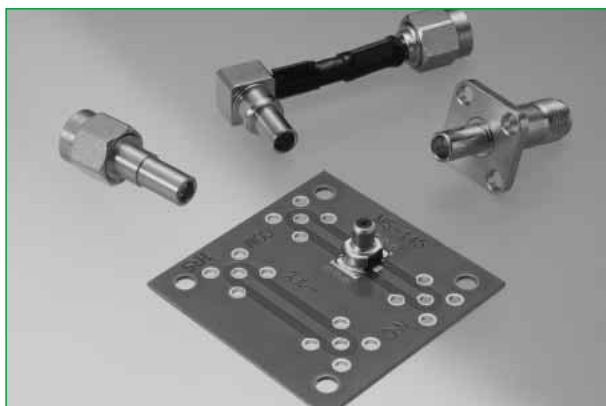


DC to 2.5GHz Small Coaxial Switch

MS-145NB Series



Features

- 1. Space saving**
External dimensions are 7mm x 4.6mm.
Saves installation space.
- 2. Low profile**
Low protrusion of only 6mm above the mounting surface (receptacle).
- 3. Light weight**
Weight is only 0.18g.
- 4. Durability**
High durability(mating/unmating) of 10 000 cycles.
- 5. Automatic mounting**
Receptacle designed for placement on board with automated equipment.
- 6. Frequency range**
Can be used from DC to 2.5 GHz and with GSM, PCS, cdma-One,W-CDMA, etc.
- 7. Plugs**
Wide variety of mating heights are available.
- 8. RoHS compliant**
All components and materials comply with the requirements of the EU Directive 2002/95/EC.
- 9. Self alignment of mating parts**
Inducement to floating is $\pm 0.5\text{mm}$.

Applications

Mobile Phone antenna switching
Checks of microwave boards, etc.

Materials

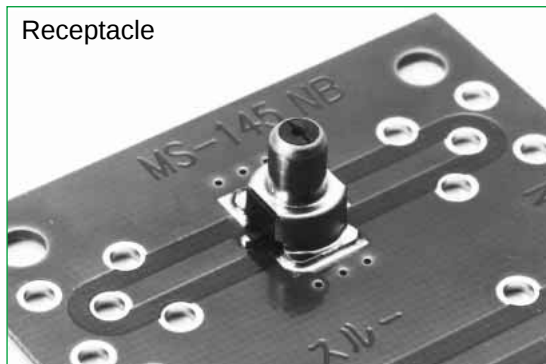
Part	Material	Finish	Remarks
Outer shell	Phosphor bronze	Gold plating	—
Insulator	Polyamide	—	UL94HB
Common contact	Beryllium copper	Mounting area : Gold plating	—
		Contact area : Gold plating	—
Board circuit side (N.C.) contact	Beryllium copper	Mounting area : Gold plating	—
		Contact area : Gold plating	—

Overview

Designed primarily as interface coaxial switch for a mobile phones, they are also used in variety of other applications requiring redirecting of signals when mating with corresponding plug.

The mating action redirects the signals from the receptacle side to the plug side.

Receptacle



Plug

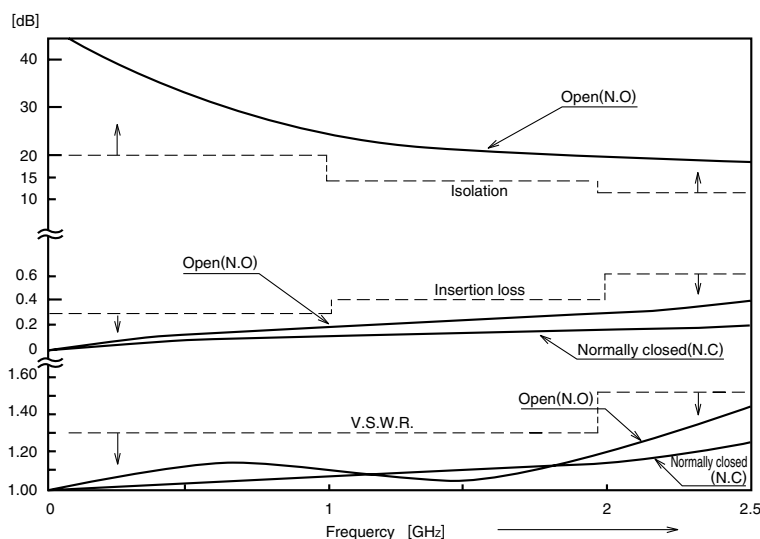


Product Specifications

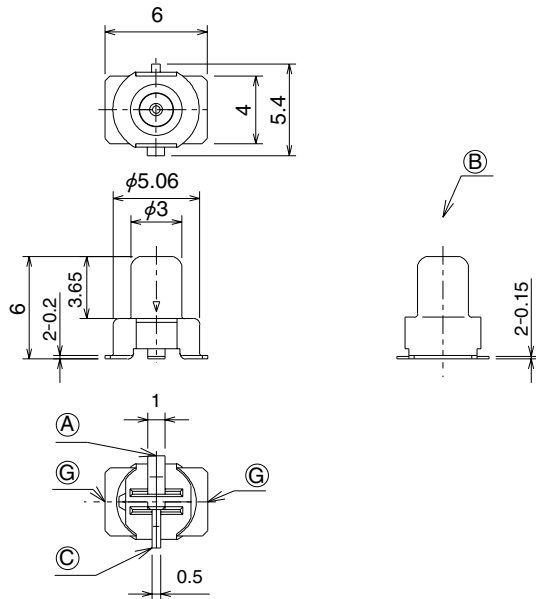
Operating temperature range	-30°C to +85°C
Power	2 W
Frequency range	DC to 2.5 GHz
Insertion loss	0.3 dB Max. (DC to 1 GHz)
	0.4 dB Max. (1 GHz to 2 GHz)
	0.6 dB Max. (2 GHz to 2.5 GHz)
Isolation	20 dB Min. (DC to 1 GHz)
	14 dB Min. (1 GHz to 2 GHz)
	12 dB Min. (2 GHz to 2.5 GHz)
V.S.W.R.	1.3 Max. (DC to 2 GHz)
	1.5 Max. (2 GHz to 2.5 GHz)

Item	Standard	Test Condition
1. Insulation resistance	1000M ohms Min.	100 V DC
2. Withstanding voltage	No flashover or insulation breakdown	100 V AC/one minute
3. Contact resistance	Center: 75 m ohms Max. Outside: 50 m ohms Max.	at 100 mA Max.
4. Vibration	No electrical discontinuity of 10 μ s or more Contact resistance Center: 100 m ohms Max. Outer : 75 m ohms Max.	Frequency of 10 to 55 Hz, overall amplitude of 1.5 mm for 2 hours in each of 3 directions
5. Shock		Acceleration of 490 m/s ² , sine half-wave waveform, 3 cycles in each of the 3 axis
6. Thermal shock	Contact resistance Center: 100 m ohms Max. Outer : 75 m ohms Max. Insulation resistance 10 M ohms Min.	Temperature: -55°C → +15°C to +35°C → +85°C → +15°C to +35°C Time: 30 → 5 max. → 30 → 5 max. (Minutes) 5 cycles
7. Salt spray	Contact resistance Center: 100 m ohms Max. Outer : 75 m ohms Max. No excessive corrosion	Exposed to 5% salt water solution for 48 hours
8. Durability (Insertion/withdrawal)	Contact resistance Center: 100 m ohms Max. Outer : 75 m ohms Max.	10000 cycles

Typical Data

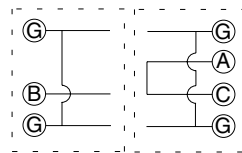


■ Receptacle dimensions



Circuit Diagram

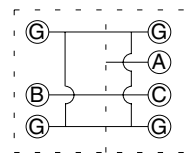
Not mated with the plug
(N.C)



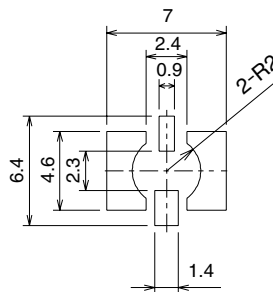
Plug

MS-145

Mated with the plug
(N.O)

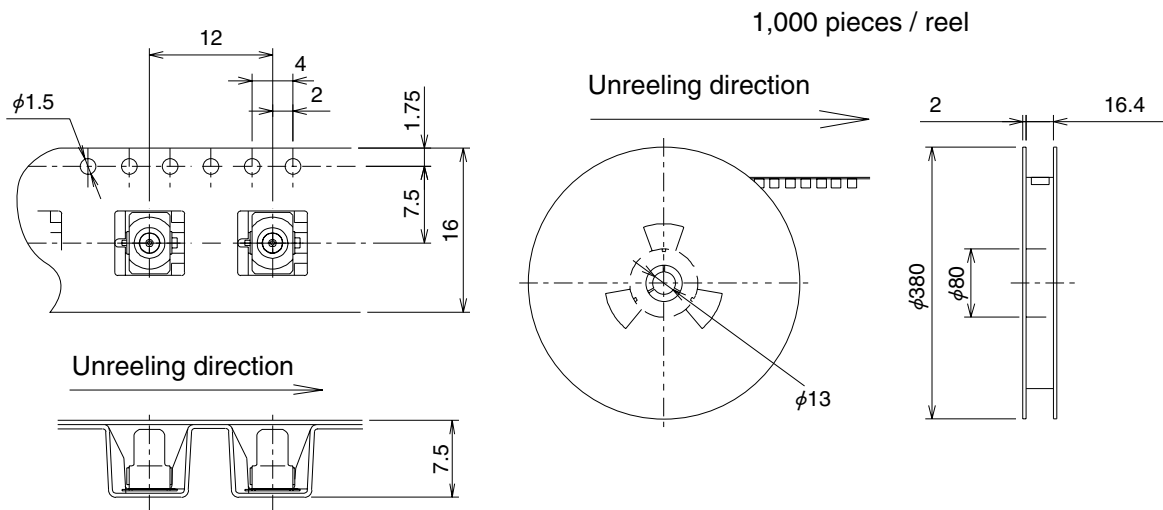


PCB Mounting Pattern

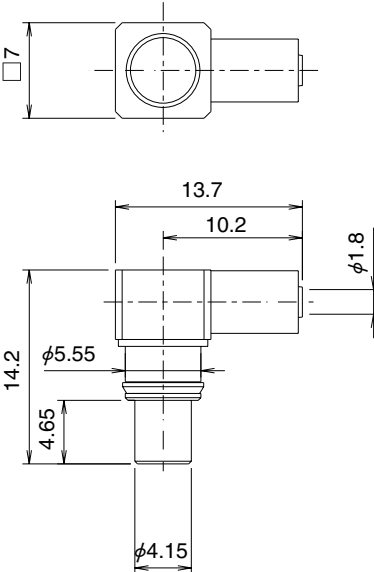
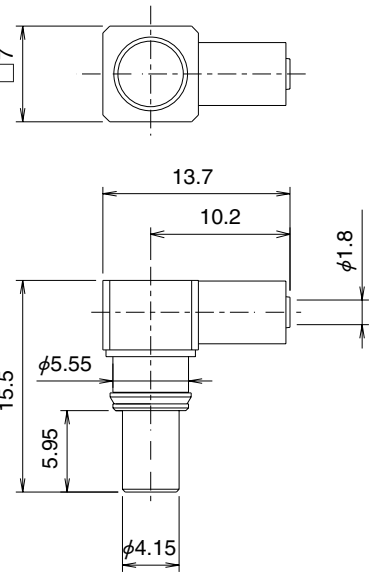
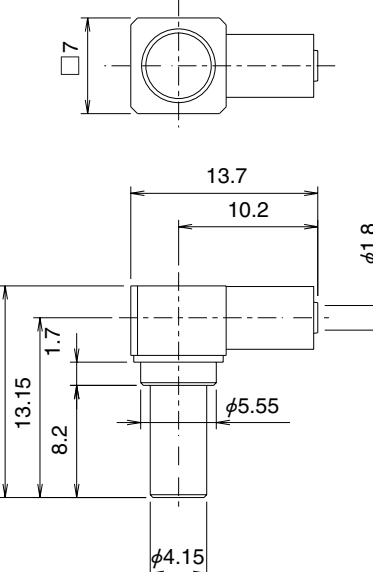


Part Number	HRS No.	Packaging	RoHS
MS-145NB	358-0223-7	1,000 pieces / reel	YES
MS-145NB(01)	358-0223-7-01	50 pieces	

◆ Packaging Specifications

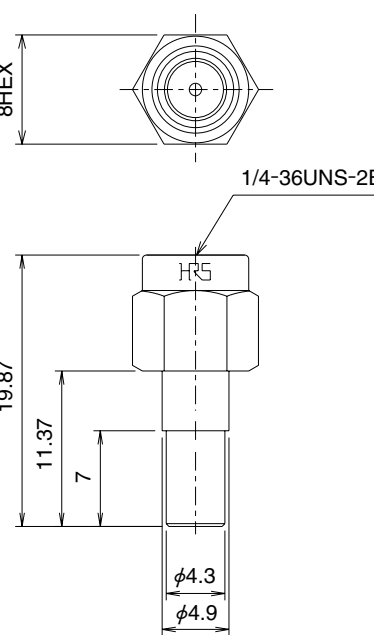
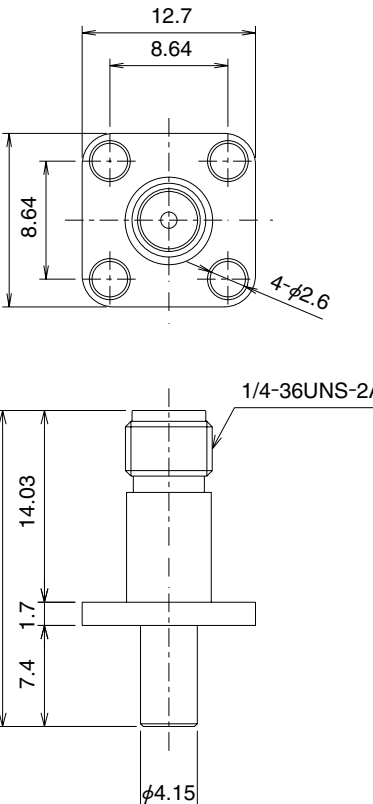
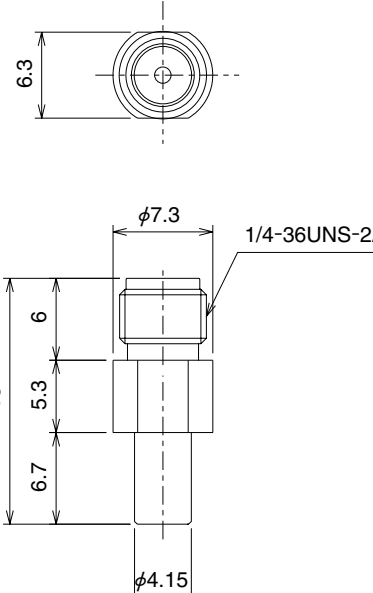


■ Plug

Part No.	HRS No.	RoHS	Part No.	HRS No.	RoHS	Part No.	HRS No.	RoHS
MS-145-C(LP)-1	CL358-0142-7	YES	MS-145-C(LP)-A	CL358-0145-5	YES	MS-145-C(LP)-M1	CL358-0147-0	YES
								

Applicable cable : 1.5D-HQEW, 1.5D-QEW (Fujikura Ltd.)

■ MS-145 to SMA adaptor

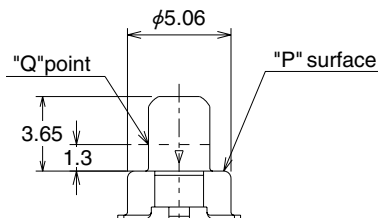
MS-145 to SMA Male			MS-145 to SMA Female					
Straight type			Panel mount type			Straight type		
Part No.	HRS No.	RoHS	Part No.	HRS No.	RoHS	Part No.	HRS No.	RoHS
MS-145-HRMP-A	CL358-0144-2	YES	MS-145-HRMJ	CL358-0143-0	YES	MS-145-HRMJ-A-D	CL358-0146-8	YES
								

MS-145NB Series DC to 2.5GHz Small Coaxial Switch

◆Precautions

1. Please select plugs according to the following applications.

Part No.	Engagement position	Effective engagement length (Nominal)
MS-145-C(LP)-1	Engages up to a position (Q point) of 1.3 mm from the 5.06 mm diameter shoulder of the MS-145NB	0.82mm
MS-145-C(LP)-A MS-145-C(LP)-MI MS-145-HRMJ-A-D MS-145-HRMP-A	Engages by pushing up to the 5.06 mm diameter shoulder (P surface) of the MS-145NB	1.32mm
MS-145-HRMJ	Engages by pushing up to the 5.06 mm diameter shoulder (P surface) of the MS-145NB	0.82mm



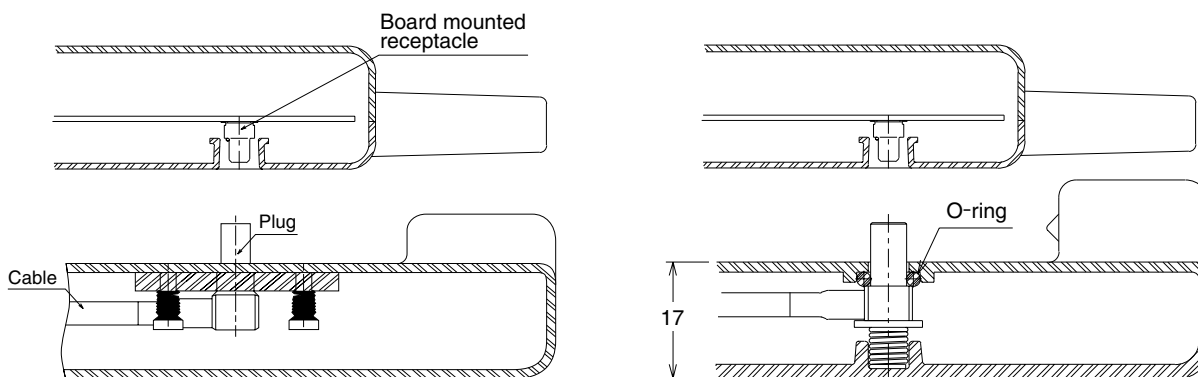
2. Applicable cable for plugs: 1.5D-HQEW or 1.5D-QEW (manufactured by Fujikura Ltd.).

3. No cleaning is needed after soldering or cable termination.

4. Please design avoiding holes so that force is not applied to this product from the case when dropped in the board mounted condition.

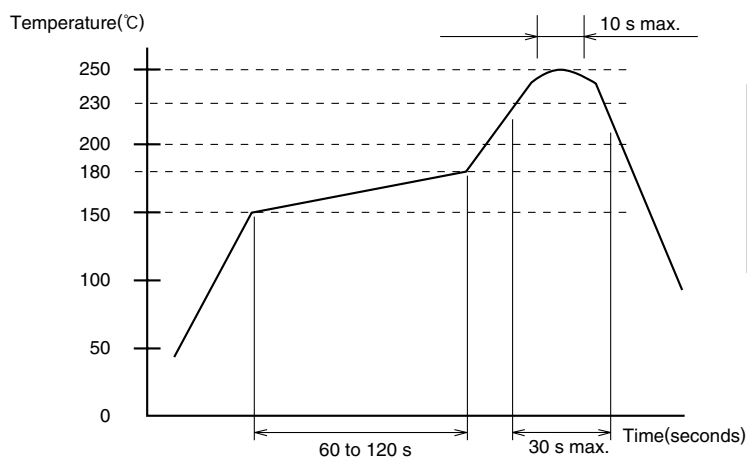
5. When mounted as the RF interface of a Mobile Phone, please consider using a rubber cap when the plug is not engaged to prevent dust from entering.

◆Application examples



Note: Mounting example

◆Recommended Temperature Profile



①	Maximum temperature	: 250°C
②	Base peak temperature	: 240°C ~ 250°C
③	Duration of peak temperature	: 10sec Max.
④	230°C or over	: 50sec Max.
⑤	150°C - 180°C	: 60 to 120sec Min.

◆Recommended Nozzle Dimensions

