

SMT/QuickGrip Connectors

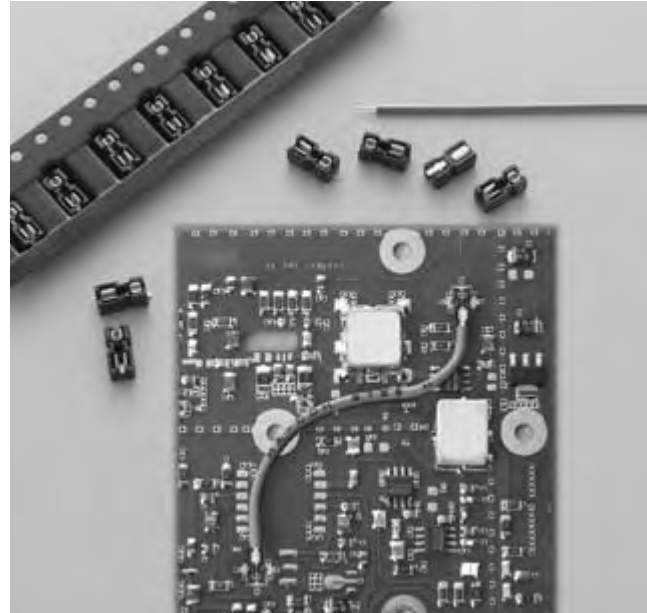
Product Facts

- Solderless Cable Termination
- 3.0 [.118] Mated Height
- Excellent Cable Retention
- Usable With Flexible and Semi-Rigid Micro-Coaxial Cables
- Tape and Reel Packaging

Tyco Electronics revolutionary SMT/QuickGrip product line is designed to meet the growing demand for a reliable, low cost system for direct termination of coax to a printed circuit board (PCB). SMT/QuickGrip technology eliminates the requirement to connectorize the coaxial cable, reducing assembly times and, therefore, cost. The SMT/QuickGrip surface mount device occupies less PCB area than conventional through hole coaxial connectors. An innovative microstrip mounting pattern and cable receptacle design ensures excellent grounding and PCB retention. The SMT/QuickGrip cable termination system stands a mere 3.0 [.118] off the board when mated, allowing for closer pitch/spacing when designing a

system. The SMT/QuickGrip design provides optimal cable retention for applications where shock, vibration, and/or cable flexure may be encountered. This unique RF design accepts both flexible and semi-rigid micro-coaxial cables while delivering exceptional RF performance up to 3GHz.

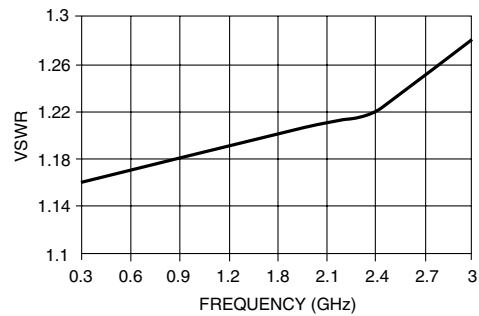
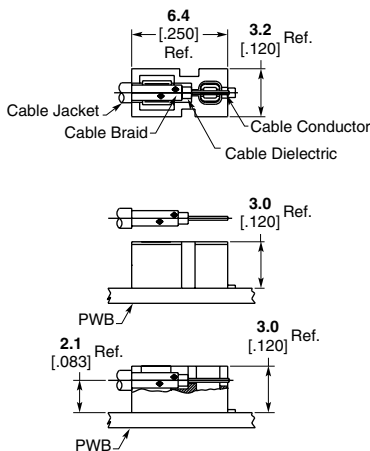
These features make this system extremely versatile for design engineers and offer a reliable, cost effective alternative to direct soldering of cable to the PCB. The cable is inserted into the device by means of a simple self-aligning hand tool, eliminating the requirement for skilled personnel. This system removes the possibility of damaged PCBs and cables which are common quality issues associated with direct solder, while providing superior RF performance. The SMT/QuickGrip accommodates multiple cable insertions allowing easy replacement of cables for repairs. This receptacle is designed for high volume assembly using surface mount technology and is available in tape and reel packaging for pick and place board assembly. Pre-stripped cables and inter-



series cable pigtails are available as turnkey solutions for your application needs (i.e.: for use in multi-board applications, for connecting antennas to the PCB, or point to point transmission on the same PCB).

The SMT/QuickGrip cable termination system is ideal for wireless surface mount applications in handsets, pagers and personal digital assistants (PDA). The SMT/QuickGrip

mechanical and electrical performance, coupled with its ease of use, ensure it to be a high quality, reliable solution for current and future interconnect needs. Tyco Electronics is an ISO9001 certified manufacturer and maintains an SPC controlled manufacturing environment. Please call your local Sales or Distribution office for additional information and qualification samples today.



Typical VSWR using SMT/QuickGrip with Omni-Flex 200 Cable

Omni-Flex 200 cable is a Tyco Electronics specified cable.

SMT/QuickGrip Connectors (Continued)

Specifications
General

| | |
|------------------|-----------------------------|
| Materials | |
| Housing: | Polyphenylene Sulfide (PPS) |
| Contacts: | Copper Alloy |
| Finishes | |
| Contacts: | Gold Plate over Nickel |

Electrical

| | |
|------------------|--|
| Frequency Range: | DC - 3GHz |
| Impedance: | Usable with 50 & 75 Ohm systems |
| Insertion Loss: | .08 \sqrt{f} GHz |
| DWV: | 750 VRMs |
| VSWR: | 1.3:1 @ 3GHz (Omni-Flex 200 and .047 [.002] Semi-Rigid) 1.4:1 @ 3GHz (.034 [.001] Semi-Rigid) |

Mechanical

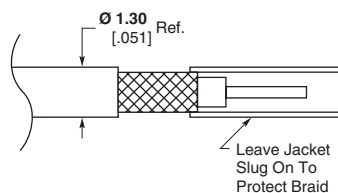
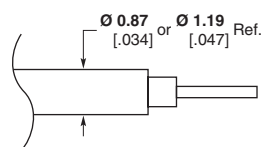
| | |
|--|--|
| Connector Durability: | 5 mating cycles min. (receptacle only) |
| Tape and Reel Packaging: | 16 [.629] per EIA-481 |
| Force to Disengage by Cam-Out (grams): | Omni-Flex 200 Cable - 543 typical .034 [.001] Semi-Rigid - 852 typical .047 [.002] Semi-Rigid - 1066 typical |

Environmental

| | |
|----------------------------|---|
| Temperature Rating: | -40°C(-40°F) to 125°C(257°F) when mated with Omni-Flex 200 Cable |
| Resistance to Solder Heat: | Infrared, convection, and vapor phase solderable (receptacle only). Maximum reflow time/temperature not to exceed 260°C for 3 minutes. |

Cable Information

| | |
|--|---|
| Omni-Flex 200 Cable | |
| Materials: | FEP Flexible Cable (200°C) |
| Jacket: | Fluorinated Ethylene Propylene |
| Shield: | Silver plated copper wire, 44 AWG, 90% min. coverage |
| Dielectric: | PTFE (Polytetrafluoroethylene) |
| Center Conductor: | Silver Plated Copper Clad Steel, 30 AWG |
| Minimum Bend Radius: | 6.35 [.250] |
| Insertion Loss (PVC and FEP cable only): | 1.3dB/m, 0.4 dB/ft. @ 500 MHz 2.0dB/m, 0.5 dB/ft. @ 1 GHz 3.0dB/m, 0.9 dB/ft. @ 2 GHz |
| Center Conductor Resistance: | .26 Ohms per foot average |

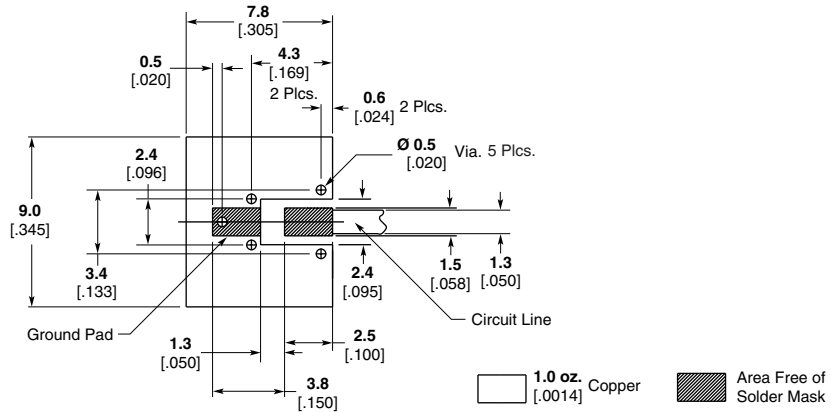
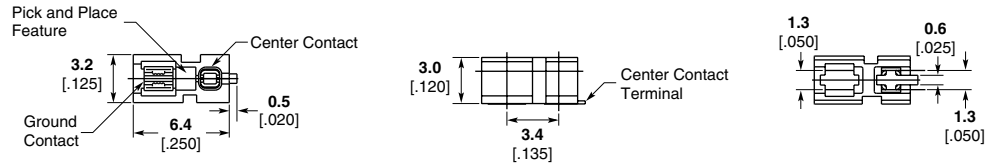
Strip Dimensions
**Tyco Electronics
Omni-Flex 200 Cable
Part Number 1407578-1**

**Semi-Rigid Cable
(.034 and .047)**


Omni-Flex 200 cable is a Tyco Electronics specified cable.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SMT/QuickGrip Connectors (Continued)

PC Board Mount Receptacle



Recommended Mounting Pattern for Microstrip Line

| Description | Part No. |
|-----------------------|------------------|
| Bulk Packaged 100/bag | 1085456-1 |
| 700 Piece Reel | 1086008-1 |
| 2000 Piece Reel | 1086009-1 |

1. Printed wiring board material: glass epoxy FR-4 or similar, relative permittivity: 4.8, 1 oz. copper clad both sides.
2. These dimensions valid for 1.6 [.062] board thickness.

Cable Insertion Tool



| Part No. |
|------------------|
| 1088313-1 |

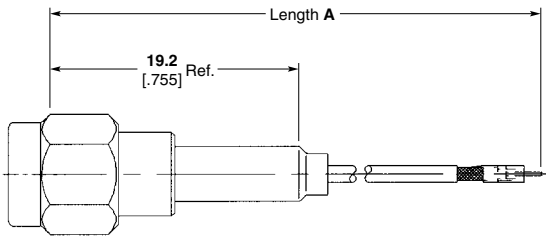
Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SMT/QuickGrip Connectors (Continued)

Inter-Series Cable Assemblies



SMA Straight Plug

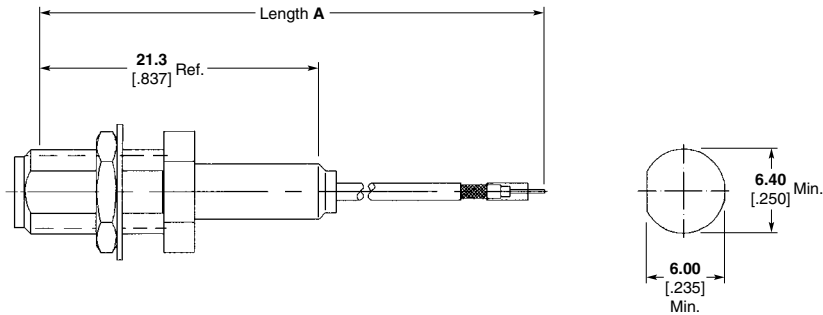


| Cable | Assembly Length (A) | Part No. |
|---------------|---------------------|------------------|
| Omni-Flex 200 | 100 [4] | 1329174-1 |
| | 200 [8] | 1329174-2 |
| | 305 [12] | 1310432-1 |

Note:

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],
 50 to 100 [3.94], ± 3 [± .12], 101 to 500 [3.98 to 19.69], ± 5 [± .20],
 Over 500 [19.69], ± 10 [± .39]

SMA Bulkhead Jack



Recommended Mounting Hole

| Cable | Assembly Length (A) | Part No. |
|---------------|---------------------|------------------|
| Omni-Flex 200 | 100 [4] | 1329175-1 |
| | 200 [8] | 1329175-2 |
| | 305 [12] | 1329175-3 |

Note:

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],
 50 to 100 [3.94], ± 3 [± .12], 101 to 500 [3.98 to 19.69], ± 5 [± .20],
 Over 500 [19.69], ± 10 [± .39]

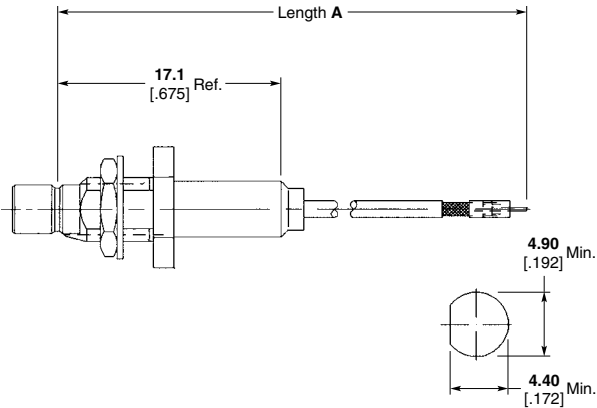
Omni-Flex 200 cable is a Tyco Electronics specified cable.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SMT/QuickGrip Connectors (Continued)

Inter-Series Cable Assemblies (Continued)

SMB Bulkhead Jack



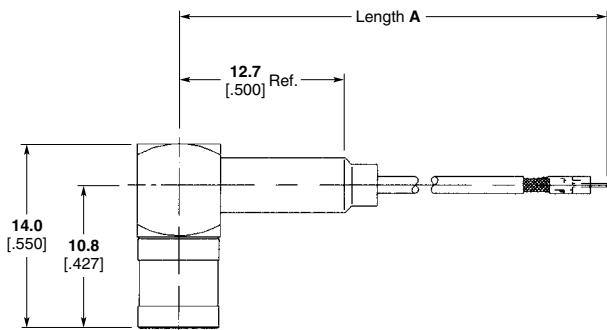
Recommended Mounting Hole

| Cable | Assembly Length (A) | Part No. |
|---------------|---------------------|-----------|
| Omni-Flex 200 | 100 [4] | 1408050-4 |
| | 200 [8] | 1408050-5 |
| | 305 [12] | 1408050-6 |

Note:

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],
50 to 100 [3.94], ± 3 [± .12], 101 to 500 [3.98 to 19.69], ± 5 [± .20],
Over 500 [19.69], ± 10 [± .39]

SMB Right-Angle Plug

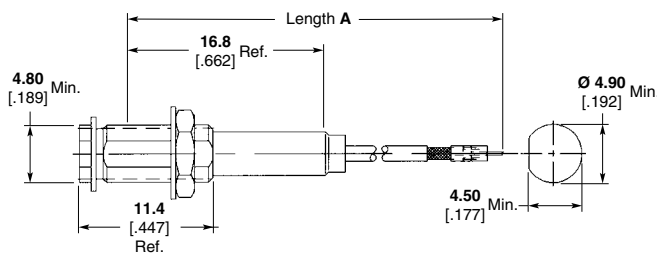


| Cable | Assembly Length (A) | Part No. |
|---------------|---------------------|-----------|
| Omni-Flex 200 | 100 [4] | 1255378-4 |
| | 200 [8] | 1255378-5 |
| | 305 [12] | 1255378-6 |

Note:

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],
50 to 100 [3.94], ± 3 [± .12], 101 to 500 [3.98 to 19.69], ± 5 [± .20],
Over 500 [19.69], ± 10 [± .39]

MCX Bulkhead Jack



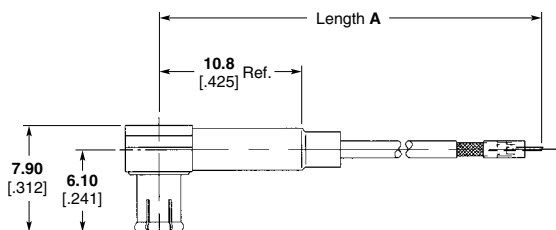
Recommended Mounting Hole

| Cable | Assembly Length (A) | Part No. |
|---------------|---------------------|-----------|
| Omni-Flex 200 | 100 [4] | 1408051-4 |
| | 200 [8] | 1408051-5 |
| | 305 [12] | 1408051-6 |

Note:

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],
50 to 100 [3.94], ± 3 [± .12], 101 to 500 [3.98 to 19.69], ± 5 [± .20],
Over 500 [19.69], ± 10 [± .39]

MCX Right-Angle Plug



| Cable | Assembly Length (A) | Part No. |
|---------------|---------------------|-----------|
| Omni-Flex 200 | 100 [4] | 1330401-4 |
| | 200 [8] | 1330401-5 |
| | 305 [12] | 1330401-6 |

Note:

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],
50 to 100 [3.94], ± 3 [± .12], 101 to 500 [3.98 to 19.69], ± 5 [± .20],
Over 500 [19.69], ± 10 [± .39]

Omni-Flex 200 cable is a Tyco Electronics specified cable.

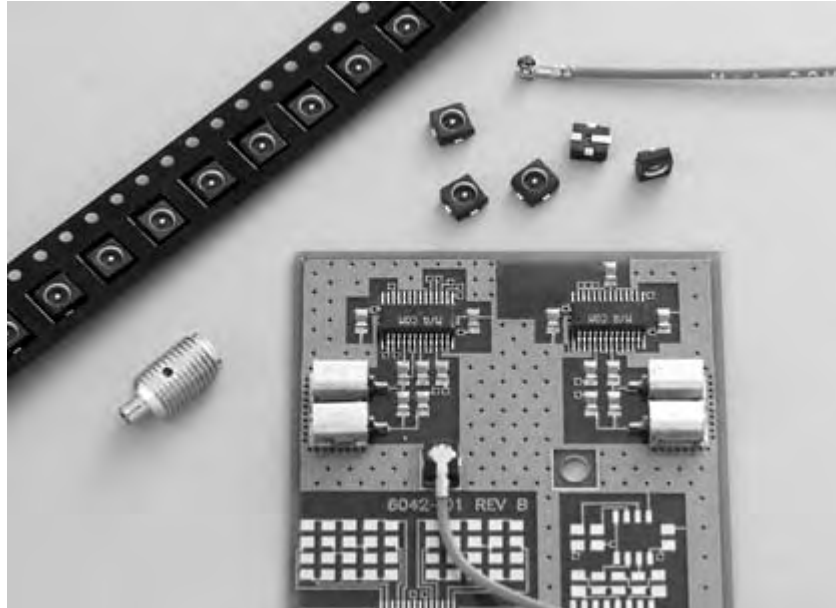
Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SSMT Surface Mount Interconnect System

Microminiature Surface Mount RF Connectors

Product Facts

- 3.0 [.118] mated height
- Excellent interface retention
- Flexible micro-coax cable
- 360 degree mated rotation
- Tape and Reel packaging available



The Tyco Electronics SSMT surface mount Interconnect System is designed to provide superior electrical and mechanical performance for wireless communication applications. The SSMT system occupies less printed circuit board (PCB) real estate than conventional through hole coaxial connectors. An innovative microstrip mounting pattern and plug receptacle design ensure reliable grounding and PCB retention characteristics. The SSMT Interconnect System allows closer pitch/spacing, standing 3.0 [.118] (fully mated height) off the board. The mated SSMT interface allows 360 degrees of rotation providing maximum PCB design flexibility. It has been designed to provide optimal retention for

applications where shock, vibration or cable flexure may be encountered. Force to disengage by cable load (cam-out) exceeds 300 grams.

The SSMT system is designed to provide the performance of much larger industry standard connectors. The SSMT Interconnect System consistently achieves broad band electrical performance through 6 GHz with a maximum VSWR of 1.20:1 at 2 GHz. This broad band performance establishes a reliable interface that can be utilized for future system upgrades without concern for performance degradation.

The SSMT utilizes a common plug receptacle, part number 1251802-1, which is designed for high volume

assembly using surface mount technology and is available in tape and reel packaging for automatic pick and place board assembly. The mating cable jack is available terminated to a highly flexible micro-coax cable as either a pigtail, jumper or standard interseries connector assembly to meet your needs.

The SSMT Interconnect System can be manually mated, facilitating high volume assembly and eliminating the need for special engagement tooling. The SSMT interface design aligns the center contacts prior to full mating to ensure a robust mechanical engagement. Interface durability is rated at 100 mating cycles.

SSMT Surface Mount Interconnect System (Continued)

Specifications

General

Materials

| | | |
|-----------------|--|---|
| SMT Plug | Housing: Contacts: | Polyphenylene Sulfide (PPS) Copper Alloy |
| SSMT Cable Jack | Outer Contact: Inner Contact: Dielectric: | Beryllium Copper Beryllium Copper Polypropylene, GF |
| Finish | Plug and cable jack - Contacts: Gold plate over nickel plate | |

Electrical

| | |
|--------------------------------------|--|
| Frequency | dc - 6 GHz |
| Nominal Impedance | 50 Ohms |
| Voltage Rating | 250 Volts (VRMS Maximum) @ Sea Level |
| VSWR (Mated Pair) | 1.20:1 Maximum @ 2 GHz 1.40:1 Maximum @ 6 GHz |
| Insulation Resistance | 5000 Megohms Minimum |
| Dielectric Withstanding Voltage | 500 Volts (VRMS Minimum) @ Sea Level |
| Contact Resistance (Connectors Only) | |
| Center Contact | 15 milliohms Maximum |
| Outer Contact | 10 milliohms Maximum |
| Insertion Loss (Connectors Only) | .15dB Max. @ 6 GHz |

Mechanical

| | |
|---|---|
| Connector Durability | 100 mating cycles |
| Tape/Reel Packaging (Plug) | 12mm per EIA-481 |
| Force to Engage | 5.5 lbs. Max. (3.5 lbs. typ.) |
| Force to Disengage | (2.0 lbs. typ.) 4.0 lbs. Max. (2.0 lbs. typ.) |
| Force to Disengage by Cable Load (camout) | 300 Grams Min. (800 Grams typ. initial mate) |

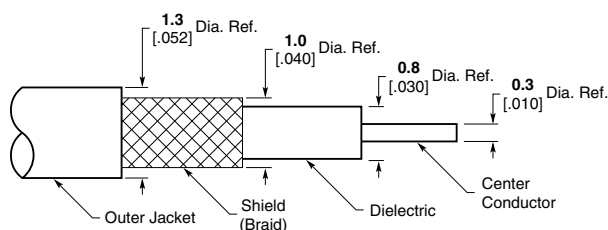
Environmental

| | |
|---------------------------------|--|
| Temperature Rating (Mated Pair) | -40°C (-40°F) to +125°C (257°F) |
| Resistance to Solder Heat | Infrared, convection and vapor phase solderable (plug only). Maximum reflow time/temperature not to exceed 260°C for 3 minutes. |

Cable Specifications

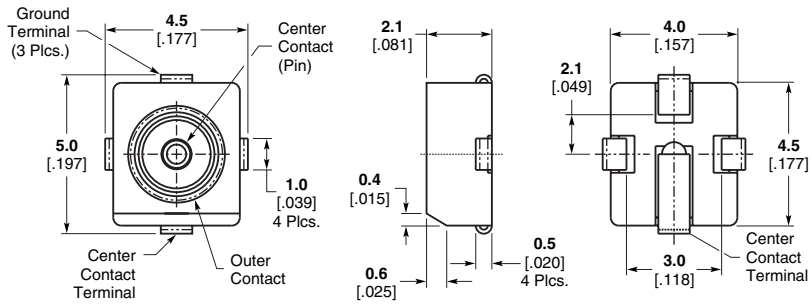
Materials

| | |
|-----------------------------|--|
| Jacket: | FEP (polytetrafluoroethylene) |
| Shield: | Silver plated copper wire, 44 AWG, 90% min. coverage |
| Dielectric: | PTFE (polytetrafluoroethylene) |
| Center Conductor: | Silver plated copper clad steel, 30 AWG |
| Minimum Bend Radius | 6.35mm (.250 inch) |
| Insertion Loss (Cable Only) | 0.5 dB/ft., 2.0 dB/m @ 1 GHz 0.9 dB/ft., 3.0 dB/m @ 2 GHz |
| Center Conductor Resistance | .25 Ohms per foot average. 819 milliohm/meter Nom.; 250 milliohm/Ft. Nom. |

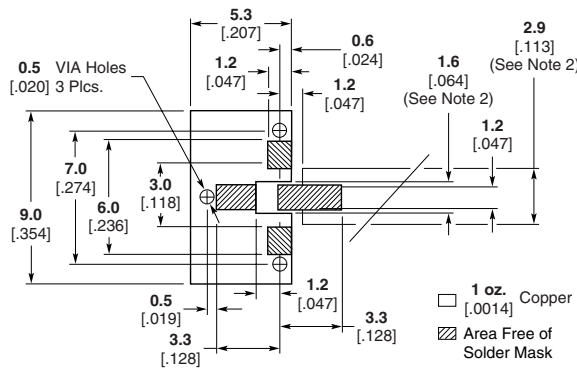


SSMT Surface Mount Interconnect System (Continued)

Straight SMT PCB Mount Plug Receptacle



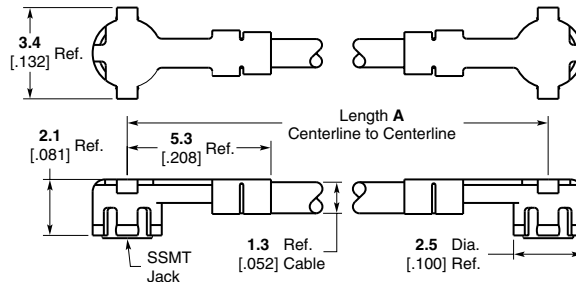
| Packaging | Quantity | Part No. |
|-------------------------|-----------------|------------------|
| Bulk | Multiple of 100 | 1251802-1 |
| 178 7.0 Dia. Taping | 800 pcs/reel | 1083946-1 |
| 330 13.3 Dia. Taping | 3000 pcs/reel | 1055689-1 |



Recommended Mounting Pattern for Microstrip Line

Right-Angle Jack to Jack Cable Assembly

| Assembly Length (A) | Part No. |
|---------------------|------------------|
| 100 [4.0] | 1064524-1 |
| 200 [8.0] | 1064530-1 |
| 305 [12.0] | 1064533-1 |



Notes:

- Consult Tyco Electronics for non-standard cable lengths.
Length A Tolerances.

| Length A | Tolerance |
|----------------------------|--------------|
| 50 To 100 [3.94] | ± 3 [± .12] |
| 101 To 500 [3.98 to 19.69] | ± 5 [± .20] |
| Over 500 [19.69] | ± 10 [± .39] |

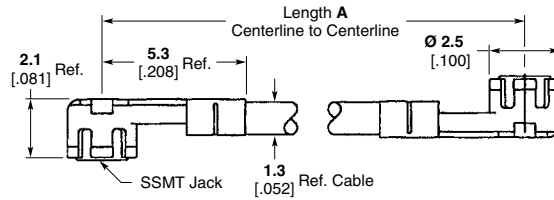
- Connector centerlines align ± 30° as shown for lengths of 165 [6.5] or less. Cable assemblies over 165 [6.5] have randomly aligned connectors.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SSMT Surface Mount Interconnect System (Continued)

**Right-Angle Jack to Jack
Cable Assembly
(180° Offset)**

| Assembly Length (A) | Part No. |
|---------------------|-----------|
| 100 [4.0] | 1082845-1 |



Notes:

1. Consult Tyco Electronics for non-standard cable lengths.
Cable length tolerance:

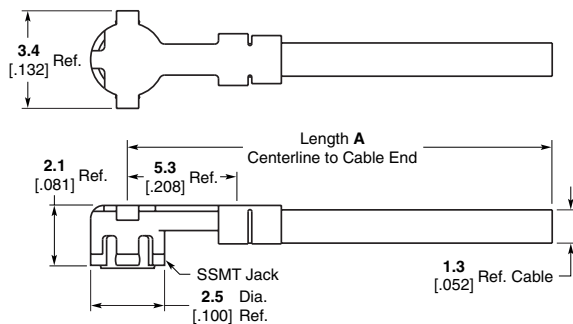
Length A Tolerances.

| Length A | Tolerance |
|----------------------------|--------------|
| 50 To 100 [3.94] | ± 3 [± .12] |
| 101 To 500 [3.98 to 19.69] | ± 5 [± .20] |
| Over 500 [19.69] | ± 10 [± .39] |

2. To avoid damaging the cable, minimize time at temperature while soldering and/or applying heat to unterminated end of cable.

**Right-Angle Jack Cable
Pigtail**

| Assembly Length (A) | Part No. |
|---------------------|-----------|
| 100 [4.0] | 1064535-1 |
| 200 [8.0] | 1064538-1 |
| 305 [12.0] | 1064540-1 |
| 510 [20.0] | 1064542-1 |



Notes:

1. Consult Tyco Electronics for non-standard cable lengths.
Cable length tolerance:

Length A Tolerances.

| Length A | Tolerance |
|----------------------------|--------------|
| 50 To 100 [3.94] | ± 3 [± .12] |
| 101 To 500 [3.98 to 19.69] | ± 5 [± .20] |
| Over 500 [19.69] | ± 10 [± .39] |

2. To avoid damaging the cable, minimize time at temperature while soldering and/or applying heat to unterminated end of cable.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SSMT Surface Mount Interconnect System (Continued)

Inter-Series Cable Assemblies

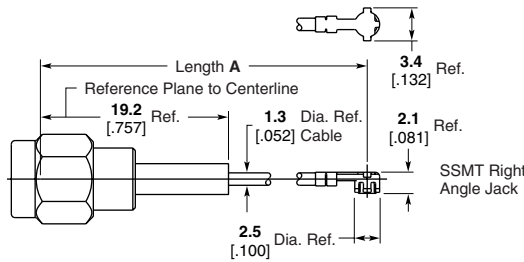


Notes:

- Consult Tyco Electronics for non-standard cable lengths:
Length A Tolerances.

| Length A | Tolerance |
|----------------------------|--------------|
| 50 To 100 (3.94) | ± 3 (± .12) |
| 101 To 500 (3.98 to 19.69) | ± 5 (± .20) |
| Over 500 (19.69) | ± 10 (± .39) |
- Connectors are randomly aligned unless otherwise noted.

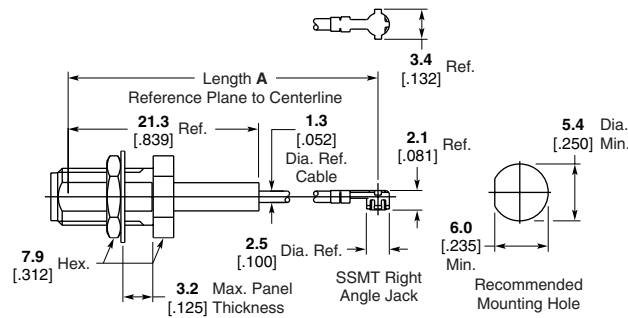
SMA Straight Plug



| Assembly Length (A) | Part No. |
|---------------------|-----------|
| 100 [4.0] | 1064543-1 |
| 200 [8.0] | 1064552-1 |
| 305 [12.0] | 1064560-1 |

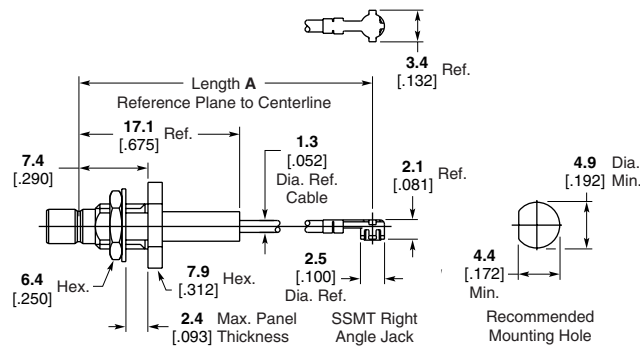
Note:
1064552-1 recommended for customer system verification.

SMA Bulkhead Jack



| Assembly Length (A) | Part No. |
|---------------------|-----------|
| 100 [4.0] | 1064544-1 |
| 200 [8.0] | 1064553-1 |
| 305 [12.0] | 1064561-1 |

SMB Bulkhead Jack



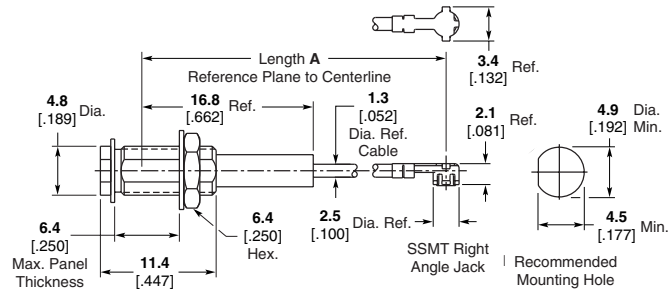
| Assembly Length (A) | Part No. |
|---------------------|-----------|
| 100 [4.0] | 1064546-1 |
| 200 [8.0] | 1064555-1 |
| 305 [12.0] | 1064563-1 |

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

SSMT Surface Mount Interconnect System (Continued)

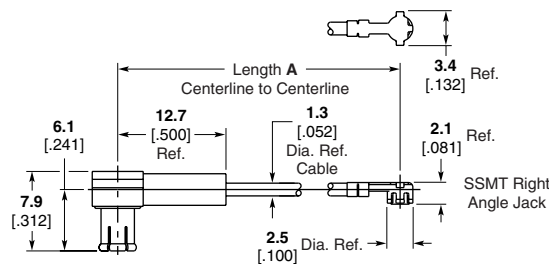
Inter-Series Cable Assemblies (Continued)

MCX Bulkhead Jack



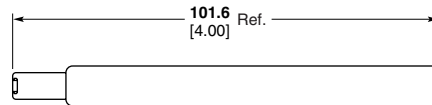
| Assembly Length (A) | Part No. |
|---------------------|-----------|
| 100 [4.0] | 1064549-1 |
| 200 [8.0] | 1064558-1 |
| 305 [12.0] | 1064566-1 |

MCX Right-Angle Plug

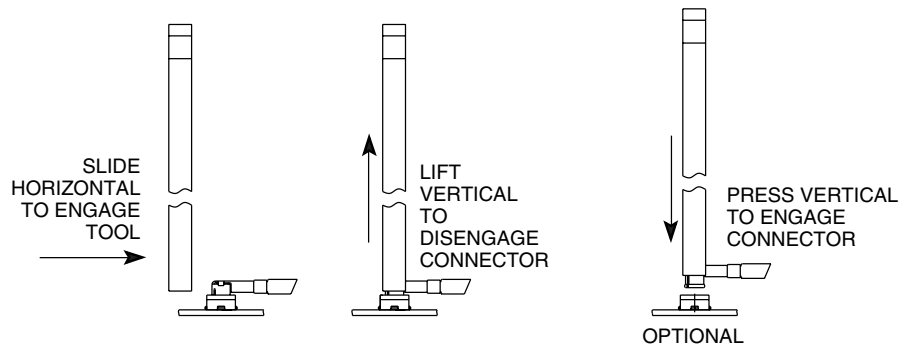


| Assembly Length (A) | Part No. |
|---------------------|-----------|
| 100 [4.0] | 1064550-1 |
| 200 [8.0] | 1064559-1 |
| 305 [12.0] | 1064567-1 |

SSMT Disengagement Tool



| Part No. |
|-----------|
| 1221286-1 |

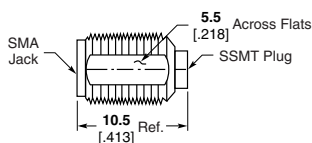


Use of Engagement/Disengagement Tool

Note: The SSMT disengagement tool can be utilized as an optional engagement tool versus manual hand installation.

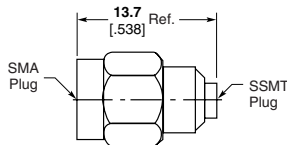
SSMT to SMA Between Series Adapters

SSMT Plug to SMA Jack Adapter



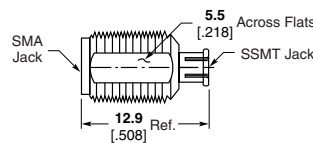
Part No. 1055696-1

SSMT Plug to SMA Plug Adapter



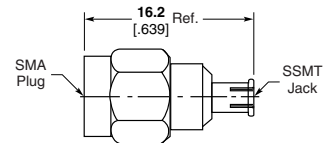
Part No. 1055695-1

SSMT Jack to SMA Jack Adapter



Part No. 1055694-1

SSMT Jack to SMA Plug



Part No. 1055697-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

MMCX Microminiature Snap-On Connector Series

Product Facts

- Snap-on interface facilitates assembly
- 35% smaller than MCX Series
- Designed for space saving applications up to 6 GHz
- Conforms to CECC Specifications
- Surface mount tape and reel for high volume

Tyco Electronics' micro-miniature snap-on connectors offer an excellent blend of size, durability and performance for emerging applications in GPS, PCS, automotive and wireless communications. An extension of the popular MCX series, MMCX connectors are 35% smaller, offering even greater packaging density and weight reduction. MMCX connectors are rated to 500 mating cycles. The snap-on interface facilitates assembly, eliminating the need for a threaded connection, and ensuring full engagement. The forces to engage and disengage have been optimized to ensure ease of mating as



well as to prevent damage to PCB solder connections. MMCX connectors are designed for broadband performance, DC-6 GHz, and can be utilized for future system upgrades without concerns for performance degradation. The non-slotted outer contact provides for minimal RF leakage. MMCX surface mount connectors are designed to withstand infrared reflow, convection and vapor phase soldering.

Tyco Electronics MMCX connectors are fully mateable with competitive MMCX product and conforms to the CECC interface specifications. They are available in a broad range of standard

configurations, including PCB and panel mount, flexible and semi-rigid cable. Tape and reel packaging is available on surface mount product to facilitate high volume manufacturing. Other options can be reviewed as well, including additional cable sizes, and adapters.

The MMCX connector series is a cost effective solution for the challenging demands of today's commercial marketplace. It offers one of the smallest conventional crimp terminations without special tooling. Call your local sales office or authorized distributor for additional information or samples of the MMCX connector series.

Material and Finish

Shells — Brass
Bodies — Brass, plated gold
Center Contacts —
 (Male) — Brass, plated gold
 (Female) — Beryllium Copper, plated gold
Dielectrics — PTFE

Electrical Characteristics in accordance with CECC 22000

Frequency — dc – 6 GHz
Nominal Impedance — 50 ohms
Voltage Rating — 170 Volts (VRMS Max.) @ Sea Level
VSWR — 1.25 : 1 Max. @ 6 GHz
Insulation Resistance — 1,000 Megohms Min.

Dielectric Withstanding Voltage — 500 Volts (VRMS Max.) @ Sea Level

RF Leakage — -60 dB Min. @ 2.5 GHz

Contact Resistance —
 Center Contact — 5 milliohms max.
 Outer Contact — 1 milliohm max.

Mechanical Characteristics in accordance with CECC 22000

Connector Durability — 500 mating cycles
Force to Engage — 18 Newtons Max.
Force to Disengage — 6 Newtons Max.
Center Contact Retention — 10 Newtons Min.
Cable Retention —
 Axial — 45 Newtons Min.
 Rotational — 0.05 N-m Min.

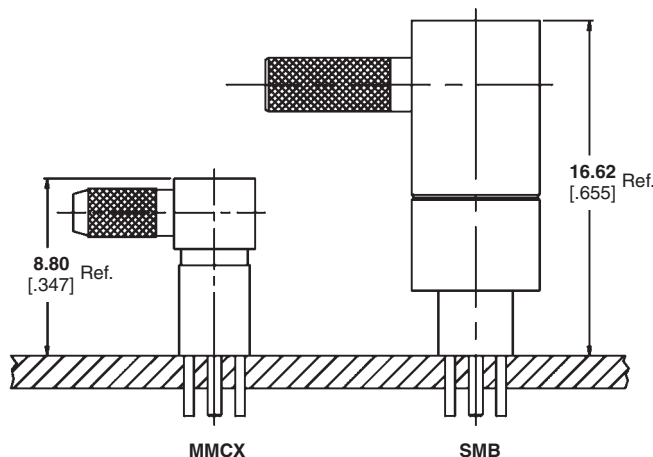
Environmental Characteristics in accordance with CECC 22000, Equivalent Test Conditions

Temperature Rating — -55 to +155°C
Vibration — MIL-STD-202, Method 204, Condition B
Shock — MIL-STD-202, Method 213, Condition A
Moisture Resistance — MIL-STD-202, Method 106
Thermal Shock — MIL-STD-202, Method 107, Condition B

Note: Performance specifications are typical, but may not apply to all connector types.

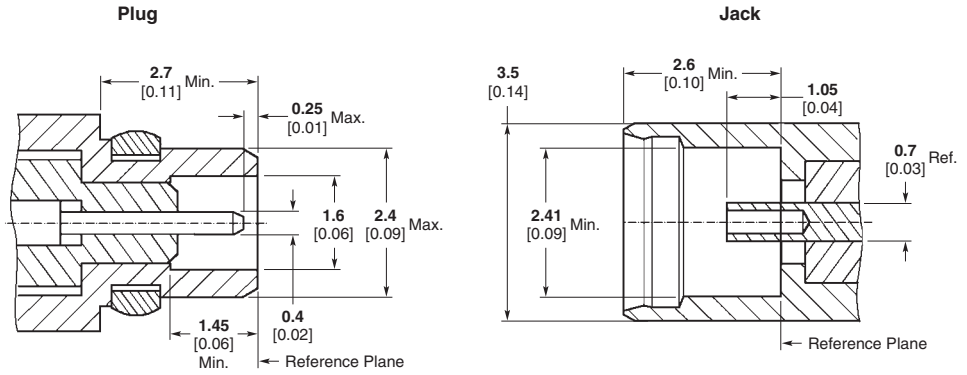
Related Product Data

Product Specification — 108-2084
Sample Kit — 1654779

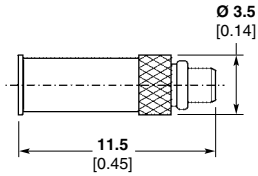


MMCX Microminiature Snap-On Connector Series (Continued)

MMCX Interface Dimensions

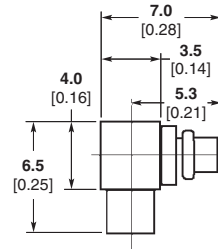


**Semi-Rigid Cable – Direct Solder Attachment
Straight Cable Plug**



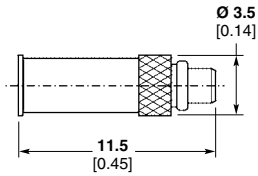
| Cable | Part No. |
|--------|-----------|
| RG 405 | 1408313-1 |

Right-Angle Cable Plug



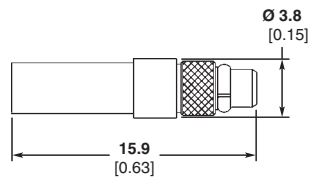
| Cable | Part No. |
|--------|-----------|
| RG 405 | 1408314-1 |

**Flexible Cable – Crimp Attachment
Straight Cable Plugs**



| Cable | Part No. |
|-------------|-----------|
| RG 178, 196 | 1408148-1 |

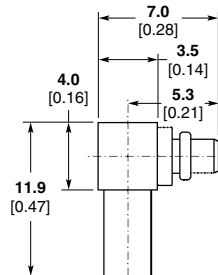
Captured Center Contact



| Cable | Part No. |
|------------------|-----------|
| RG 174, 188, 316 | 1408312-1 |
| RD 316 | 1408312-2 |

Captured Center Contact

Right-Angle Cable Plug



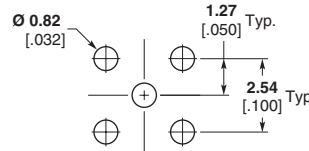
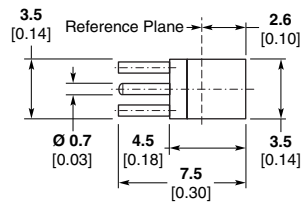
| Cable | Part No. |
|------------------|-----------|
| RG 178, 196 | 1408149-1 |
| RG 174, 188, 316 | 1408149-2 |
| RD 316 | 1408149-3 |

Captured Center Contact

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

MMCX Microminiature Snap-On Connector Series (Continued)

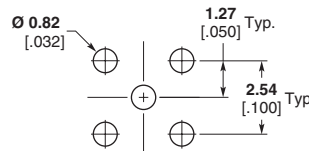
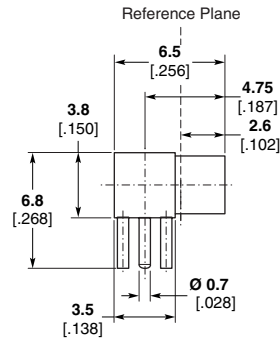
**Printed Circuit Board
Straight Jack Receptacle**



Recommended Mounting Holes

| |
|------------------|
| Part No. |
| 1408150-1 |

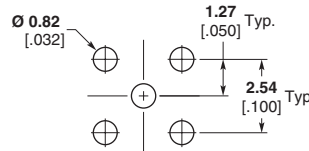
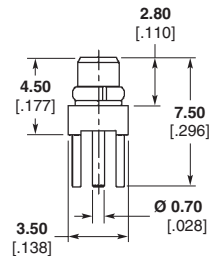
Right-Angle Jack Receptacle



Recommended Mounting Holes

| |
|------------------|
| Part No. |
| 1408151-1 |

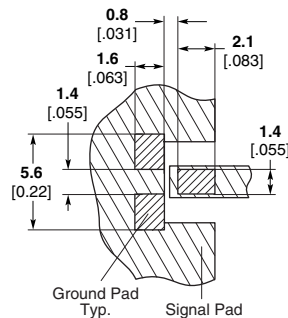
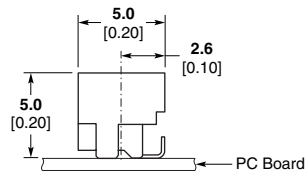
Straight Plug Receptacle



Recommended Mounting Holes

| |
|------------------|
| Part No. |
| 1408496-1 |

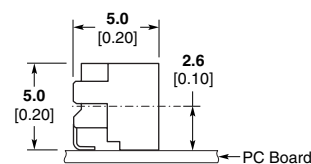
**Surface Mount
Straight Jack Receptacle**



Recommended Mounting Pattern

| |
|------------------|
| Part No. |
| 1393757-6 |

Right-Angle Jack Receptacle



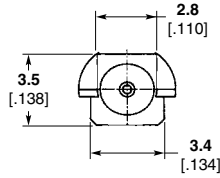
Recommended Mounting Pattern

| |
|------------------|
| Part No. |
| 1393757-7 |

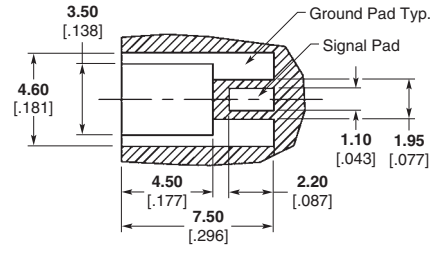
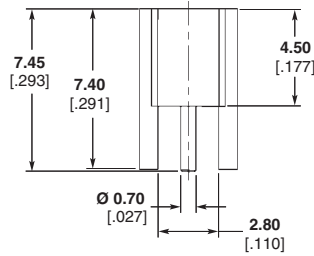
Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

MMCX Microminiature Snap-On Connector Series (Continued)

Edge Mount
Straight Jack Receptacle

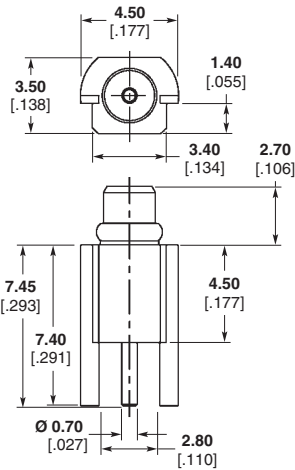


| |
|------------------|
| Part No. |
| 1408152-1 |

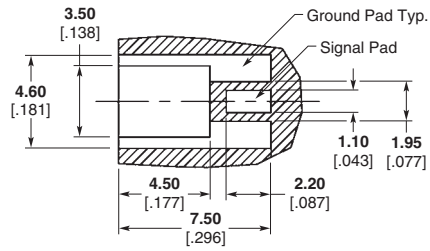


Solder Pad Configuration Only

Straight Plug Receptacle



| |
|------------------|
| Part No. |
| 1408120-1 |



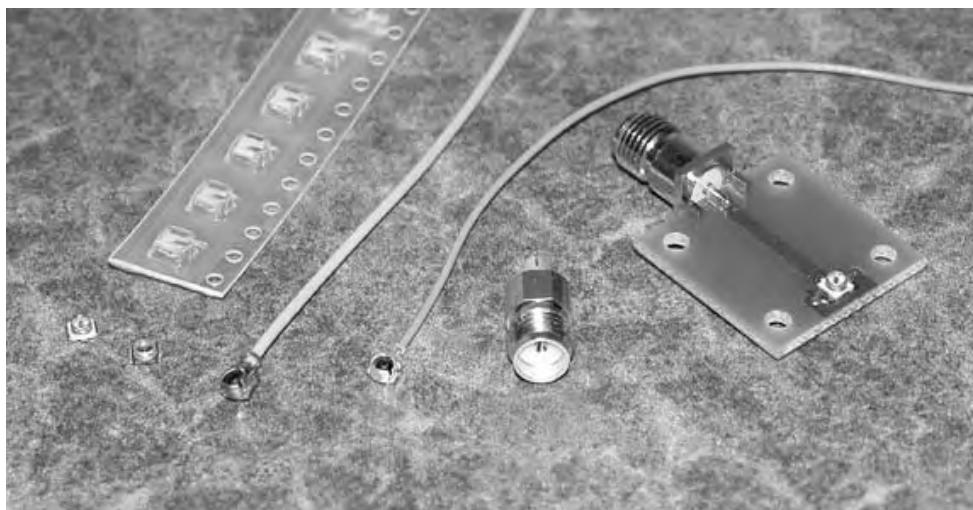
Solder Pad Configuration Only

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

UMCC — Ultraminiature Coax Connector and Cable Assembly Series

Product Facts

- Ultra low profile (2.0 mm or 2.5 mm maximum mated height)
- Easy snap on/off mating
- Small footprint on PCB (3 mm x 3 mm)
- Excellent performance to 6 GHz
- Surface mount and reflow solderable
- Available on 0.80 mm and 1.37 mm dia. single shield, and 1.32 mm dia. double shield cable
- Style A receptacles mate with HIROSE U.FL/U.FL(v) Series connectors
- Style B receptacles mate with MURATA GSC Series connectors



Description

- Extremely low profile
- Surface mount technology
- 360° mated rotation
- Excellent price-to-performance ratio

Applications

- Wireless LAN, Mini PCI
- Mobile Antenna/GPS/Radio Systems
- PDA/PCS/Cellular Handset applications
- Wireless Communications systems (LAN, GSM, PCS, WCDMA, UMTS)
- Remote measuring equipment

Electrical Characteristics

- Characteristic Impedance** — 50 Ohms
- Frequency Range** — DC to 6 GHz
- VSWR (mated pair)** — 1.30 max. DC to 3 GHz
1.40 max. 3 to 6 GHz (cable dependent)
- Insertion Loss (connectors only)** — 0.24 dB max. DC to 6 GHz
- Rated Voltage** — 60 VAC (rms) — standard receptacle (Styles A, B)
- Dielectric Withstanding Voltage** — 200 VAC, 50 Hz for 1 min. @ sea level
- Insulation Resistance** — 500 Megohms min.
- Contact Resistance (connectors only)** — 20 milliohms max. (Center)
10 milliohms max. (Outer, Plug)
10 milliohms max. (Outer, Receptacle)

Mechanical and Environmental Characteristics

- Durability** — 30 cycles — standard receptacle (Styles A, B)
- Disengagement Force** — 2N min. perpendicular
4N min. orthogonal
- Center Contact Retention Force** — 0.15N min.
- Tape/Reel Packaging (receptacle)** — 12 mm carrier per EIA-481
- Operating Temperature** — -40°C to +90°C

Material and Finish

- Shell** — Phosphor bronze, plated gold or silver
- Male Center Contact** — Brass or phosphor bronze, plated gold
- Female Center Contact** — Brass or phosphor bronze, plated gold
- Insulator (Plug)** — PBT (15% G.F.), black, UL94V-0
- Insulator (Receptacle)** — LCP, beige or black, UL94V-0

Related Product Data

- Product Specification** — 108-2231
- Sample Kit** — 1-1773441-6

HIROSE is a trademark of Hirose Electric.
MURATA is a trademark of Murata Electronics, Inc.

UMCC — Ultraminiature Coax Connector and Cable Assembly Series (Continued)

Cable Information

Material and Finish

Center Conductor —
0.8 mm Dia. — Silver plated copper
1.32 mm Dia. — Silver plated copper
1.37 mm Dia. — Silver plated copper

Center Conductor Size —
0.8 mm Dia. — Stranded 7/0.05 mm
1.32 mm Dia. — Stranded 7/0.08 mm
1.37 mm Dia. — Stranded 7/0.10 mm

Dielectric —
0.8 mm Dia. — FEP or PFA
1.32 mm Dia. — FEP
1.37 mm Dia. — FEP

Dielectric Size —
0.8 mm Dia. — 0.4 mm OD
1.32 mm Dia. — 0.66 mm OD
1.37 mm Dia. — 0.83 mm OD

Shield —
0.8 mm Dia. — Silver plated copper braid
1.32 mm Dia. — Double SPL braid
1.37 mm Dia. — Silver plated copper braid

Shield Coverage —
0.8 mm Dia. — > 90%
1.32 mm Dia. — > 90% (each braid layer)
1.37 mm Dia. — > 90%

Jacket —
0.8 mm Dia. — FEP or PFA
1.32 mm Dia. — FEP
1.37 mm Dia. — FEP

Jacket Size —
0.8 mm Dia. — 0.80 mm OD
1.32 mm Dia. — 1.32 mm OD
1.37 mm Dia. — 1.37 mm OD

Mechanical Characteristics

Minimum Bend Radius —
0.8 mm Dia. — 5 mm single bend, 30 mm continuous flexing
1.32 mm Dia. — 5 mm single bend, 30 mm continuous flexing
1.37 mm Dia. — 5 mm single bend, 30 mm continuous flexing

Electrical Characteristics

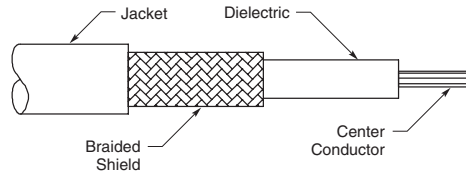
Impedance (Ohms) —
0.8 mm Dia. — 50 ± 2
1.32 mm Dia. — 50 ± 2
1.37 mm Dia. — 50 ± 2

Velocity of Propagation —
0.8 mm Dia. — 70%
1.32 mm Dia. — 70%
1.37 mm Dia. — 70%

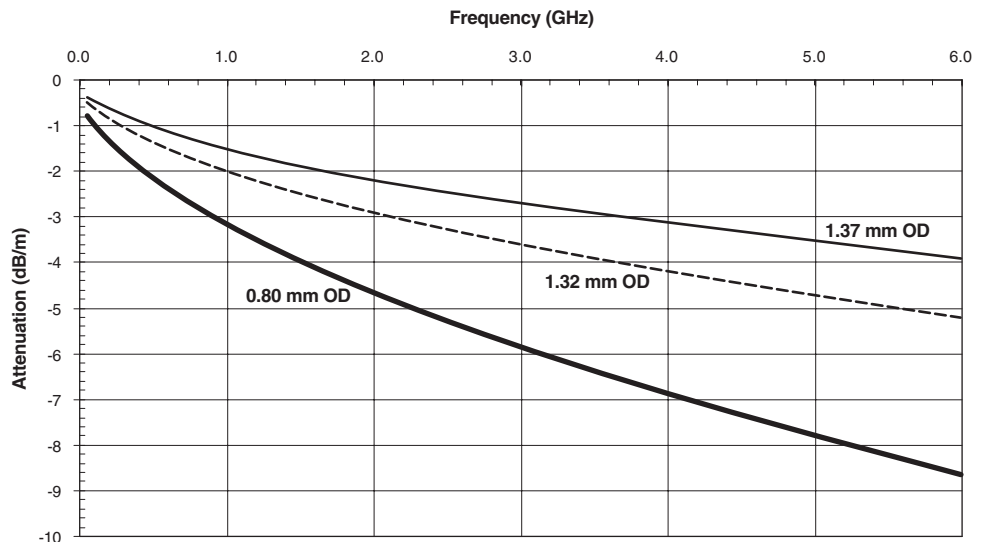
CC Resistance (Ohms/KM) —
0.8 mm Dia. — 1450
1.32 mm Dia. — 560
1.37 mm Dia. — 354

Voltage Rating —
0.8 mm Dia. — 60 VAC
1.32 mm Dia. — 60 VAC
1.37 mm Dia. — 60 VAC

Attenuation — See chart

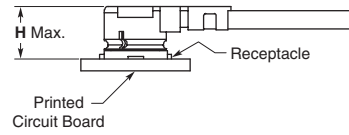


UMCC Cable Attenuation



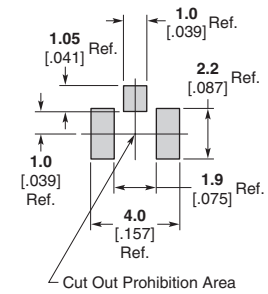
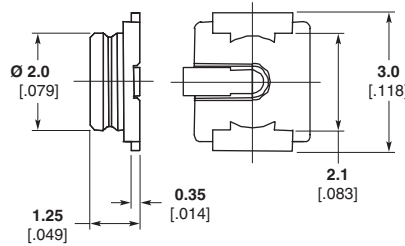
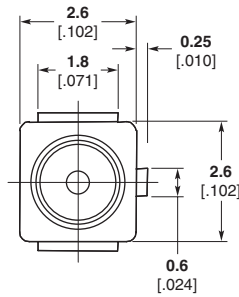
UMCC — Ultraminiature Coax Connector and Cable Assembly Series (Continued)

**PCB Receptacles —
Style A**



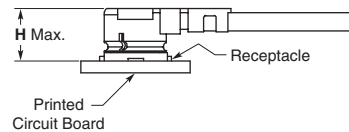
| Style | Mates with UMCC Connector Type | Mated Height (H) | Description | Part Number |
|-------|--------------------------------|------------------------|-----------------------------------|-------------|
| A | II / III | 2.00–2.50 .079–.098 | UMCC PCB Receptacle, 2500 Pc Reel | 1566230-1 |
| A | II / III | 2.00–2.50 .079–.098 | UMCC PCB Receptacle, 500 Pc Bag | 1566230-2 |

UMCC PCB Receptacle



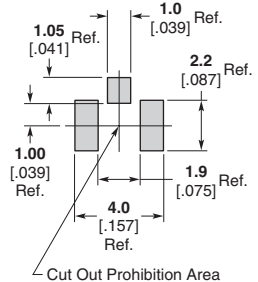
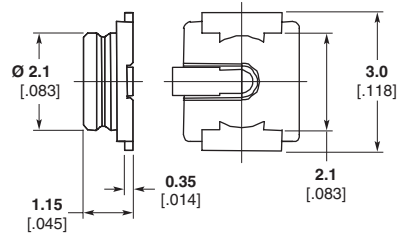
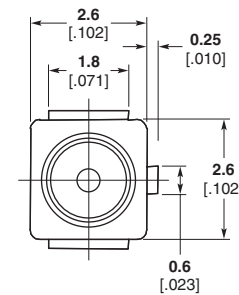
Recommended PC Board Layout

**PCB Receptacles —
Style B**



| Style | Mates with UMCC Connector Type | Mated Height (H) | Description | Part Number |
|-------|--------------------------------|------------------|-----------------------------------|-------------|
| B | I | 2.00 .079 | UMCC PCB Receptacle, 2500 Pc Reel | 1775146-1 |
| B | I | 2.00 .079 | UMCC PCB Receptacle, 500 Pc Bag | 1775146-2 |

UMCC PCB Receptacle

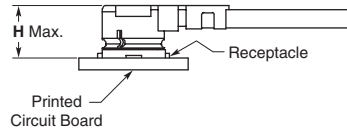


Recommended PC Board Layout

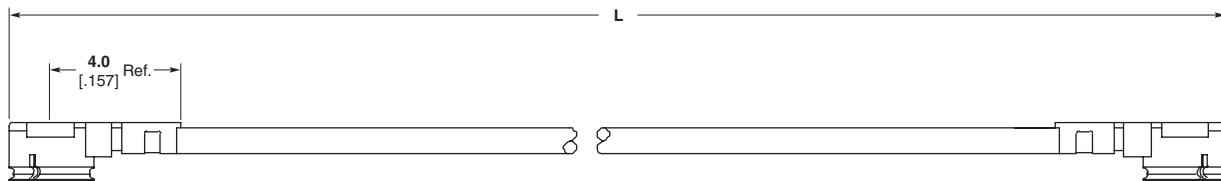
Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

UMCC — Ultraminiature Coax Connector and Cable Assembly Series (Continued)

**Standard Double Ended
Cable Assemblies**



| UMCC Connector Type | Mated Height (H) | Cable Dia. | Length L | Mates with PCB Rcpt. | Part Number |
|---------------------|------------------|--------------|-----------------|----------------------|-------------|
| I | 2.00 .079 | 0.80 .031 | 100.00 3.937 | Style B | 1750109-1 |
| | 2.00 .079 | 0.80 .031 | 200.00 7.874 | Style B | 1750109-2 |
| II | 2.00 .079 | 0.80 .031 | 100.00 3.937 | Style A | 1750108-1 |
| | 2.00 .079 | 0.80 .031 | 200.00 7.874 | Style A | 1750108-2 |
| III | 2.50 .098 | 0.80 .031 | 100.00 3.937 | Style A | 1750107-1 |
| | 2.50 .098 | 0.80 .031 | 200.00 7.874 | Style A | 1750107-2 |
| | 2.50 .098 | 1.32 .052 | 100.00 3.937 | Style A | 1750107-3 |
| | 2.50 .098 | 1.32 .052 | 200.00 7.874 | Style A | 1750107-4 |
| III | 2.50 .098 | 1.37 .054 | 100.00 3.937 | Style A | 1750107-5 |
| | 2.50 .098 | 1.37 .054 | 200.00 7.874 | Style A | 1750107-6 |



Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

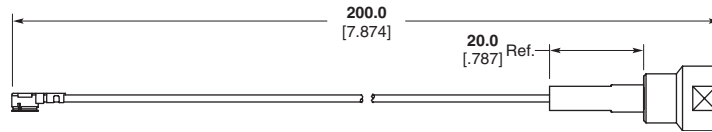
UMCC — Ultraminiature Coax Connector and Cable Assembly Series (Continued)

Interseries Cable Assemblies

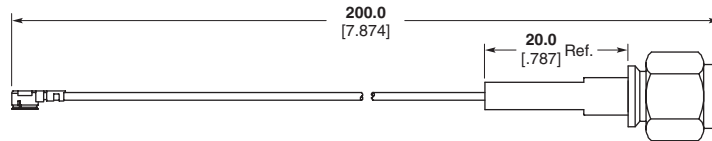


| UMCC Connector Type | Mated Height (H) | Cable Dia. | Length | Description | Part Number |
|---------------------|------------------|--------------|-----------------|------------------------------------|-------------|
| III | 2.50 .098 | 1.37 .054 | 200.00 7.874 | UMCC Plug to FME Plug | 1750110-2 |
| | 2.50 .098 | 1.37 .054 | 200.00 7.874 | UMCC Plug to SMA Plug | 1750110-4 |
| | 2.50 .098 | 1.37 .054 | 200.00 7.874 | UMCC Plug to SMA Bulkhead Jack | 1750110-6 |
| | 2.50 .098 | 1.37 .054 | 200.00 7.874 | UMCC Plug to MCX Right-Angle Plug | 1750110-8 |
| | 2.50 .098 | 1.37 .054 | 200.00 7.874 | UMCC Plug to MMCX Right-Angle Plug | 1-1750110-0 |
| II | 2.00 .079 | 0.80 .031 | 200.00 7.874 | UMCC Plug to MCX Right-Angle Plug | 1750110-7 |
| | 2.00 .079 | 0.80 .031 | 200.00 7.874 | UMCC Plug to MMCX Right-Angle Plug | 1750110-9 |

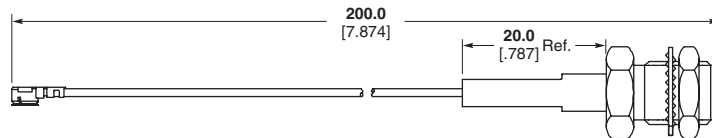
UMCC to FME Plug



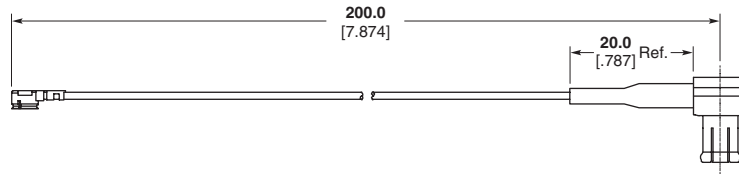
UMCC to SMA Plug



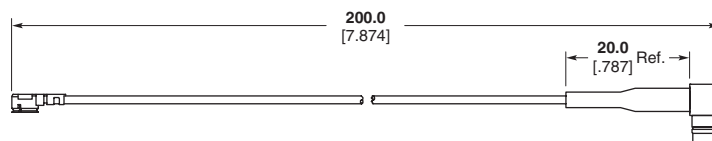
UMCC to SMA Bulkhead Jack



UMCC to MCX Right-Angle Plug



UMCC to MMCX Right-Angle Plug



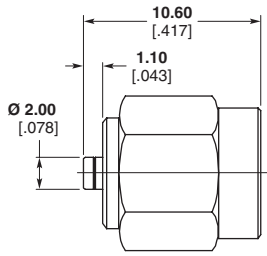
Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

UMCC — Ultraminiature Coax Connector and Cable Assembly Series (Continued)

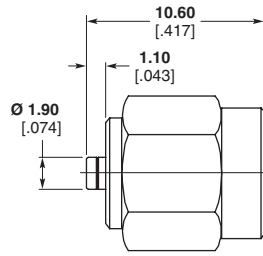
Adapters



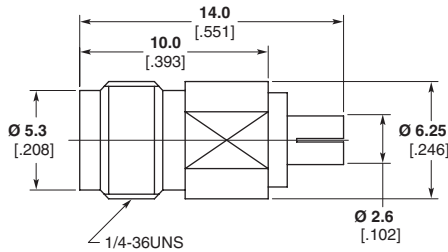
| UMCC Connector Type | Description | Part Number |
|---------------------|----------------------------------|-------------|
| I | UMCC Jack Receptacle to SMA Plug | 1775228-1 |
| | UMCC Plug to SMA Jack | 1775229-1 |
| II / III | UMCC Jack Receptacle to SMA Plug | 1775227-1 |
| | UMCC Plug to SMA Jack | 1775230-1 |



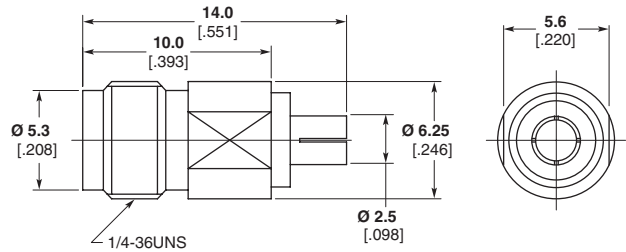
Part Number 1775228-1



Part Number 1775227-1

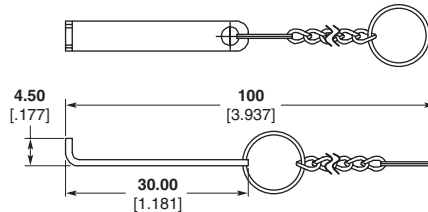


Part Number 1775229-1



Part Number 1775230-1

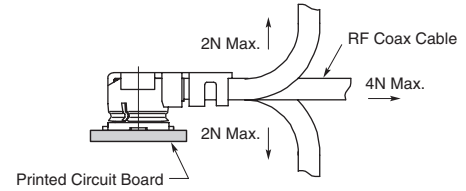
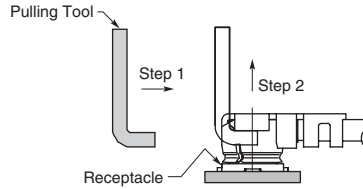
Extraction Tool
Part Number 1775231-1



Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

UMCC — Ultraminiature Coax Connector and Cable Assembly Series (Continued)

Application Notes
Mating/Unmating —
Cable Plugs



Mating/Unmating

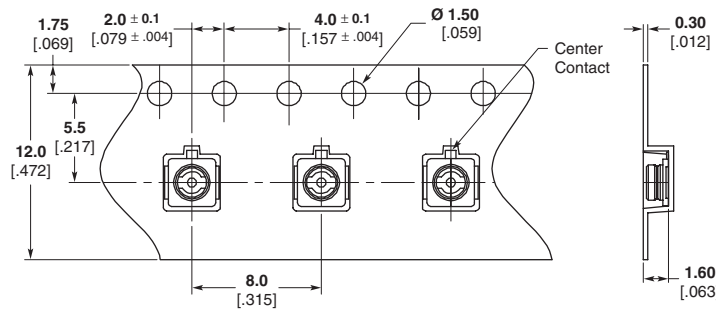
1. To mate the connectors, insert the cable plug into the SMT receptacle, making sure the cable plug is as vertical as possible and the mating axis of both connectors are aligned. Do not insert on an extreme angle.
2. To unmate the connectors, insert the end portion of the extraction tool under the SMT receptacle connector flanges and pull off vertically in the direction of the mating axis.

Permissible Load

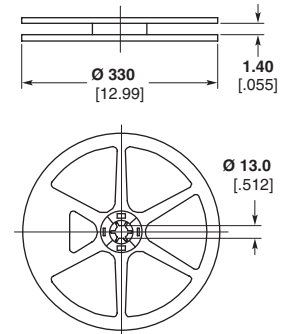
Do not apply excessive load to the cable after the connectors are mated. Please refer to the permissible loads indicated in the figure to the right.

Tape and Reel Packaging
Specifications

Standard Receptacles



Dimensions of Taping



Dimensions Reel (2500 Pieces/Reel)

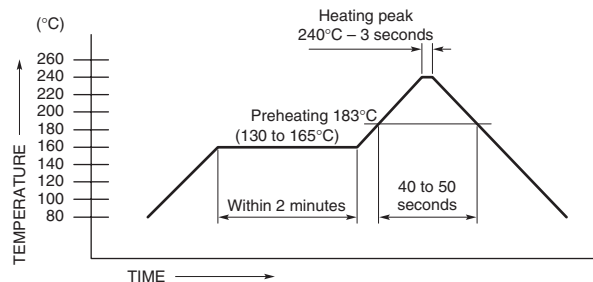
Soldering Profile —
SMT Receptacle

Recommended Temperature
Profile (Reference)

1. The preferred technique for mounting the SMT Receptacle package is to reflow solder the device onto a PCB (Printed Circuit Board).
2. The maximum temperature for the lead of PCB surface does not exceed 240°C.
3. The right reflow soldering profile is for reference and will modify under individual different conditions.

Hand Soldering (Reference only)

1. Soldering iron: The maximum temperature is 240°C.
2. Soldering period: within 5 seconds.



COAXICON Series Mobile Phone Switching Coax Connectors

Product Facts

- Able to switch RF signal from internal to external antenna
- SMD component for standard pick & place
- Up to 2.4 GHz
- Up to 30,000 life cycles
- High radial and axial tolerance capture
- Low insertion loss
- Right-angle cable plug with floating for alignment tolerance capture
- Application in handsets



Product Specification

108-71000

Technical Features

- Impedance** — 50 Ohms
 - Operating Temperature** — -40°C to +85°C
 - Radial Tolerance Capture** — ±1.0 [.039] (except for 3.5 [.138] height)
 - Axial Tolerance Capture** — 0.6 [.024]
 - Plating** — Outer shell and center contact are gold plated
 - Short Stamped Contact** — Selective gold plating
 - Long Stamp Contact (switch)** — Full gold plating with ink barrier
 - Insertion Loss** — 0.30 dB max. at 2 GHz
 - Isolation** — 26 dB min. at 2 GHz
 - VSWR** — 1.15:1 at 1 GHz, below 1.20:1 at 2 GHz
 - Mated Insertion Loss (after life cycle testing)** — Below 0.30 dB at 1 GHz, below 0.45 dB at 2 GHz
 - Unmated Insertion Loss (after life cycle testing)** — Below 0.20 dB at 1 GHz, below 0.35 dB at 2 GHz
- Packaging on reels for SMD.
For more details, refer to the product specification.

The Tyco Electronics SMD mobile phone connector system offers a low-cost and effective solution to passive switching between an internal and external phone antenna. When implemented in a cradle kit, the connector helps to make possible hands-free operation of the mobile

phone within a vehicle, enhancing safety and permitting compliance with a growing body of legislation. Connection to the external antenna also enhances signal gain and clarity.

The connector design accommodates gross misalignment between the

phone and cradle, which is extremely important when blindmating is necessary. The Tyco Electronics switching coax connector system meets all performance objectives, including up to 30,000 connect/disconnect and switching cycles over the connector's life.

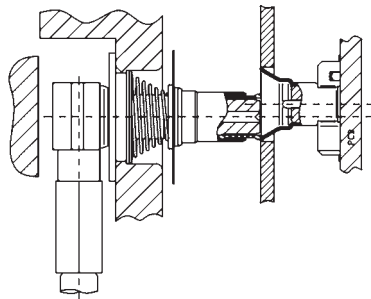


Figure 1 — System Configuration

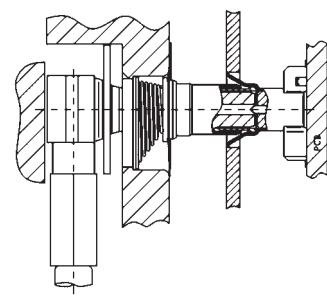
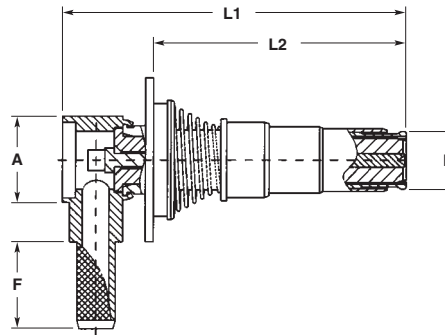


Figure 2 — System Configuration

COAXICON Series Mobile Phone Switching Coax Connectors (Continued)

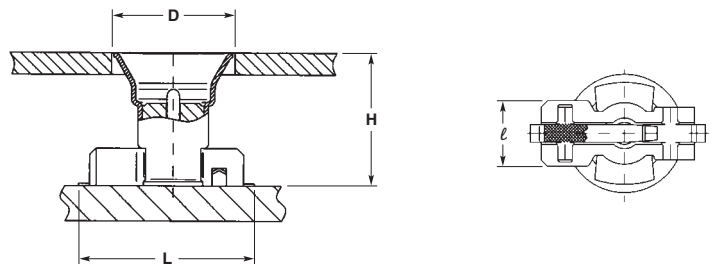
Right-Angle Cable Plugs



Note: Hex Crimp Dim. 3.25 [.128]

| RG/U Cable | Dimensions | | | | | Single Packed Part No. | Bulk Packed Part No. | |
|------------|------------|-------------|-------------|--------------|--------------|------------------------|----------------------|------------|
| | A | D | F | L1 | L2 | | | |
| RG 174 | 5x5 Square | 3.4 .134 | 6.9 .272 | 15.6 .614 | 10.9 .429 | 619028-2 | 5-619028-2 | |
| | 5x5 Square | 3.4 .134 | 9.6 .378 | 15.6 .614 | 10.9 .429 | 619028-4 | 5-619028-4 | |
| | | 6.0 .236 | 3.4 .134 | 6.9 .272 | 15.8 .622 | 10.9 .429 | 619041-2 | 5-619041-2 |
| | | 6.0 .236 | 3.4 .134 | 9.6 .378 | 15.8 .622 | 10.9 .429 | 619041-4 | 5-619041-4 |
| | | 6.0 .236 | 3.4 .134 | 6.9 .272 | 20.3 .799 | 11.0 .433 | 619078-1 | 5-619078-3 |
| | | 6.0 .236 | 3.4 .134 | 9.6 .378 | 20.3 .799 | 11.0 .433 | 619078-2 | 5-619078-4 |

SMD Switching Jacks



| H | Dimensions | | | Diameter D | Part No. |
|-------------|-------------|-------------|-------------|------------|----------|
| | L | l | | | |
| 6.0 .236 | 8.0 .315 | 3.2 .126 | 5.4 .213 | 619061-1 | |
| 4.5 .177 | 8.0 .315 | 3.2 .126 | 5.4 .213 | 619062-1 | |
| 3.5 .137 | 8.0 .315 | 3.2 .126 | 5.4 .213 | 619072-1 | |

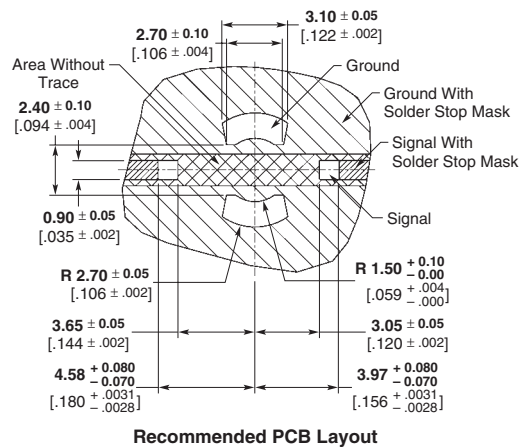
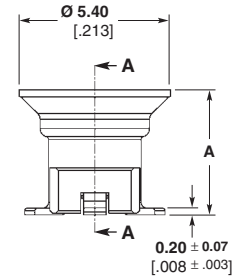
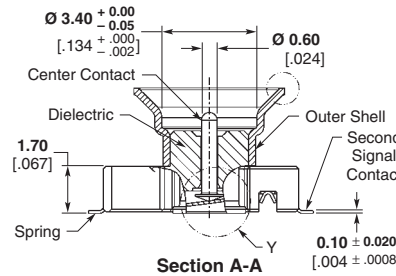
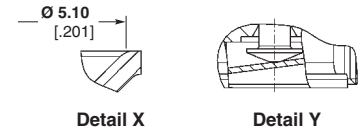
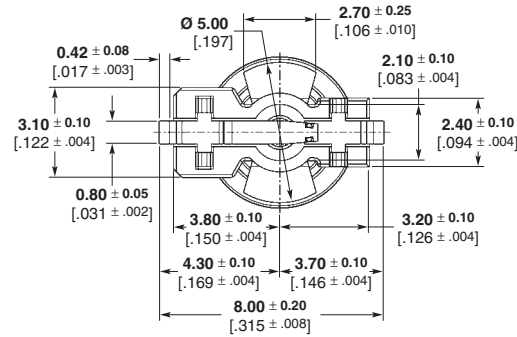
Other models upon request.
For all dimensions, stencil and PCB recommended layout, see customer drawing.
*Dim. l is the width of the connector on the PCB.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

COAXICON Series Mobile Phone Switching Coax Connectors (Continued)

**Switching SMD Jack
Low Profile**

**Part Number 619061-1,
Part Number 619062-1, and
Part Number 619072-1**



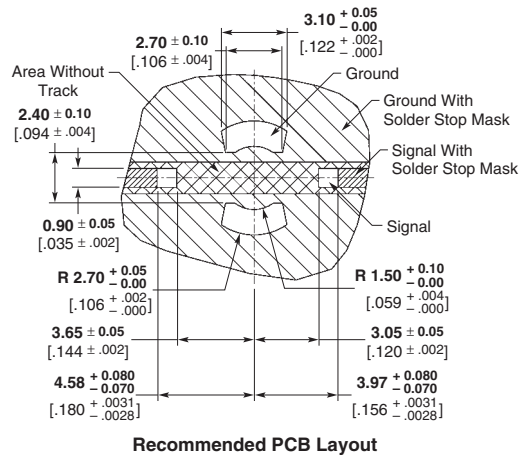
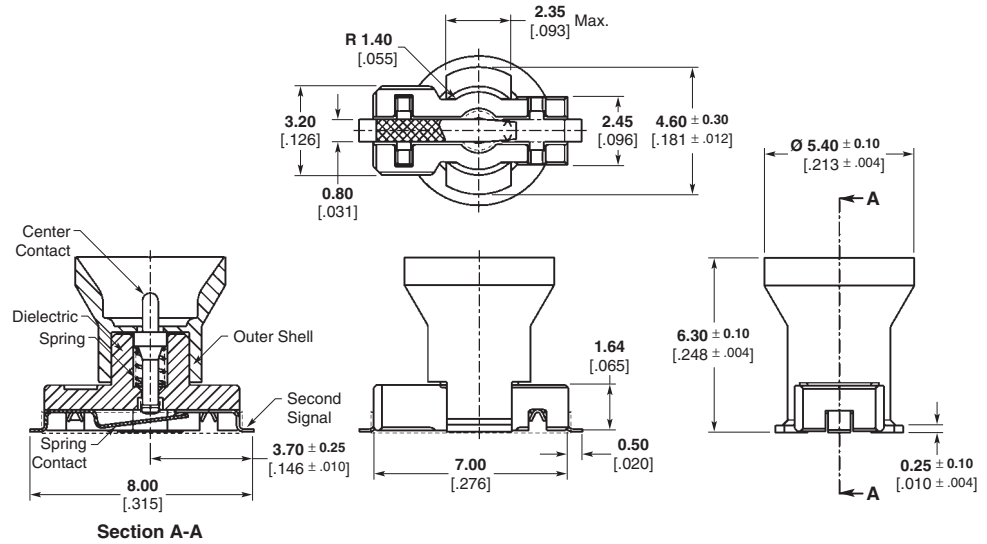
| Plating | Dim. A | Part No. |
|---------|----------------------------|----------|
| Gold | 6.00 ± 0.10 .236 ± .004 | 619061-1 |
| Gold | 4.50 ± 0.10 .177 ± .004 | 619062-1 |
| Gold | 3.50 ± 0.10 .138 ± .004 | 619072-1 |

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

COAXICON Series Mobile Phone Switching Coax Connectors (Continued)

Switching SMD Jack
ESD Protected
Part Number 619133-3

Plating — Gold

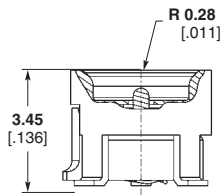


Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

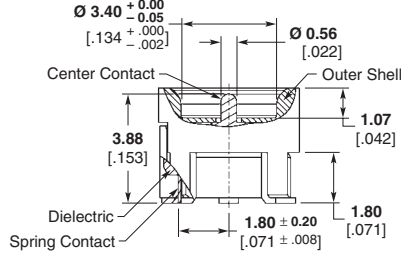
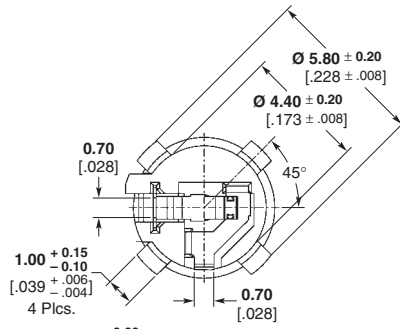
COAXICON Series Mobile Phone Switching Coax Connectors (Continued)

**Switching SMD Jack
ESD Protected
4.1mm Height
Part Number 619201-1***

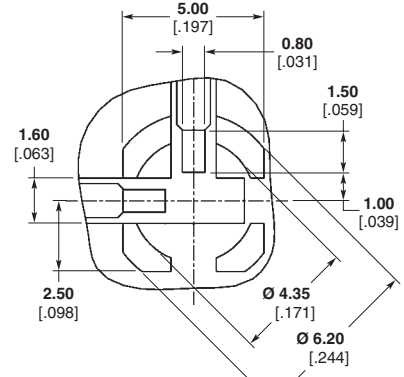
Plating — Gold



Mated Position



Unmated Position

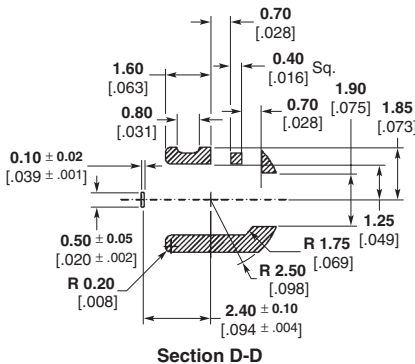


Recommended PCB Layout

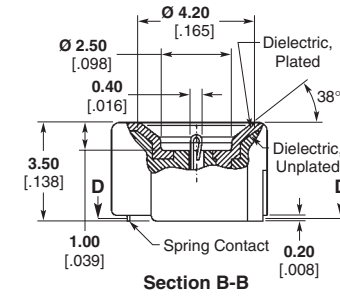
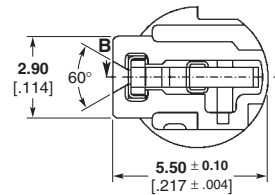
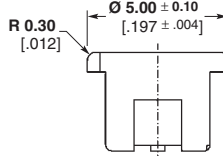
*Mirrored Version of Part Number 619201-1 Also Available Under Part Number 619231-1

**Switching SMD Jack Mid
Part Number 619075-1**

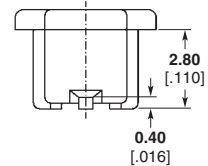
Plating — Gold



Section D-D



Section B-B

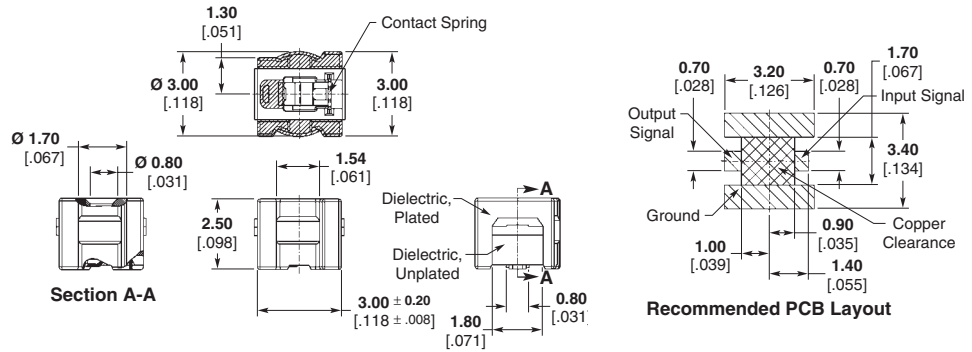


Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

COAXICON Series Mobile Phone Switching Coax Connectors (Continued)

Micro Switching Coax Connector
Part Number 619196-1

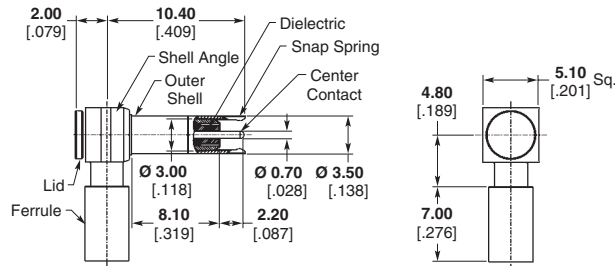
Plating — Gold



Right-Angle Cable Plug For Micro Switching Coax Connector Cable RG 316/ RG 174

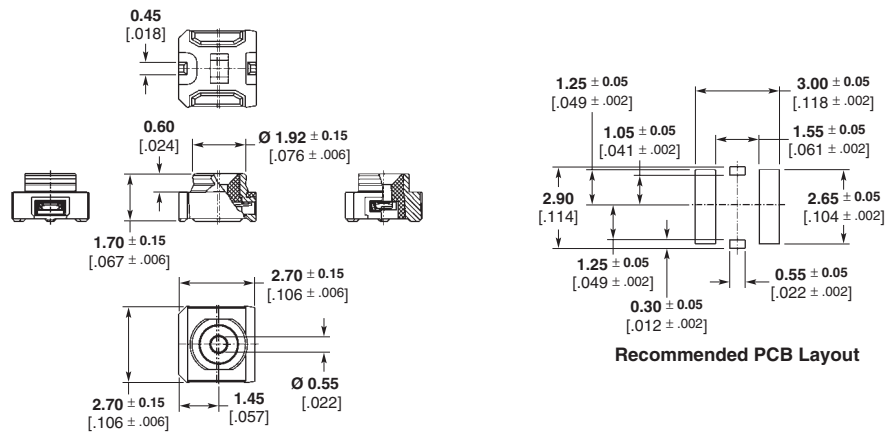
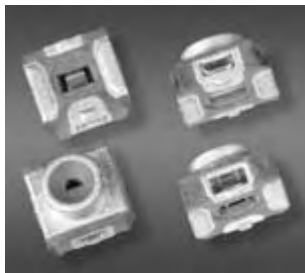
Part Number 619211-2

Plating — Gold



Nano Switching Coax
Part Number 619213-1

Plating — Gold

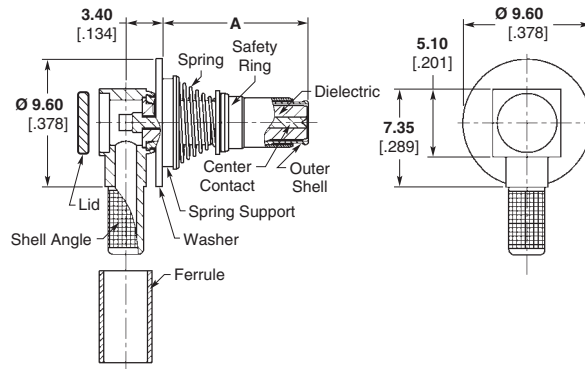


Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

COAXICON Series Mobile Phone Switching Coax Connectors (Continued)

Protected Front Contact Cable Plug

**Part Number 5-619028-1,
Part Number 5-619078-1,
and Part Number 5-619137-1**



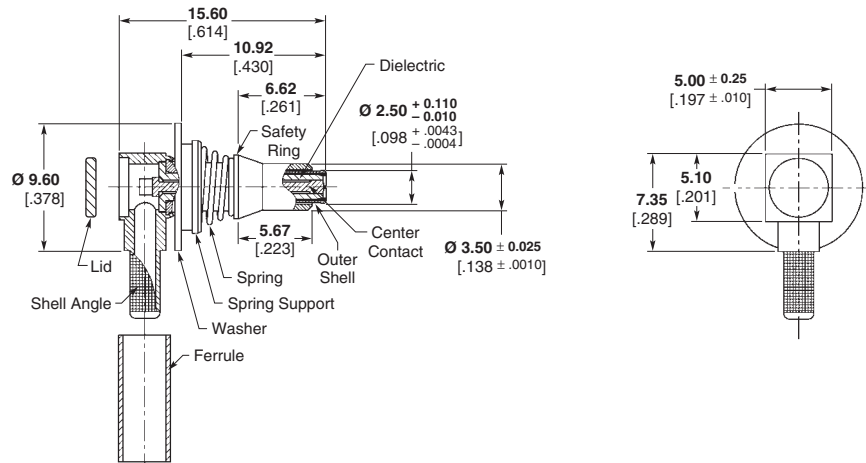
| Plating | Dim. A | Part No. |
|---------|---------------|-------------|
| Gold | 10.92 .430 | 5-619028-1 |
| Gold | 14.90 .587 | 5-619078-1 |
| Gold | 10.92 .430 | 5-619137-1* |

Bulk packaging.
*Outer conductor without slot.

Protected Front Contact Cable Plug With Cylindrical Interface

Part Number 5-619076-2

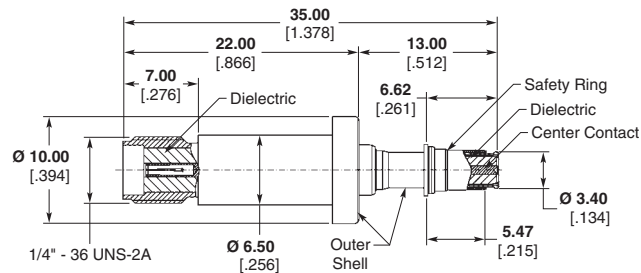
Plating — Gold
Bulk packaging.



Cable Plug/SMA Jack Adapter

Part Number 619052-1

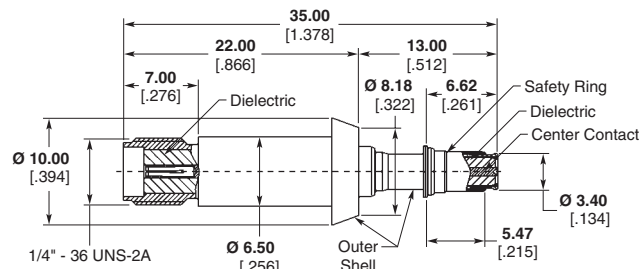
Plating — Gold



Cable Plug/SMA Jack Adapter With Conical Flange

Part Number 619068-1

Plating — Gold

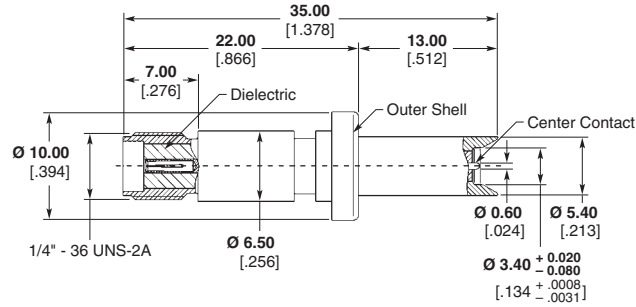


Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

COAXICON Series Mobile Phone Switching Coax Connectors (Continued)

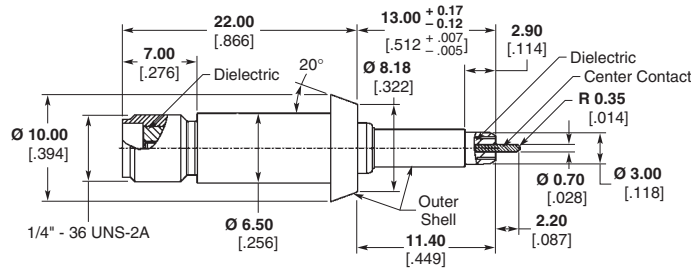
**Switching SMD Jack/
SMA Jack Adapter
Part Number 619053-1**

Plating — Gold



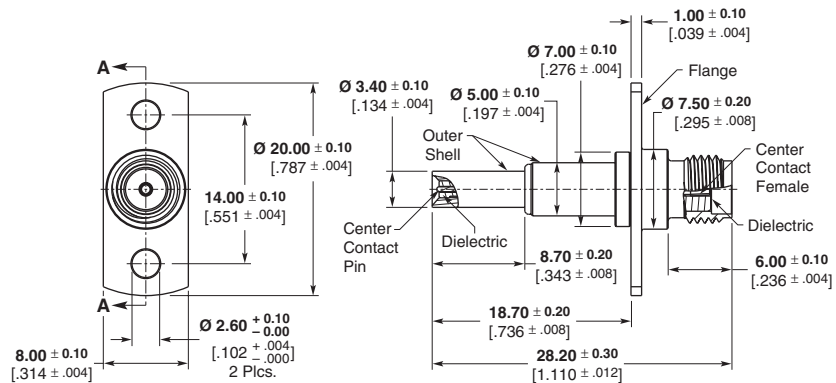
**Adapter SMA Jack —
MSC Test Plug
With Conical Flange
Part Number 619210-1**

Plating — Gold



**Adapter SMA Jack —
NSC Test Plug With
Two-Hole Flange
Part Number 619214-1**

Plating — Gold



Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

Quick Snap Stripline (QSL) Coaxial Connector

Coaxial Cable Displacement Interface

- Low profile
- Highly reliable ruggedized interface
- Surface mount technology
- Excellent price-to-performance ratio
- Platform expandable to include multi-port versions and other customization



Product Facts

- Surface mount compatible
- RoHS compliant (lead-free SMT process [260° C] compatible)
- PCI / PCI Express compatible
- Designed for RG 174 & RG 316 Cable, and easily adaptable to other cable types
- Overall Height < 10 mm
- Can be packaged to meet IP67 Sealing
- 10mm x 10.6mm max. footprint (w/o panel extension)
- Cost effective solution to standard screw machine RF connectors

Applications

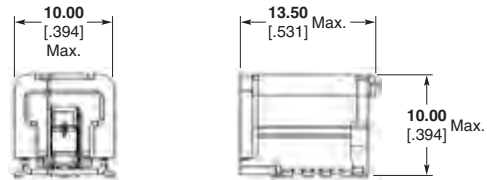
- PCI, Mini PCI, PCI Express
- Mobile Antenna/GPS/Radio Systems/RFID
- PDA / PCS / Cellular Handset applications
- Wireless Communications systems
- Satellite Communications, Broadcast, Multimedia
- Automotive Telematics

Related Product Data

Product Specification — 108-2224

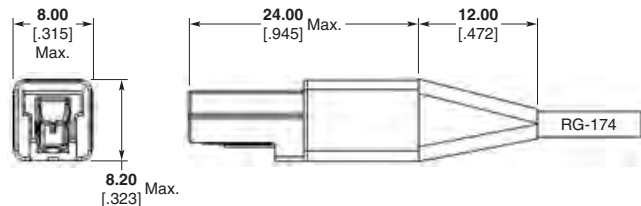
Specifications

Characteristic Impedance — 50 Ohms
Frequency Range — Dc to 6 GHz
VSWR — 1.3 Max to 3 GHz, 1.5 Max to 6 GHz
Rated Voltage — 60 VAC rms
Dielectric Withstanding Voltage — 800 VAC, 50 Hz (at sea level)
Insulation Resistance — 100 Megohms min
Operating Temperature — -40 to +125°C
Engagement Force — < 30 N
Disengagement Force — < 20 N
Cable Retention — 110 N
Durability — 250 cycles



Surface Mount Jack Receptacle

| Part Number |
|-------------|
| 1274794-1 |



Cable Plug

| Part Number |
|-------------|
| 1274795-1 |

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Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.