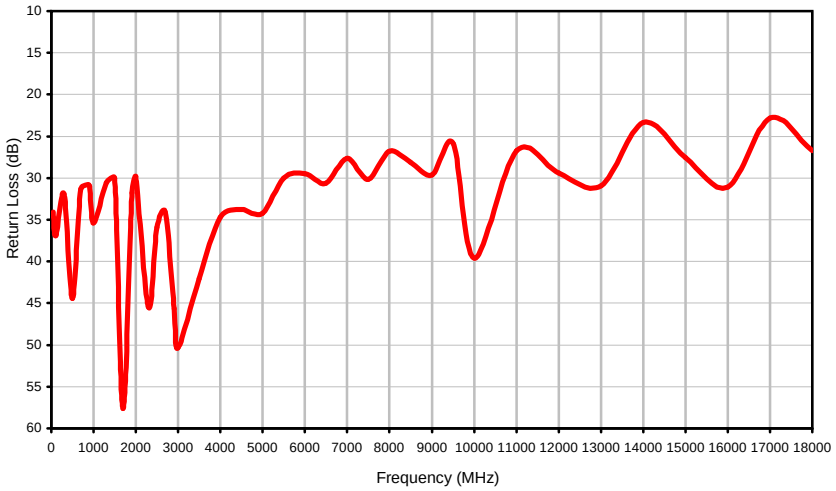
**Insertion Loss**




**SMA-Male 1 Return Loss**




**SMA-Male 2 Return Loss**





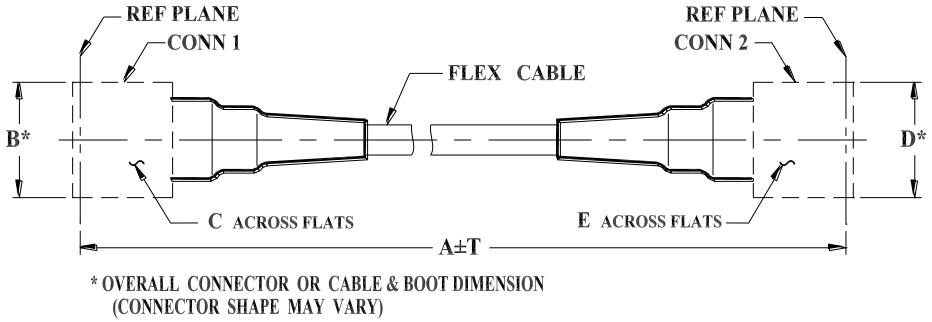


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# Case Style GM

**GM1006**

## Outline Dimensions




GM1006 SERIES
SMA MALE (CONN-1)
SMA MALE (CONN-2)

| CASE STYLE # | A | | B | C | D | E | T | | WEIGHT GRAMS |
|---|---|---|---|---|---|---|---|---|---|
| | FEET | METERS | | | | | FEET | METERS | |
| GM1006-1 | 1.00 | .30 | 0.42 (10.67) | 0.312 (7.92) | 0.42 (10.67) | 0.312 (7.92) | .06 | .02 | 48 |
| GM1006-1.5 | 1.50 | .46 | | | | | .06 | .02 | 58 |
| GM1006-1.64 | 1.64 | .50 | | | | | .06 | .02 | 60 |
| GM1006-2 | 2.00 | .61 | | | | | .06 | .02 | 67 |
| GM1006-3 | 3.00 | .91 | | | | | .09 | .03 | 87 |
| GM1006-3.28 | 3.28 | 1.00 | | | | | .10 | .03 | 92 |
| GM1006-3.5 | 3.50 | 1.07 | | | | | .11 | .03 | 97 |
| GM1006-4 | 4.00 | 1.22 | | | | | .12 | .04 | 106 |
| GM1006-4.92 | 4.92 | 1.50 | | | | | .15 | .05 | 124 |
| GM1006-5 | 5.00 | 1.52 | | | | | .15 | .05 | 126 |
| GM1006-6 | 6.00 | 1.83 | | | | | .18 | .05 | 145 |
| GM1006-6.56 | 6.56 | 2.00 | | | | | .20 | .06 | 156 |
| GM1006-7 | 7.00 | 2.13 | | | | | .21 | .06 | 165 |
| GM1006-7.5 | 7.50 | 2.29 | | | | | .23 | .07 | 175 |
| GM1006-8 | 8.00 | 2.44 | | | | | .24 | .07 | 184 |
| GM1006-8.2 | 8.20 | 2.50 | | | | | .25 | .08 | 188 |
| GM1006-9 | 9.00 | 2.74 | | | | | .27 | .08 | 204 |
| GM1006-9.84 | 9.84 | 3.00 | | | | | .30 | .09 | 220 |
| GM1006-10 | 10.00 | 3.05 | | | | | .30 | .09 | 223 |
| GM1006-11 | 11.00 | 3.35 | | | | | .33 | .10 | 243 |
| GM1006-12 | 12.00 | 3.66 | | | | | .36 | .11 | 262 |

**Unless otherwise specified dimensions are in inches (mm).**
**Tolerances: 2Pl. ± .03; 3Pl. ± .015**

### Note:

1. Flexible Coaxial Cable.


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# Case Style GM

GM1006 SERIES
SMA MALE (CONN-1)
SMA MALE (CONN-2)

| CASE STYLE # | A | | B | C | D | E | T | | WEIGHT GRAMS |
|---|---|---|---|---|---|---|---|---|---|
| | FEET | METERS | | | | | FEET | METERS | |
| GM1006-14 | 14.00 | 4.27 | 0.42 (10.67) | 0.312 (7.92) | 0.42 (10.67) | 0.312 (7.92) | .42 | .13 | 301 |
| GM1006-15 | 15.00 | 4.57 | | | | | .45 | .14 | 321 |
| GM1006-16 | 16.00 | 4.88 | | | | | .48 | .15 | 340 |
| GM1006-16.4 | 16.40 | 5.00 | | | | | .49 | .15 | 348 |
| GM1006-17 | 17.00 | 5.18 | | | | | .51 | .16 | 360 |
| GM1006-20 | 20.00 | 6.10 | | | | | .60 | .18 | 418 |
| GM1006-23 | 23.00 | 7.01 | | | | | .69 | .21 | 477 |
| GM1006-24 | 24.00 | 7.32 | | | | | .72 | .22 | 496 |
| GM1006-25 | 25.00 | 7.62 | | | | | .75 | .23 | 516 |
| GM1006-26 | 26.00 | 7.92 | | | | | .78 | .24 | 535 |
| GM1006-27 | 27.00 | 8.23 | | | | | .81 | .25 | 555 |
| GM1006-30 | 30.00 | 9.14 | | | | | .90 | .27 | 613 |
| GM1006-32 | 32.00 | 9.75 | | | | | .96 | .29 | 652 |
| GM1006-32.8 | 32.80 | 10.00 | | | | | .98 | .30 | 668 |
| GM1006-35 | 35.00 | 10.67 | | | | | 1.05 | .32 | 711 |
| GM1006-37 | 37.00 | 11.28 | | | | | 1.11 | .34 | 750 |
| GM1006-39 | 39.00 | 11.89 | | | | | 1.17 | .36 | 789 |
| GM1006-40 | 40.00 | 12.19 | | | | | 1.20 | .37 | 808 |
| GM1006-50 | 50.00 | 15.24 | | | | | 1.50 | .46 | 1003 |

**Unless otherwise specified dimensions are in inches (mm).**

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Mini-Circuits

# Environmental Specifications ENV34

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 105°C<br>Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 105°C<br>Ambient Environment | Individual Model Data Sheet |
| Thermal Shock | -55° to 105°C, 100 cycles | MIL-STD-202, Method 107, Condition A-3, except -105°C |
| Mechanical Flexing | 20,000 cycles<br>During each cycle, cable flexed from 90° through 0° to -90° and back with a Radii of 3 inches | - - - |


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