



Armored Test Cable

50Ω 1M DC to 40 GHz Low Loss

KBL-1M-LOW+



CASE STYLE: MA1628-3.28

| | |
|-------------|-------------|
| Connectors | Model |
| 2.92mm Male | KBL-1M-LOW+ |

+RoHS Compliant

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

Maximum Ratings

| | | |
|-------------------------|----------------|-------------|
| Operating Temperature | -55°C to +85°C | |
| Storage Temperature | -55°C to +85°C | |
| Power Handling at 25°C, | 53W | at 2 GHz |
| Sea Level | 17W | at 18 GHz |
| | 15W | at 26.5 GHz |
| | 11W | at 40 GHz |
| Coupling Nut Torque | 1.09 N.M | |

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

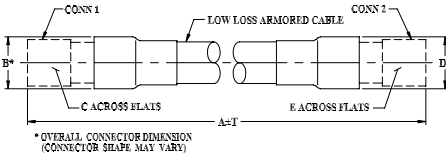
Features

- extremely low insertion loss
- extra rugged construction includes protective shield and strain relief for longer life
- stainless steel 40 GHz connector for long mating-cycle life
- double shield cable for excellent shielding effectiveness
- 40 GHz connector mates with 2.92 mm, K*, 3.5mm, SMA

Applications

- military and defense applications
- research & development labs

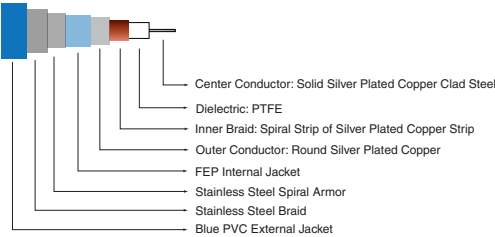
Outline Drawing



Outline Dimensions (inch/mm)

| | | | | | | |
|------|--------|-------|------|-------|------|----------|
| A | B | C | D | E | T | wt |
| Feet | Meters | .40 | .312 | .40 | .312 | Inch |
| 3.28 | 1.00 | 10.16 | 7.92 | 10.16 | 7.92 | +79/-0 |
| | | | | | | +20.0/-0 |
| | | | | | | 130 |

Cable Construction



Electrical Specifications at 25°C

| Parameter | Condition (GHz) | Min. | Typ. | Max. | Units |
|-----------------|-----------------|------|------|------|-------|
| Frequency Range | | DC | | 40 | GHz |
| Length | | | 1 | | M |
| Insertion Loss | DC - 6 | — | 1.05 | 1.35 | dB |
| | 6-18 | — | 1.87 | 2.15 | |
| | 18-26.5 | — | 2.35 | 2.65 | |
| | 26.5-40 | — | 3.05 | 3.35 | |
| Return Loss | DC - 6 | 17 | 25 | — | dB |
| | 6-18 | 17 | 20 | — | |
| | 18-26.5 | 16 | 19 | — | |
| | 26.5-40 | 14 | 17 | — | |

*K Connector is a trademark of Anritsu
Custom sizes available, consult factory.

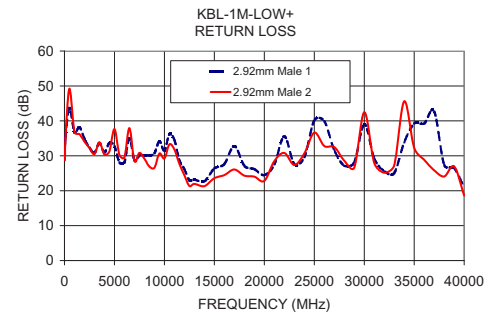
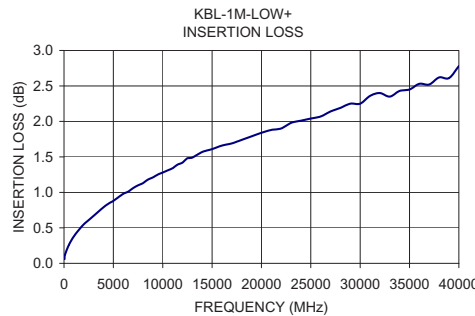
Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | |
|-----------------|---------------------|------------------|--------|
| | | MALE 1 | MALE 2 |
| 50.0 | 0.06 | 29.0 | 28.7 |
| 1000.0 | 0.38 | 36.7 | 36.8 |
| 1500.0 | 0.47 | 38.2 | 36.2 |
| 2000.0 | 0.55 | 34.9 | 34.1 |
| 4000.0 | 0.79 | 31.0 | 30.3 |
| 5000.0 | 0.88 | 32.7 | 37.7 |
| 6000.0 | 0.98 | 28.1 | 29.6 |
| 7000.0 | 1.06 | 28.7 | 28.5 |
| 8000.0 | 1.13 | 30.2 | 29.2 |
| 9000.0 | 1.21 | 30.7 | 26.6 |
| 10000.0 | 1.28 | 31.5 | 29.3 |
| 18000.0 | 1.74 | 27.2 | 24.3 |
| 26000.0 | 2.07 | 39.9 | 32.8 |
| 30000.0 | 2.25 | 39.0 | 42.5 |
| 40000.0 | 2.78 | 21.0 | 18.6 |

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.

Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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



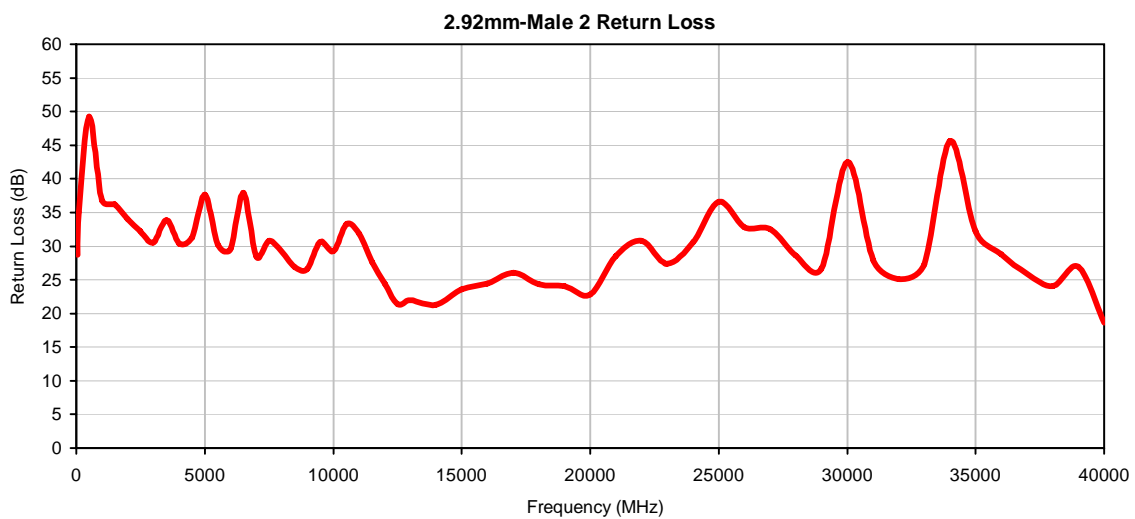
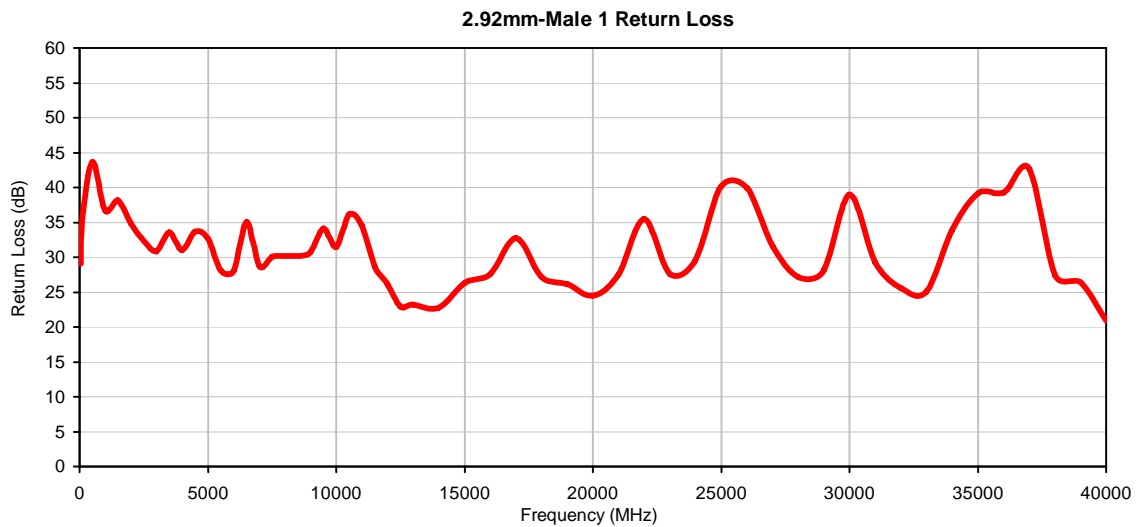
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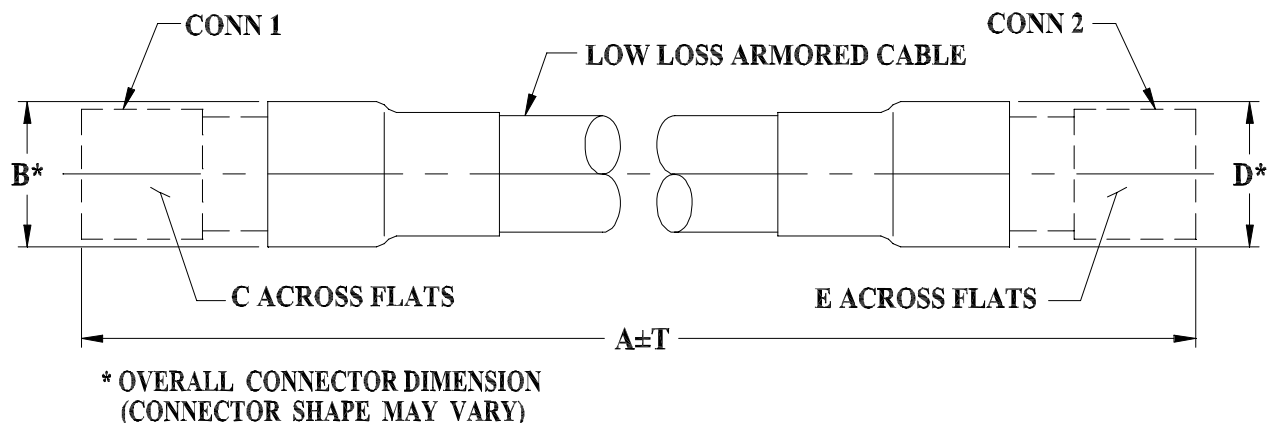
Typical Performance Data

| FREQUENCY (MHz) | INSERTION LOSS (dB) | 2.92mm MALE 1 RETURN LOSS (dB) | 2.92mm MALE 2 RETURN LOSS (dB) |
|--------------------|---------------------------|--------------------------------------|--------------------------------------|
| 50.0 | 0.06 | 29.0 | 28.7 |
| 100.0 | 0.12 | 35.3 | 35.1 |
| 500.0 | 0.26 | 43.7 | 49.2 |
| 1000.0 | 0.38 | 36.7 | 36.8 |
| 1500.0 | 0.47 | 38.2 | 36.2 |
| 2000.0 | 0.55 | 34.9 | 34.1 |
| 2500.0 | 0.61 | 32.4 | 32.3 |
| 3000.0 | 0.67 | 30.8 | 30.5 |
| 3500.0 | 0.73 | 33.6 | 33.9 |
| 4000.0 | 0.79 | 31.0 | 30.3 |
| 4500.0 | 0.84 | 33.7 | 31.3 |
| 5000.0 | 0.88 | 32.7 | 37.7 |
| 5500.0 | 0.93 | 28.1 | 30.3 |
| 6000.0 | 0.98 | 28.1 | 29.6 |
| 6500.0 | 1.01 | 35.1 | 37.9 |
| 7000.0 | 1.06 | 28.7 | 28.5 |
| 7500.0 | 1.10 | 30.1 | 30.8 |
| 8000.0 | 1.13 | 30.2 | 29.2 |
| 8500.0 | 1.18 | 30.1 | 26.9 |
| 9000.0 | 1.21 | 30.7 | 26.6 |
| 9500.0 | 1.25 | 34.2 | 30.7 |
| 10000.0 | 1.28 | 31.5 | 29.3 |
| 10500.0 | 1.31 | 36.2 | 33.3 |
| 11000.0 | 1.34 | 34.6 | 31.8 |
| 11500.0 | 1.39 | 28.7 | 27.7 |
| 12000.0 | 1.42 | 26.2 | 24.5 |
| 12500.0 | 1.48 | 23.0 | 21.4 |
| 13000.0 | 1.49 | 23.2 | 21.9 |
| 14000.0 | 1.57 | 22.7 | 21.3 |
| 15000.0 | 1.61 | 26.4 | 23.6 |
| 16000.0 | 1.66 | 27.6 | 24.5 |
| 17000.0 | 1.69 | 32.8 | 26.1 |
| 18000.0 | 1.74 | 27.2 | 24.3 |
| 19000.0 | 1.79 | 26.2 | 24.0 |
| 20000.0 | 1.84 | 24.5 | 22.8 |
| 21000.0 | 1.88 | 27.5 | 28.5 |
| 22000.0 | 1.90 | 35.5 | 30.8 |
| 23000.0 | 1.98 | 27.6 | 27.4 |
| 24000.0 | 2.01 | 29.6 | 30.7 |
| 25000.0 | 2.04 | 40.1 | 36.6 |
| 26000.0 | 2.07 | 39.9 | 32.8 |
| 27000.0 | 2.14 | 31.6 | 32.5 |
| 28000.0 | 2.19 | 27.2 | 28.6 |
| 29000.0 | 2.25 | 28.1 | 26.6 |
| 30000.0 | 2.25 | 39.0 | 42.5 |
| 31000.0 | 2.36 | 29.3 | 28.0 |
| 32000.0 | 2.40 | 25.6 | 25.2 |
| 33000.0 | 2.35 | 25.1 | 27.3 |
| 34000.0 | 2.43 | 33.8 | 45.6 |
| 35000.0 | 2.45 | 39.2 | 32.3 |
| 36000.0 | 2.53 | 39.3 | 28.9 |
| 37000.0 | 2.52 | 42.7 | 25.9 |
| 38000.0 | 2.62 | 27.4 | 24.1 |
| 39000.0 | 2.61 | 26.4 | 27.0 |
| 40000.0 | 2.78 | 21.0 | 18.6 |

Typical Performance Curves



Outline Dimensions



MA1628 SERIES

2.92mm K-MALE (CONN-1)

2.92mm K-MALE (CONN-2)

| CASE STYLE # | A | | B | C | D | E | T | | WEIGHT GRAMS |
|--------------|------|--------|----------------|----------------|----------------|----------------|----------|----------|--------------|
| | FEET | METERS | | | | | INCH | MM | |
| MA1628-1.5 | 1.50 | .46 | .40 (10.16) | .312 (7.92) | .40 (10.16) | .312 (7.92) | +.50/-0 | +12.7/-0 | 75 |
| MA1628-2 | 2.00 | .61 | | | | | +.50/-0 | +12.7/-0 | 91 |
| MA1628-3.28 | 3.28 | 1.00 | | | | | +.79/-0 | +20.0/-0 | 130 |
| MA1628-4 | 4.00 | 1.22 | | | | | +.96/-0 | +24.4/-0 | 152 |
| MA1628-6.56 | 6.56 | 2.00 | | | | | +1.57/-0 | +40.0/-0 | 231 |

Unless otherwise specified dimensions are in inches (mm).

Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$

Note:

1. Low Loss Armored Flexible Cable.



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 85°C Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 85° C Ambient Environment | Individual Model Data Sheet |
| Thermal Shock | -55° to 100° C, 100 cycles | MIL-STD-202, Method 107, Condition A-3 |
| Mechanical Flexing | 20,000 cycles During each cycle, cable flexed from 90° through 0° to -90° and back with a Radii of 3 inches | - - - |