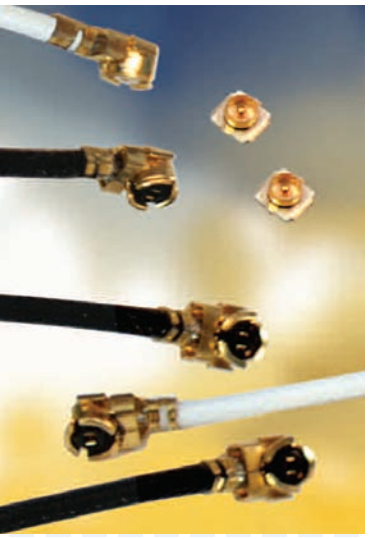
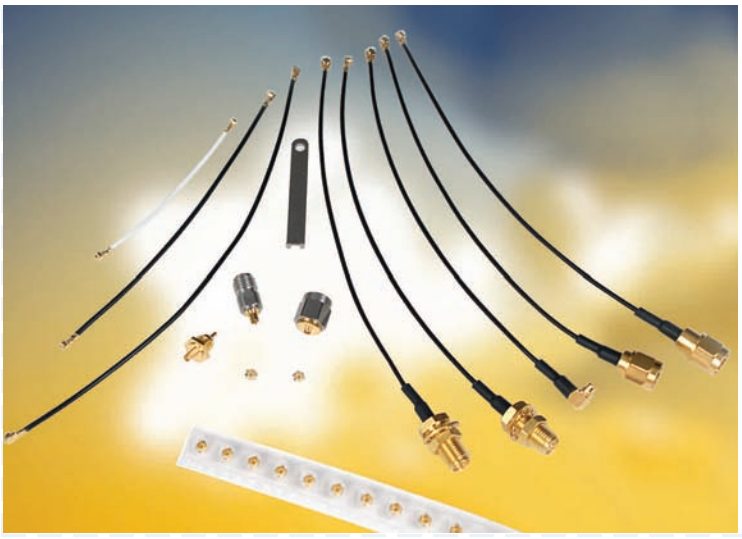
Connectivity....for
Business-Critical Continuity

UMC Ultra Miniature Connectors

Product Catalog





JOHNSON®

EMERSON™
Network Power

Emerson's UMC Ultraminiature Coaxial Connectors and Cable Assemblies *are the answer for quality, snap-on connections built to meet your cost and performance targets.*

The UMC cable plugs and jack receptacles offer 2.0mm and 2.5mm maximum mated height options with DC to 6 GHz electrical performance.

All parts are RoHS compliant and mate with the Hirose U.FL series connectors.

Applications

1. Wireless LAN, Mini-PCI, and Hand-Held RF Devices
2. GSM, GPRS & CDMA Mobile Phones
3. PDA & Notebook Computer
4. GPS
5. Bluetooth
6. Microwave radio and measurement

Features

1. Excellent cost to performance ratio.
2. Ultra-low profile connections (2.0mm & 2.5mm max. mated height).
3. R/A plug to R/A plug cable assemblies on .81mm, 1.13mm, 1.32mm and 1.37mm cables.
4. UMC cables available in a variety of standard off-the-shelf lengths (from 50mm to 500mm).
5. Between-series cables available with std. & rev. polarity SMA plugs and Blukhead jacks or MMCX plugs on one end of the cable and the UMC plug on the other end.
6. Surface-mount jack receptacles available on tape and reel (2,500 per reel).
7. In-series UMC adapters available to support testing requirements.
8. All cabled plugs and jack receptacles are supplied with gold plated contacts and bodies.
9. UMC connectors mate with Hirose U.FL series connectors.

HIROSE is a trademark of Hirose Electrc U.S.A.
Hirose Electric U.S.A. is not affiliated with the UMC product

inches (mm)

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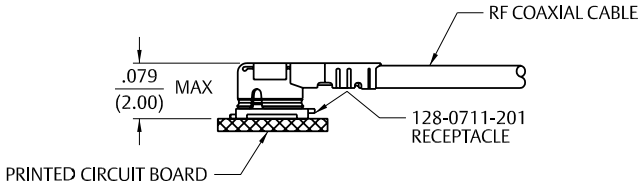
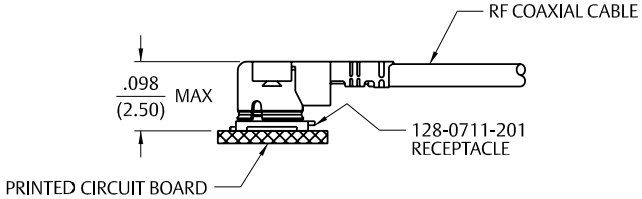
Product Specifications

Impedance	50 Ω (Nominal)
Temperature Range	-40°C to +90°C
Frequency Rating	0-6 GHz
VSWR	1.30 max (0-6 GHz)
Contact Resistance	20 m Ω max. (Center)
	20 m Ω max. (Outer, for plug)
	10 m Ω max. (Outer, for receptacle)
Withstanding Voltage	200 V AC
Insulation Resistance	500 M Ω min.
Durability	30 cycles
Holding Force (min.)	0.15 N (Female contact)



LP Plug
(Low Profile Plug)



MP Plug
(Medium Profile Plug)

UMC Right Angle Cable Plug to UMC Right Angle Cable Plug

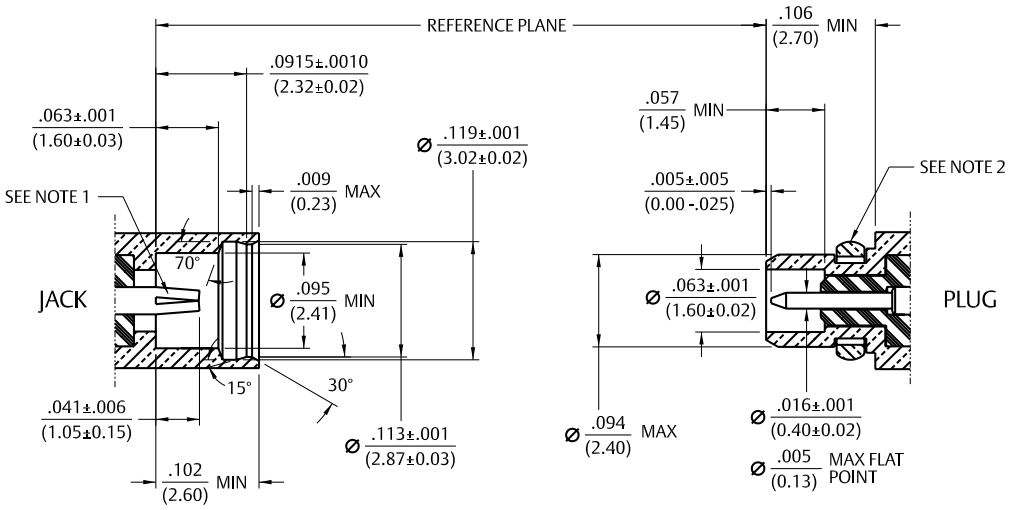
Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Plug Mated Height	Connector B
415-0084-050	0.81 mm	50 mm	UMC LP PLUG	2.0 mm	UMC LP PLUG
415-0084-100	0.81 mm	100 mm	UMC LP PLUG	2.0 mm	UMC LP PLUG
415-0084-150	0.81 mm	150 mm	UMC LP PLUG	2.0 mm	UMC LP PLUG
415-0084-200	0.81 mm	200 mm	UMC LP PLUG	2.0 mm	UMC LP PLUG
415-0084-250	0.81 mm	250 mm	UMC LP PLUG	2.0 mm	UMC LP PLUG
415-0084-300	0.81 mm	300 mm	UMC LP PLUG	2.0 mm	UMC LP PLUG
415-0084-500	0.81 mm	500 mm	UMC LP PLUG	2.0 mm	UMC LP PLUG

UMC Right Angle Cable Plug to UMC Right Angle Cable Plug

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Plug Mated Height	Connector B
415-0085-050	0.81 mm	50 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0085-100	0.81 mm	100 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0085-150	0.81 mm	150 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0085-200	0.81 mm	200 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0085-250	0.81 mm	250 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0085-300	0.81 mm	300 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0085-500	0.81 mm	500 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0086-050	1.13 mm	50 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0086-100	1.13 mm	100 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0086-150	1.13 mm	150 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0086-200	1.13 mm	200 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0086-250	1.13 mm	250 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0086-300	1.13 mm	300 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0086-500	1.13 mm	500 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0087-050	1.32 mm	50 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0087-100	1.32 mm	100 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0087-150	1.32 mm	150 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0087-200	1.32 mm	200 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0087-250	1.32 mm	250 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0087-300	1.32 mm	300 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0087-500	1.32 mm	500 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0088-050	1.37 mm	50 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0088-100	1.37 mm	100 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0088-150	1.37 mm	150 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0088-200	1.37 mm	200 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0088-250	1.37 mm	250 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0088-300	1.37 mm	300 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG
415-0088-500	1.37 mm	500 mm	UMC MP PLUG	2.5 mm	UMC MP PLUG

NOTES

1. ID OF CONTACT TO MEET VSWR MATING CHARACTERISTICS AND CONNECTOR DURABILITY WHEN MATED WITH A DIA, .016±.001 MALE CONTACT.
2. MUST MEET THE FORCE TO ENGAGE AND DISENGAGE WHEN MATED WITH PART.



Low Profile

UMC Right Angle Cable Plug to MMCX Right Angle Crimp Plug

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0101-150	0.81 mm	150 mm	UMC LP PLUG	2.0 mm	MMCX RA PLUG
415-0101-250	0.81 mm	250 mm	UMC LP PLUG	2.0 mm	MMCX RA PLUG

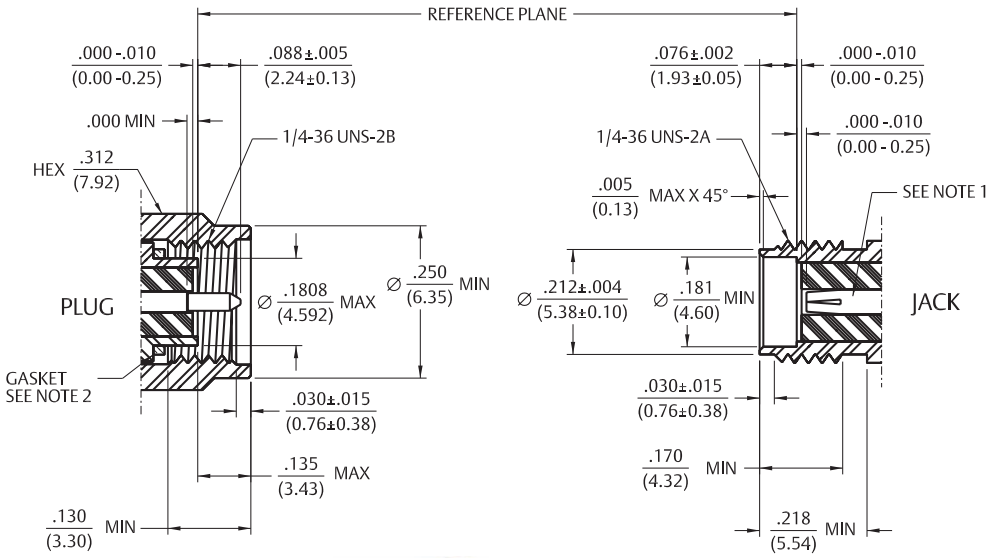
Medium Profile

UMC Right Angle Cable Plug to MMCX Right Angle Crimp Plug

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0102-150	0.81 mm	150 mm	UMC MP PLUG	2.5 mm	MMCX RA PLUG
415-0102-250	0.81 mm	250 mm	UMC MP PLUG	2.5 mm	MMCX RA PLUG
415-0103-150	1.37 mm	150 mm	UMC MP PLUG	2.5 mm	MMCX RA PLUG
415-0103-250	1.37 mm	250 mm	UMC MP PLUG	2.5 mm	MMCX RA PLUG

NOTES

1. ID TO MEET VSWR, CONTACT RESISTANCE AND INSERTION WITHDRAWL FORCES WHEN MATED WITH A DIA, .0355 - .0370 PIN.
2. GASKET IS NOT SUPPLIED WITH BRASS CONNECTORS.



Low Profile
UMC Right Angle Cable Plug to SMA Straight Crimp Plug

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0089-150	0.81 mm	150 mm	UMC LP PLUG	2.0 mm	SMA STR. CRIMP PLUG
415-0089-250	0.81 mm	250 mm	UMC LP PLUG	2.0 mm	SMA STR. CRIMP PLUG

Medium Profile
UMC Right Angle Cable Plug to SMA Straight Crimp Plug

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0090-150	0.81 mm	150 mm	UMC MP PLUG	2.5 mm	SMA STR. CRIMP PLUG
415-0090-250	0.81 mm	250 mm	UMC MP PLUG	2.5 mm	SMA STR. CRIMP PLUG
415-0091-150	1.37 mm	150 mm	UMC MP PLUG	2.5 mm	SMA STR. CRIMP PLUG
415-0091-250	1.37 mm	250 mm	UMC MP PLUG	2.5 mm	SMA STR. CRIMP PLUG

Low Profile
UMC Right Angle Cable Plug to SMA Straight Crimp Bulkhead Jack

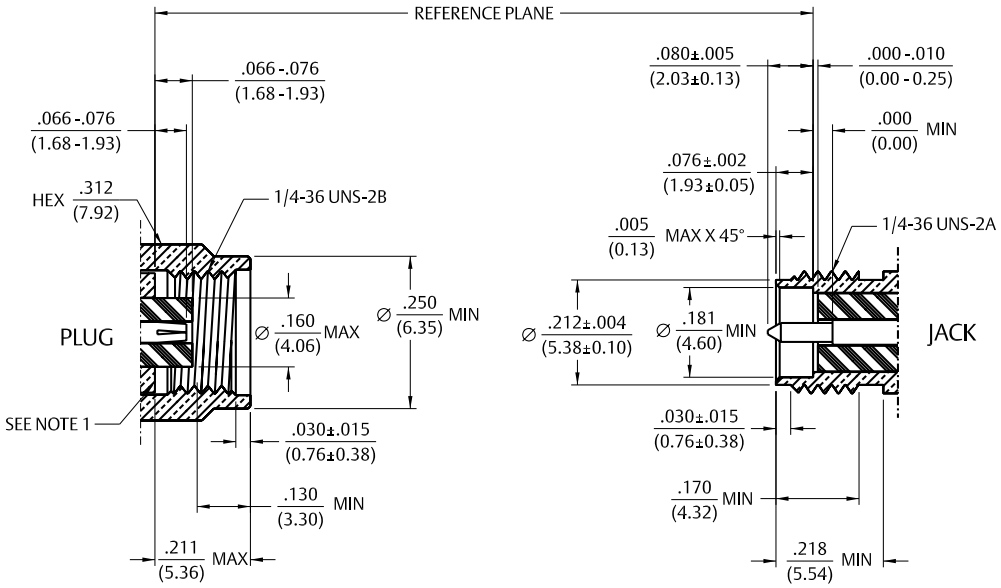
Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0095-150	0.81 mm	150 mm	UMC LP PLUG	2.0 mm	SMA STR CR. BKHD. JACK
415-0095-250	0.81 mm	250 mm	UMC LP PLUG	2.0 mm	SMA STR CR. BKHD. JACK

Medium Profile
UMC Right Angle Cable Plug to SMA Straight Crimp Bulkhead Jack

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0096-150	0.81 mm	150 mm	UMC MP PLUG	2.5 mm	SMA STR CR. BKHD. JACK
415-0096-250	0.81 mm	250 mm	UMC MP PLUG	2.5 mm	SMA STR CR. BKHD. JACK
415-0097-150	1.37 mm	150 mm	UMC MP PLUG	2.5 mm	SMA STR CR. BKHD. JACK
415-0097-250	1.37 mm	250 mm	UMC MP PLUG	2.5 mm	SMA STR CR. BKHD. JACK

Ultra Miniature Connectors
SMA Reverse Polarity Cable Assembly

NOTES
1. ID TO MEET VSWR, CONTACT RESISTANCE AND INSERTION WITHDRAWL FORCES WHEN MATED WITH A DIA, .0355 - .0370 PIN.



Low Profile

UMC Right Angle Cable Plug to SMA Straight Crimp Reverse Polarity Plug

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0092-150	0.81 mm	150 mm	UMC LP PLUG	2.0 mm	SMA STR. CRIMP RP PLUG
415-0092-250	0.81 mm	250 mm	UMC LP PLUG	2.0 mm	SMA STR. CRIMP RP PLUG

Medium Profile

UMC Right Angle Cable Plug to SMA Straight Crimp Reverse Polarity Plug

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0093-150	0.81 mm	150 mm	UMC MP PLUG	2.5 mm	SMA STR. CRIMP RP PLUG
415-0093-250	0.81 mm	250 mm	UMC MP PLUG	2.5 mm	SMA STR. CRIMP RP PLUG
415-0094-150	1.37 mm	150 mm	UMC MP PLUG	2.5 mm	SMA STR. CRIMP RP PLUG
415-0094-250	1.37 mm	250 mm	UMC MP PLUG	2.5 mm	SMA STR. CRIMP RP PLUG

Low Profile

UMC Right Angle Cable Plug to SMA Straight Crimp Bulkhead Rev. Polarity Jack

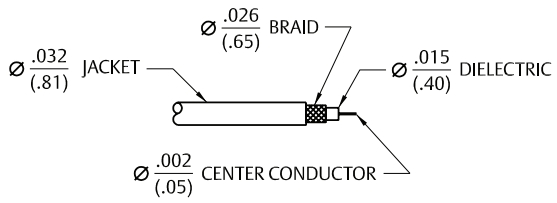
Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0098-150	0.81 mm	150 mm	UMC LP PLUG	2.0 mm	SMA STR CR. BKHD. RP JACK
415-0098-250	0.81 mm	250 mm	UMC LP PLUG	2.0 mm	SMA STR CR. BKHD. RP JACK

Medium Profile

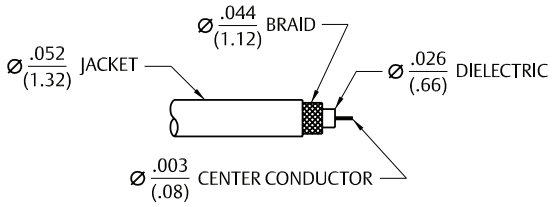
UMC Right Angle Cable Plug to SMA Straight Crimp Bulkhead Rev. Polarity Jack

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0099-150	0.81 mm	150 mm	UMC LP PLUG	2.5 mm	SMA STR CR. BKHD. RP JACK
415-0099-250	0.81 mm	250 mm	UMC LP PLUG	2.5 mm	SMA STR CR. BKHD. RP JACK
415-0100-150	1.37 mm	150 mm	UMC MP PLUG	2.5 mm	SMA STR CR. BKHD. RP JACK
415-0100-250	1.37 mm	250 mm	UMC MP PLUG	2.5 mm	SMA STR CR. BKHD. RP JACK

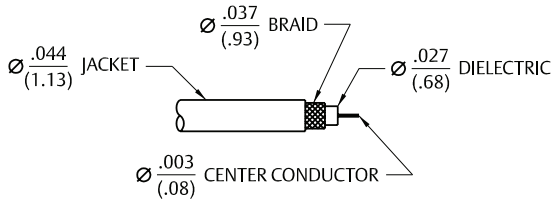
0.81 mm Coaxial Cable



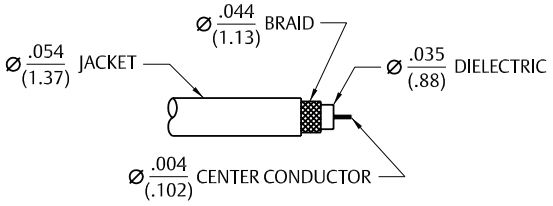
1.32 mm Coaxial Cable



1.13 mm Coaxial Cable



1.37 mm Coaxial Cable



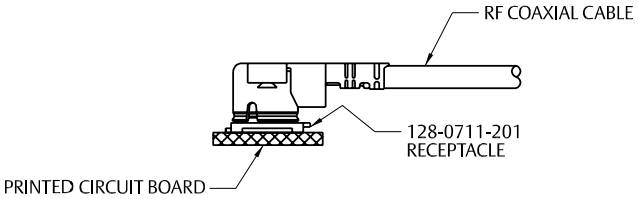
Low Profile
UMC Right Angle Cable Plug to Bare End

Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0104-150	.81 mm	150 mm	UMC LP PLUG	2.0 mm	BARE END
415-0104-250	.81 mm	250 mm	UMC LP PLUG	2.0 mm	BARE END

Medium Profile
UMC Right Angle Cable Plug to Bare End

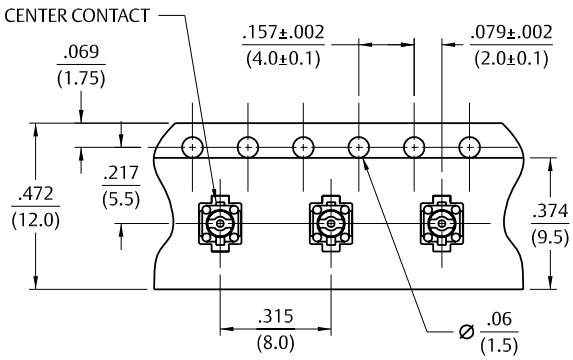
Part No.	Teflon Coaxial Cable O.D.	Cable Length	Connector A	Height	Connector B
415-0105-150	.81 mm	150 mm	UMC MP PLUG	2.5 mm	BARE END
415-0105-250	.81 mm	250 mm	UMC MP PLUG	2.5 mm	BARE END
415-0106-150	1.13 mm	150 mm	UMC MP PLUG	2.5 mm	BARE END
415-0106-250	1.13 mm	250 mm	UMC MP PLUG	2.5 mm	BARE END
415-0107-150	1.32 mm	150 mm	UMC MP PLUG	2.5 mm	BARE END
415-0107-250	1.32 mm	250 mm	UMC MP PLUG	2.5 mm	BARE END
415-0108-150	1.37 mm	150 mm	UMC MP PLUG	2.5 mm	BARE END
415-0108-250	1.37 mm	250 mm	UMC MP PLUG	2.5 mm	BARE END

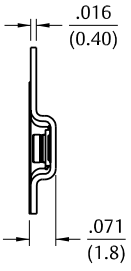
Straight Jack Receptacle - Surface Mount

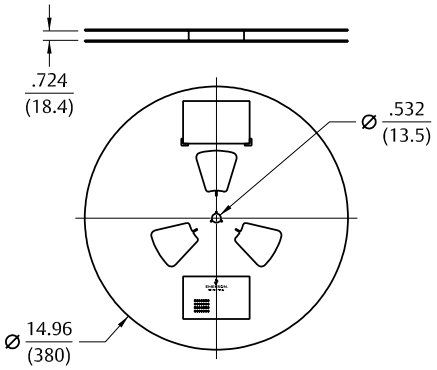


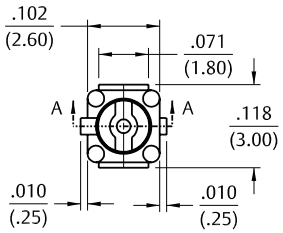
Part No.	Tape & Reel
128-0711-201	2,500/REEL

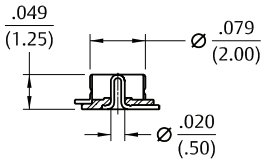
Tape and Reel



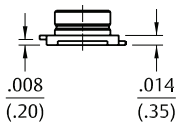


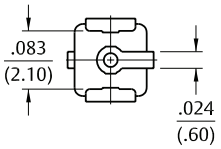


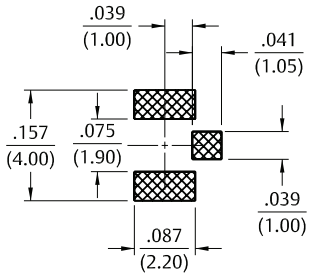




SECTION A-A







RECOMMENDED PCB PATTERN

SMA Conversion Adapter for Mating UMC Plugs (SMA Plug to UMC Jack)

Part No.
134-1019-361

Fig. 1

UMC Separation Key

FOR EXTRACTION

FROM A COUPLED CONDITION.

Part No.
128-0000-901

SMA Conversion Adapter for Surface Mt. Jack Receptacle 128-0711-201 (SMA Jack to UMC Plug)

Part No.
134-1019-371

Fig. 2

Inspection Tool for Cable Assy.

Part No.
134-1019-381

Fig. 3

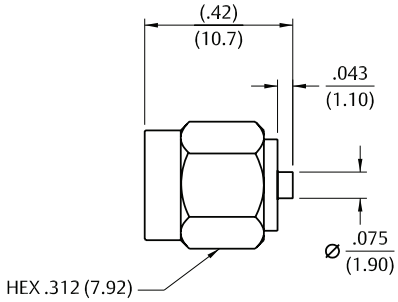


Fig.1

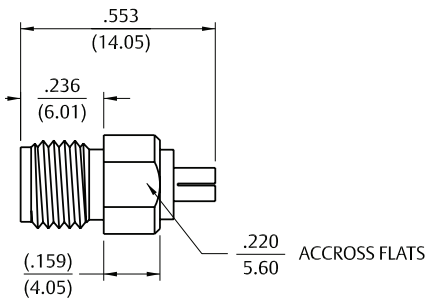


Fig.2

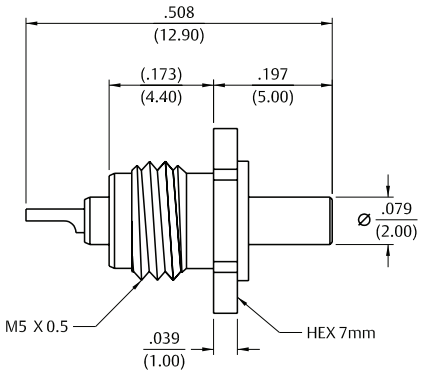


Fig.3

Ultra Miniature Connectors
UMC to U.FL Cross Reference

JOHNSON P/N	HIROSE
128-0711-201	U.FL-R-SMT(10)
415-0084-050	U.FL-2LP(V)-04N1-A-50
415-0084-100	U.FL-2LP(V)-04N1-A-100
415-0084-150	U.FL-2LP(V)-04N1-A-150
415-0084-200	U.FL-2LP(V)-04N1-A-200
415-0084-250	U.FL-2LP(V)-04N1-A-250
415-0084-300	U.FL-2LP(V)-04N1-A-300
415-0084-500	U.FL-2LP(V)-04N1-A-500
415-0085-050	U.FL-2LP-04N2-A-50
415-0085-100	U.FL-2LP-04N2-A-100
415-0085-150	U.FL-2LP-04N2-A-150
415-0085-200	U.FL-2LP-04N2-A-200
415-0085-250	U.FL-2LP-04N2-A-250
415-0085-300	U.FL-2LP-04N2-A-300
415-0085-300	U.FL-2LP-04N2-A-500
415-0086-050	U.FL-2LP-068N2-A-50
415-0086-100	U.FL-2LP-068N2-A-100
415-0086-150	U.FL-2LP-068N2-A-150
415-0086-200	U.FL-2LP-068N2-A-200
415-0086-250	U.FL-2LP-068N2-A-250
415-0086-300	U.FL-2LP-068N2-A-300
415-0086-500	U.FL-2LP-068N2-A-500
415-0087-050	U.FL-2LP-066J2-A-50

JOHNSON P/N	HIROSE
415-0087-100	U.FL-2LP-066J2-A-100
415-0087-150	U.FL-2LP-066J2-A-150
415-0087-200	U.FL-2LP-066J2-A-200
415-0087-250	U.FL-2LP-066J2-A-250
415-0087-300	U.FL-2LP-066J2-A-300
415-0087-500	U.FL-2LP-066J2-A-500
415-0088-050	U.FL-2LP-088K2T-A-50
415-0088-100	U.FL-2LP-088K2T-A-100
415-0088-150	U.FL-2LP-088K2T-A-150
415-0088-200	U.FL-2LP-088K2T-A-200
415-0088-250	U.FL-2LP-088K2T-A-250
415-0088-300	U.FL-2LP-088K2T-A-300
415-0088-500	U.FL-2LP-088K2T-A-500
415-0104-150	U.FL-LP(V)-04N1-A-150
415-0104-250	U.FL-LP(V)-04N1-A-250
415-0105-150	U.FL-LP-04N2-A-150
415-0105-250	U.FL-LP-04N2-A-250
415-0106-150	U.FL-LP-068N2-A-150
415-0106-250	U.FL-LP-068N2-A-250
415-0107-150	U.FL-LP-066J2-A-150
415-0107-250	U.FL-LP-066J2-A-250
415-0108-150	U.FL-LP-088K2T-A-150
415-0108-250	U.FL-LP-088K2T-A-250

UMC Family : UMC MP, LP, ULP
Competition with other Supplier's Product

	Emerson / Johnson			HIROSE		
Model Name	**UMC MP**	**UMC LP**	**UMC ULP**	**U.FL-LP-040/066**	**U.FL-LP(V)-040**	**W.FL-LP-040**
Mated Height (Max.)	2.5/2.7mm	2.1mm	1.6mm	2.5mm	2.0mm	1.55mm
Termination Style	Mechanical Termination			Soldering		
Plating of Shell	Gold	Gold	Gold	Silver	Silver	Silver
Plating of Contact	Gold	Gold	Gold	Gold	Gold	Gold
Applicable Coaxial Cable (Diameter)	AWG30(1.37mm) AWG32(1.32mm) AWG32(1.13mm) AWG36(0.81mm)	AWG36(0.81mm)	AWG36(0.81mm)	AWG32(1.32mm) AWG36 (0.81mm)	AWG36(0.81mm)	AWG36(0.81mm)
Frequencies	DC to 6GHz			DC to 6GHz		

UMC Compatibility Table Johnson Vs HIROSE

UMC Family	Mated Height (mm)	AWG (O.D. mm)	Emerson / Johnson		HIROSE	
			Plating (Contact / Ground)	Part No.	Plating (Contact / Ground)	Product No.
UMC Receptacle	2.7/2.5/2.1	N/A	Gold	128-0711-201	Gold/Silver	U.FL-R-SMT (10)
UMC MP Plug	2.5	30 (1.37)	Gold	415-0088-xxx	Gold/Silver	U.FL-LP-088
UMC MP Plug	2.7/2.5	32 (1.32)	Gold	415-0087-xxx	Gold/Silver	U.FL-LP-066
		32 (1.13)	Gold	415-0086-xxx	Gold/Silver	U.FL-LP-066
		36 (0.81)	Gold	415-0085-xxx	Gold/Silver	U.FL-LP-040
UMC LP Plug	2.1	36 (0.81)	Gold	415-0084-xxx	Gold/Silver	U.FL-LP(V)-040
UMC ULP Plug	1.6	N/A	Gold	415-0109-xxx	Gold/Silver	CL-331-0482-6-10

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