

End Launch Connectors *Narrow Block*

SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

Withwave's End Launch connectors (Narrow Block) are specially designed for well-used high frequency substrates to minimize electromagnetic effects including impedance discontinuities from coaxial to GCPWG (Grounded Coplanar Waveguide) and Top Ground Microstrip structure.

The types of connectors are SMA, 2.92 mm, 2.4 mm, 1.85 mm & 1.0mm.

We solve your performance and cost problems.



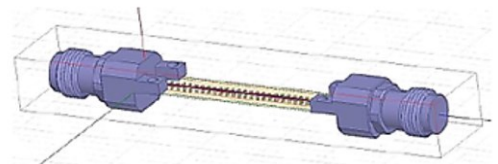
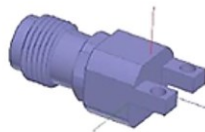
■ Features

- Now available in : **SMA (26.5 GHz), 2.92 mm (40 GHz), 2.40 mm (50 GHz), 1.85 mm (67 GHz), 1.0 mm(110GHz)**
- **GCPWG, Top Ground Microstrip structure**
- Easy Installation on designed substrate
- No Soldering required



■ Application

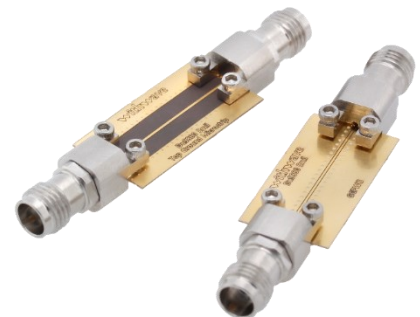
- RFIC Chip set evaluation board
- High data rate ASIC and SoC evaluation module test
- Substrate Characterization



- Design Assistance

- 3D Model for Mechanical Layout (STEP file)
- **ANSYS HFSS models** (version 17.0 or newer) for 3D EM(Electromagnetic) Simulation

		
End Launch (Standard)	End Launch (Narrow Block)	Bulkhead type



End Launch Connectors **Narrow Block**



SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

Versatile RF & MW Test Solutions

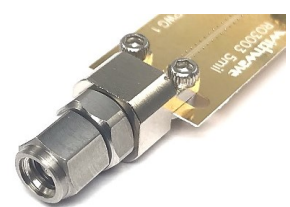
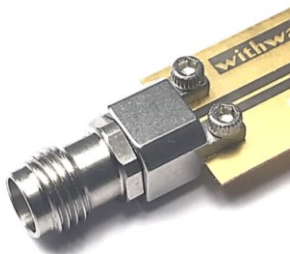
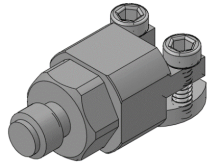
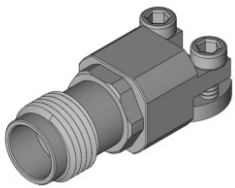
■ Specification

Scope	Items	Specification
Electrical	Freq. range	DC to 26.5 GHz (SMA type) DC to 40 GHz (2.92 mm type) DC to 50 GHz (2.4 mm type) DC to 67 GHz (1.85 mm type) DC to 110 GHz (1.0 mm type)
	Impedance	50 Ohm
	VSWR(Max)	1.40 : 1 (to 26.5 GHz) 1.40 : 1 (to 40 GHz) 1.40 : 1 (to 50 GHz) 1.40 : 1 (to 67 GHz) 2.00 : 1 (to 110 GHz)
Material	Connector type	SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm
	Body & Block	Brass with Ni Plated(SMA) Stainless Steel
	Contact	BeCu with Gold Plated
	Operating Temperature	-55~+125°C

* RoHS Compliant

■ Ordering Information

Application	Connector	Type	Part No.
Narrow Block	SMA	Female	NE06FS001
		Male	NE06MS001
	2.92 mm	Female	NE03FS001
		Female (Bulkhead)	NE03FS002
		Male	NE03MS001
		Male	NE03MS001
	2.4 mm	Female	NE02FS001
		Male	NE02MS001
	1.85 mm	Female	NE01FS001
		Male	NE01MS001
	1.0 mm	Female	NE00FS001
		Male	NE00MS001

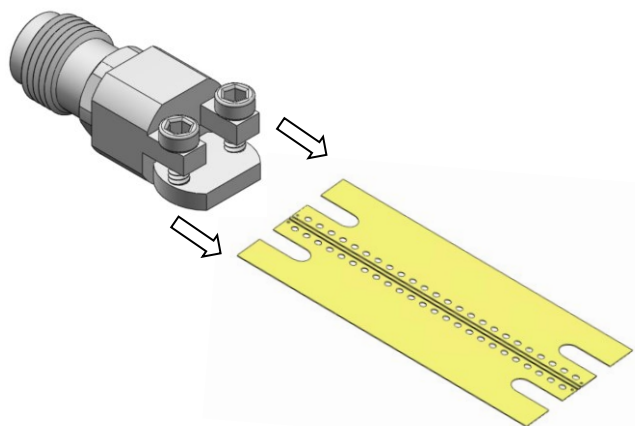


SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

■ Installation Procedure

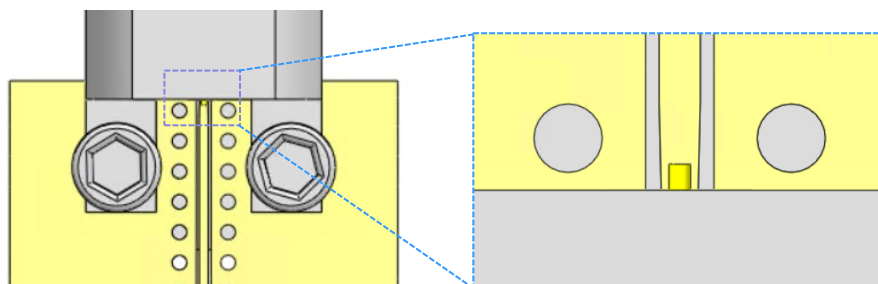
STEP 1 :

Insert end launch connector (including block & screws) in the edge position of substrate.



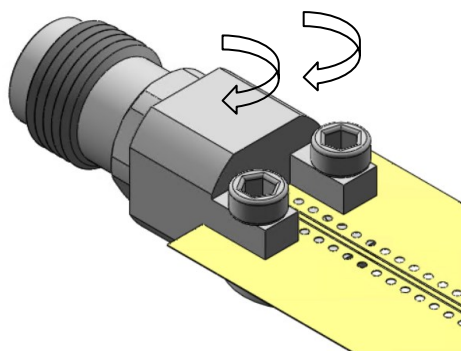
STEP 2:

Ensure the pin is centered on the trace.



STEP 3:

Ensure the block is tight against the substrate.

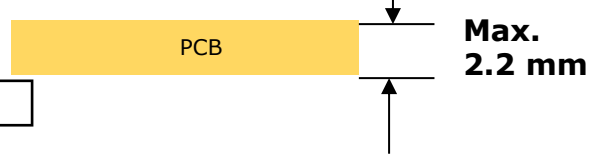
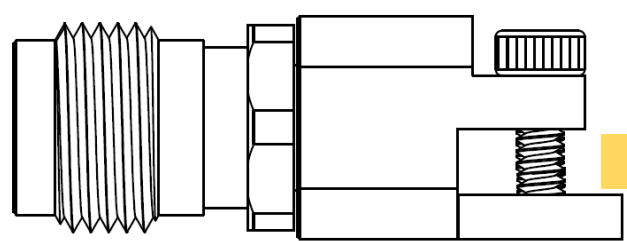
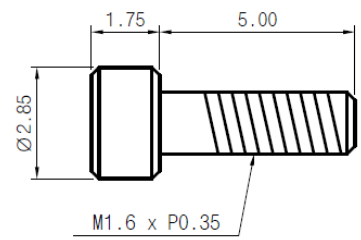


SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

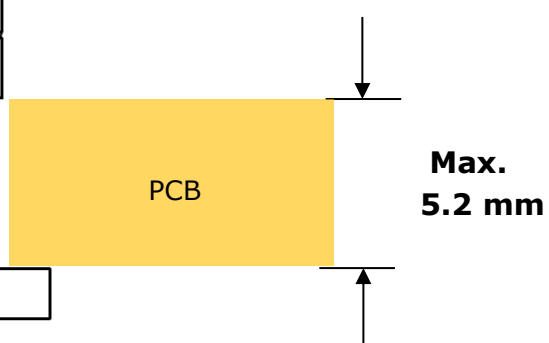
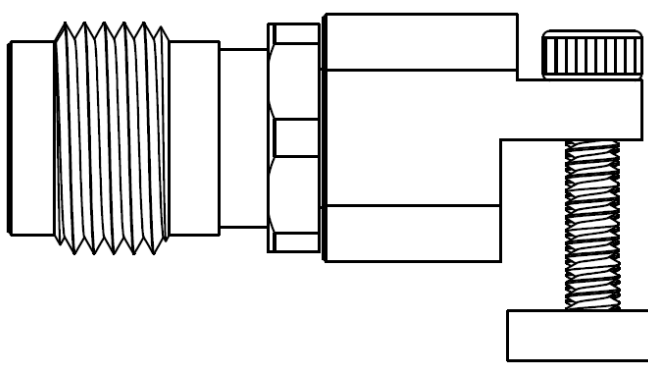
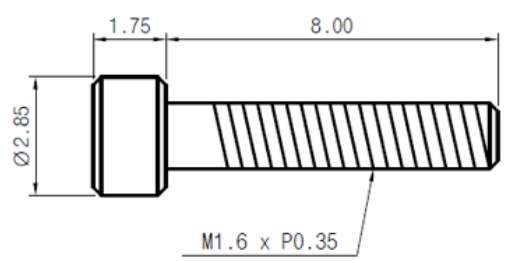
■ **Maximum PCB Thickness (Low Profile type)**

Unit : mm

Bolt Size: M1.6 X 5



Bolt Size: M1.6 X 8



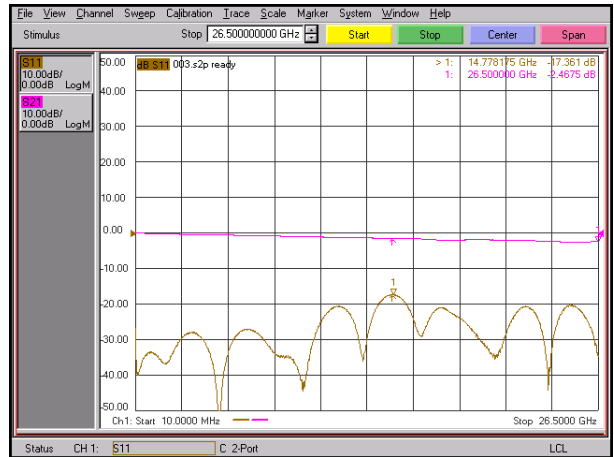
■ **Test Result**

SMA Type GCPWG Structure

Freq. : 10 MHz to 26.5 GHz

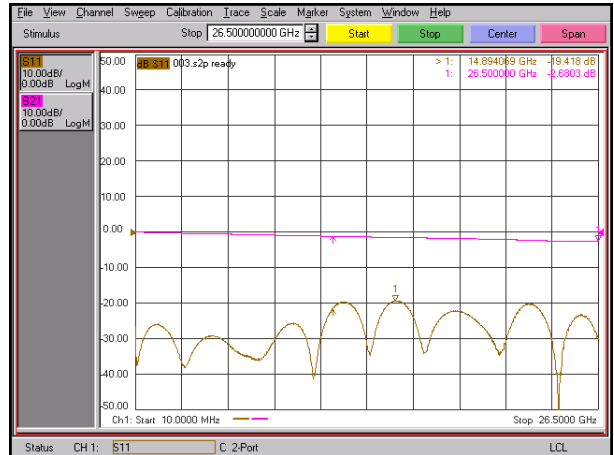
Substrate : RO4003C (8 mil)

Part No. : NE06FS001



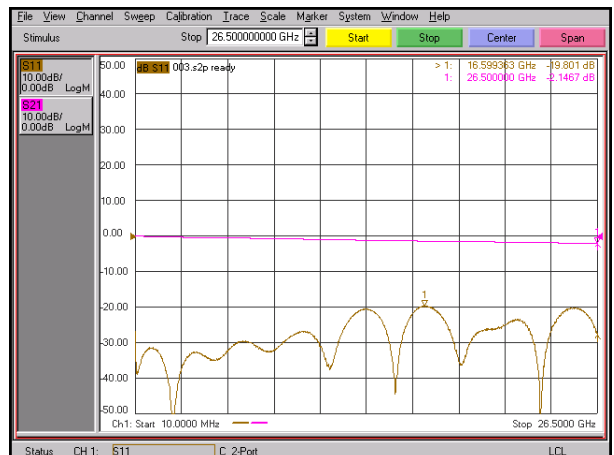
Substrate : RO4350B (10 mil)

Part No. : NE06FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE06FS001



* Substrate length : 1 inch (=25.4 mm)

■ Test Result

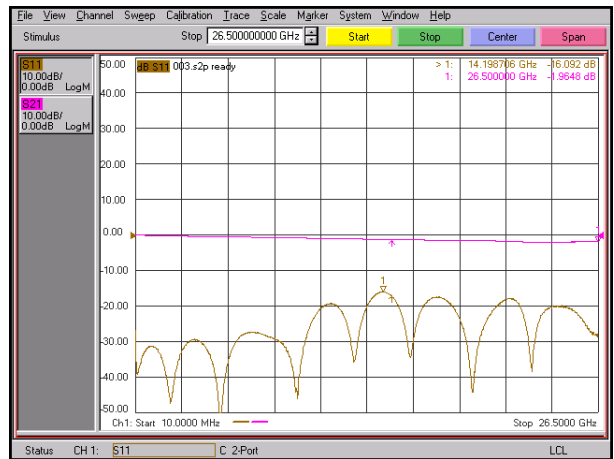
SMA Type

Top Ground Microstrip

Freq. : 10 MHz to 26.5 GHz

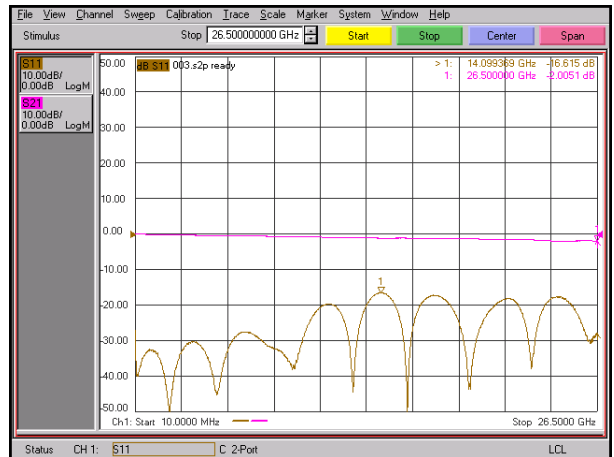
Substrate : RO4003C (8 mil)

Part No. : NE06FS001



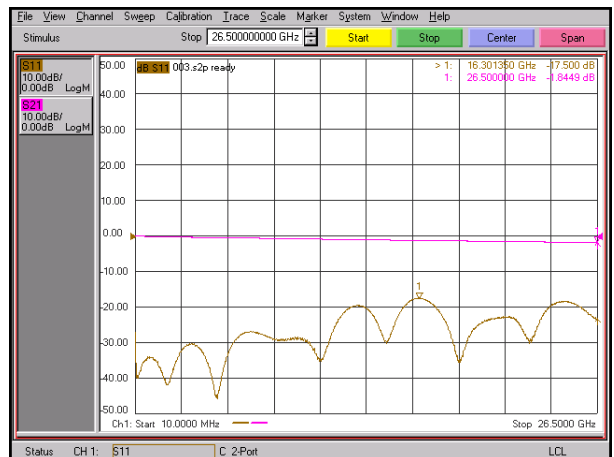
Substrate : RO4350B (10 mil)

Part No. : NE06FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE06FS001



* Substrate length : 1 inch (=25.4 mm)

■ **Test Result**

2.92mm Type GCPWG Structure

Freq. : 10 MHz to 40 GHz

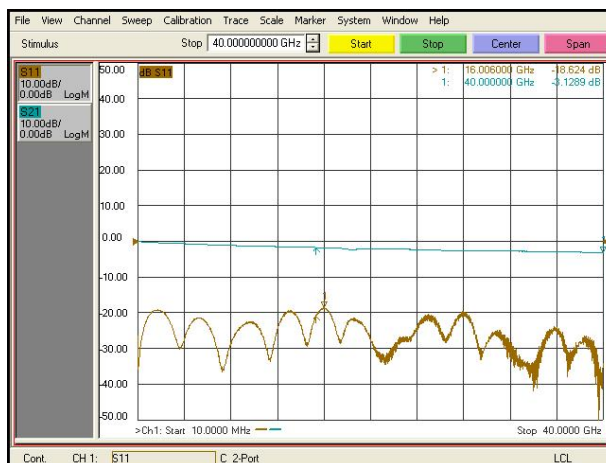
Substrate : RO4003C (8 mil)

Part No. : NE03FS001



Substrate : RO4350B (10 mil)

Part No. : NE03FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE03FS001



* Substrate length : 1 inch (=25.4 mm)

■ Test Result

2.92mm Type

Top Ground Microstrip

Freq. : 10 MHz to 40 GHz

Substrate : RO4003C (8 mil)

Part No. : NE03FS001



Substrate : RO4350B (10 mil)

Part No. : NE03FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE03FS001



* Substrate length : 1 inch (=25.4 mm)

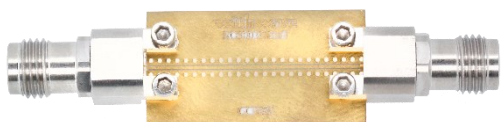
■ **Test Result**

2.4 mm Type GCPWG Structure

Freq. : 10 MHz to 50 GHz

Substrate : RO4003C (8 mil)

Part No. : NE02FS001



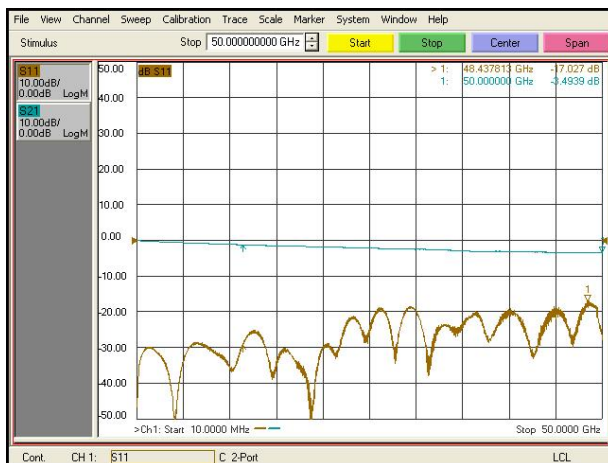
Substrate : RO4350B (10 mil)

Part No. : NE02FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE02FS001



* Substrate length : 1 inch (=25.4 mm)

■ Test Result

2.4 mm Type

Top Ground Microstrip

Substrate : RO4003C (8 mil)

Part No. : NE02FS001

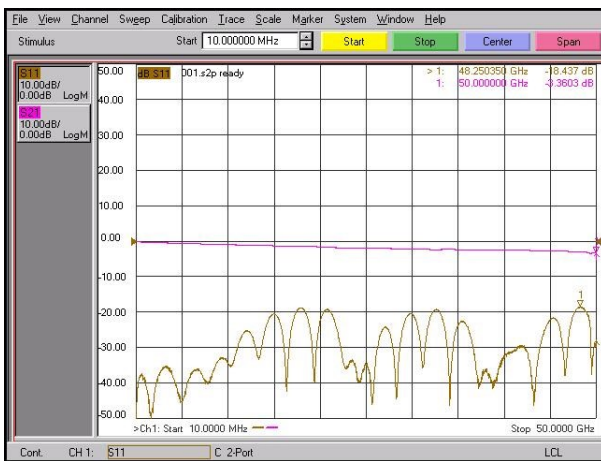


Freq. : 10 MHz to 50 GHz



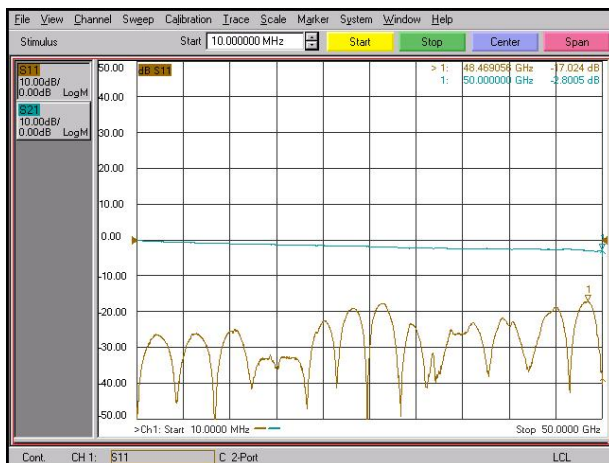
Substrate : RO4350B (10 mil)

Part No. : NE02FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE02FS001



* Substrate length : 1 inch (=25.4 mm)

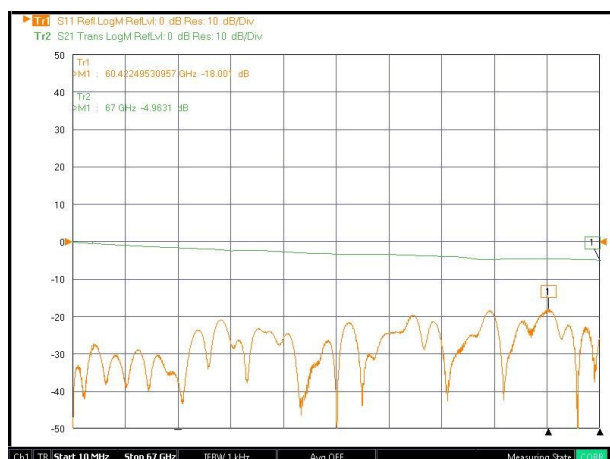
■ **Test Result**

1.85 mm Type GCPWG Structure

Freq. : 10 MHz to 67 GHz

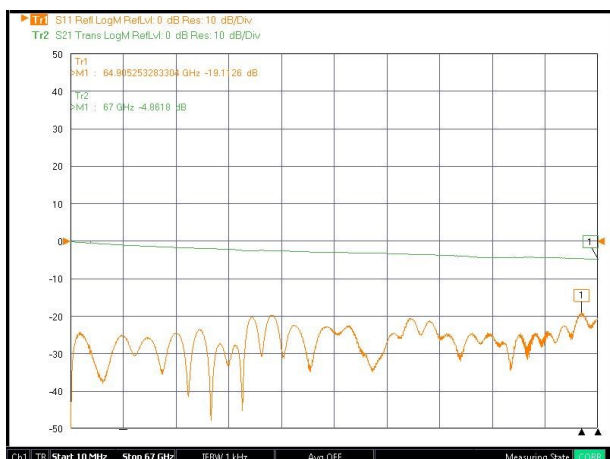
Substrate : RO4003C (8 mil)

Part No. : NE01FS001



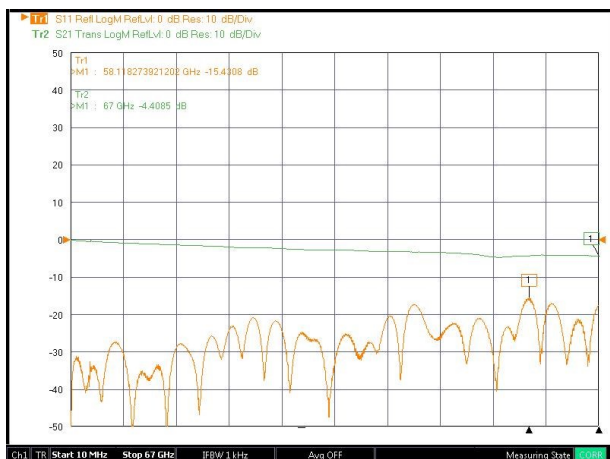
Substrate : RO4350B (10 mil)

Part No. : NE01FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE01FS001



* Substrate length : 1 inch (=25.4 mm)

■ Test Result

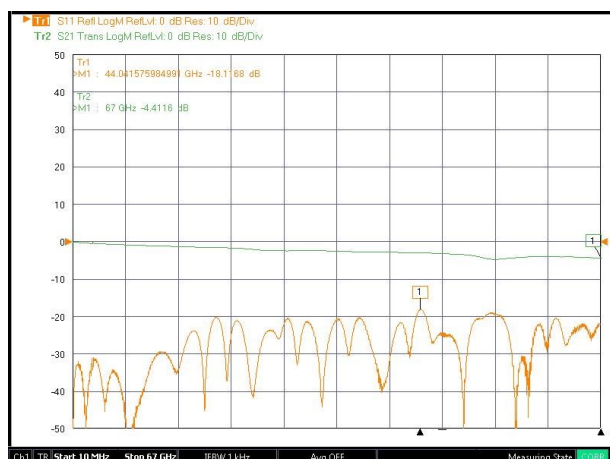
1.85 mm Type

Top Ground Microstrip

Freq. : 10 MHz to 67 GHz

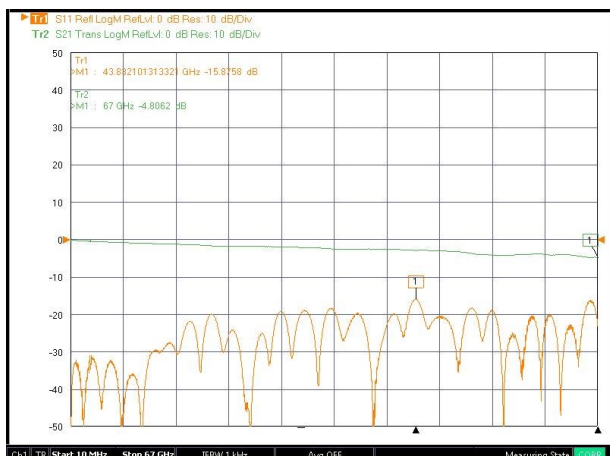
Substrate : RO4003C (8 mil)

Part No. : NE01FS001



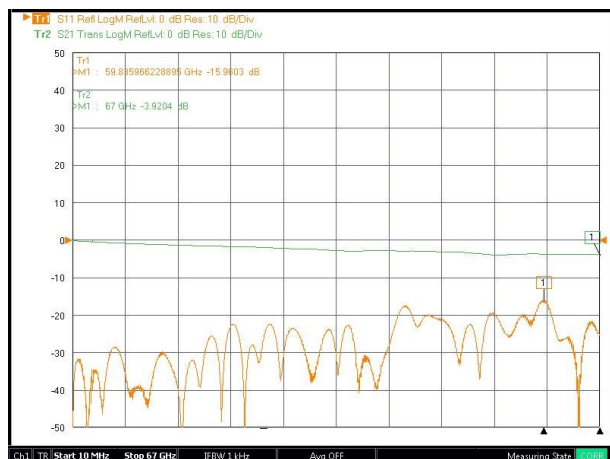
Substrate : RO4350B (10 mil)

Part No. : NE01FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE01FS001



* Substrate length : 1 inch (=25.4 mm)

■ Test Result

1.0 mm Type (Female)

GCPWG Structure

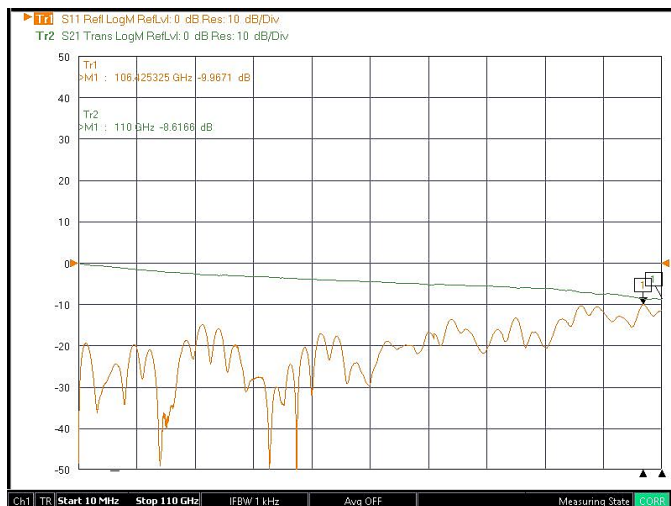
Freq. : 10 MHz to 110 GHz

Substrate : RO3003 (5 mil)

Part No. : NE00FS001



* Substrate length : 1 inch (=25.4 mm)



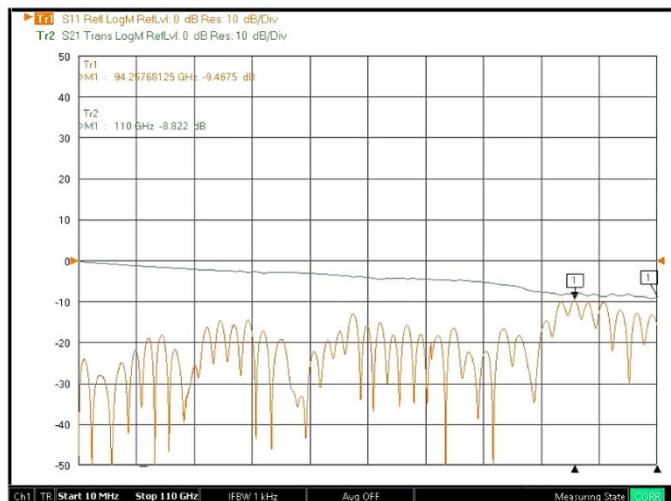
Top Ground Microstrip

Substrate : RO3003 (5 mil)

Part No. : NE00FS001



* Substrate length : 30 mm



■ Test Result

1.0 mm Type (Male)

GCPWG Structure

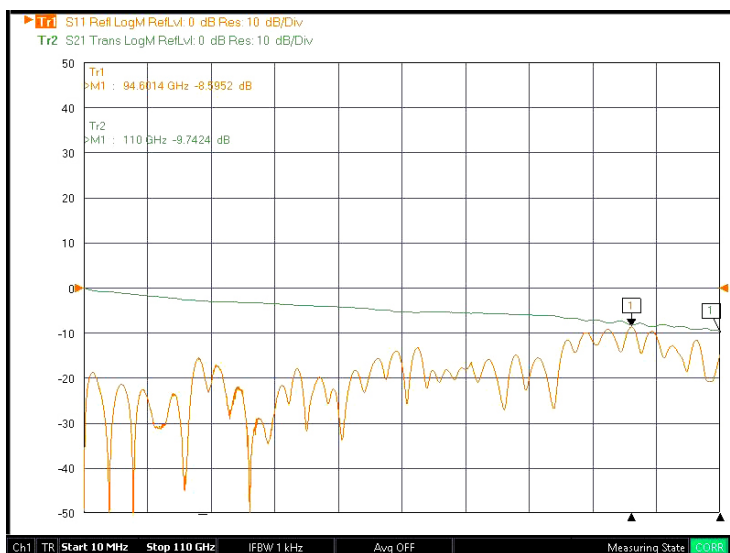
Freq. : 10 MHz to 110 GHz

Substrate : RO3003 (5 mil)

Part No. : NE00MS001



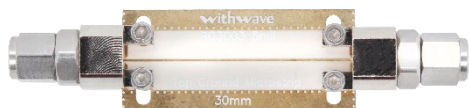
* Substrate length : 1 inch (=25.4 mm)



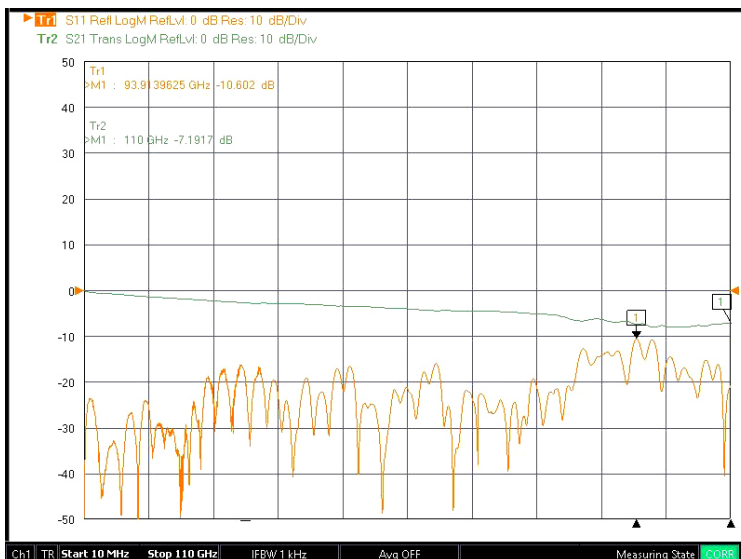
Top Ground Microstrip

Substrate : RO3003 (5 mil)

Part No. : NE00MS001



* Substrate length : 30 mm



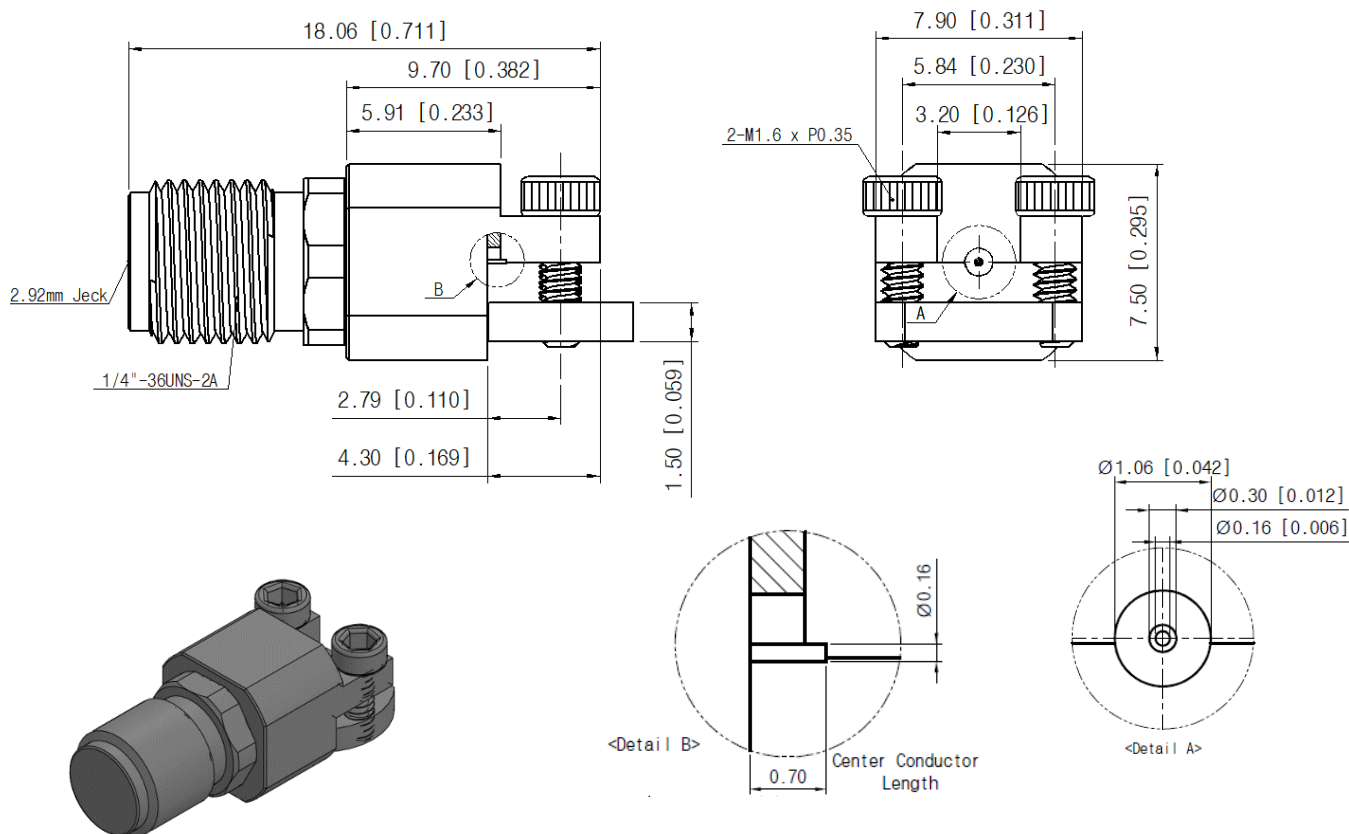
SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

SMA Type (Female)

■ Drawing

Part No. : NE06FS001

Unit : mm[inch]



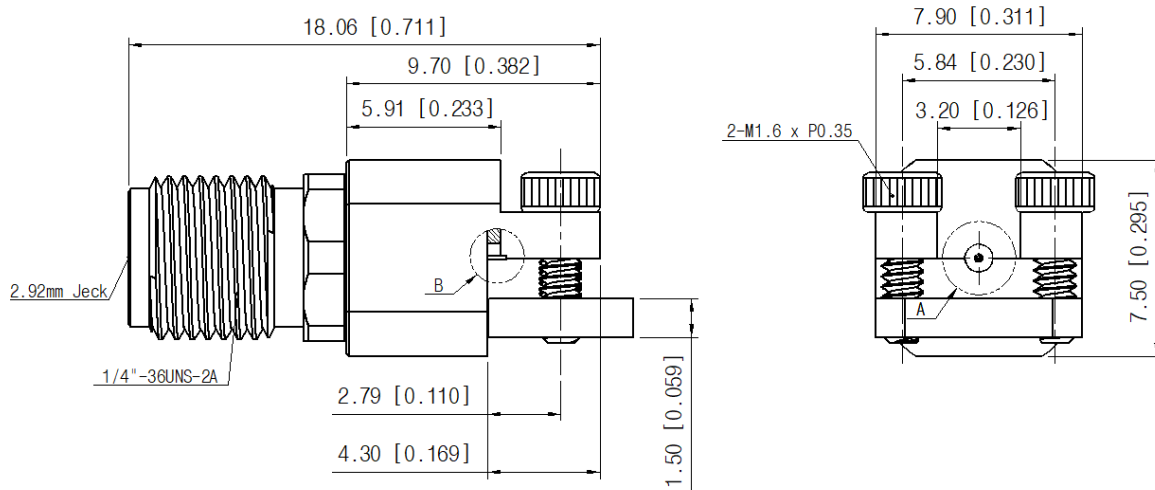
SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

2.92 mm Type (Female)

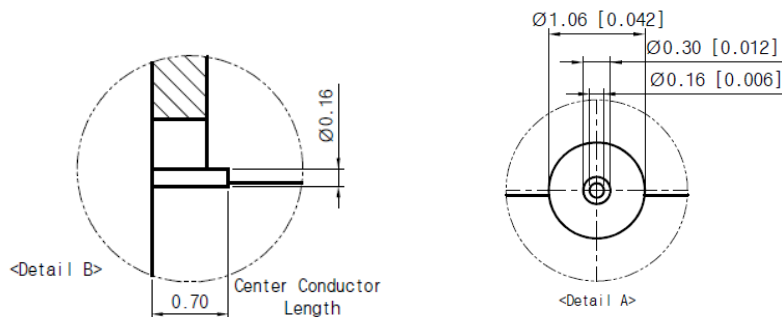
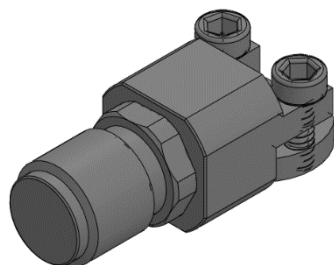
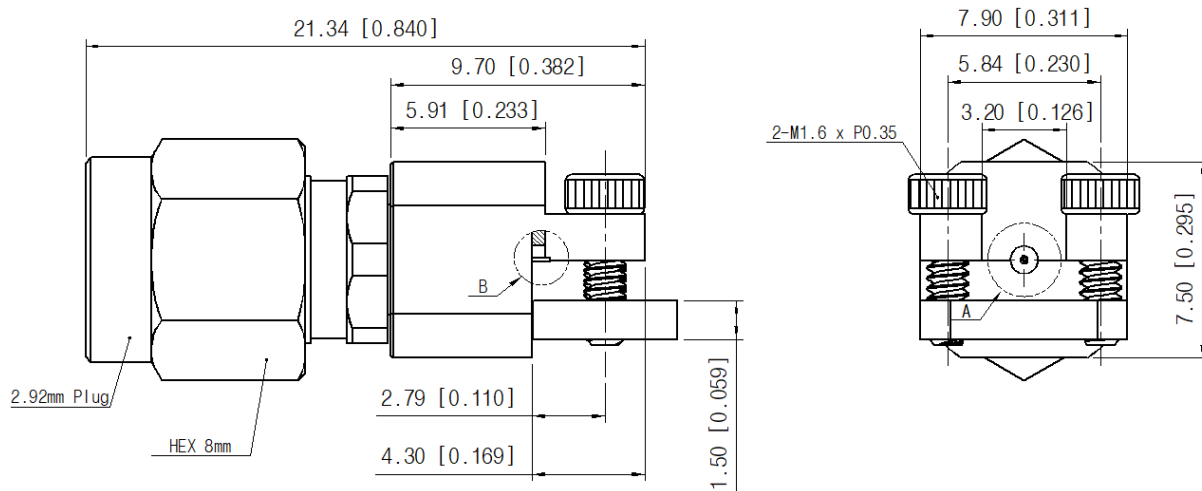
■ **Drawing**

Part No. : NE03FS001

Unit : mm[inch]



Part No. : NE03MS001



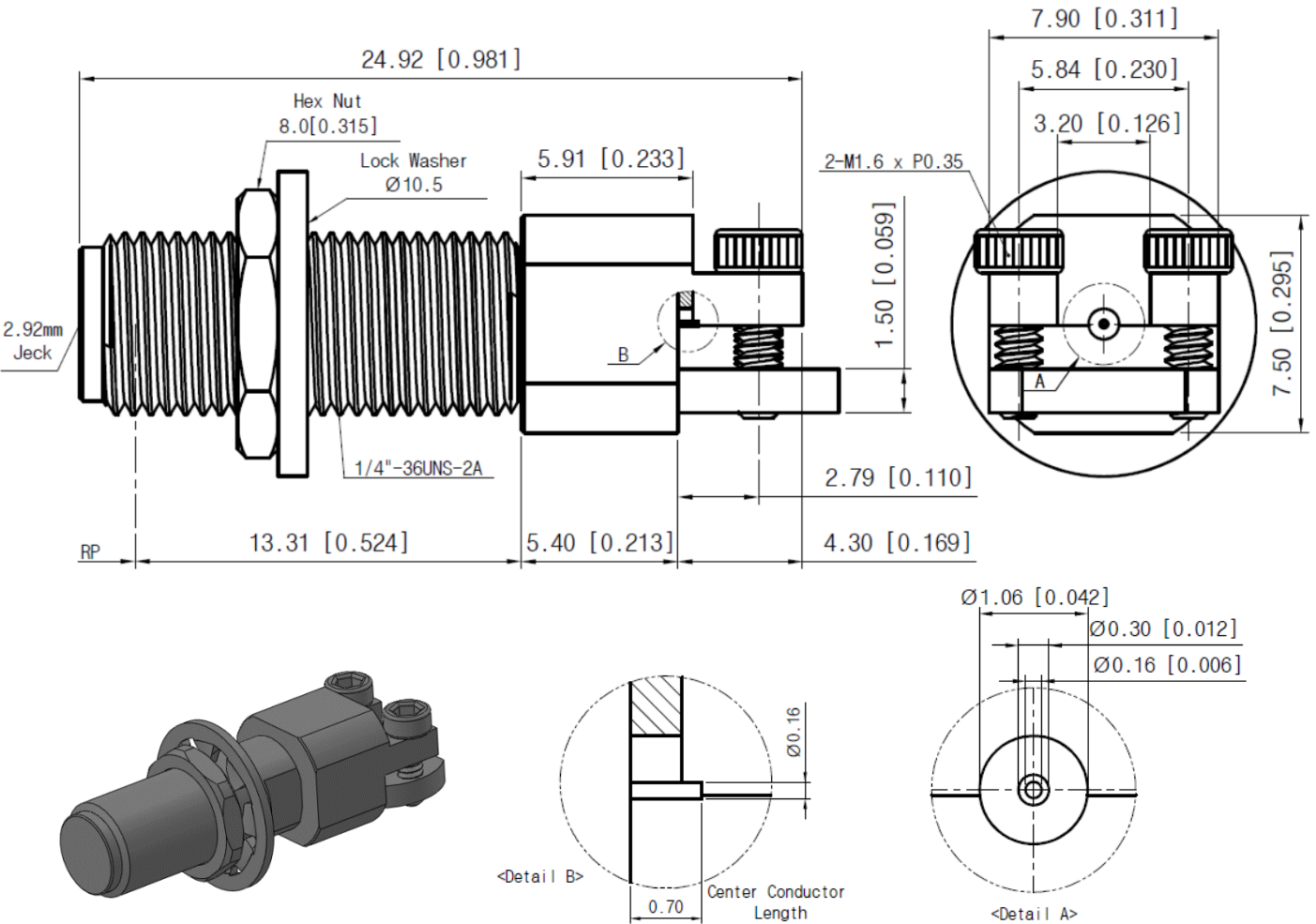
SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

2.92 mm Type (Female) : Bulkhead

■ Drawing

Part No. : NE03FS002

Unit : mm[inch]



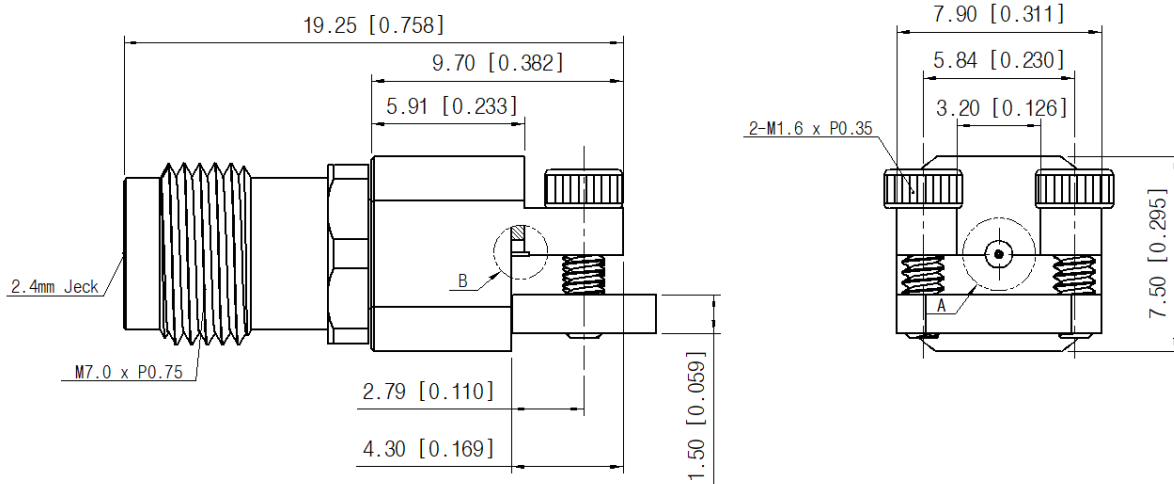
SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

2.4 mm Type (Female)

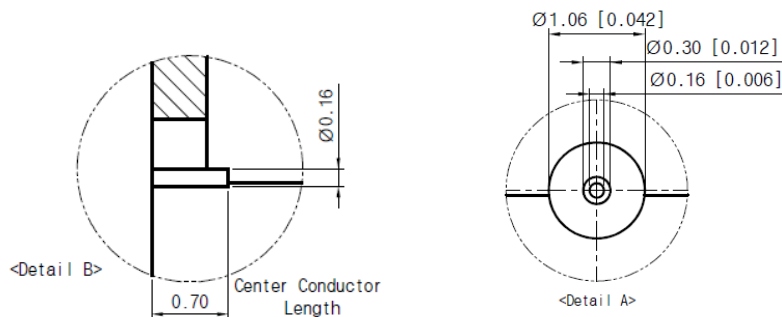
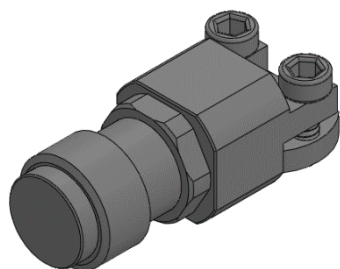
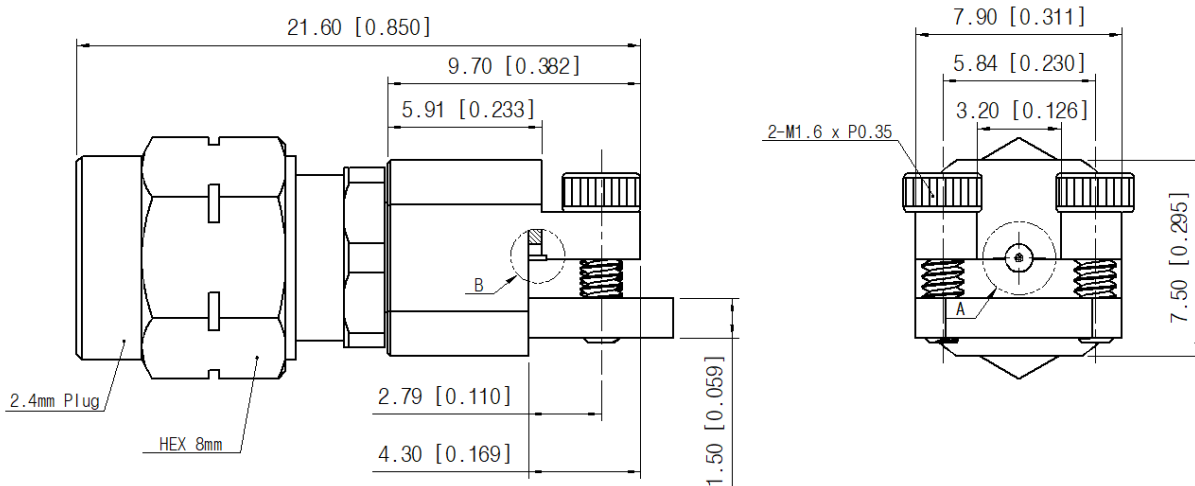
■ Drawing

Part No. : NE02FS001

Unit : mm[inch]



Part No. : NE02MS001



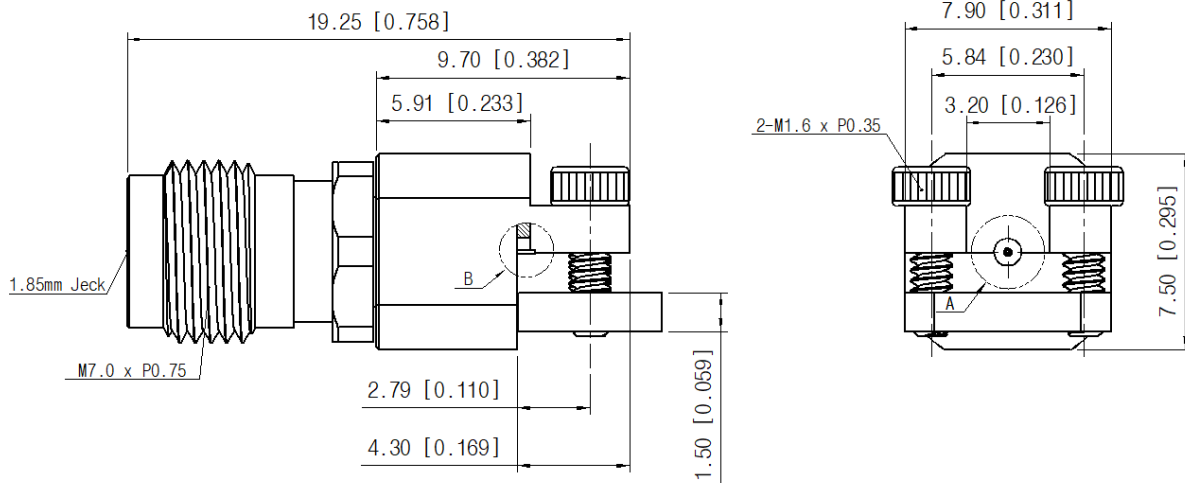
SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

1.85 mm Type (Female)

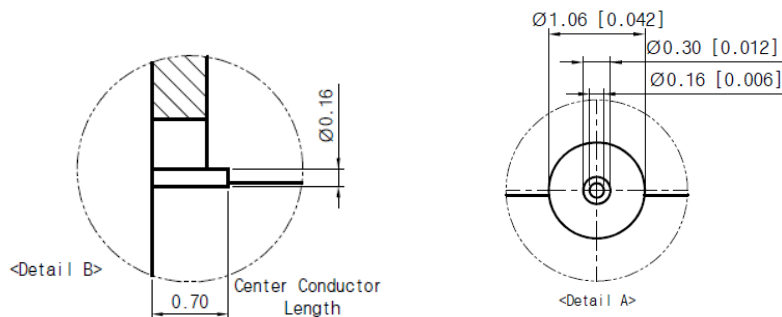
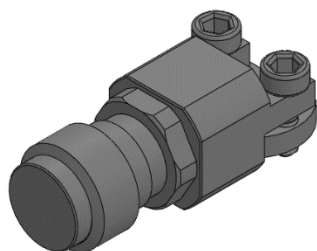
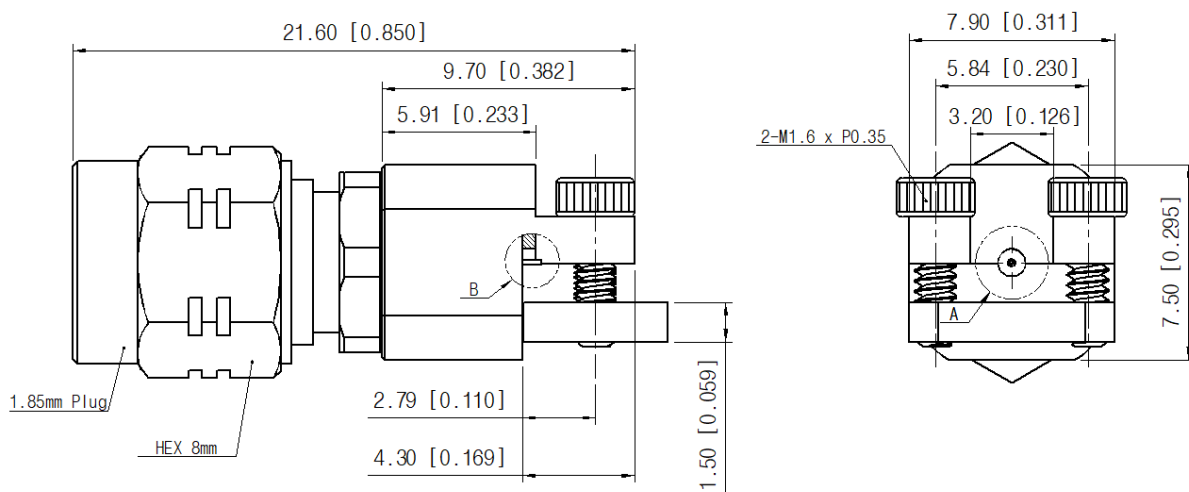
■ **Drawing**

Part No. : NE01FS001

Unit : mm[inch]



Part No. : NE01MS001



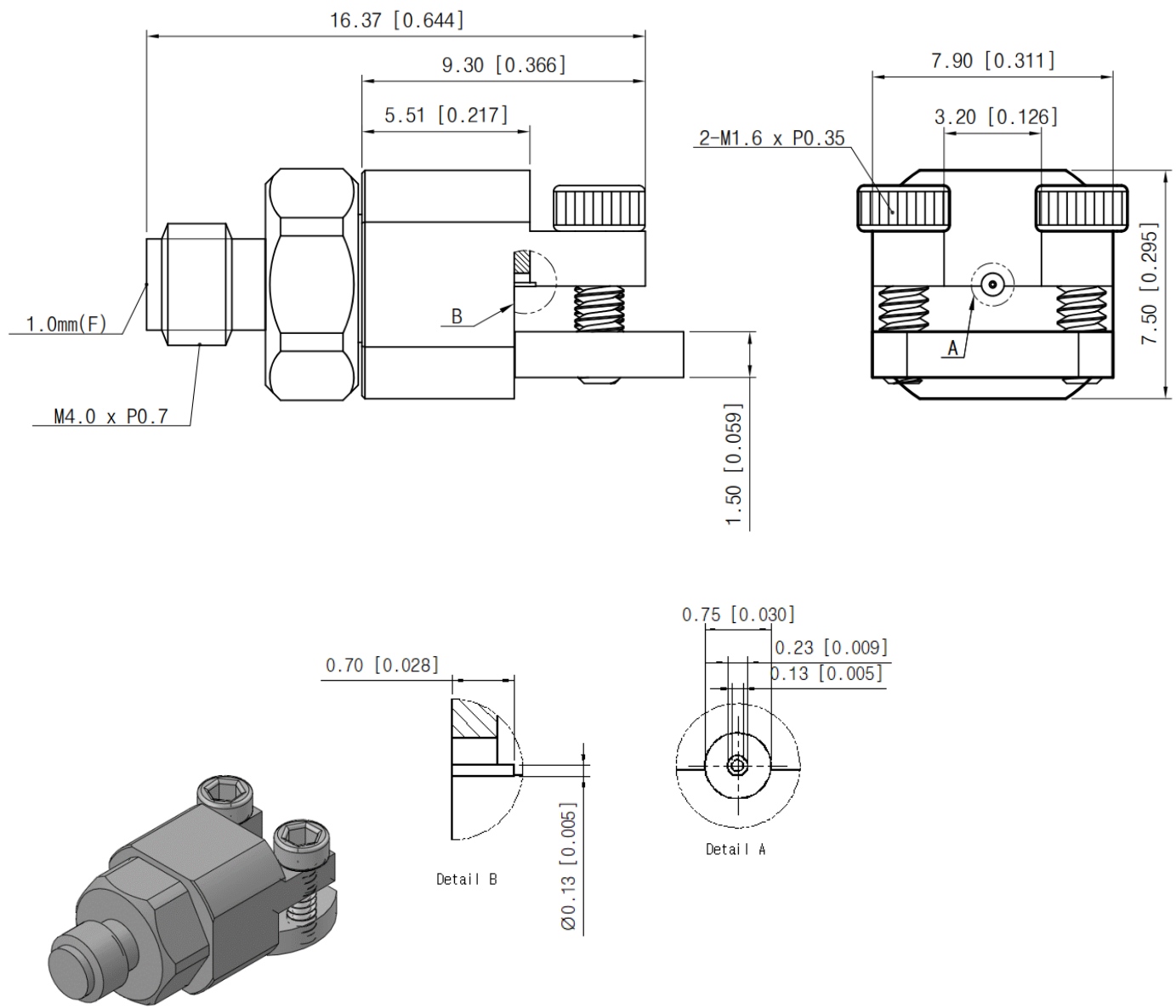
SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

1.0 mm Type (Female)

■ Drawing

Part No. : NE00FS001

Unit : mm[inch]

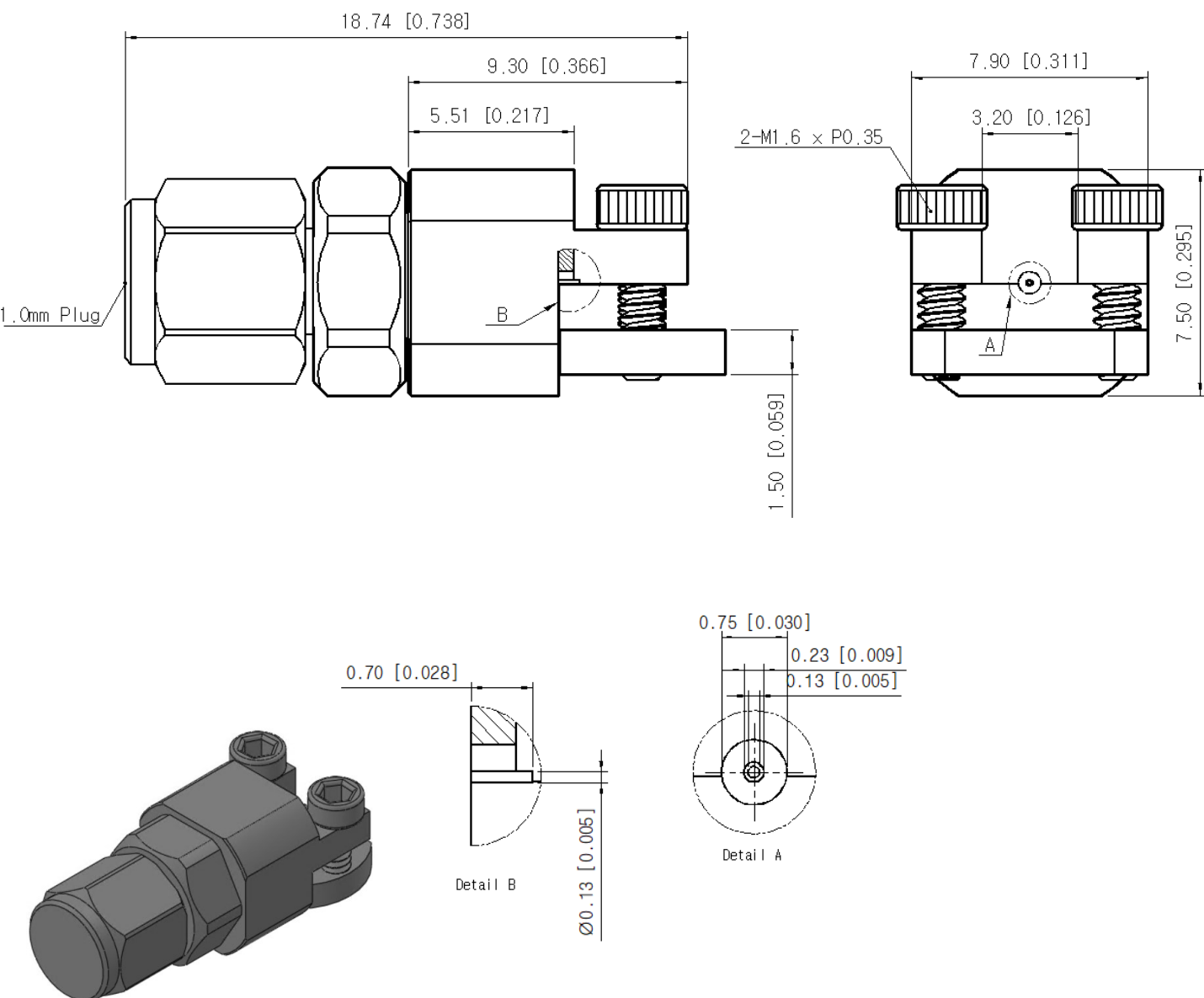


1.0 mm Type (Male)

■ Drawing

Part No. : NE00MS001

Unit : mm[inch]

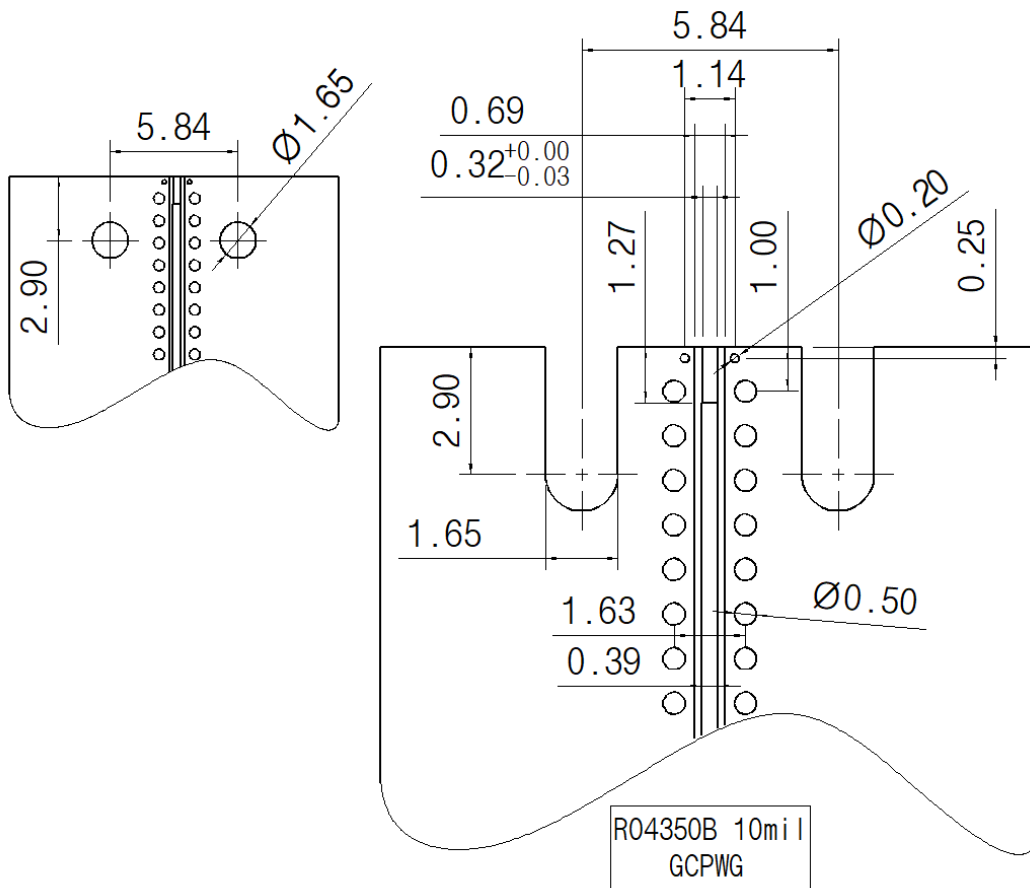


SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

■ PCB Layout

GCPWG (RO4350B 10 mil)

Unit : mm

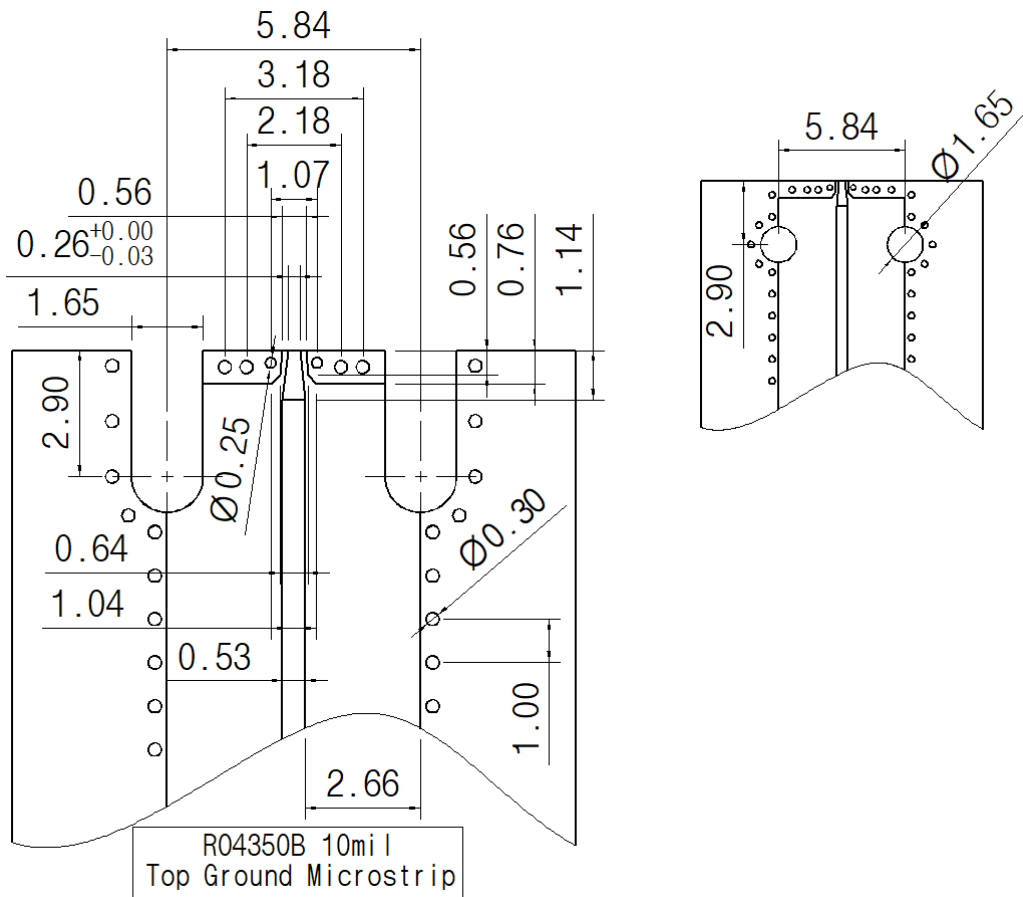


SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

■ PCB Layout

Top Ground Microstrip (RO4350B 10 mil)

Unit : mm

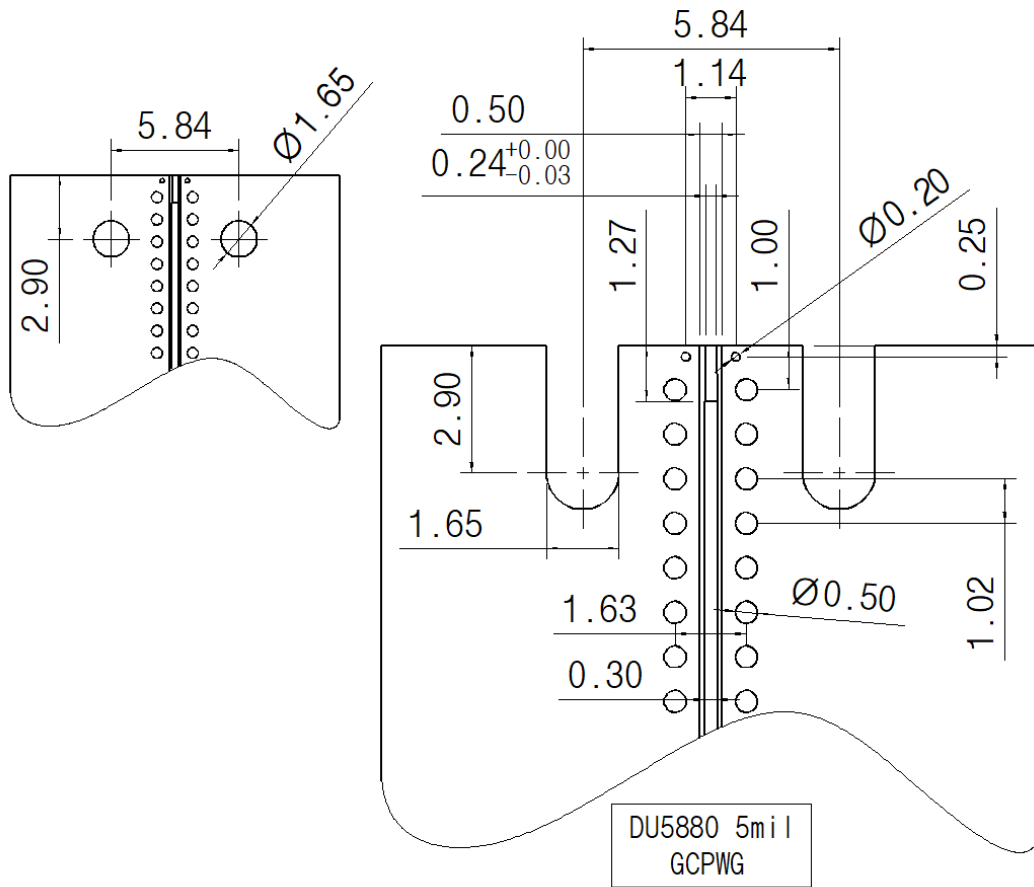


SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

■ PCB Layout

GCPWG (Duroid 5880 5mil)

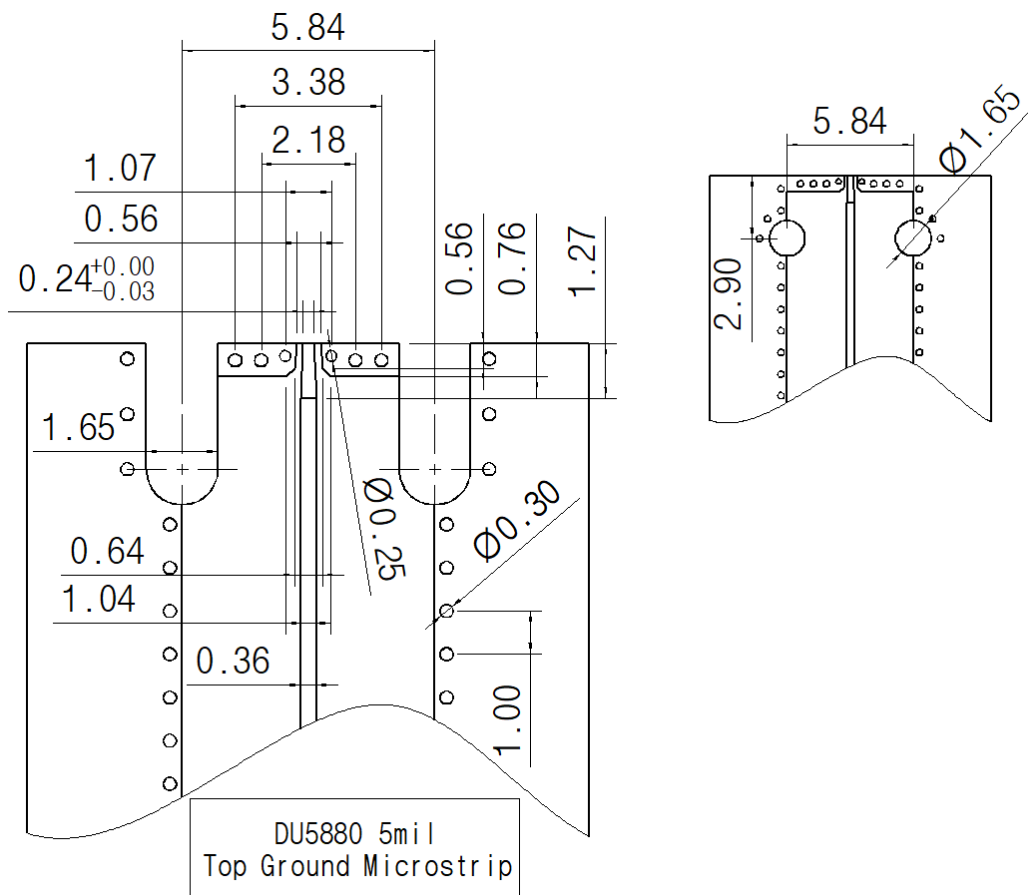
Unit : mm



■ PCB Layout

Top Ground Microstrip (Duroid 5880 5 mil)

Unit : mm

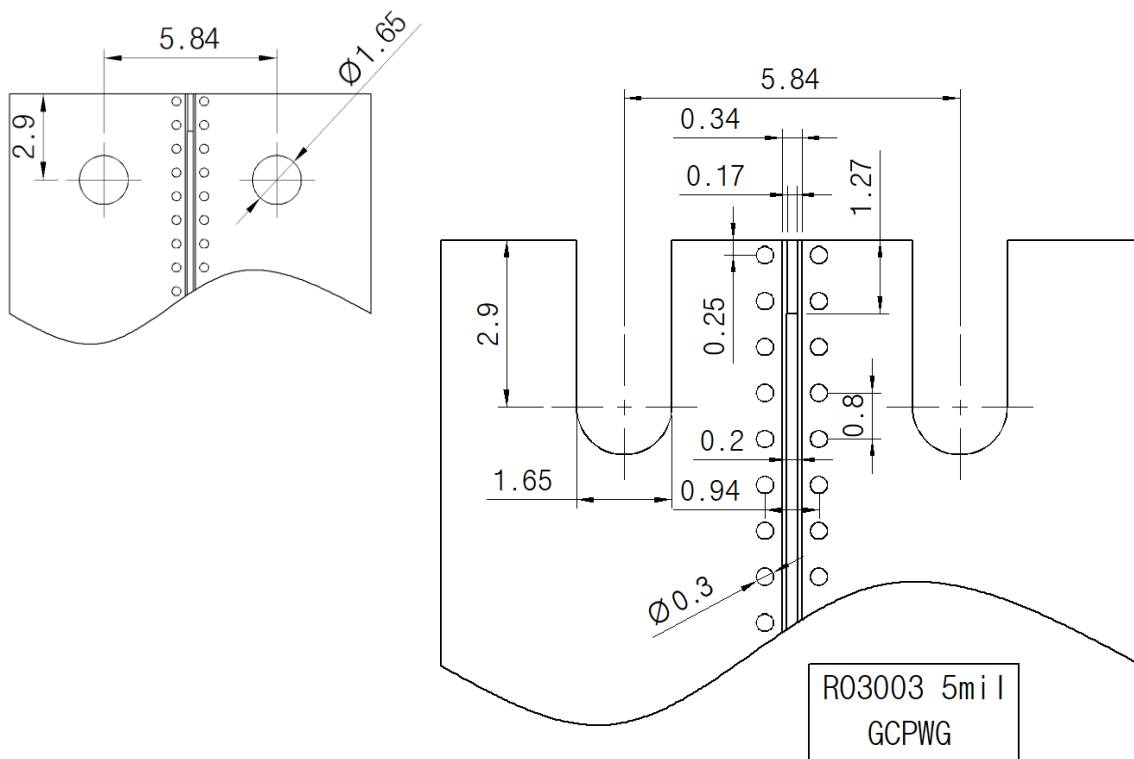


SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

■ PCB Layout

GCPWG (RO3003 5 mil)

Unit : mm

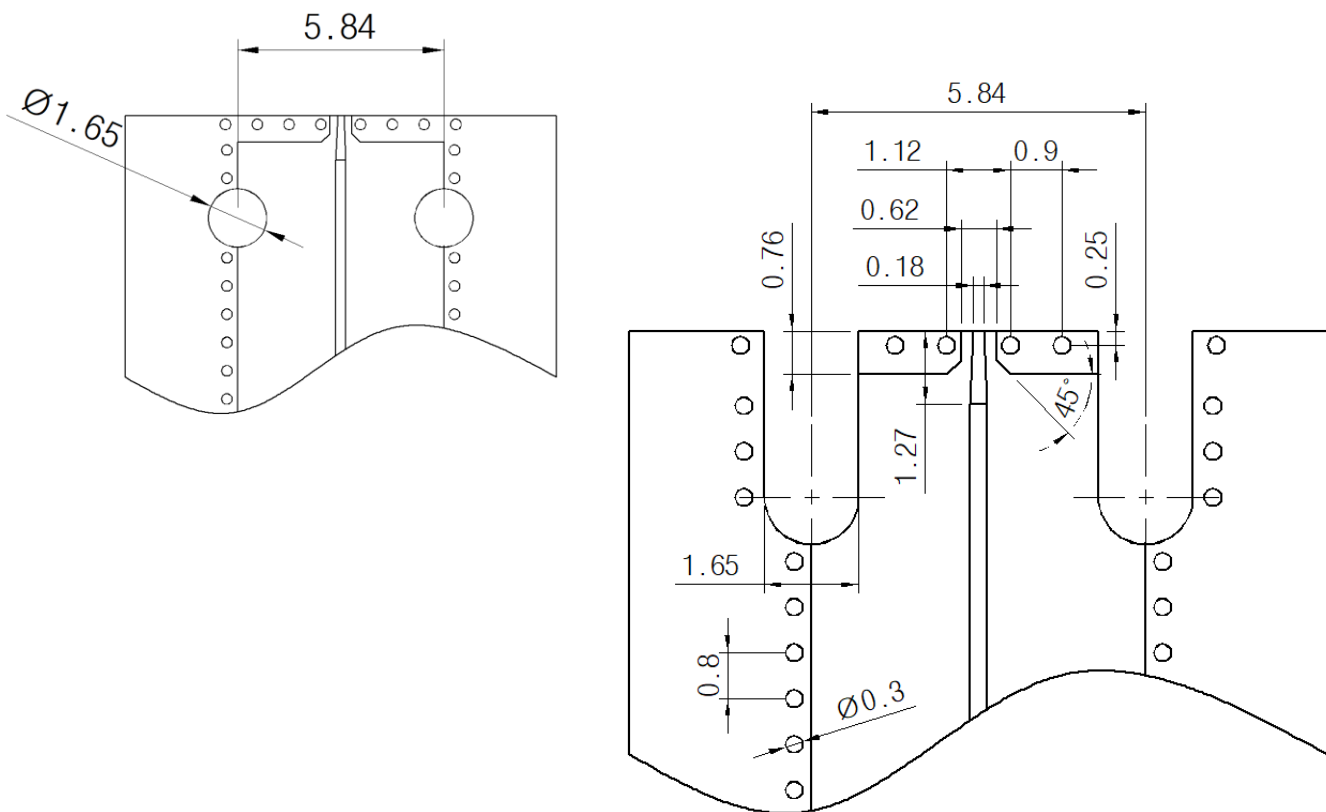


SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

■ **PCB Layout**

Top Ground Microstrip (R03003 5 mil)

Unit : mm



R03003 5mil
Top Ground Microstrip

SMA, 2.92 mm, 2.4 mm, 1.85 mm, 1.0 mm

■ *Revision History*

Revision	Date	Changes
Ver 1.0	2019-09-15	Released End launch connectors (Narrow Block)
Ver 1.1	2020-01-08	Updated drawing
Ver 1.2	2021-01-11	Add New 1.0 mm type (110 GHz)
Ver 1.3	2021-03-12	Add Test Result of 1.0 mm type (Male)
Ver 1.4	2021-08-31	Add SMA type and 2.92 mm(Bulkhead) type