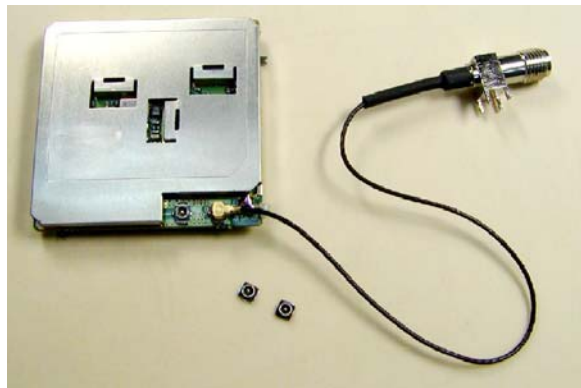


Sunridge MCF Series – 2.0mm Mated Height Miniature Coaxial Interconnect



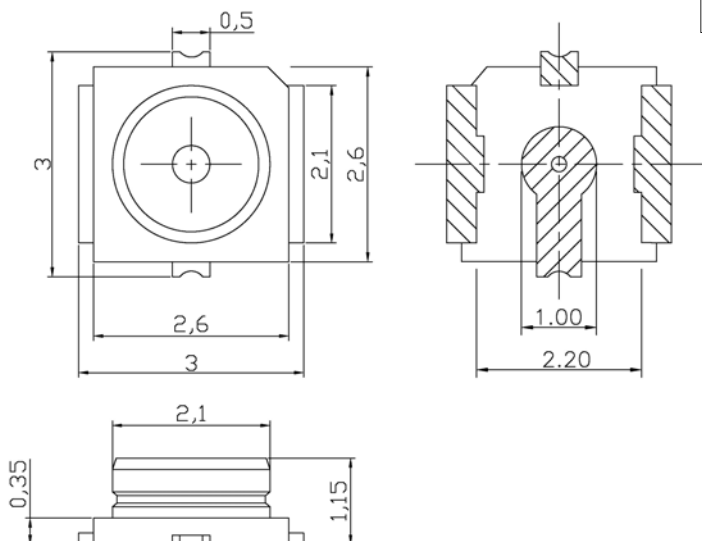
Sunridge MCF series coaxial product fulfills the rigorous requirements of high frequency RF signal transmission in digital world. In a miniature form factor of 3.0mm x 3.0mm PCB foot print by 2.0mm mated height, MCF features an advanced design that makes for optimal mechanical application, i.e., easy insertion and sturdy engagement among mating pair, and delivers a supreme performance of low insertion loss and low VSWR at 50 OHM impedance over a working frequency range from DC to 6.0 GHz. MCF offers a practical and reliable solution for interconnection from board to board or from board to panel.



Typical Application:

Smart cell phone, portable info or tracking device, monitoring base station. Particularly, widely used in Telecommunication modules.

PCB Connector Pn: MCF-ST-00T



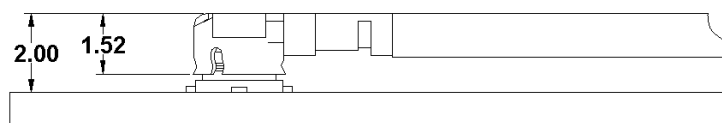
Material Spec

Outer Contact: Copper Alloy, Gold Plated.
Center Contact: Copper Alloy, Gold Plated.
Insulator: Engineering Plastic.
Cable: Silver plated center conductor with Teflon dielectric and jacket.

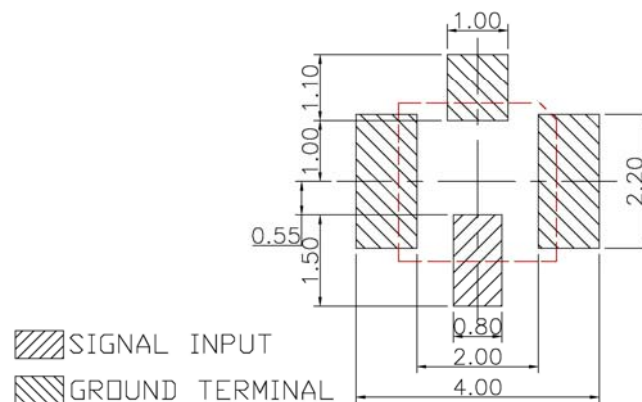
Features

- Space Economy: 3.0mm x 3.0mm PCB footprint, mated height of 2.0 mm
- Cable Connector: designed for robust cable assembly, and perfect mating with PCB socket
- Teflon Cable: silver plated center conductor with Teflon dielectric and jacket of 0.81mm OD to facilitate intricate cable routing where space is limited.
- Versatility: other cable types and a variety of MCF-to-RF cable assembly are available
- PCB socket: Molded construction in one integral piece. High temp plastic housing for IR reflow.
- Strength: Lead-in and interlock features make for easy insertion and sturdy engagement among cable connector and PCB socket.
- Accessory: Assembly tool for easy insertion and extraction. MCF-SMA adapter for connection to network analyzer.

Form Factor



Recommended PCB Layout



Characteristics

Frequency Range	DC to 6GHz
Nominal Impedance	50 ohm
Temperature Range	-40°C to +90°C
Contact Resistance	25m ohm max
Withstanding Voltage	AC 200Vrms
Insulation Resistance	500M ohm min
Durability	20 Cycles

(dimension: mm)

www.sunridgecorp.com



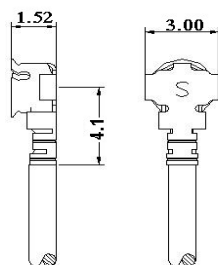
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MCF Cable Assembly



Pn: MCF-SH-XX-LLL-T

Pn: MCF-SH-XX-LLL-F

Pn: MCF-DH-XX-LLL

P/N Designation

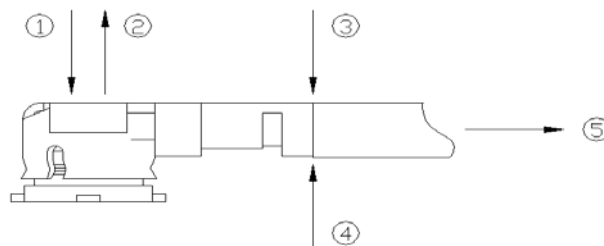
MCF – XX – XX – XXX – X
A B C D

- A. Head Configuration: SH: Single-Headed Cable construction
DH: Double-Headed Cable construction
- B. Coaxial Cable Code: see cable selection guide
- C. Length (in mm): Ex: LLL = 200: 200mm.
- D. End Cut (SH only): T : open end striped & tinned.
F : open end flat cut

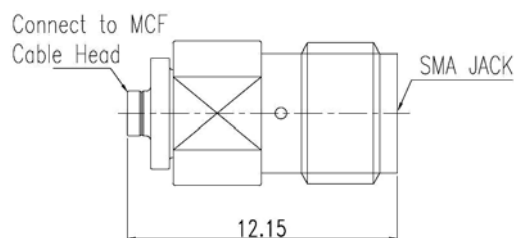
Insertion/Extraction Tool Pn: ET-MCF



Mechanical Application



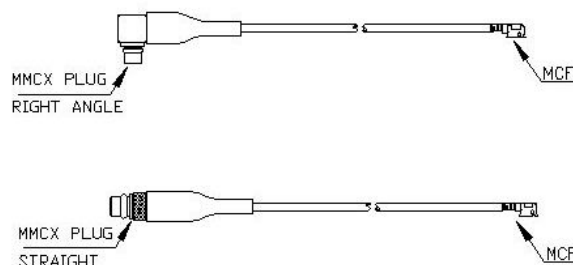
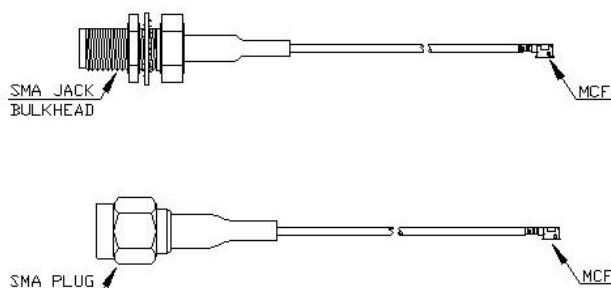
Test Adaptor Pn: MCFP-SMAJ



- ① Insertion force (with tool): 900gf.
② Extraction force (with tool): 600f.
③ Retention, downward force: 200gf
④ Retention, upward force: 200gf
⑤ Retention, pull back: 1,500gf min
Durability: 20 cycles

Integrated Solution

MCF- single headed cable is typically integrated with another R/F connector for interconnection, say, from module board to panel or to antenna fitting. Sunridge is equally committed to both R/F cable assembly customers and OEM's. Send your application requirement to engineering@sunridgecorp.com for a project evaluation.



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(dimension: mm)

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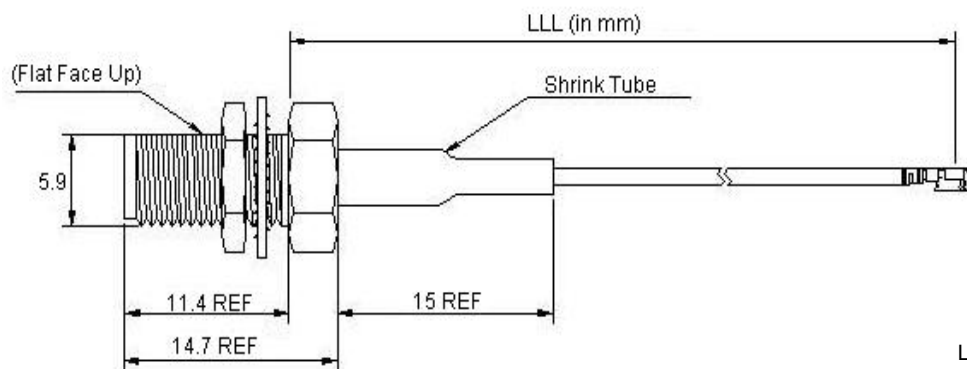




MCF- Derivative Cable Assembly P/N Selector:

(Illustration of the most commonly used MCF-RF cable assy. A variety of other RF configurations is readily available at Sunridge Corp. Contact engineering@sunridgecorp.com for project inquiry.)

■ MCF to SMA Bulkhead Jack Cable Assembly:

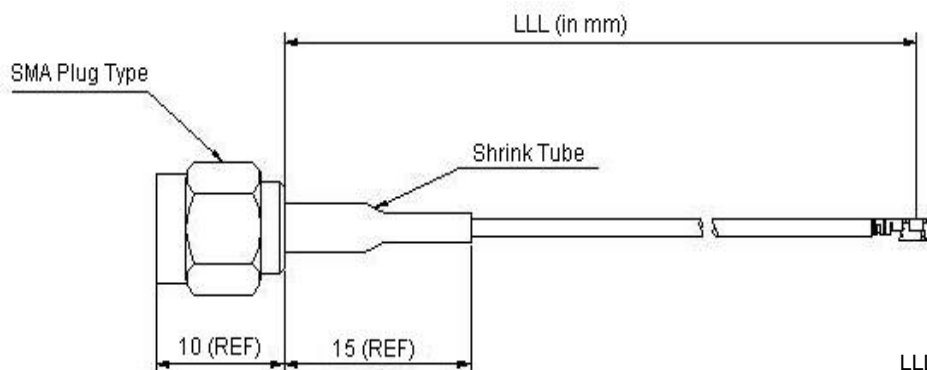


Range	Tolerance
50 < LLL < 100	± 2
100 < LLL < 200	± 3
300 < LLL < 300	± 5
300 < LLL < 500	± 10
500 < LLL < 1000	± 25
1000 < LLL	±60

LLL: Length in mm. e.g., LLL = 200 means 200mm; LLL = 073 means 73mm

Descriptions	Recommended Cable	Sunridge P/N
MCF to SMAJB	#59, 1.13 mm OD	MCF-RH-59-LLL-SMAJB103
MCF to SMAJB Reverse Polarity (RP)	#59, 1.13 mm OD	MCF-RH-59-LLL-SMAJB181
MCF to SMAJB with O-Ring Seal	#59, 1.13 mm OD	MCF-RH-59-LLL-SMAJB105
MCF to SMAJB RP with O-ring Seal	#59, 1.13 mm OD	MCF-RH-59-LLL-SMAJB183

■ MCF to SMA Plug Cable Assembly:



Range	Tolerance
50 < LLL < 100	± 2
100 < LLL < 200	± 3
300 < LLL < 300	± 5
300 < LLL < 500	± 10
500 < LLL < 1000	± 25
1000 < LLL	±60

LLL: Length in mm. e.g., LLL = 200 means 200mm; LLL = 073 means 73mm

Descriptions	Recommended Cable	Sunridge P/N
MCF to SMAP	#59, 1.13 mm OD	MCF-RH-59-LLL-SMAP103
MCF to SMAP Reverse Polarity (RP)	#59, 1.13 mm OD	MCF-RH-59-LLL-SMAP181



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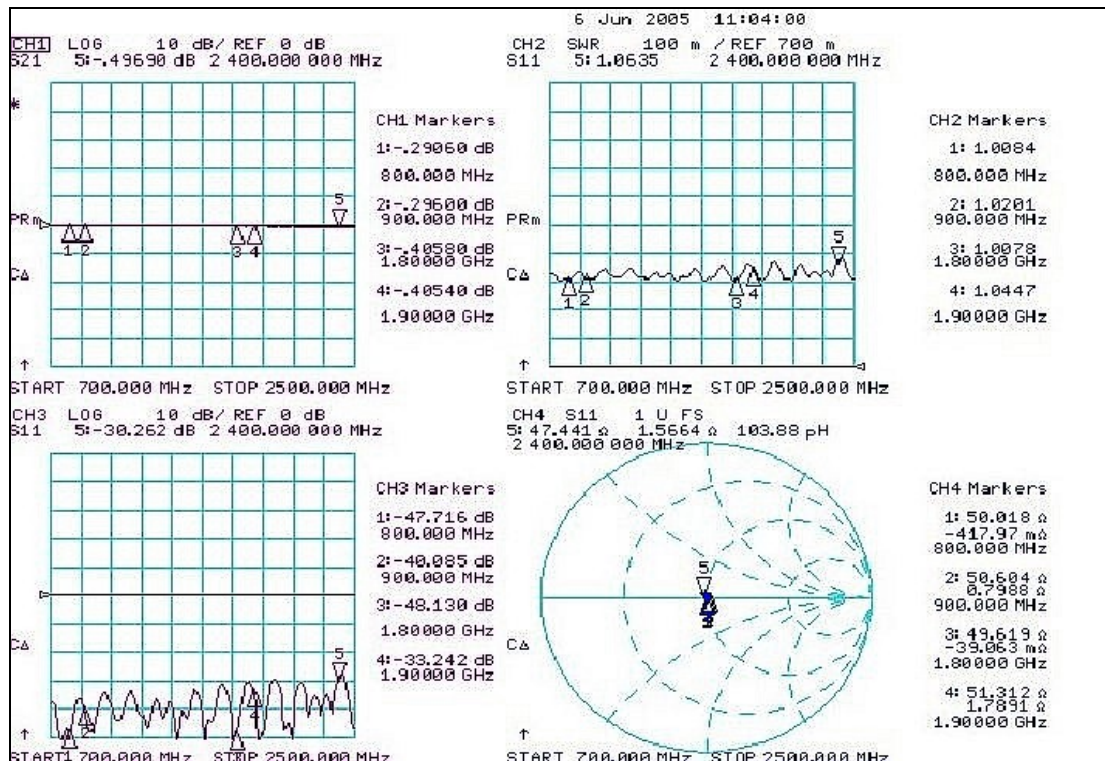


Cable Selection Guide

Cable Designation Code			#62	#59	#68
Inner conductor	No. and Dia.	(No./mm)	7/0.07	7/0.08	7/0.05
	Material	—	Silver plated copper wire	Silver plated copper wire	Silver plated copper wire
	Total Dia.	(mm)	0.21	0.24	0.15
Dielectric	Material	—	FEP	FEP	PFA
	Total Dia.	(mm)	0.63	0.68	0.4
Outer conductor	Material	—	Tinned copper wire/copper tape	Tinned copper wire	Tinned copper wire
	Dia. of wire	(mm)	0.05	0.05	0.05
	Total Dia.	(mm)	0.80	0.93	0.65
Jacket	Material	—	FEP	FEP	PFA
	Nominal thickness	(mm)	0.05	0.1	0.08
Overall Dia.		(mm)	0.91	1.13	0.81
Nominal impedance		(Ohm)	50	50	50
Voltage rating		Vrms Max.	300	300	300
Nominal static capacitance		(pF/m)	97	97	96
Insertion loss		dB/m at 1GHz	2.00	2.06	3.53
		dB/m at 2GHz	2.60	2.97	5.17
		dB/m at 2.4GHz	3.10	3.27	5.71
		dB/m at 3GHz	3.50	3.69	6.45
		dB/m at 5GHz	4.00	4.87	8.53
		dB/m at 6GHz	4.40	5.38	9.42

Performance Measurement Reference:

(Test sample: MCF dual head cable assy, 100mm; Test instrument: Agilent 8753ES network analyzer.)



MCF-DH-62-100

Length: 100mm
Cable Code: #62
Overall Diameter: 0.91mm
Inner Conductor: 0.21mm Dia.
Dielectric: 0.63m Dia.
Outer Conductor: 0.80mm
Jacket: 0.91mm Dia.

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(dimension: mm)



Sunridge Corporation

USA Headquarters: 1-626-535-1780
Taiwan Operations: 886-2-2906-2119
E-mail: sales@sunridgecorp.com

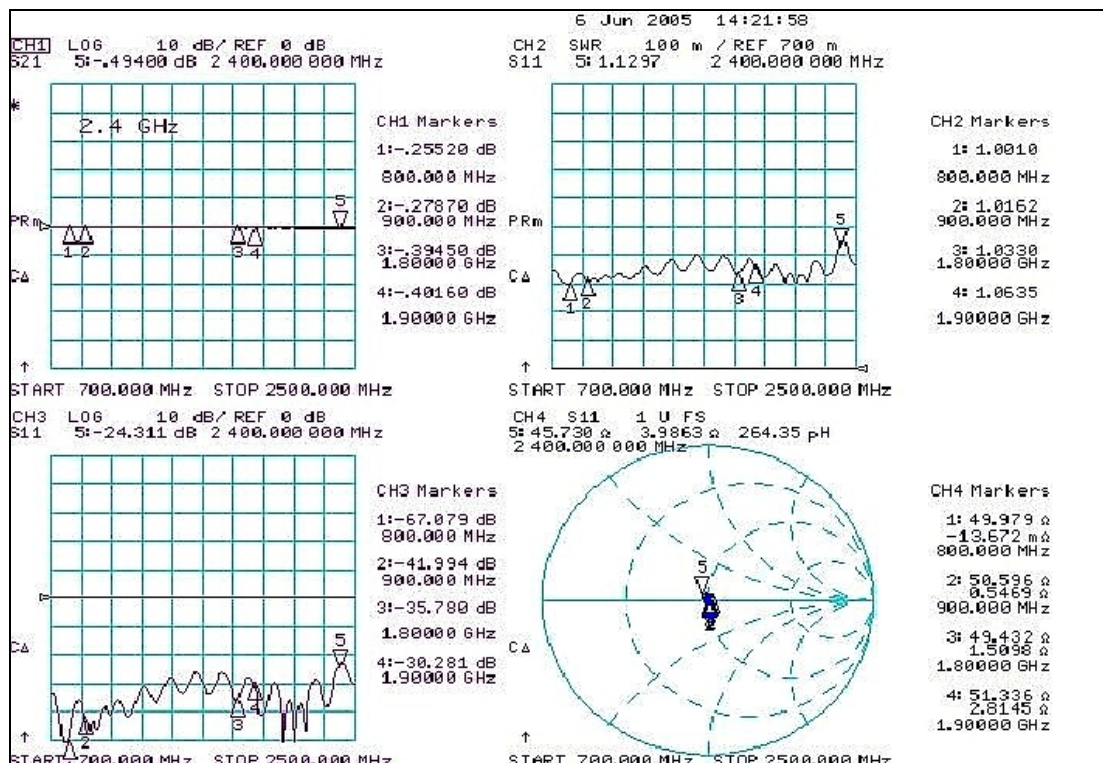
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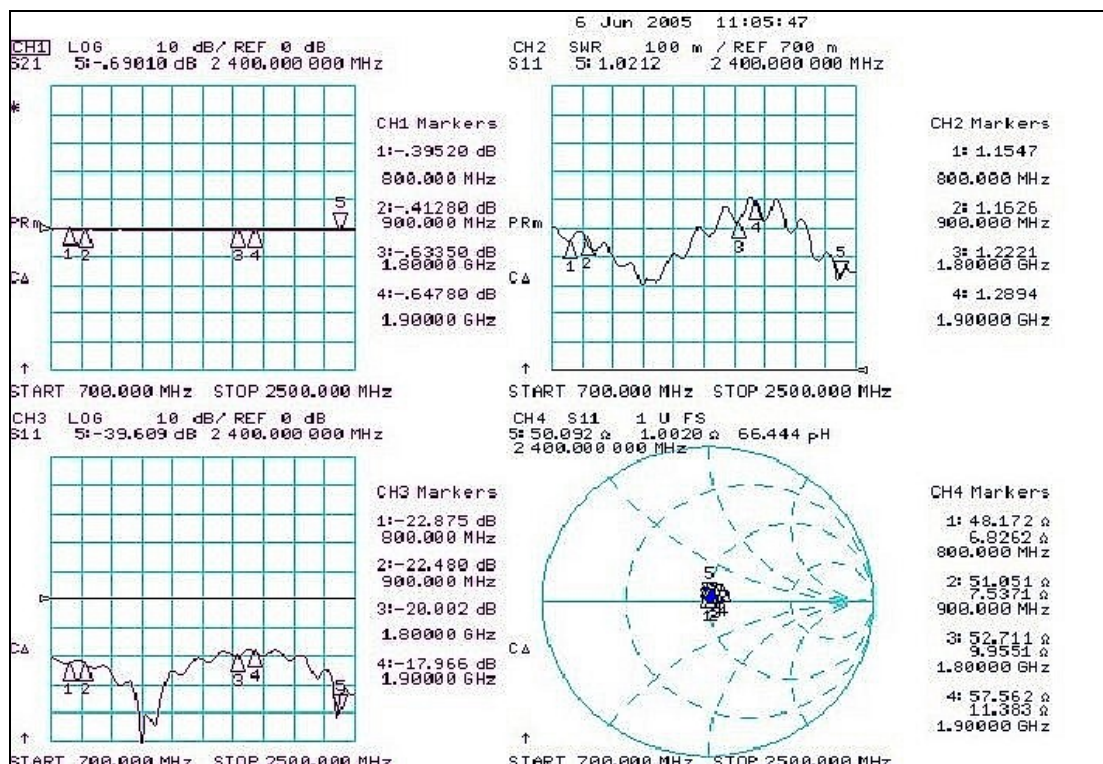
Performance Measurement Reference:

(Test sample: MCF dual head cable assy, 100mm; Test instrument: Agilent 8753ES network analyzer.)



MCF-DH-59-100

Length: 100mm
Cable Code: #59
Overall Diameter: 1.13mm
Inner Conductor: 0.24mm
Dia.
Dielectric: 0.68mm Dia.
Outer Conductor: 0.93mm
Dia.
Jacket: 1.13mm Dia.



MCF-DH-68-100

Length: 100mm
Cable Code: #68
Overall Diameter: 0.81mm
Inner Conductor: 0.15mm
Dia.
Dielectric: 0.40mm Dia.
Outer Conductor: 0.65mm
Dia.
Jacket: 0.81mm Dia.



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(dimension: mm)

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