

## 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

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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**

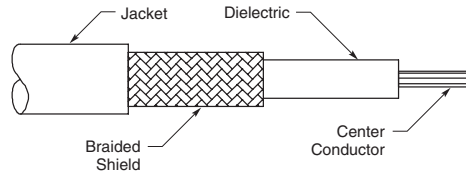
**Impedance (Ohms) —**  
0.8 mm Dia. — 50 ± 2  
1.32 mm Dia. — 50 ± 2  
1.37 mm Dia. — 50 ± 2

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

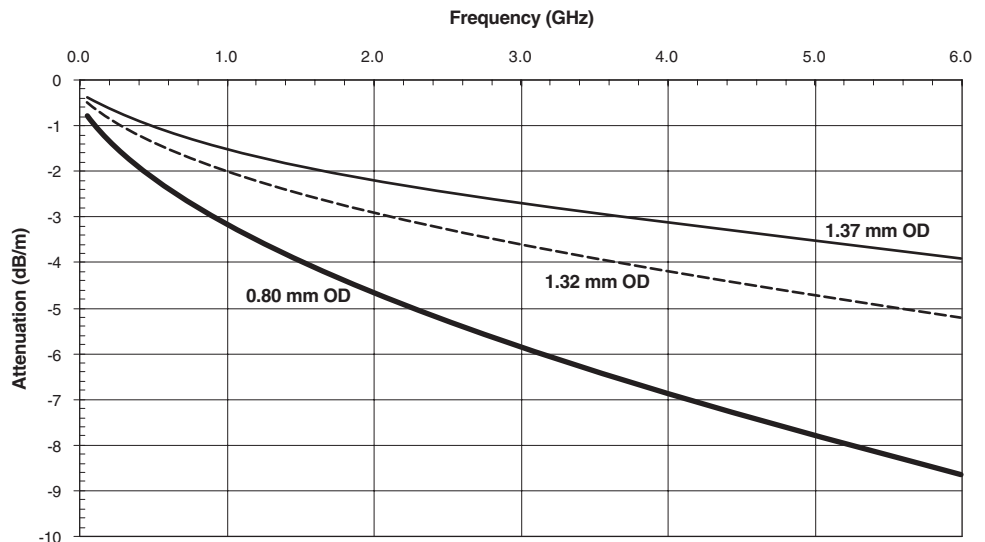
**CC Resistance (Ohms/KM) —**  
0.8 mm Dia. — 1450  
1.32 mm Dia. — 560  
1.37 mm Dia. — 354

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

**Attenuation —** See chart

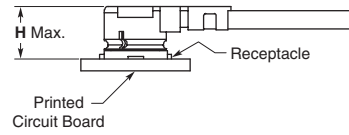


**UMCC Cable Attenuation**



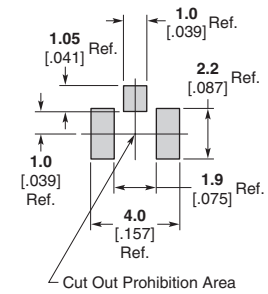
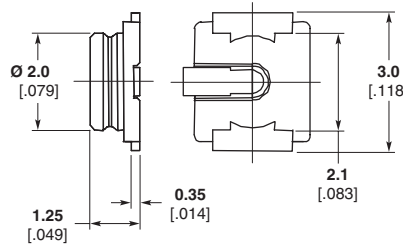
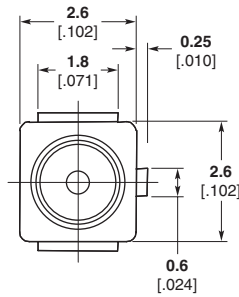
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**PCB Receptacles —  
Style A**



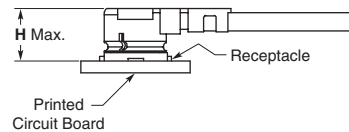
Style	Mates with UMCC Connector Type	Mated Height (H)	Description	Part Number
A	II / III	2.00–2.50 .079–.098	UMCC PCB Receptacle, 2500 Pc Reel	1566230-1
A	II / III	2.00–2.50 .079–.098	UMCC PCB Receptacle, 500 Pc Bag	1566230-2

**UMCC PCB Receptacle**



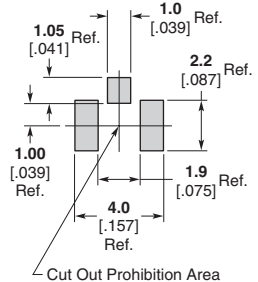
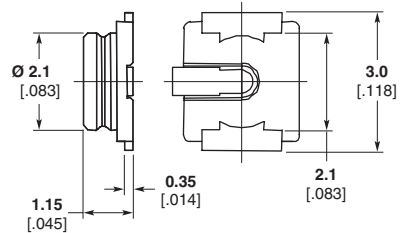
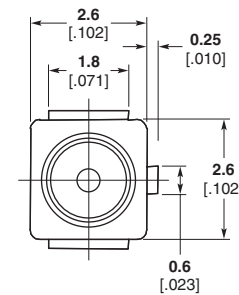
**Recommended PC Board Layout**

**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**

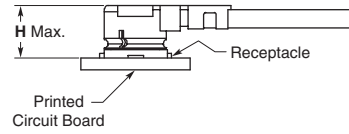


**Recommended PC Board Layout**

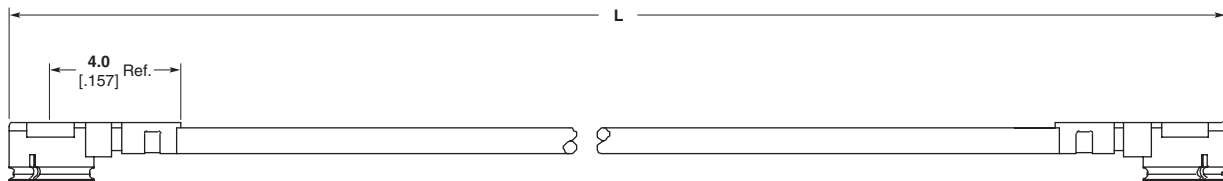
**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**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.

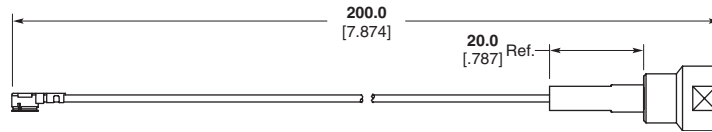
**UMCC — Ultraminiature Coax Connector and Cable Assembly Series** (Continued)

**Interseries Cable Assemblies**

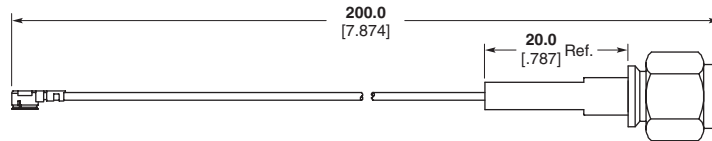


UMCC Connector Type	Mated Height (H)	Cable Dia.	Length	Description	Part Number
III	2.50 .098	1.37 .054	200.00 7.874	UMCC Plug to FME Plug	1750110-2
	2.50 .098	1.37 .054	200.00 7.874	UMCC Plug to SMA Plug	1750110-4
	2.50 .098	1.37 .054	200.00 7.874	UMCC Plug to SMA Bulkhead Jack	1750110-6
	2.50 .098	1.37 .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

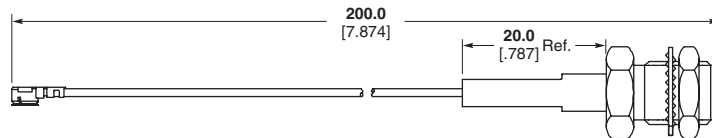
**UMCC to FME Plug**



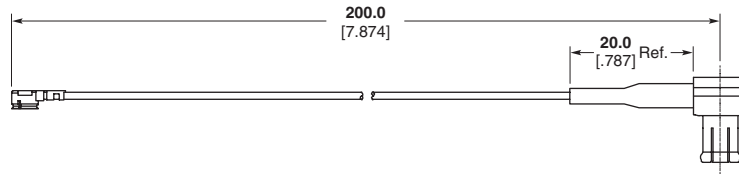
**UMCC to SMA Plug**



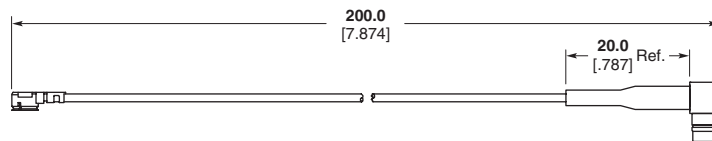
**UMCC to SMA Bulkhead Jack**



**UMCC to MCX Right-Angle Plug**



**UMCC to MMCX Right-Angle Plug**



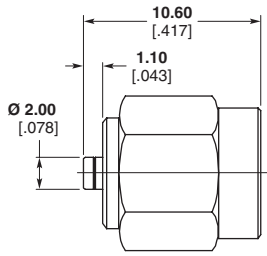
**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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

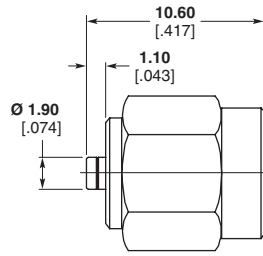
**Adapters**



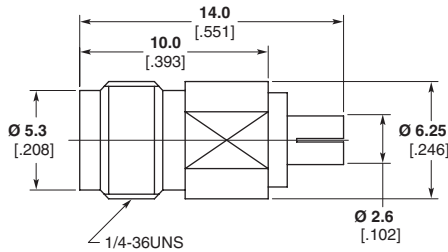
UMCC Connector Type	Description	Part Number
I	UMCC Jack Receptacle to SMA Plug	1775228-1
	UMCC Plug to SMA Jack	1775229-1
II / III	UMCC Jack Receptacle to SMA Plug	1775227-1
	UMCC Plug to SMA Jack	1775230-1



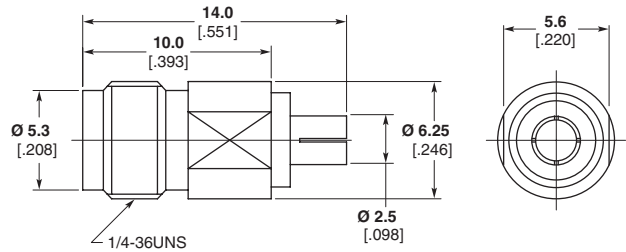
Part Number 1775228-1



Part Number 1775227-1

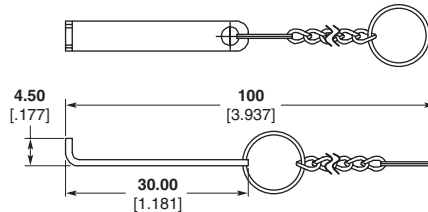


Part Number 1775229-1



Part Number 1775230-1

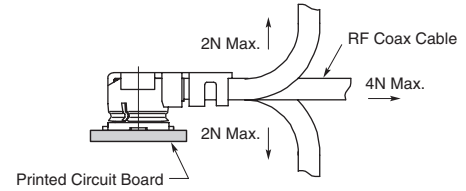
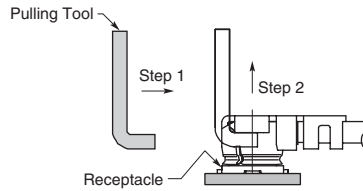
**Extraction Tool**  
**Part Number 1775231-1**



**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**

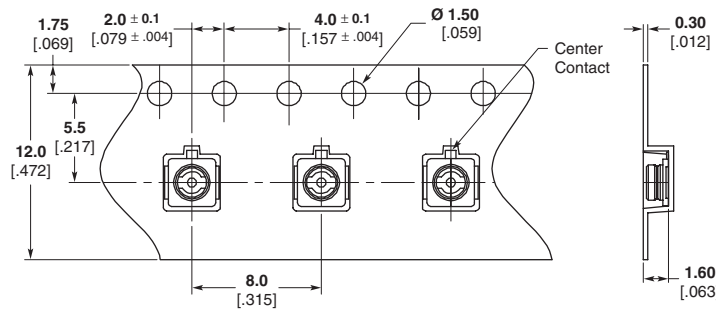
1. To mate the connectors, insert the cable plug into the SMT receptacle, making sure the cable plug is as vertical as possible and the mating axis of both connectors are aligned. Do not insert on an extreme angle.
2. To unmate the connectors, insert the end portion of the extraction tool under the SMT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

**Permissible Load**

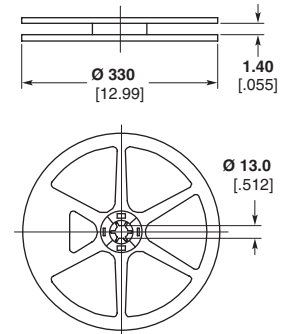
Do not apply excessive load to the cable after the connectors are mated. Please refer to the permissible loads indicated in the figure to the right.

**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.

