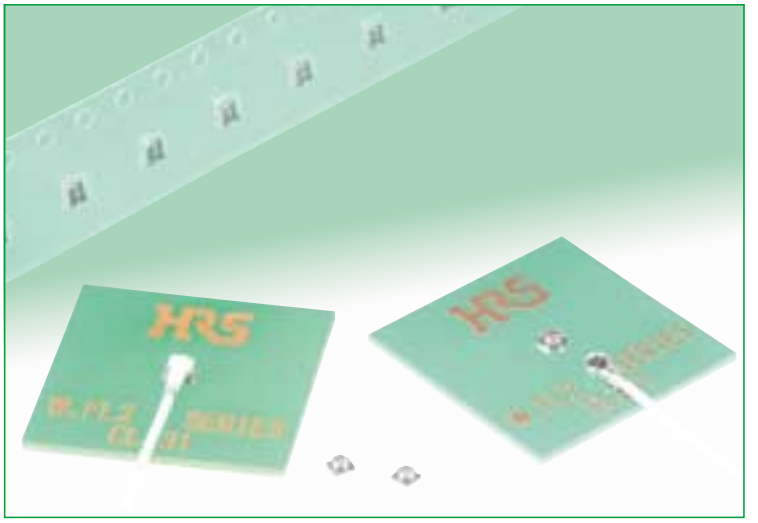
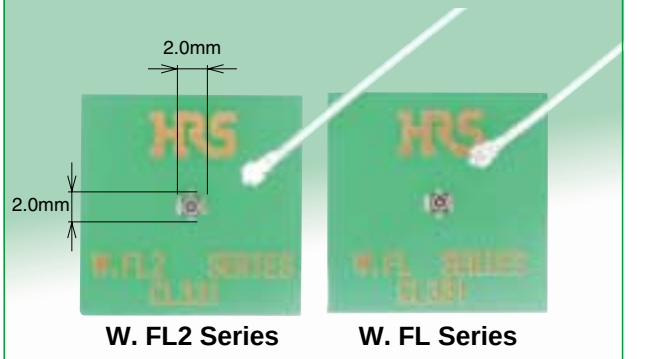
NEW

Ultra-Small Surface Mount Coaxial Connectors - 1.18mm Mated Height

W.FL2 Series



Occupied Mounting Area



Features

1. Nominal mated height of 1.18 mm (Max. 1.3 mm)

2. Small board footprint

As with W. FL Series, the receptacles occupies an area of 3.4 mm— and share the same land pattern.
Note: The W. FL2 Series and the W. FL Series are not compatible.

3. Extremely light weight

Receptacle weight of 5.0 mg and plug weight of 17.4 mg makes the connectors one of the lowest weights on the market

4. Accepts high frequency transmission of DC to 6 GHz

DC to 3 GHz: V.S.W.R. of 1.3 max.
3 GHz to 6 GHz: V.S.W.R. of 1.4 max.

5. Automatic board placement

Packaged on tape-and-reel the receptacles can be placed with vacuum nozzles of the automatic placement equipment.

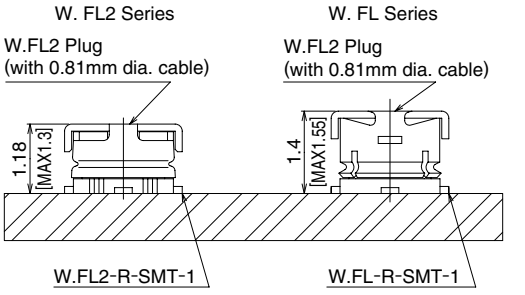
6. Plugs are terminated with ultra-fine coaxial (fluorinated resin insulated) cable

Standard ultra- fine coaxial cable of 0.81 mm diameter (single braid shielding) is used for the plug termination, assuring secure and stable connections.

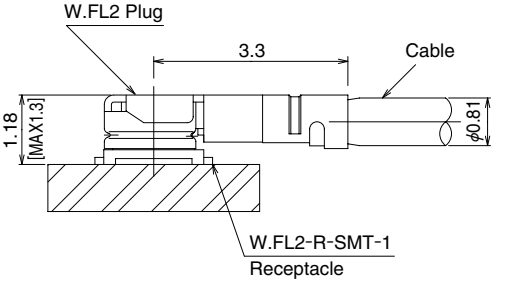
7. Simple connector mating / un-mating

Use of the available mating / un-mating tools assures correct connection / disconnection of the plug and receptacle.

Mated height comparison (with W.FL Series)



W. FL2 Plug and Receptacle



Applications

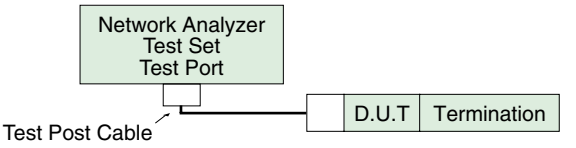
Mobile phones, wireless LAN related applications, Bluetooth protocol devices, PDA, GPS, wireless communication devices, electronic measuring instruments and any application requiring high frequency transmission using ultra-small coaxial connectors.

■Specifications

Rating	Nominal characteristic impedance	50Ω	Operating temperature range	-40°C to +90°C (RH 90% max.)
	Frequency range	DC to 6 GHz	Storage temperature range	-30°C to +70°C (RH 90% max.)Note 1

Item	Specification
1. Contact resistance	20 mΩ max. (center contact), l0 mΩ max. (outer contact)
2. Insulation resistance	500 MΩ min., 100 V DC
3. Withstanding voltage	200 V AC / 1 minute
4. V.S.W.R.	1.3 max. (DC to 3 GHz) 1.4 max. (3 GHz to 6 GHz)

∗ V.S.W.R. Measurement
as shown on the block diagram below.
Note: Verify connection and measurement setup.



Note1: Cable assembly measurements with SMA conversion adapters mated with W.FL2 plug at each end of the 100cm long ultra-fine coaxial cable.
Note2: Receptacles mounted on a 50 ohms glass epoxy board. Measurements were conducted with SMA conversion adapters attached.

Note1. The term “storage” refers to products stored for long period of time prior to mounting and use.

■Materials

●Plugs – Right Angle

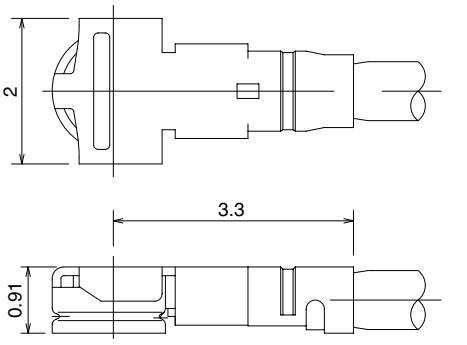
Part	Material	Finish
Shell	Phosphor bronze	Silver plated
Insulator	PBT	Color: Black, UL94V-0
Female center contact	Phosphor bronze	Gold plated

●Receptacle

Part	Material	Finish
Shell	Phosphor bronze	Silver plated
Insulator	LCP	Color: Black, UL94V-0
Male center contact	Brass	Gold plated

■Plugs

●Cable

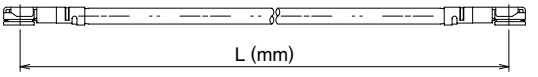


All dimensions: mm

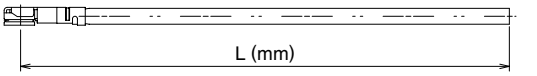
Plugs can be ordered only as terminated cable assemblies.

■How to Specify Cable Assembly

Double-ended cable assembly



Single-ended cable assembly



Ordering Information

●Ordering Information

W.FL2 -- 2LP -- 04N [ ] -- A -- (L)
❶ ❷ ❸ ❹ ❺

W.FL2 -- LP -- 04N [ ] -- A -- (L)
❶ ❷ ❸ ❹ ❺

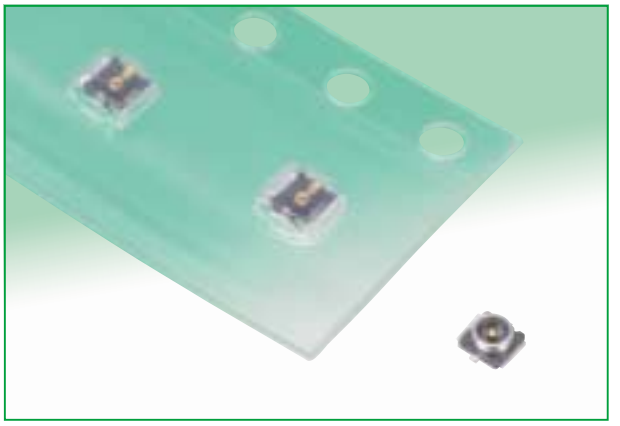
●Standard tolerances for (L)**

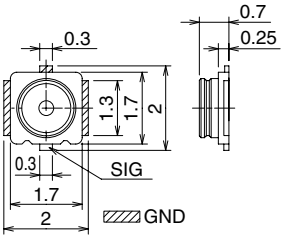
(L)(mm)	Standard Tolerance (mm)
＊L=35 to 200	±4 mm
L=200 to 500	±8 mm
L=500 to 1000	±12 mm
L=Longer than 1000 mm /	±1.5% of (L)

＊ Minimum available length (L) is 35mm
＊＊ Contact nearest HRS representative if different tolerances are required.
＊＊＊ Contact Nearest HRS representative if one end requires preparation.

❶ Series name	W.FL2	❹ Cable color	1: White, 2: Black
❷ Assembly type	LP : Single ended 2LP : Double ended	❺ Total length (mm)	Length (L)
❸ Cable type	04N : 0.81mm dia. ultra-fine coaxial cable		

■Receptacles

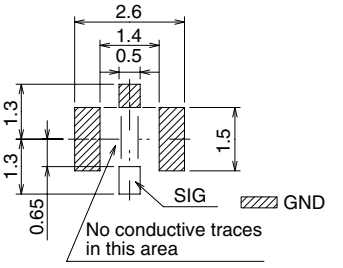




Part Number	CL No.	Packaging	Weight/EA	RoHS
W.FL2-R-SMT-1(10)	331-0315-4-10	Reel (2,000 pieces per reel)	5.0mg	YES
W.FL2-R-SMT-1(40)	331-0315-4-40	Reel (5,000 pieces per reel)		

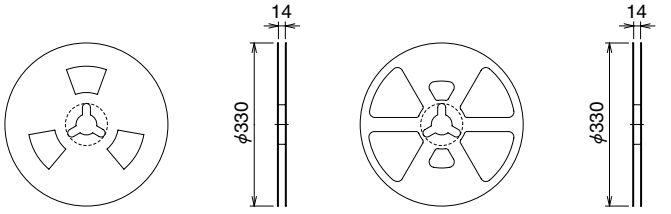
◆Recommended PCB mounting pattern (Note 1)

Note 1: The land pattern is the same as that of the W. FL series connectors.
Note 2: Recommended metal mask thickness: 0.1mm to 0.12mm



●Packaging Specifications

Reel Dimensions



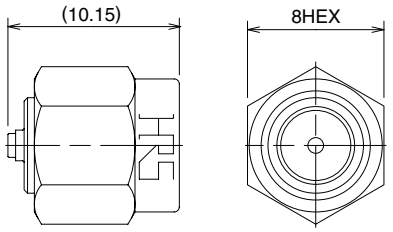
W.FL2-R-SMT-1(10): Reel material: Corrugated board

W.FL2-R-SMT-1(40): Reel material: Plastic

■Conversion Adapters

●SMA Conversion Adapter (W.FL2 side jack – SMA side plug)

Note: Used for performance measurements only.
The W.FL mating side has lower retention force when mated with the corresponding part.

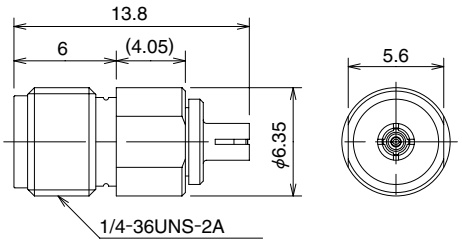


All dimensions: mm

Part Number	CL No.	RoHS
HRMP-W.FL2J	311-0394-6	YES

●SMA Conversion Adapter (W.FL2/W.FL side plug – SMA side jack)

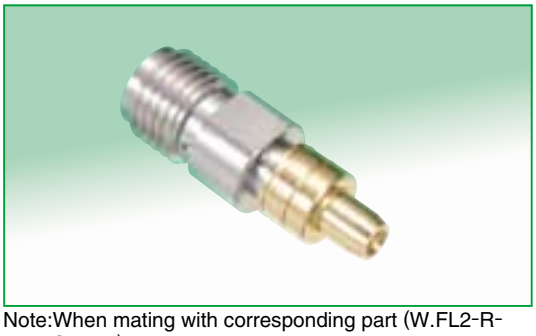
Note: Used for performance measurements only.
The W.FL mating side has lower retention force when mated with the corresponding part.



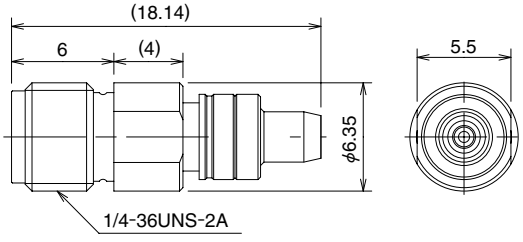
All dimensions: mm

Part Number	CL No.	RoHS
HRMJ-W.FLP(40)	311-0368-6-40	YES

●SMA Conversion Adapter



Note:When mating with corresponding part (W.FL2-R-SMT-1) must be pressed down and held to make complete connection.

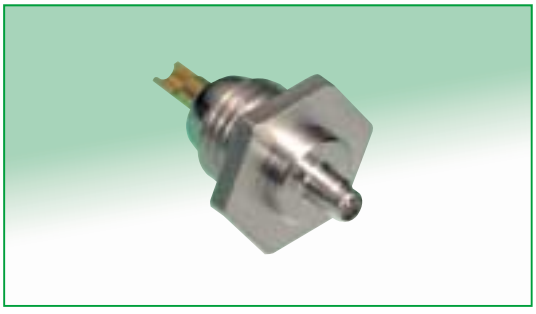


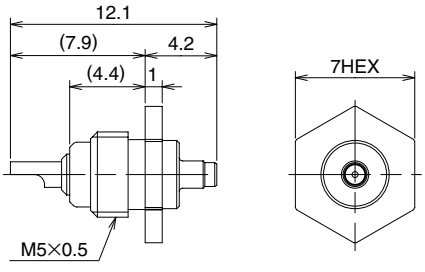
All dimensions: mm

Part Number	CL No.	RoHS
HRMJ-W.FL2P-ST3	311-0417-0	YES

■Receptacle Inspection Adapter (W.FL2/W.FL)

Used for inspecting the performance parameters of the cable assembly.



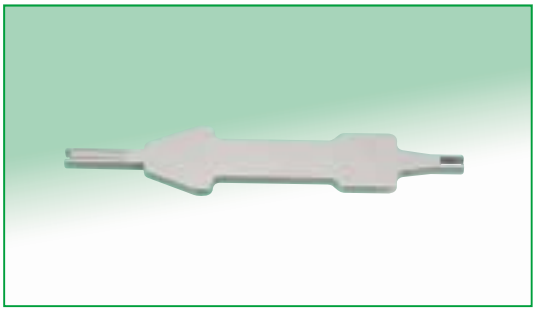


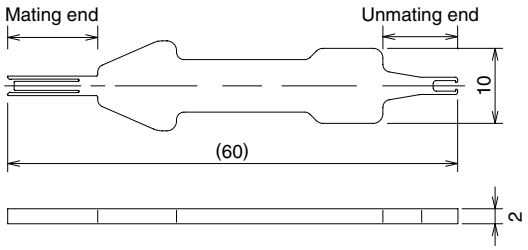
All dimensions: mm

Part Number	CL No.	RoHS
W.FL-R-1	331-0483-9	YES

■Tools

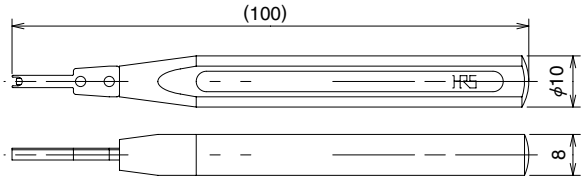
●Plug - Mating /Unmating





Part Number	CL No.	RoHS
W.FL2-LP-IN.OUT	CL331-0321-7	YES

●Plug - Mating

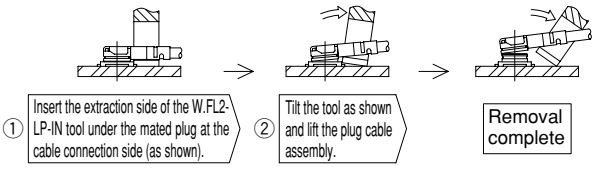
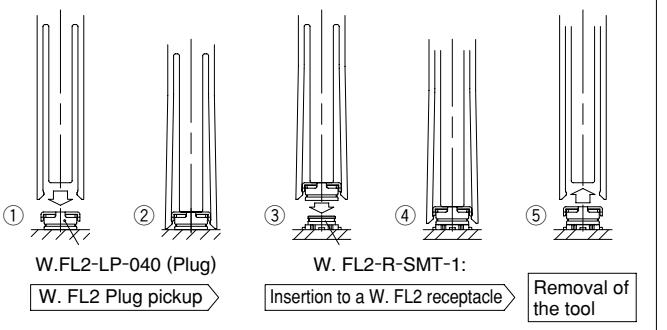
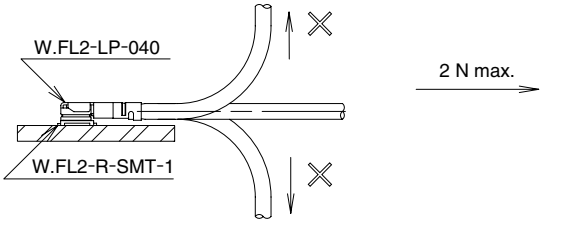


Part Number	CL No.	RoHS
W.FL-LP-IN	CL331-0323-2	YES

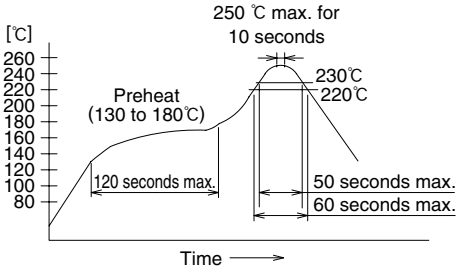
Note: Can be used with W.FL or W.FL-LP(G) plugs.

■Precautions

1. Plugs

(1) Mating / unmating	①To disconnect connectors, insert the extraction side of insertion and extraction jig W.FL2-LP-IN.OUT and perform as described in the diagram below. • **Unmating**  ●Use of the extraction tool is absolutely mandatory. Any attempt of unmating by pulling on the cable may result in damage and affect the mechanical / electrical performance. • **Mating** ① Align the mating tool W.FL-LP-IN or the mating end of the tool W.FL2-LP-IN.OUT over the plug end of the cable assembly. ② Firmly place the tool over the plug until it is secured in the tool. ③ Place the plug cable assembly (held in the tool) over the corresponding receptacle. ④ Assuring that the plug and receptacle are aligned press-down perpendicular to the mounting surface until both connectors are fully mated. ⑤ Remove the mating tool by carefully pulling it up.Removal of the tool 
(2) Pull forces on the cable after connectors are mated	Do NOT apply any pull forces after the bending of the cable. • **Plug** 
(3) Precautions	Do not twist connectors excessively during mating / unmating.

2. Receptacles

(1) Recommended reflow temperature profile	 ① The temperature of the printed circuit board surface temperature at the points of contact with the terminals. ② Reflow soldering should be performed at a printed circuit surface temperature of 250°C max. ③ In individual applications the actual temperature may vary, depending on the solder paste type, volume / thickness and board size / thickness. Consuly your solder paste and equipment manufacturer for specific recommendations.
(2) Recommended metal mask thickness	0.1 mm to 0.12 mm
(3) Reflow cycles	2 times

3. Operating environment and storage conditions

(1) Operating environment	The connectors are NOT designed to operate in the following environments: • Exposed to a excessive amounts of fine particles and dust • Regions and places having a high density of sulfur dioxide, hydrogen sulfide, nitrogen dioxide or other corrosive gasses. • Environments having large rapid variations in temperature.
(2) Storage conditions - Receptacle	Store in the Hirose Electric packaging. Temperature: -10 to +40℃, Humidity: 85% max. Use within 6 months of delivery. Receptacles for which the storage period has elapsed must be tested for solderability to the PC board mounting surface.

Creative Links to World Electronics ®

HIROSE ELECTRIC CO.,LTD.
5-23,OSAKI 5-CHOME,SHINAGAWA-KU,TOKYO 141-8587,JAPAN
PHONE: 81-3-3491-9741, FAX: 81-3-3493-2933
http://www.hirose.com
http://www.hirose-connectors.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Hirose Electric:

W.FL2-2LP-04N2-A-(50)