NON-CATALOG

FLEX TEST™ E-Z Lock

# Interconnect Cable

## QBL1MSMQ-NM+

50Ω 1M DC to 18 GHz

CASE STYLE: GM1530-3.28

| Connectors | | Model | Price | Qty. |
|---|---|---|---|---|
| **Conn1** | **Conn2** | | | |
| **SMA-Male E-Z Lock** | **N-Male** | QBL1MSMQ-NM+ | Contact Sales Dept | |

***+RoHS Compliant***

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

### Maximum Ratings

| | | | |
|---|---|---|---|
| Operating Temperature | -55°C to 105°C | | |
| Storage Temperature | -55°C to 105°C | | |
| Power Handling at 25°C, | 270W | at | 1 GHz |
| Sea Level | 180W | at | 2 GHz |
| | 120W | at | 4 GHz |
| | 62W | at | 12 GHz |
| | 47W | at | 18 GHz |

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

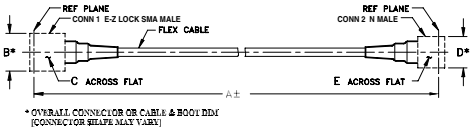
### Features

- E-Z Lock connector on one end for easy mating & demating
- extra rugged construction with strain relief for longer life
- stainless steel N connector for long mating-cycle life
- useful over temperature range, -55°C to 105°C
- double shield cable for excellent shielding effectiveness
- flexible for easy connection & bend
- excellent stability of insertion loss, VSWR & phase after thousands of flex cycles
- 6 month guarantee*

### Applications

- dense RF connect
- commercial and military systems to 18 GHz
- multi-port telecom systems

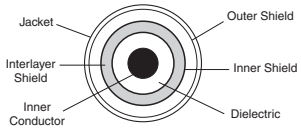
### Outline Drawing




### Outline Dimensions (inch / mm)

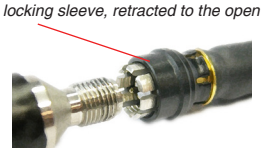
| A | | B | C | D | E | T | | wt |
|---|---|---|---|---|---|---|---|---|
| Feet | Meters | 0.43 | -- | 0.85 | 0.787 | Inches | mm | grams |
| 3.28 | 1.00 | 10.92 | -- | 21.59 | 19.99 | +0.79/-0 | +20/-0 | 85 |

### Cable Cross Section




| Cable Construction | |
|---|---|
| Inner Conductor | Solid Silver Plated Copper |
| Dielectric | Solid PTFE |
| Shield | Silver-Plated Copper tape under Silver-Plated Copper Braid |
| Jacket | Blue FEP |
| **Connectors (N)** | |
| • passivated stainless steel (coupling nut)<br>• captive contact<br>• gold plated brass center contacts<br>• PTFE dielectric | |
| **E-Z Lock SMA** | |
| • body & outer contact: gold-plated brass<br>• center contact: gold-plated CuBe<br>• PTFE dielectric<br>• clamping piece: white bronze plated brass<br>• sleeve: POM | |

*sliding locking sleeve, retracted to the open position*



*locking sleeve closed and in locked position, securing the SMA connection*

***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.*

### Electrical Specifications at 25°C

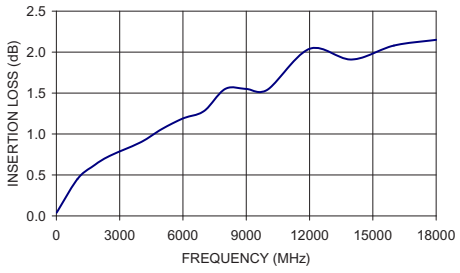
| Parameter | Condition (GHz) | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|
| Frequency Range | | DC | | 18 | GHz |
| Length | | | 1 | | M |
| Insertion Loss | DC - 2 | — | 0.4 | 1.0 | dB |
| | 2 - 6 | — | 0.8 | 1.8 | |
| | 6 - 12 | — | 1.4 | 2.5 | |
| | 12 - 18 | — | 1.8 | 2.9 | |
| Return Loss | DC - 2 | 20 | 38 | — | dB |
| | 2 - 6 | 20 | 30 | — | |
| | 6 - 12 | 13.5 | 29 | — | |
| | 12 - 18 | 13.5 | 25 | — | |

Custom sizes available, consult factory.

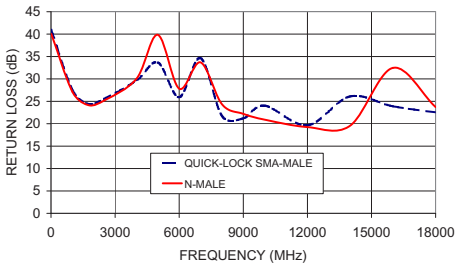
### Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | |
|---|---|---|---|
| | | E-Z Lock SMA-M | N-MALE |
| 10.0 | 0.04 | 41.0 | 40.1 |
| 1000.0 | 0.45 | 27.5 | 27.2 |
| 1750.0 | 0.61 | 24.4 | 24.2 |
| 2500.0 | 0.73 | 25.6 | 25.2 |
| 4000.0 | 0.90 | 29.7 | 30.1 |
| 5000.0 | 1.06 | 33.7 | 39.8 |
| 6000.0 | 1.19 | 25.9 | 27.8 |
| 7000.0 | 1.28 | 34.6 | 33.7 |
| 8000.0 | 1.55 | 21.8 | 24.4 |
| 9000.0 | 1.55 | 21.2 | 22.2 |
| 10000.0 | 1.54 | 24.0 | 20.9 |
| 12000.0 | 2.04 | 19.7 | 19.3 |
| 14000.0 | 1.91 | 26.1 | 19.6 |
| 16000.0 | 2.08 | 23.9 | 32.5 |
| 18000.0 | 2.15 | 22.5 | 23.7 |

QBL1MSMQ-NM+
INSERTION LOSS




QBL1MSMQ-NM+
RETURN LOSS




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/MCLStore/terms.jsp

*Flex Test, E-Z Lock SMA-M to N-M*

# Test Cable

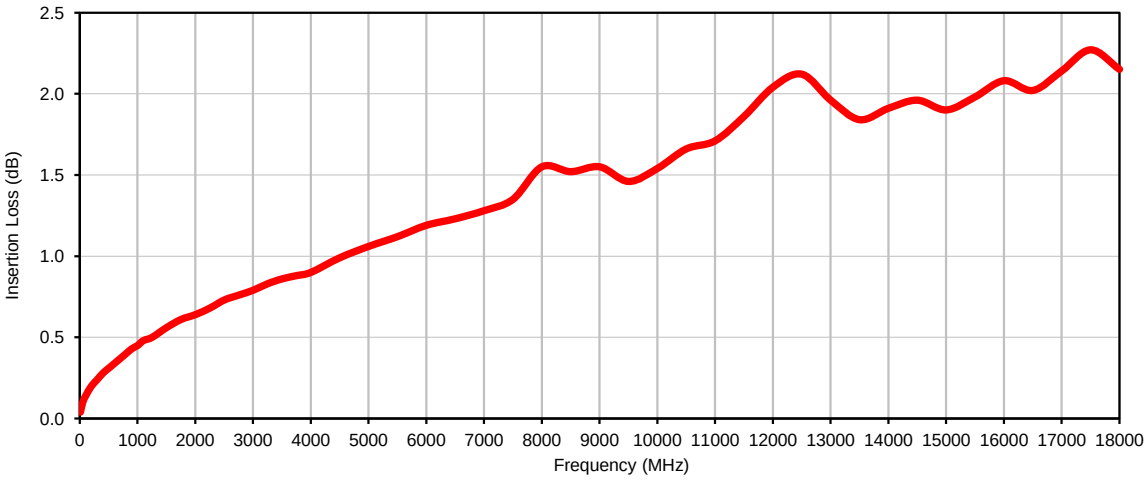
# QBL1MSMQ-NM+

*Typical Performance Data*

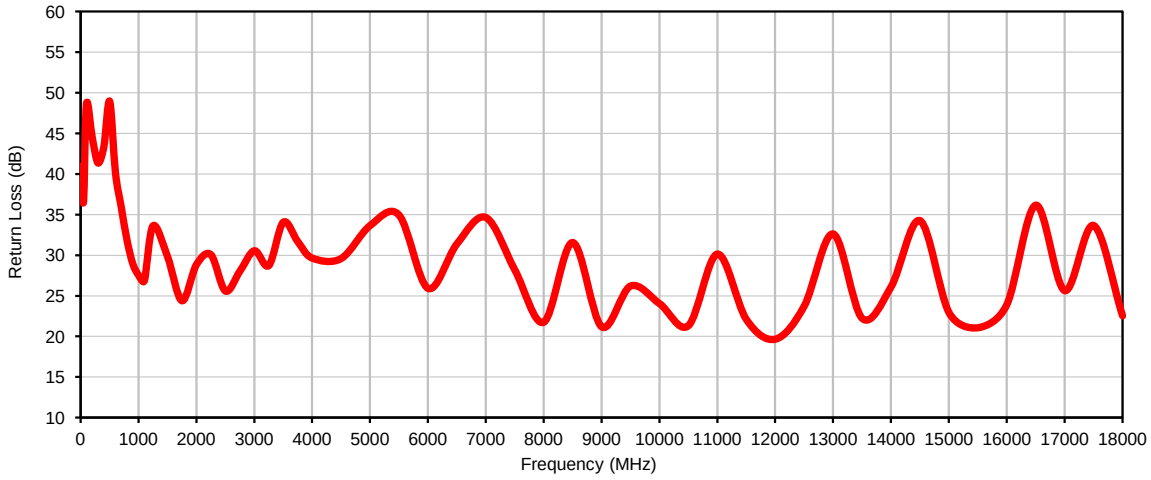
| FREQUENCY (MHz) | INSERTION LOSS (dB) | E-Z Lock SMA-MALE RETURN LOSS (dB) | N-MALE RETURN LOSS (dB) |
|---|---|---|---|
| 10.0 | 0.04 | 41.0 | 40.1 |
| 50.0 | 0.10 | 36.6 | 36.7 |
| 100.0 | 0.14 | 48.6 | 47.0 |
| 200.0 | 0.20 | 44.5 | 41.7 |
| 300.0 | 0.24 | 41.4 | 39.7 |
| 400.0 | 0.28 | 43.4 | 40.3 |
| 500.0 | 0.31 | 49.0 | 44.6 |
| 600.0 | 0.34 | 40.2 | 41.4 |
| 700.0 | 0.37 | 35.9 | 36.9 |
| 800.0 | 0.40 | 31.9 | 32.1 |
| 900.0 | 0.43 | 28.9 | 28.9 |
| 1000.0 | 0.45 | 27.5 | 27.2 |
| 1100.0 | 0.48 | 26.9 | 26.2 |
| 1250.0 | 0.50 | 33.6 | 37.1 |
| 1500.0 | 0.56 | 29.8 | 28.1 |
| 1750.0 | 0.61 | 24.4 | 24.2 |
| 2000.0 | 0.64 | 28.8 | 30.3 |
| 2250.0 | 0.68 | 30.1 | 32.2 |
| 2500.0 | 0.73 | 25.6 | 25.2 |
| 2750.0 | 0.76 | 28.0 | 29.2 |
| 3000.0 | 0.79 | 30.6 | 35.0 |
| 3250.0 | 0.83 | 28.7 | 28.2 |
| 3500.0 | 0.86 | 34.1 | 32.6 |
| 3750.0 | 0.88 | 31.7 | 37.0 |
| 4000.0 | 0.90 | 29.7 | 30.1 |
| 4500.0 | 0.99 | 29.6 | 35.2 |
| 5000.0 | 1.06 | 33.7 | 39.8 |
| 5500.0 | 1.12 | 34.9 | 32.2 |
| 6000.0 | 1.19 | 25.9 | 27.8 |
| 6500.0 | 1.23 | 31.4 | 38.5 |
| 7000.0 | 1.28 | 34.6 | 33.7 |
| 7500.0 | 1.35 | 28.2 | 33.1 |
| 8000.0 | 1.55 | 21.8 | 24.4 |
| 8500.0 | 1.52 | 31.6 | 26.7 |
| 9000.0 | 1.55 | 21.2 | 22.2 |
| 9500.0 | 1.46 | 26.2 | 23.6 |
| 10000.0 | 1.54 | 24.0 | 20.9 |
| 10500.0 | 1.66 | 21.3 | 21.0 |
| 11000.0 | 1.71 | 30.1 | 23.5 |
| 11500.0 | 1.86 | 22.1 | 22.9 |
| 12000.0 | 2.04 | 19.7 | 19.3 |
| 12500.0 | 2.12 | 23.7 | 16.8 |
| 13000.0 | 1.96 | 32.6 | 25.5 |
| 13500.0 | 1.84 | 22.2 | 21.9 |
| 14000.0 | 1.91 | 26.1 | 19.6 |
| 14500.0 | 1.96 | 34.3 | 29.6 |
| 15000.0 | 1.90 | 23.0 | 23.2 |
| 15500.0 | 1.98 | 21.1 | 25.7 |
| 16000.0 | 2.08 | 23.9 | 32.5 |
| 16500.0 | 2.02 | 36.2 | 30.1 |
| 17000.0 | 2.14 | 25.6 | 27.5 |
| 17500.0 | 2.27 | 33.7 | 35.7 |
| 18000.0 | 2.15 | 22.5 | 23.7 |

## *Typical Performance Curves*

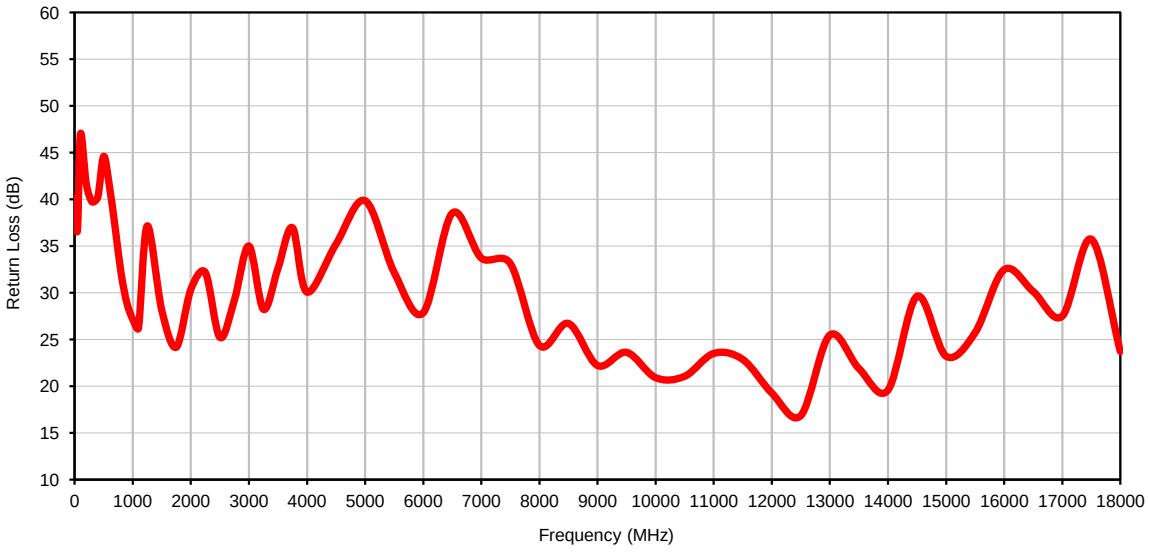
**Insertion Loss**




**E-Z Lock SMA-Male Return Loss**



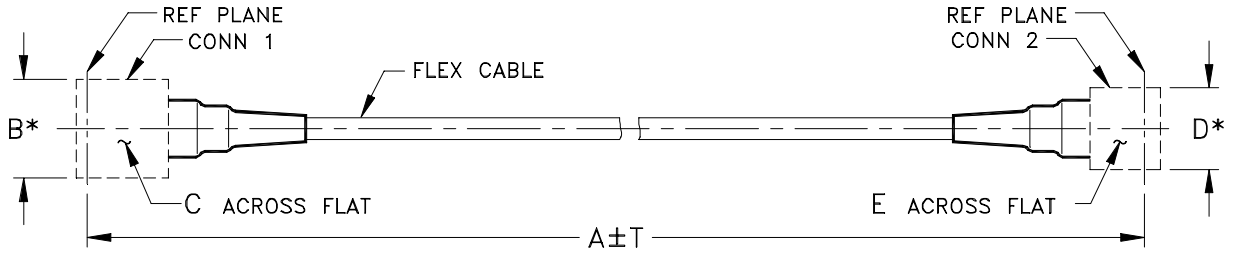

**N-Male Return Loss**



# Case Style GM

**GM1530**

## Outline Dimensions




* OVERALL CONNECTOR OR CABLE & BOOT DIM
[CONNECTOR SHAPE MAY VARY]

GM1530 SERIES
E-Z LOCK SMA MALE (CONN-1)
N MALE (CONN-2)

| CASE STYLE # | A | | B | C | D | E | T | | WEIGHT GRAMS |
|---|---|---|---|---|---|---|---|---|---|
| | FEET | METERS | | | | | INCHES | MM | |
| GM1530-1.5 | 1.50 | .46 | .43 (10.92) | - - | .85 (21.59) | .787 (19.99) | +.50/-0 | +12.7/-0 | 61 |
| GM1530-1.64 | 1.64 | .50 | | | | | +.50/-0 | +12.7/-0 | 63 |
| GM1530-2 | 2.00 | .61 | | | | | +.50/-0 | +12.7/-0 | 68 |
| GM1530-3 | 3.00 | .91 | | | | | +.72/-0 | +18.3/-0 | 82 |
| GM1530-3.28 | 3.28 | 1.00 | | | | | +.79/-0 | +20.0/-0 | 85 |
| GM1530-4 | 4.00 | 1.22 | | | | | +.96/-0 | +24.4/-0 | 95 |
| GM1530-6 | 6.00 | 1.83 | | | | | +1.44/-0 | +36.6/-0 | 122 |
| GM1530-6.56 | 6.56 | 2.00 | | | | | +1.57/-0 | +40.0/-0 | 130 |
| | | | | | | | | | |

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

**Note:**
1. Flexible Coaxial Cable.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# 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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