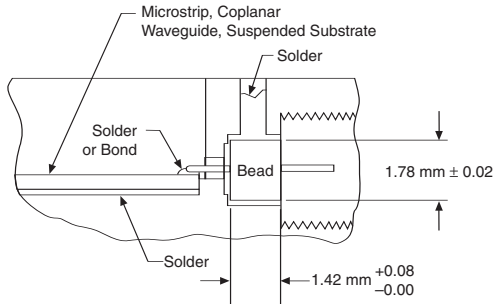


V CONNECTOR®

DC to 65 GHz

Complete family

There are four different models of V Connector launchers. Two types of sparkplug (screw-in) launchers are available: the V102F-R female version and the V102M-R male version. Both screw into the housing that encloses the microwave circuit. And, like all Anritsu launchers, they can be easily removed for replacement or repair without unsoldering the glass bead and its interface to the microwave circuit.



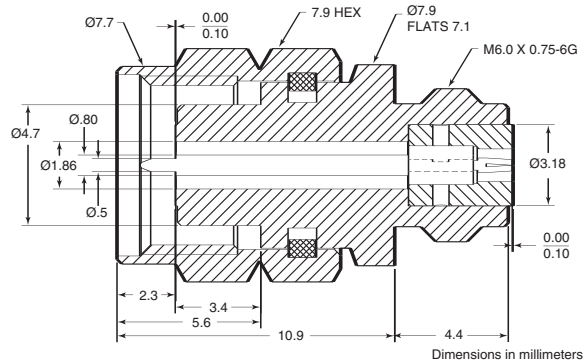
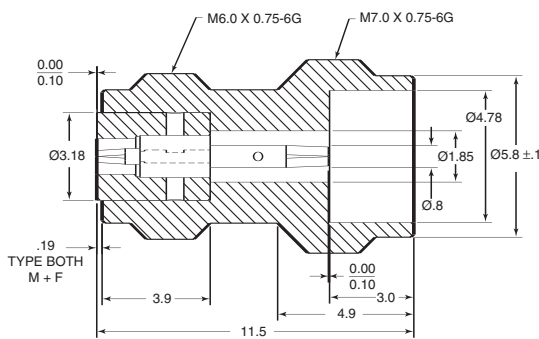
Transition from Microcircuit to Outside Transmission Line

When the housing that encloses the microwave circuit is not thick enough to support a threaded, screw-in launcher, flush-mounted (flange) launchers are required. Models with two mounting holes are available in both male and female versions, V103M-R and V103F-R. The mounting hole spacing is identical to that of similar SMA flange launchers. The glass bead interface, of course, is the same design used for the sparkplug launcher.

Cable connectors

To complement the high performance V085 cable, both male and female cable connectors are available. Typical return loss at 65 GHz for finished cables exceeds 16 dB (1.35 SWR).

The V Connector® coaxial cable connectors use a 2.16 mm cable with a microporous Teflon dielectric and a copper center conductor. The cable assemblies use the center conductor of the coax as the male pin. This is similar to the UT-141 SMA-type assembly and 2.4 mm cable assemblies. The microporous Teflon dielectric has maximum phase stability and minimum insertion loss. This type of cable assembly allows for easy assembly and maximum RF performance; however, since the male pin is copper, the cable assemblies are not suitable for repeated connections. In applications where the cable will be subject to more than 100 connections, we recommend that a connector saver be used.



V Connector interface dimensions

Evaluation kit

01-301

V Connector Evaluation Kit contains one V120MM - 25CM Male/Male Cable Assembly, two V102F Female Sparkplug Launcher Connector Assemblies, two V103F Female Flange Launcher Connector Assemblies, two V101M-R Male In-line Cable Connector Assemblies, five V100 Glass Beads, one 01-304 Drill and Tap Set, one 01-302 Test Fixture, two 01-303 Soldering Fixtures.



Tools and fixtures

01-303

Soldering Fixture for sparkplug launcher glass beads, package of 10.



01-304

Drill and Tap Set for precision machining of concentric holes for mounting V Connector in microwave housing. (Drill Part No. 783-568) (Tap Part No. 783-569)



V CONNECTOR®

DC to 65 GHz

01-105A

K and V Connector® Male and Female Sparkplug Torquing Kit.



01-306

Soldering Fixture for flange launcher glass bead, package of 5.



01-307M or 01-307F

Cable Sleeve Soldering Fixture for V101M-R Male and V101F-R Female Cable Connectors, package of 10.



01-308

Drill and Tap set for precision machining of concentric holes for mounting V Connector in microwave housing in applications where stress-relief contacts are used. (Drill Part No. 55300) (Tap Part No. 783-569)



01-309

V Connector Cable Assembling Fixture for V085 semi-rigid cable.



01-201

Torque wrench: 0.9 N-M (8 in-lb) for standard SMA and 3.5 mm connectors, and for the Anritsu K Connector® and V Connector®.



01-204

Handy stainless steel connector wrench for standard SMA, 3.5 mm, and 2.4 mm connectors, and for the Anritsu K Connector® and V Connector®.

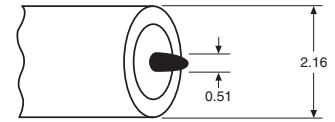


Semi-rigid coaxial cable

| | |
|---------------------------|--|
| Type | Semi-rigid coaxial, tin-plated copper outer conductor, silver-plated copper center conductor. |
| Impedance | 50 ± 2 Ω |
| Dielectric type | Microporous Teflon, 0.14 cm diameter |
| Dielectric constant | 1.687 |
| Relative velocity | 0.77 |
| Outside diameter | 2.16 mm |
| Center conductor diameter | 0.51 mm |
| Minimum bend radius | 0.65 cm |
| Attenuation | 2.3 dB/m at 10 GHz 3.6 dB/m at 20 GHz 4.3 dB/m at 30 GHz 5.2 dB/m at 40 GHz 7.2 dB/m at 60 GHz |

V085

semirigid coaxial cable
1.5m length of 2.16 mm semirigid cable for V101 series connector

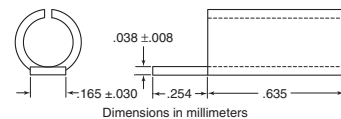


Dimensions in millimeters

Stress relief contacts

Stress Relief Contacts provide an elegant yet simple solution to relieving stress at the interface of the microcircuit and its connecting coaxial conductor. These contacts simply slide onto the standard glass bead pins and can be soldered, bonded or parallel-gap welded to a circuit trace.

| | |
|-----------------|----------------------------|
| Frequency range | DC to 67 GHz |
| Material | 0.025 mm heat-treated BeCu |
| Plating | Bondable gold |



V110-1-R

Microstrip and Coplanar Waveguide when using the V110-1, use 01-308 Drill and Tap set to make the required concentric holes.

Launchers and cable connectors

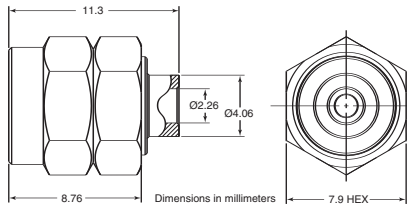
| | |
|--------------------------------|---|
| Return loss (launchers only) | 15 dB up to 65 GHz |
| Coupling nut tightening torque | 1.36 N-m max |
| Material | Passivated stainless steel with heat-treated beryllium copper center conductors |
| Pin depth | 0.000 to -0.130 mm for male and female connectors |
| Temperature range | -55°C to +125°C |

V CONNECTOR®

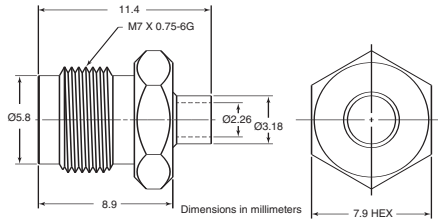
DC to 65 GHz



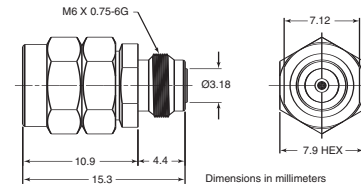
V101M-R^{②④}
V Male In-Line Cable
Connector, DC-65 GHz
for V085 cable



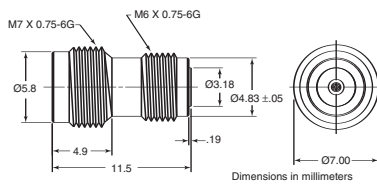
V101F-R^{③④}
V Female In-Line Cable
Connector, DC-65 GHz
for V085 cable



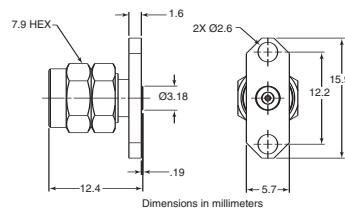
V102M-R^①
V Male Sparkplug
Launcher
Connector,
DC-65 GHz



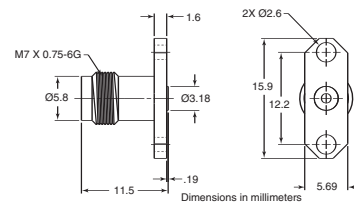
V102F-R^①
V Female Sparkplug
Launcher Connector,
DC-65 GHz



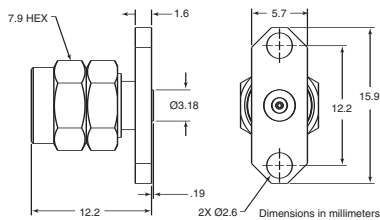
V103M-R
V Male Flange Launcher,
two-hole, DC-65 GHz



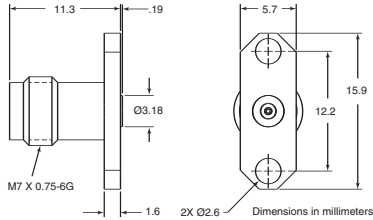
V103F-R
V Female Flange
Launcher, two-hole,
DC-65 GHz



V103M-012
V Male Flange Launcher,
two-hole for 0.30 mm
glass bead pin,
DC-65 GHz



V103F-012
V Female Flange
Launcher, two-hole for
0.30 mm glass bead pin,
DC-65 GHz



- ① Use with 01-105A Male and Female Sparkplug Torquing Kit
- ② Use with 01-307M Cable Sleeve Fixture
- ③ Use with 01-307F Cable Sleeve Fixture
- ④ Use with 01-309 Cable Assembling Fixture

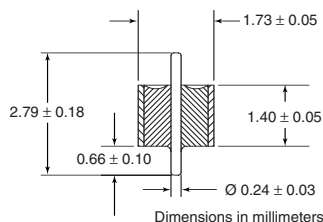
V CONNECTOR®

DC to 65 GHz



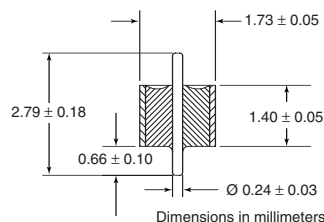
V100^{①②}

Glass Beads for V102, and V103 connectors (package of 5)
 Note: Glass Beads are not available through Anritsu. They can be purchased from Advanced Technology Group, 101 Roundhill Drive, Rockaway, New Jersey 07866
 Tel: 973-627-6955, Fax: 973-627-5980
 www.advtechgr.com



V100B^{①②}

High Hermeticity* Glass Beads for V102, and V103 connectors (package of 5)
 Note: Glass Beads are not available through Anritsu. They can be purchased from Advanced Technology Group, 101 Roundhill Drive, Rockaway, New Jersey 07866
 Tel: 973-627-6955, Fax: 973-627-5980
 www.advtechgr.com



*Glass Bead Hermeticity Spec: Hermetic to 1×10^{-8} std cc He/sec at 1 atm differential

- ① Use with 01-303 or 01-306 Soldering Fixtures
- ② Use with 01-304 or 01-308 Drill and Tap Sets

Environmental information

Tests are performed per MIL-STD-202F.

| | |
|------------------------------------|---|
| Operating Temperature Range | -55°C to +125° |
| Temperature Shock | -55°C to +150° |
| Humidity | 95% at 40°C, 96 hours, Test 103B, Condition B |
| Shock | 100 G peak sawtooth, method 213, Test condition 1 |
| Vibration | Sinewave: 10 Hz to 2000 Hz, 0.06" DA, method 204, test condition D Random: 50 Hz to 2000 Hz, 11.6 Grms, Power Spectral Density 0.1 Grms 2 Hz, Method 214, Test Condition 1, Letter D |
| Salt Spray | 5% concentration for 48 hours, Method 101D, Condition B |
| Voltage withstanding | 500 Vac RMS, 60 seconds, method 301 |

Ordering information

Please specify model/order number, name, and quantity when ordering.

| Model/Order No. | Name |
|-----------------|---|
| 01-105A | Male and female sparkplug torquing kit |
| 01-201 | Torque wrench, for SMA, 3.5mm, and K Connector and V Connector |
| 01-204 | Anritsu stainless steel connector wrench |
| 01-301 | V Connector® (evaluation kit) |
| 01-303 | Soldering fixture for sparkplug launcher glass bead |
| 01-304 | Drill and tap set |
| 01-306 | Soldering fixture for flange launcher glass bead |
| 01-307M | Cable sleeve soldering fixture, male connector |
| 01-307F | Cable sleeve soldering fixture, female connector |
| 01-308 | Drill and tap set |
| 01-309 | Cable assembling fixture |
| V085 | Coaxial cable, 152 cm (5 feet) length of 2.16 mm semi-rigid cable |
| V101M-R | V(m) in-line cable connector, DC to 65 GHz |
| V101F-R | V(f) in-line cable connector, DC to 65 GHz |
| V102M-R | V(m) sparkplug launcher connector, DC to 65 GHz |
| V102F-R | V(f) sparkplug launcher connector, DC to 65 GHz |
| V103M-R | V(m) flange launcher connector, DC to 65 GHz, 2 mounting holes |
| V103M-012 | V(m) flange launcher, 2 mounting holes for 0.30 mm glass bead pin, DC to 65 GHz |
| V103F-012 | V(f) flange launcher, 2 mounting holes for 0.30 mm glass bead pin, DC to 65 GHz |
| V103F-R | V(f) flange launcher connector, DC to 65 GHz, 2 mounting holes |
| V110-1-R* | Microstrip stress relief contact |

*Sold in multiples of 10 only.