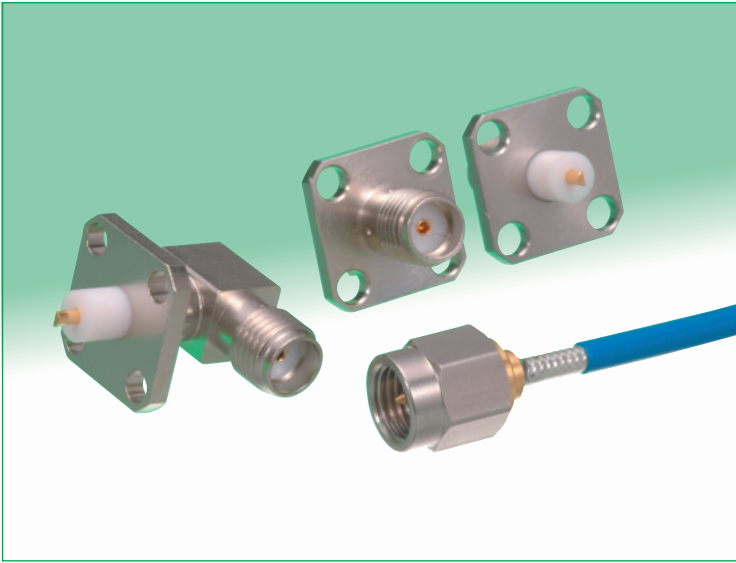


# Low-Cost HRM (SMA) Coaxial Connectors

## HRM(VA) Series



### ■ Features

#### 1. Reduced cost

A reduction of the number of parts and a change of materials make these connectors more economical to use than the existing HRM series.

#### 2. Compatible with standard SMA products

Couples with the HRM series connectors and other SMA standard products.

The high frequency characteristics are the same as the existing HRM series.

#### 3. Uses semi-rigid coaxial cable

Semi-rigid coaxial cables of 0.141 inch dia. (3.58mm) or 0.085 inch dia. (2.15mm) can be used with the plug assemblies.

### ■ Applications

Mobile communications, base stations, microwave equipment, internal wiring of test and measuring instruments.

### ■ Product Overview

Part Number	CL No.	Overview	Frequency Range
HRM-P101	CL323-0816-5	Straight plug - 0.141-inch dia. semi-rigid coaxial cable	Up to 18 GHz
HRM-P101S	CL323-0817-8	Straight plug - 0.141-inch dia. semi-rigid coaxial cable	Up to 18 GHz
HRM-P100-3.58PSG	CL323-0811-1	Straight plug - 0.141-inch dia. semi-rigid coaxial cable	Up to 12.4 GHz
HRM-P100-141BN	CL323-0837-5	Straight plug - 0.141-inch dia. semi-rigid coaxial cable	Up to 18 GHz
HRM-P100-2.19PSP	CL323-0810-9	Straight plug - 0.085-inch dia. semi-rigid coaxial cable	Up to 12.4 GHz
HRM-P100-085BN	CL323-0838-8	Straight plug - 0.085-inch dia. semi-rigid coaxial cable	Up to 12.4 GHz
HRM(G)-306S	CL323-0823-0	Straight receptacle (3 separate components supplied)	Up to 18 GHz
HRM(G)-306B	CL323-0829-7	Straight receptacle (3 separate components supplied)	Up to 18 GHz
HRM(G)-303B	CL323-0828-4	Straight receptacle (3 separate components supplied)	Up to 18 GHz
HRM(G)-305B	CL323-0830-6	Right-angle receptacle	Up to 12.4 GHz
HRM(G)-310B	CL323-0831-9	Right-angle receptacle	Up to 12.4 GHz
HRM(G)-309B	CL323-0832-1	Right-angle receptacle	Up to 12.4 GHz
HRM-R300-110S	CL323-0818-0	Straight receptacle	Up to 12.4 GHz
HRM-R300-118S	CL323-0819-3	Straight receptacle	Up to 12.4 GHz

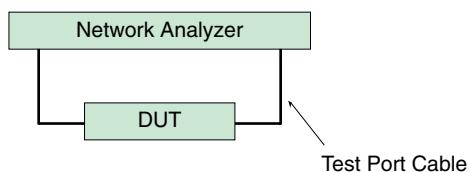
## Product specifications

Ratings	Characteristic impedance	50 Ω	Operating temperate range	-55°C to +85°C
	Frequency range	DC to 12.4GHz DC to 18GHz	Operating relative humidity	95% max.

Item	Specification	Conditions
1. Insulation resistance	5000M Ω min.	500V DC
2. Withstanding voltage	No flashover or insulation breakdown.	1000V AC / one minute (plug, 0.141-inch dia. semi-rigid cable / receptacle) 500V AC / one minute (plug, 0.085-inch dia. semi-rigid cable)
3. Contact resistance	4m Ω min. (Center conductor or outer conductor)	100mA max.
4. Center contact holding force	Mating: 8.9N Un-mating: 0.3N	Measured with a φ 0.9398 mm pin gauge Measured with a φ 0.9017 mm pin gauge
5. V.S.W.R.*	Straight type: 1.05+0.01[f:GHz]max. Right angle type: 1.05+0.025[f:GHz]max.	DC to 12.4GHz , 18GHz
6. Vibration	No electrical discontinuity of 1μs or more. No damage, cracks or parts dislocations.	Frequency: 10 to 2000Hz, single amplitude of 0.75mm, acceleration of 196m/s <sup>2</sup> , for 10 cycles in the direction of each of the 3 axis.
7. Humidity	Insulation resistance 100M Ω min. (high humidity) Insulation resistance 5000M Ω min. (dry) No damage, cracks or parts dislocation.	240 hours at temperature of +25°C to +65°C and humidity of 90% to 98%.
8. Temperature cycle	Contact resistance: 4m Ω min. (Center conductor or outer conductor) No damage, cracks or parts dislocation.	Temperature: -55°C → +5 ~ 35°C → +85°C → +5 ~ 35°C Duration: 30 → 5MAX → 30 → 5MAX (Minutes) 5 cycles
9. Durability (mating/un-mating, with corresponding plug)	Contact resistance: 6m Ω min. (Center conductor or outer conductor) No damage, cracks or parts dislocation.	1000 cycles (Material: Stainless steel) 500 cycles (Material: Brass)
10. Salt spray test	No excessive corrosion	5% salt water solution, 48 hours

\*V.S.W.R. Measurement System

The above V.S.W.R. standard values were measured using the measurement shown below.



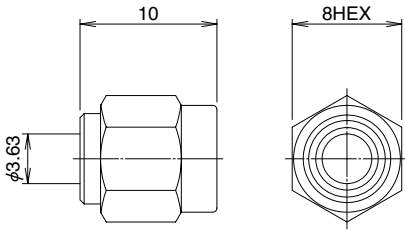
Note 1: Connectors for use with cable are measured with 10 cm of suitable cable attached at both ends.

Note 2: Connectors for use with printed circuit boards are measured with special adapter attached.

## Materials/Finish

Part	Material	Finish
Shell	Plug	Stainless steel/Brass
	Receptacle	Stainless steel/Brass
Male center contact	Brass	Gold plated
Female center contact	Beryllium copper	Gold plated
Insulator	PTFE	—
Coupling	Stainless steel/Brass	Gold plated, passivated/nickel plated

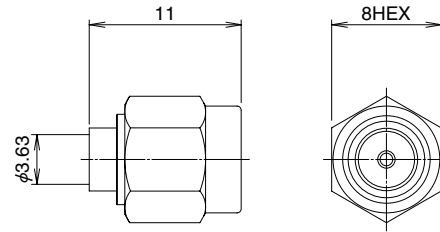
## Plugs



Note: Supplied not assembled.

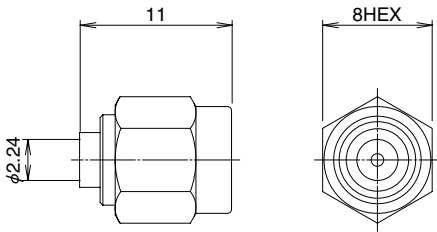
Part number	CL No.	Remarks
HRM-P101	323-0816-5	Stainless steel body, gold plated
HRM-P101S	323-0817-8	Stainless steel body, passivated
HRM-P100-141BN	323-0837-5	Brass body, nickel plated

0.141-inch dia. semi-rigid coaxial cable



Part number	CL No.	Remarks
HRM-P100-3.58PSG	323-0811-1	Stainless steel body, passivated

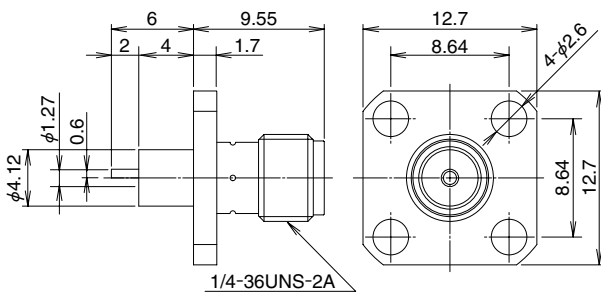
0.141-inch dia. semi-rigid coaxial cable



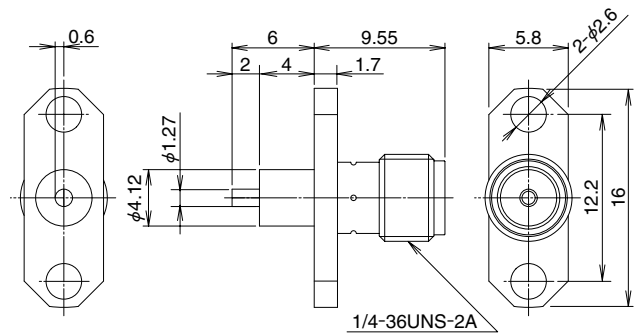
Part number	CL No.	Remarks
HRM-P100-2.19PSP	323-0810-9	Stainless steel body, passivated
HRM-P100-085BN	323-0838-8	Brass body, nickel plated

0.085-inch dia. semi-rigid coaxial cable

## Receptacles (3 separate components)

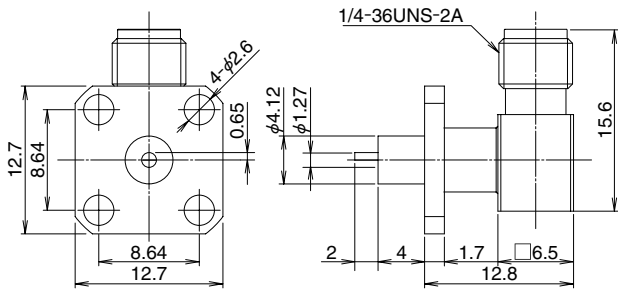


Part number	CL No.	Remarks
HRM(G)-306S	323-0823-0	Stainless steel body, passivated
HRM(G)-306B	323-0829-7	Brass body, nickel plated

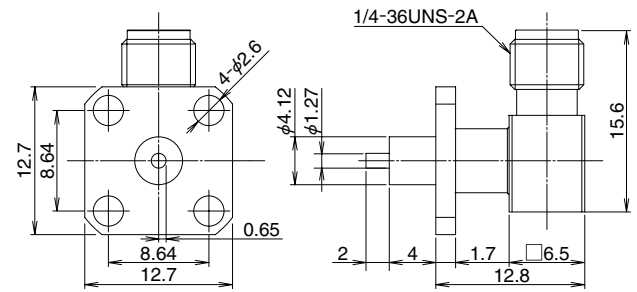


Part number	CL No.	Remarks
HRM(G)-303B	323-0828-4	Brass body, nickel plated

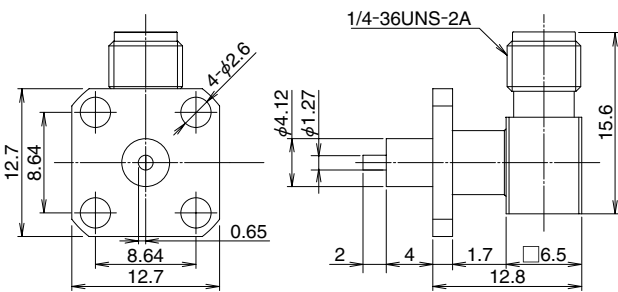
## Right angle receptacle



Part number	CL No.	Remarks
HRM(G)-305B	323-0830-6	Brass body, nickel plated

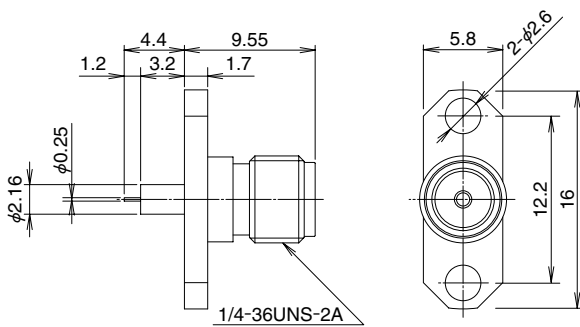


Part number	CL No.	Remarks
HRM(G)-309B	323-0832-1	Brass body, nickel plated

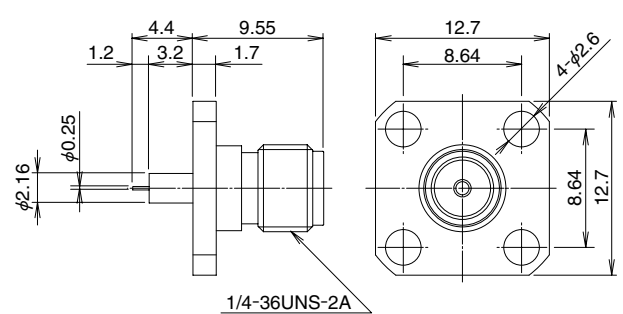


Part number	CL No.	Remarks
HRM(G)-310B	323-0831-9	Brass body, nickel plated

## Receptacle



Part number	CL No.	Remarks
HRM-R300-110S	323-0818-0	Stainless steel body, passivated



Part number	CL No.	Remarks
HRM-R300-118S	323-0819-3	Stainless steel body, passivated



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