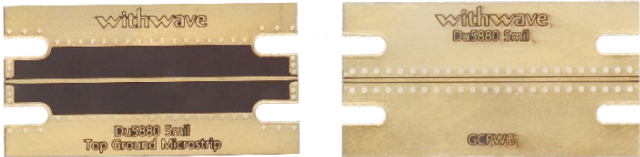


WithWave's End Launch connectors (Narrow Block) are specially designed for well-used high frequency substrates to minimize electromagnetic effects including impedance discontinuities from coaxial to GCPWG (Grounded Coplanar Waveguide) and Top Ground Microstrip structure. The types of connectors are SMA, 2.92 mm, 2.4 mm, 1.85 mm & 1.0mm. We solve your performance and cost problems.



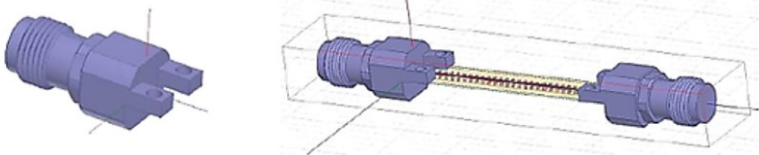
■ **Features**

- 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**

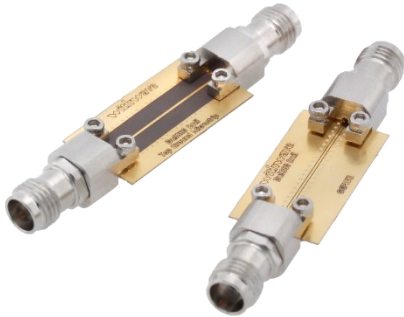
- RFIC Chip set evaluation board
- High data rate ASIC and SoC evaluation module test
- Substrate Characterization



- **Design Assistanace**

- 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

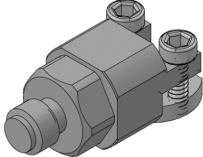
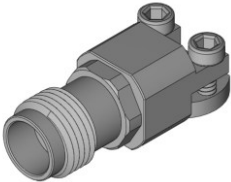


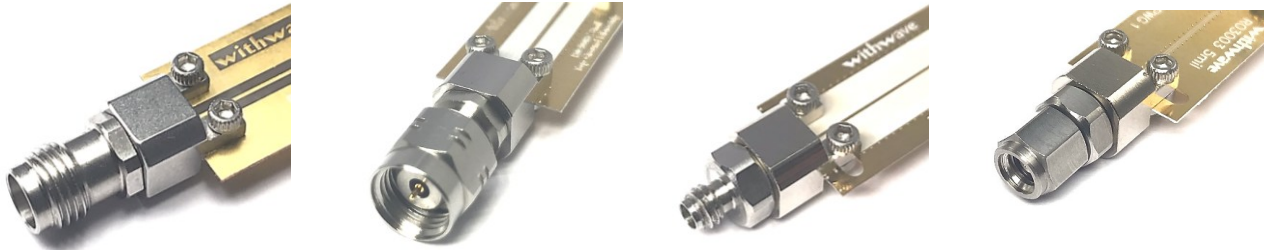
Specification

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

* RoHS Compliant

Ordering Information

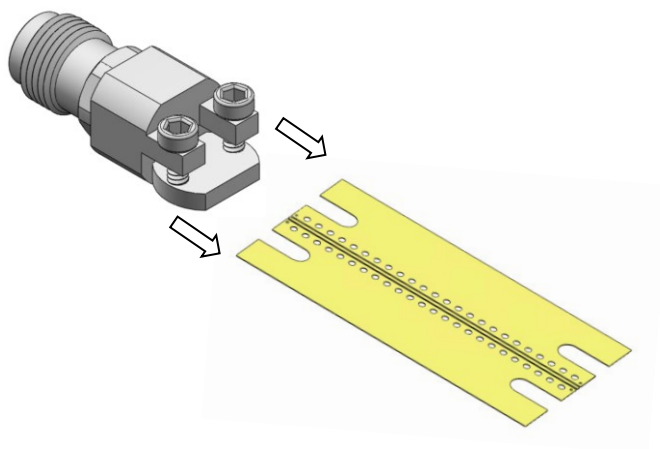
Application	Connector	Type	Part No.
Narrow Block 	SMA	Female	NE06FS001
		Male	NE06MS001
	2.92 mm	Female	NE03FS001
		Female (Bulkhead)	NE03FS002
	2.4 mm	Male	NE03MS001
		Female	NE02FS001
	1.85 mm	Male	NE02MS001
		Female	NE01FS001
	1.0 mm	Male	NE01MS001
		Female	NE00FS001
		Male	NE00MS001



■ Installation Procedure

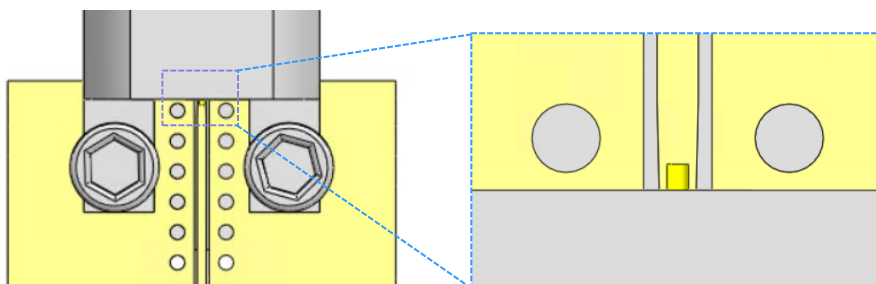
STEP 1 :

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



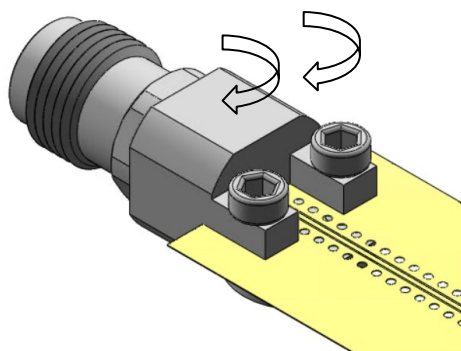
STEP 2:

Ensure the pin is centered on the trace.



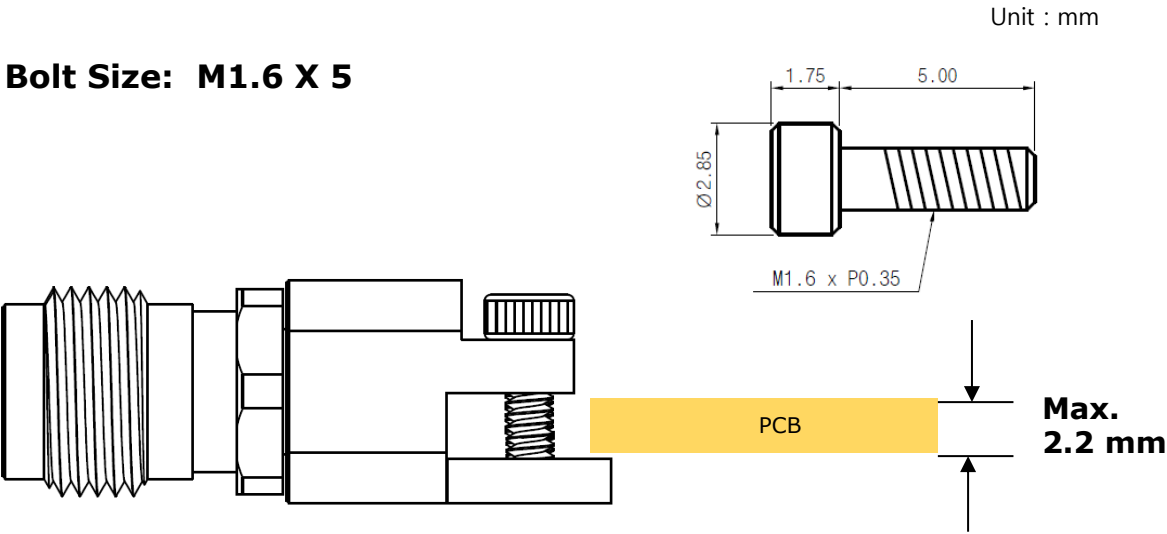
STEP 3:

Ensure the block is tight against the substrate.

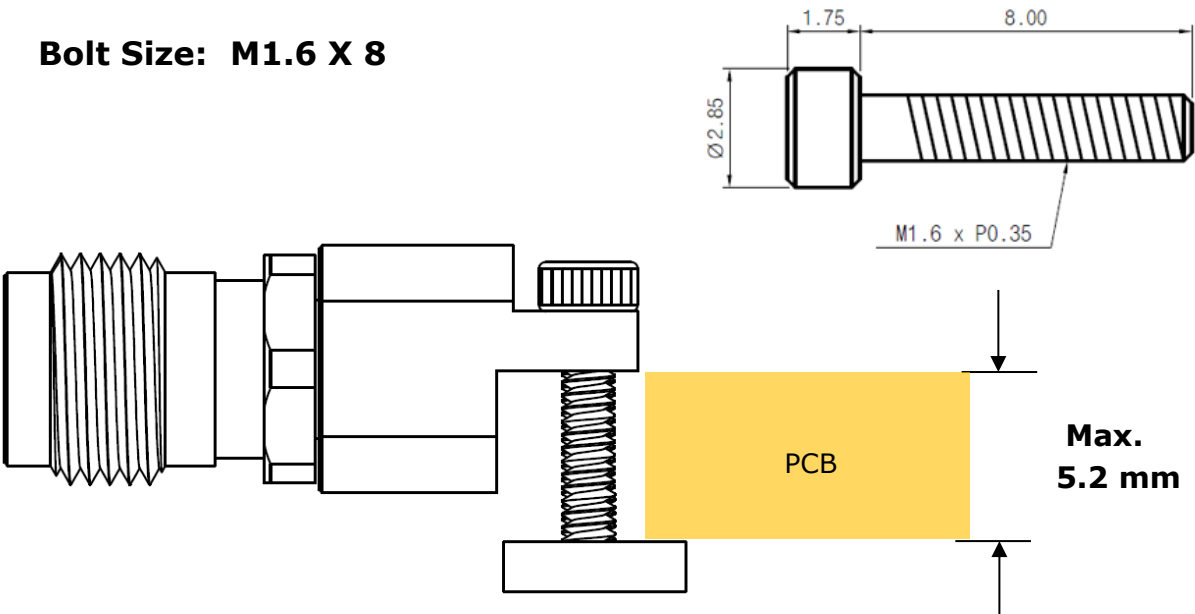


■ Maximum PCB Thickness (Low Profile type)

Bolt Size: M1.6 X 5



Bolt Size: M1.6 X 8



■ Test Result

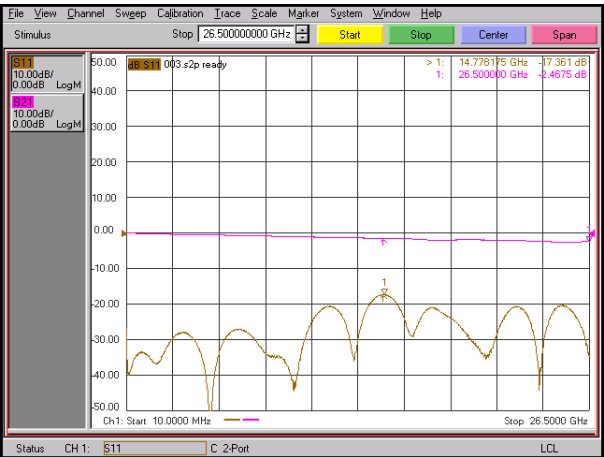
SMA Type

GCPWG Structure

Freq. : 10 MHz to 26.5 GHz

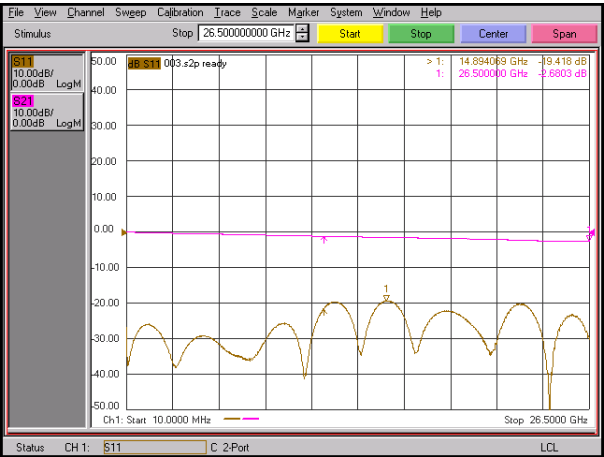
Substrate : RO4003C (8 mil)

Part No. : NE06FS001



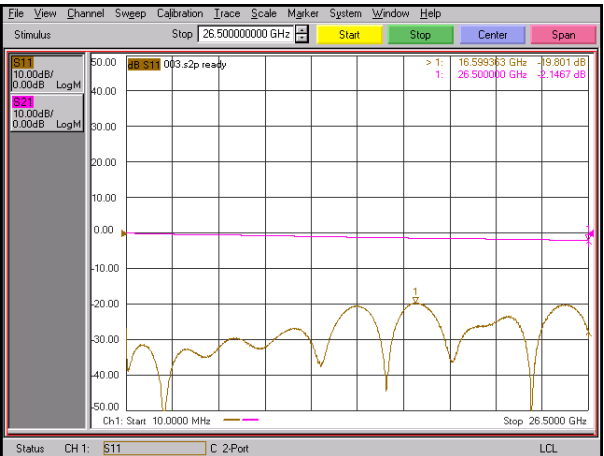
Substrate : RO4350B (10 mil)

Part No. : NE06FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE06FS001



* Substrate length : 1 inch (=25.4 mm)

■ Test Result

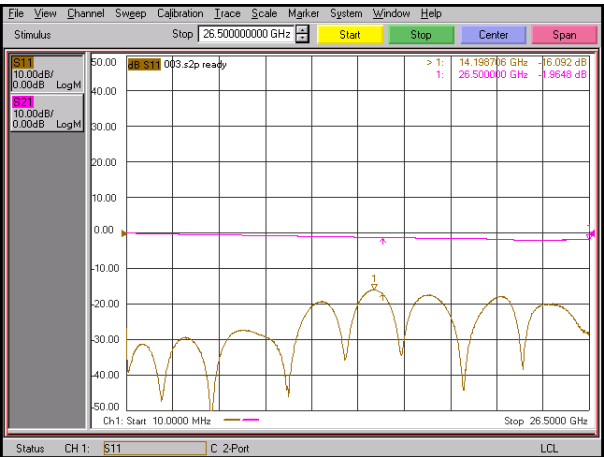
SMA Type

Top Ground Microstrip

Freq. : 10 MHz to 26.5 GHz

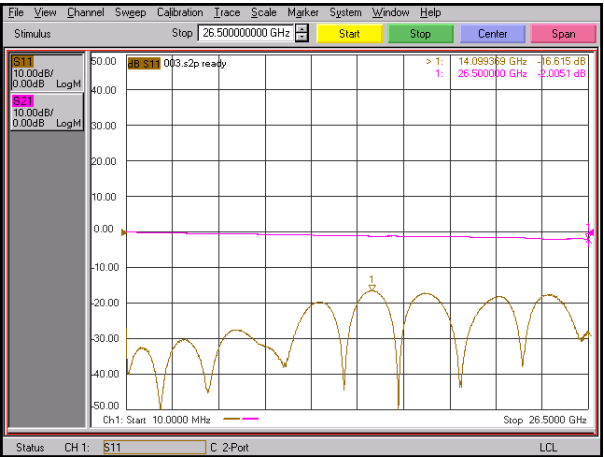
Substrate : RO4003C (8 mil)

Part No. : NE06FS001



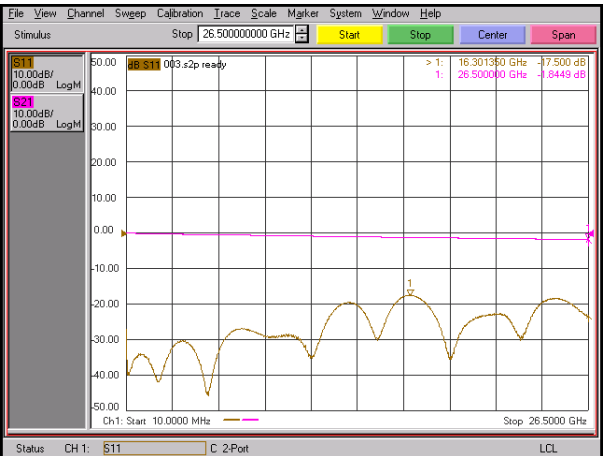
Substrate : RO4350B (10 mil)

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

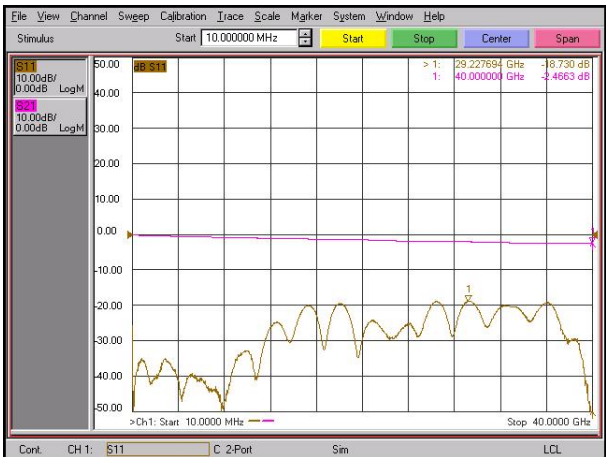
Substrate : RO4003C (8 mil)

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

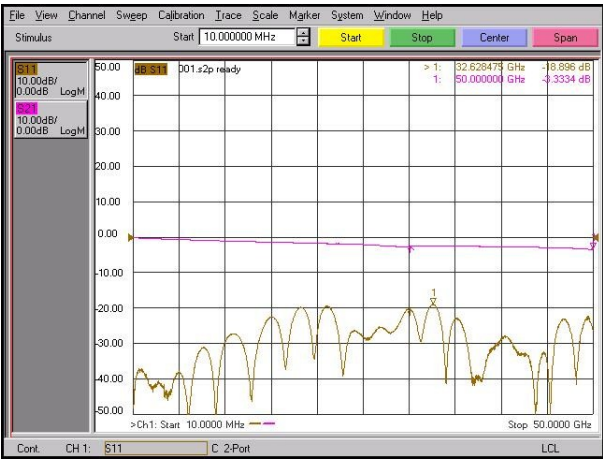
Top Ground Microstrip

Substrate : RO4003C (8 mil)

Part No. : NE02FS001

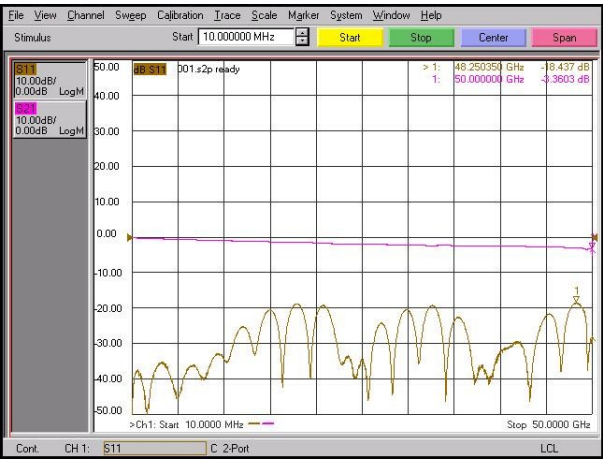


Freq. : 10 MHz to 50 GHz



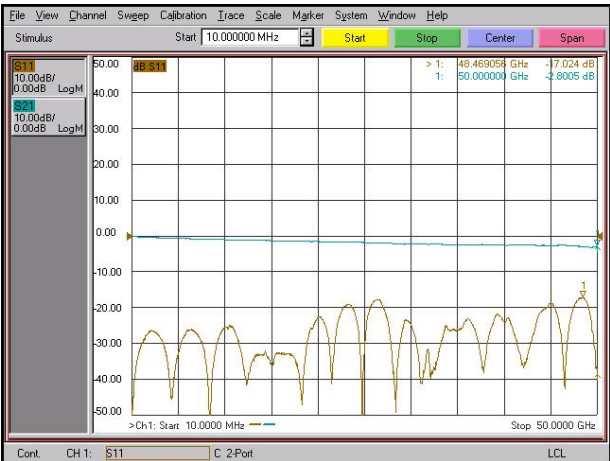
Substrate : RO4350B (10 mil)

Part No. : NE02FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE02FS001



* Substrate length : 1 inch (=25.4 mm)

■ Test Result

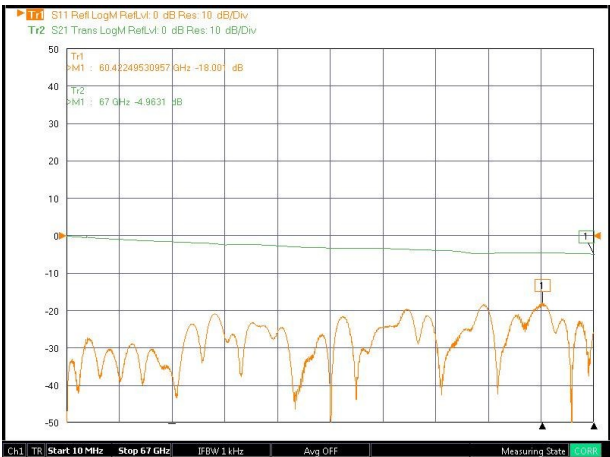
1.85 mm Type

GCPWG Structure

Freq. : 10 MHz to 67 GHz

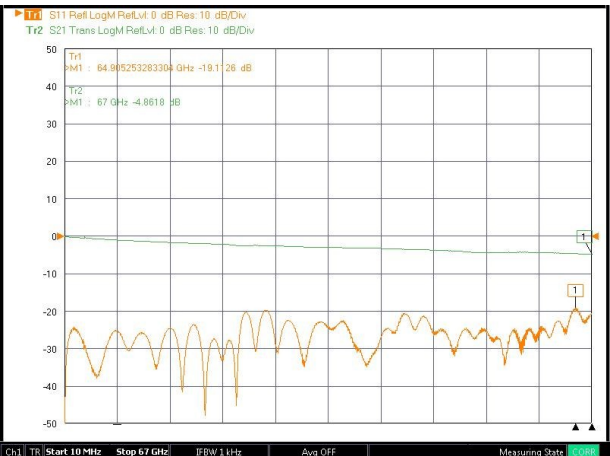
Substrate : RO4003C (8 mil)

Part No. : NE01FS001



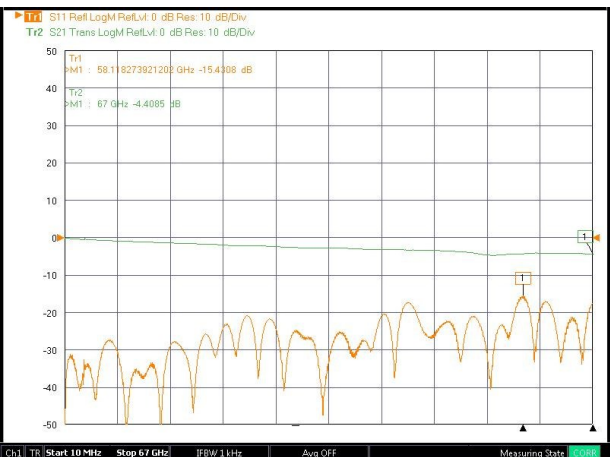
Substrate : RO4350B (10 mil)

Part No. : NE01FS001



Substrate : Duroid 5880 (5 mil)

Part No. : NE01FS001



* Substrate length : 1 inch (=25.4 mm)

■ Test Result

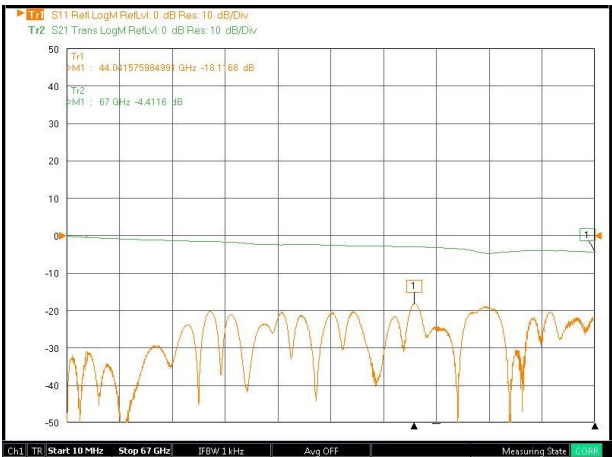
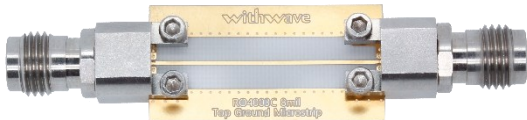
1.85 mm Type

Top Ground Microstrip

Freq. : 10 MHz to 67 GHz

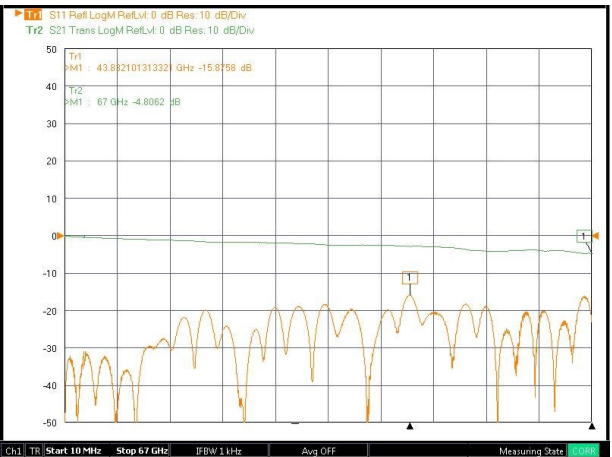
Substrate : RO4003C (8 mil)

Part No. : NE01FS001



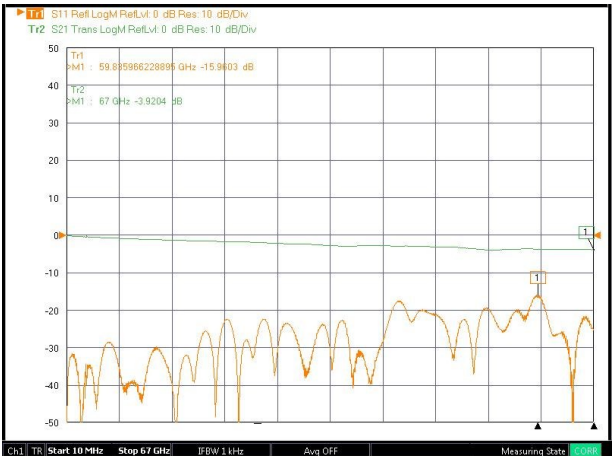
Substrate : RO4350B (10 mil)

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

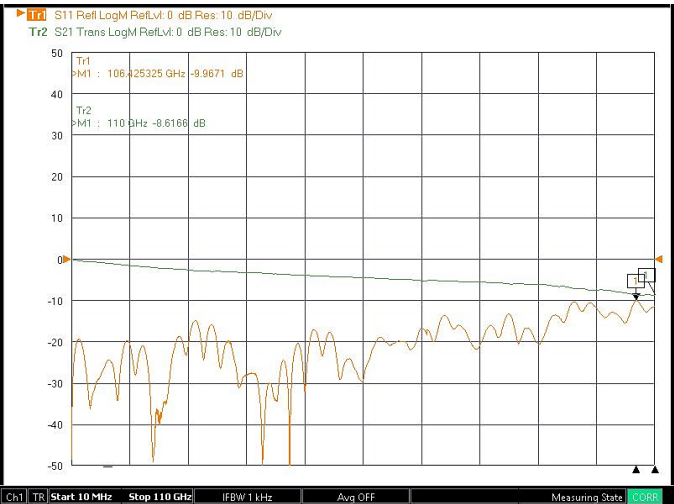
Freq. : 10 MHz to 110 GHz

Substrate : RO3003 (5 mil)

Part No. : NE00FS001



* Substrate length : 1 inch (=25.4 mm)



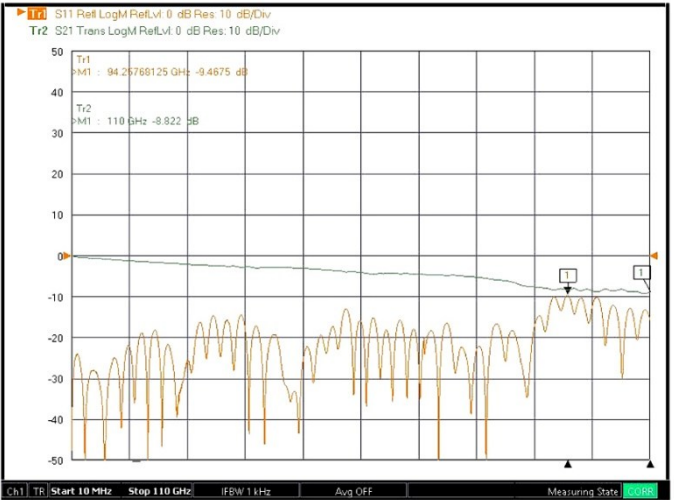
Top Ground Microstrip

Substrate : RO3003 (5 mil)

Part No. : NE00FS001



* Substrate length : 30 mm



■ Test Result

1.0 mm Type (Male)

GCPWG Structure

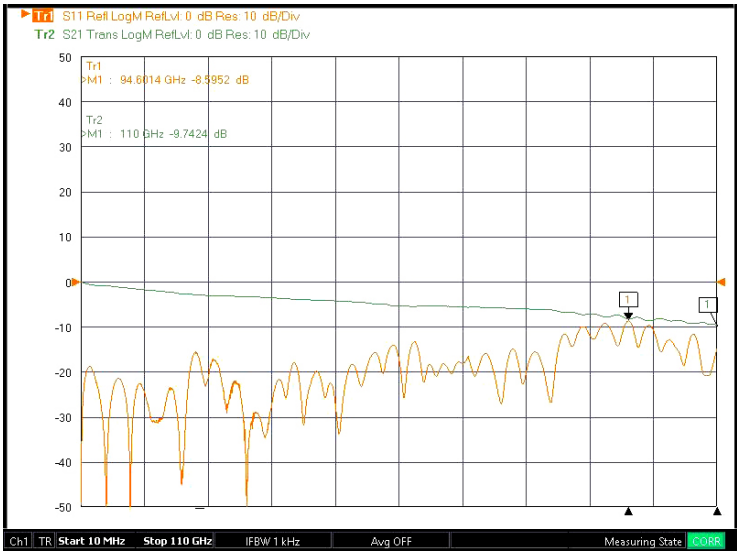
Substrate : RO3003 (5 mil)

Part No. : NE00MS001



* Substrate length : 1 inch (=25.4 mm)

Freq. : 10 MHz to 110 GHz



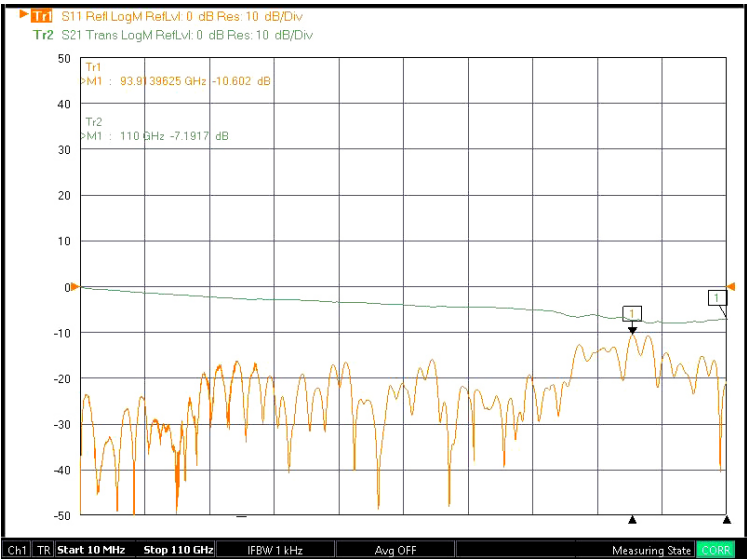
Top Ground Microstrip

Substrate : RO3003 (5 mil)

Part No. : NE00MS001



* Substrate length : 30 mm

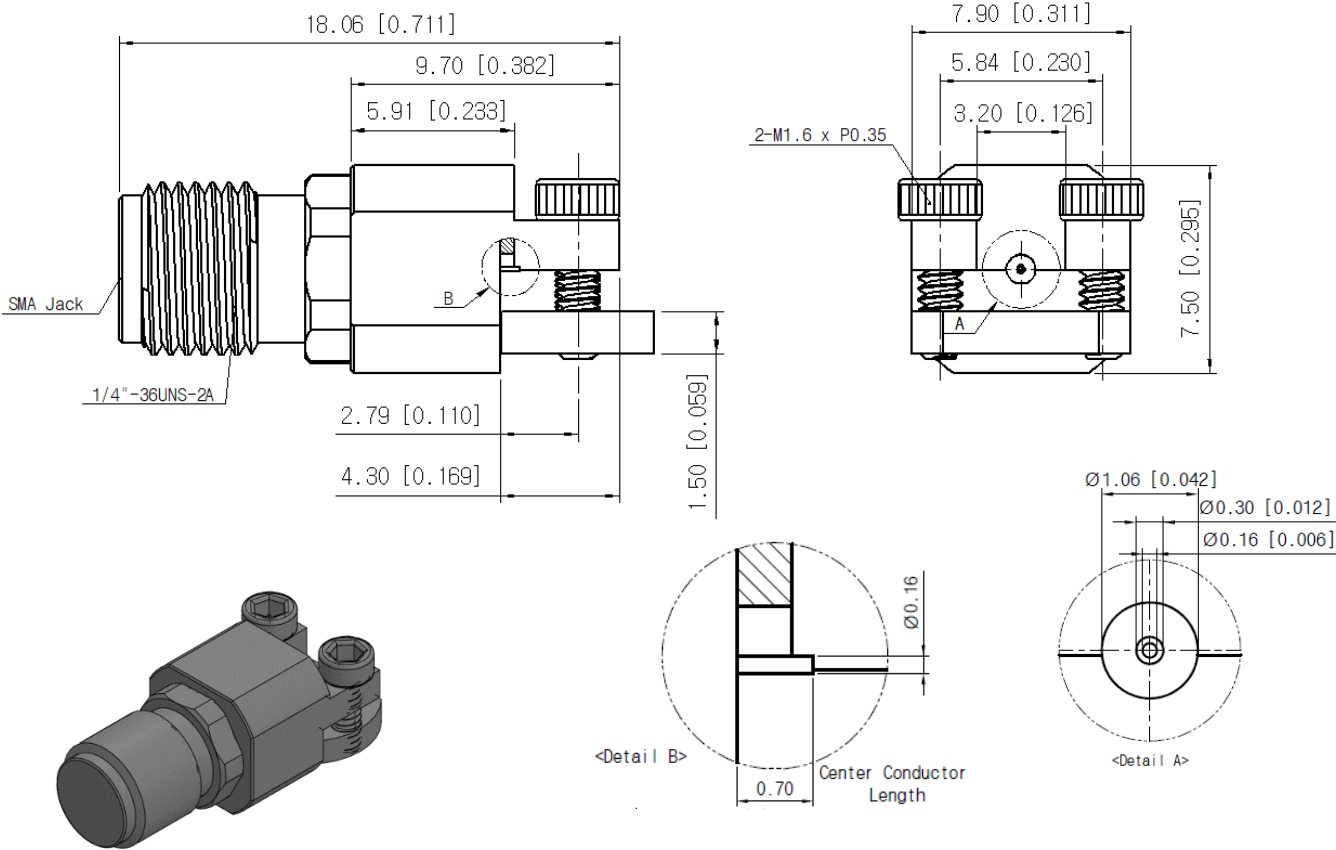


SMA Type (Female)

Drawing

Part No. : NE06FS001

Unit : mm[inch]

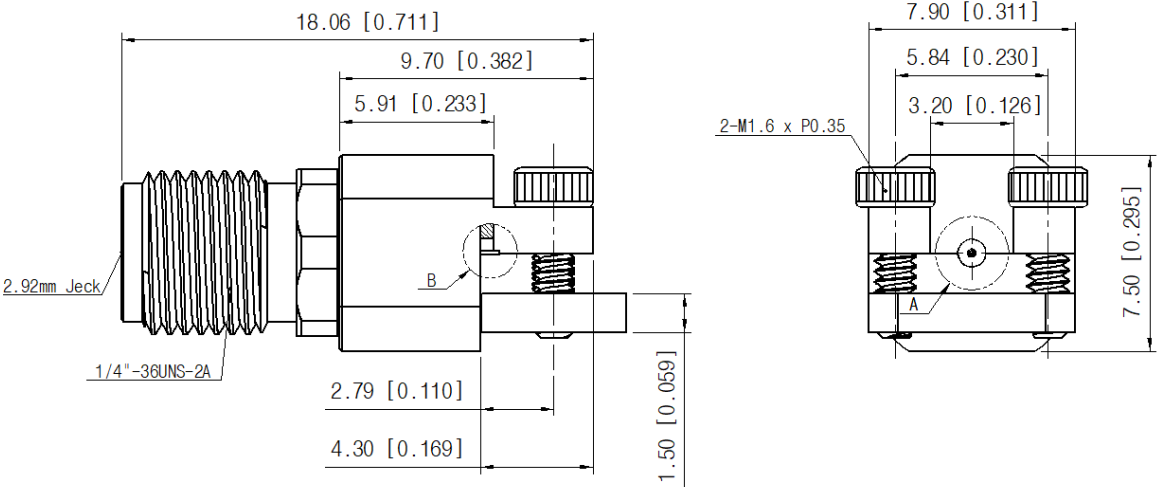


2.92 mm Type (Female)

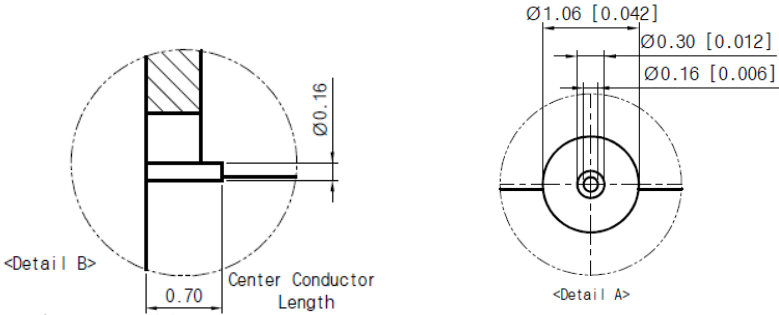
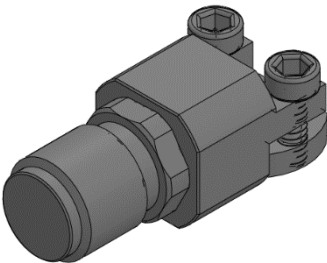
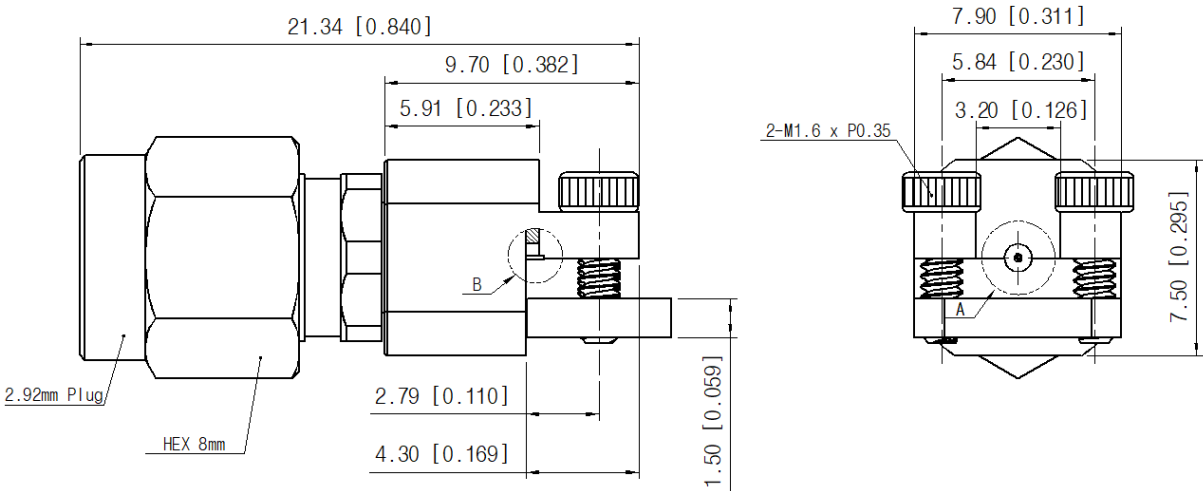
Drawing

Part No. : NE03FS001

Unit : mm[inch]



Part No. : NE03MS001

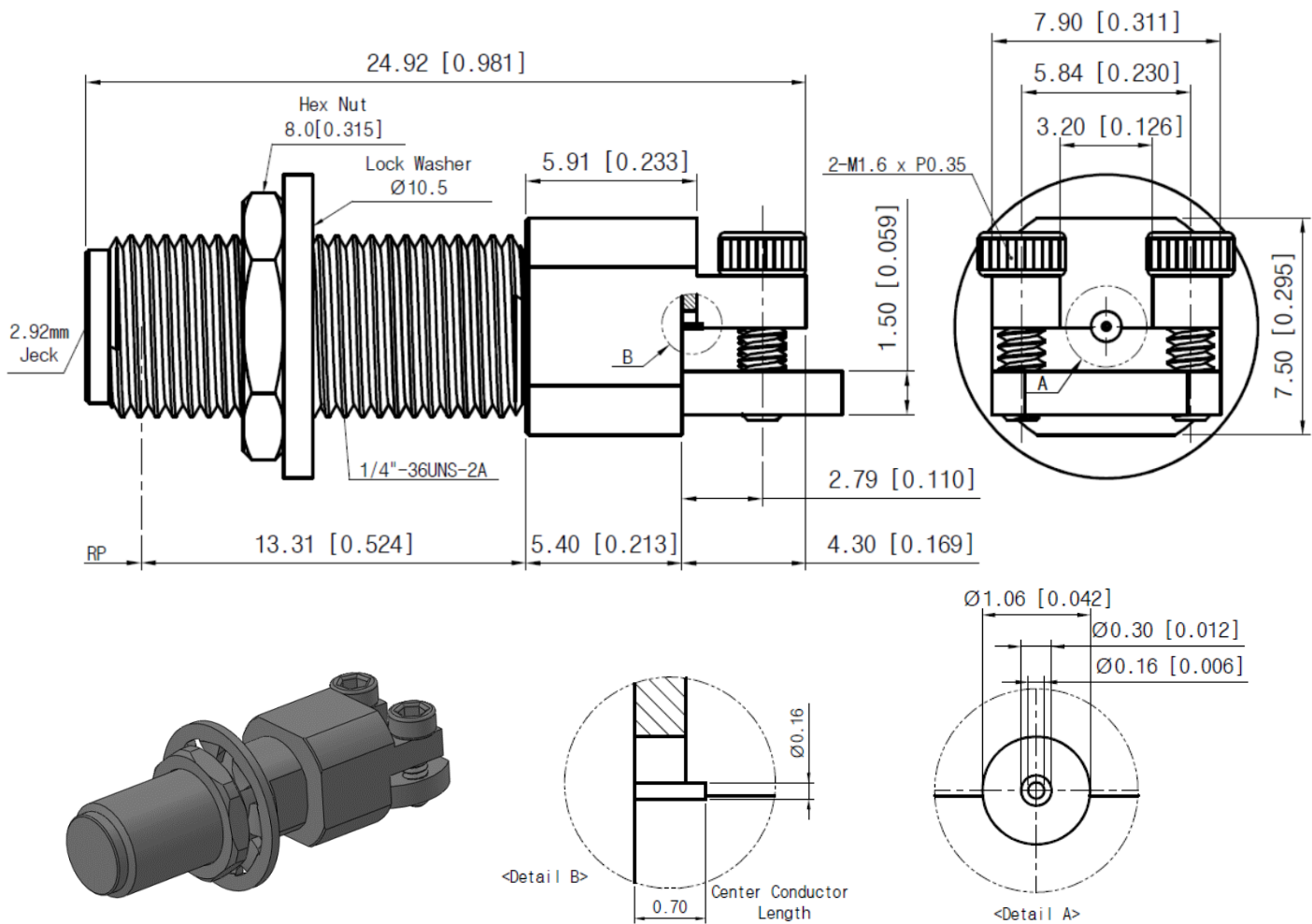


2.92 mm Type (Female) : Bulkhead

Drawing

Part No. : NE03FS002

Unit : mm[inch]

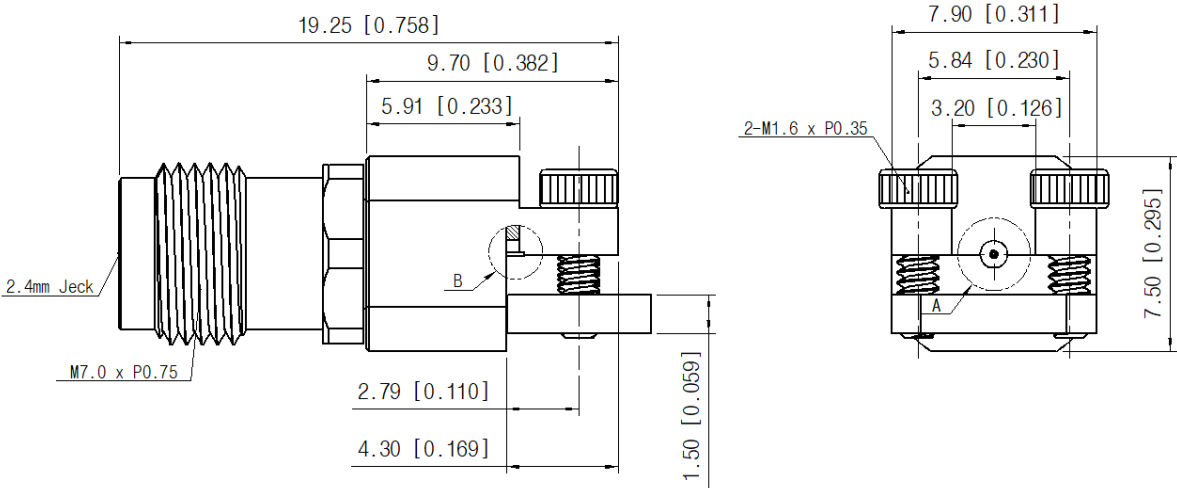


2.4 mm Type (Female)

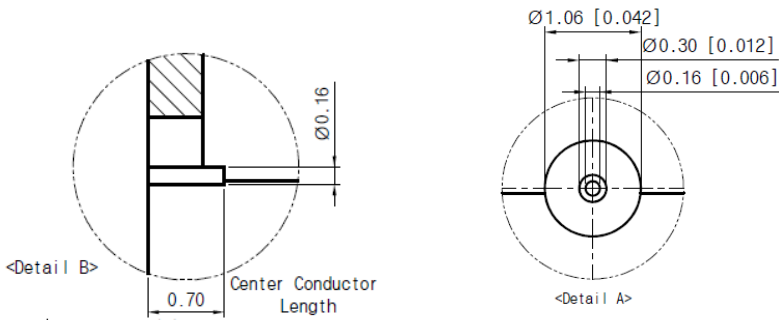
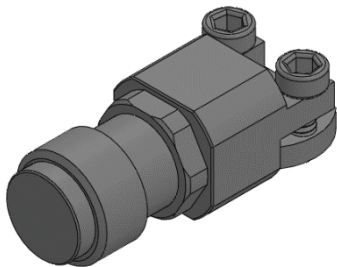
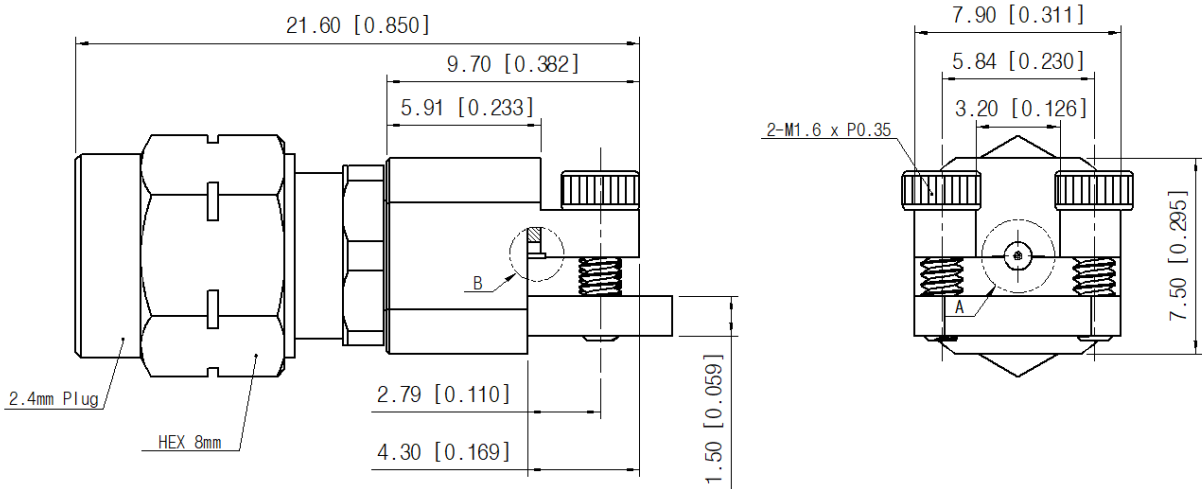
Drawing

Part No. : NE02FS001

Unit : mm[inch]



Part No. : NE02MS001

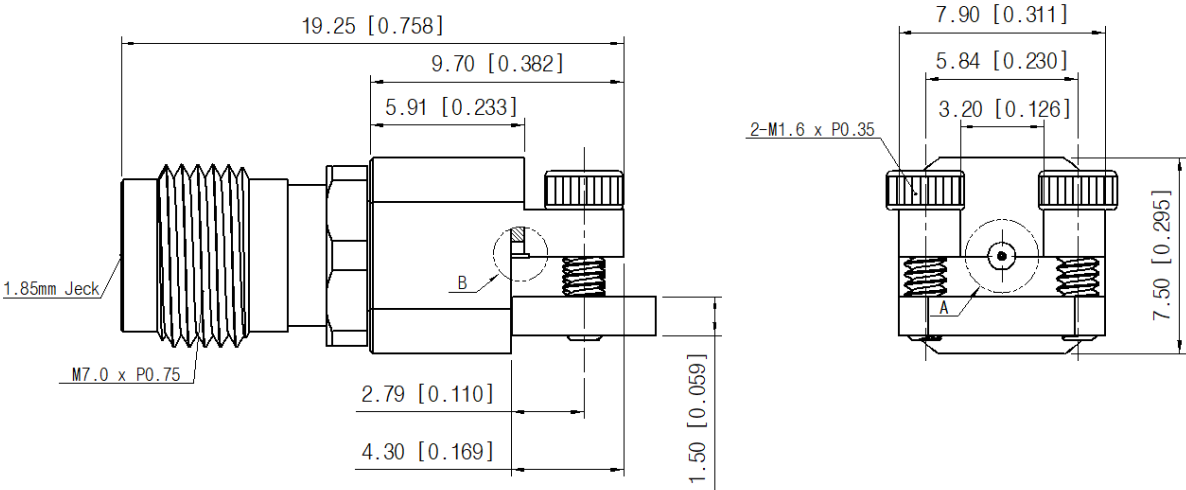


1.85 mm Type (Female)

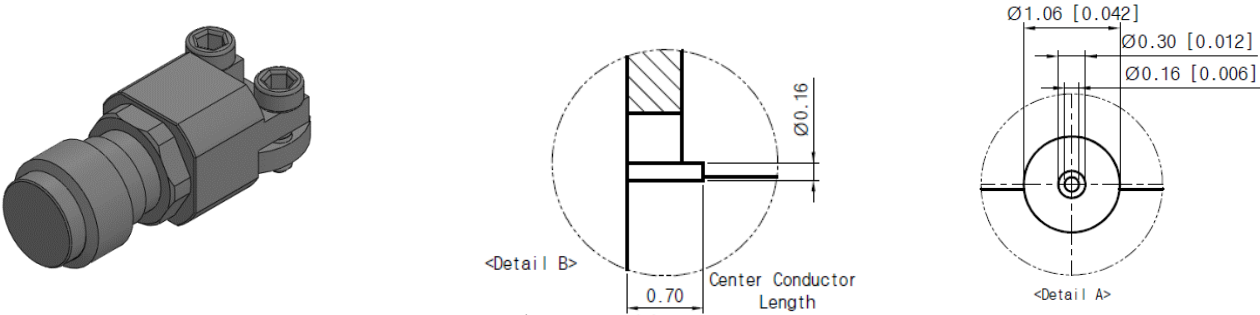
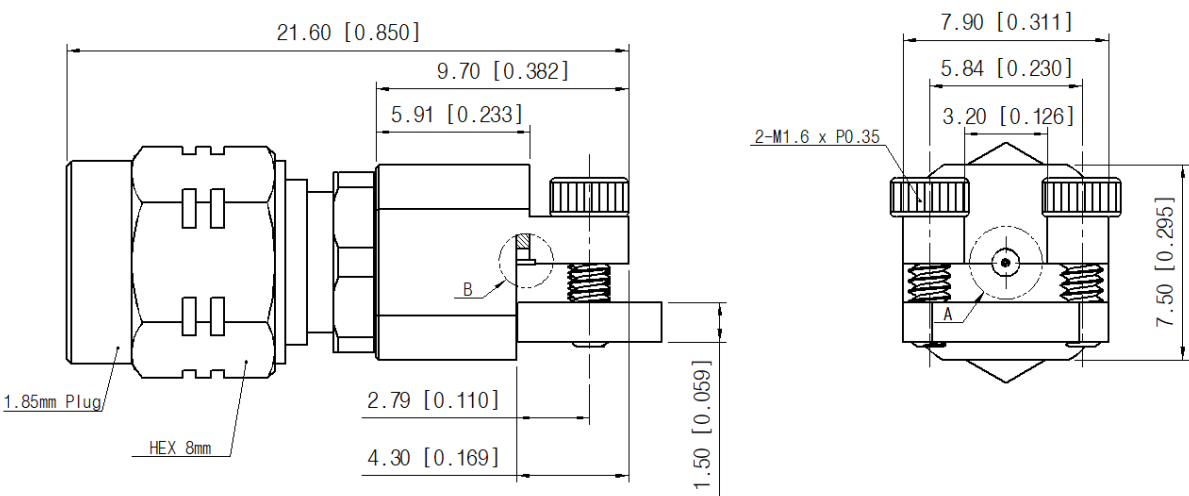
Drawing

Part No. : NE01FS001

Unit : mm[inch]



Part No. : NE01MS001

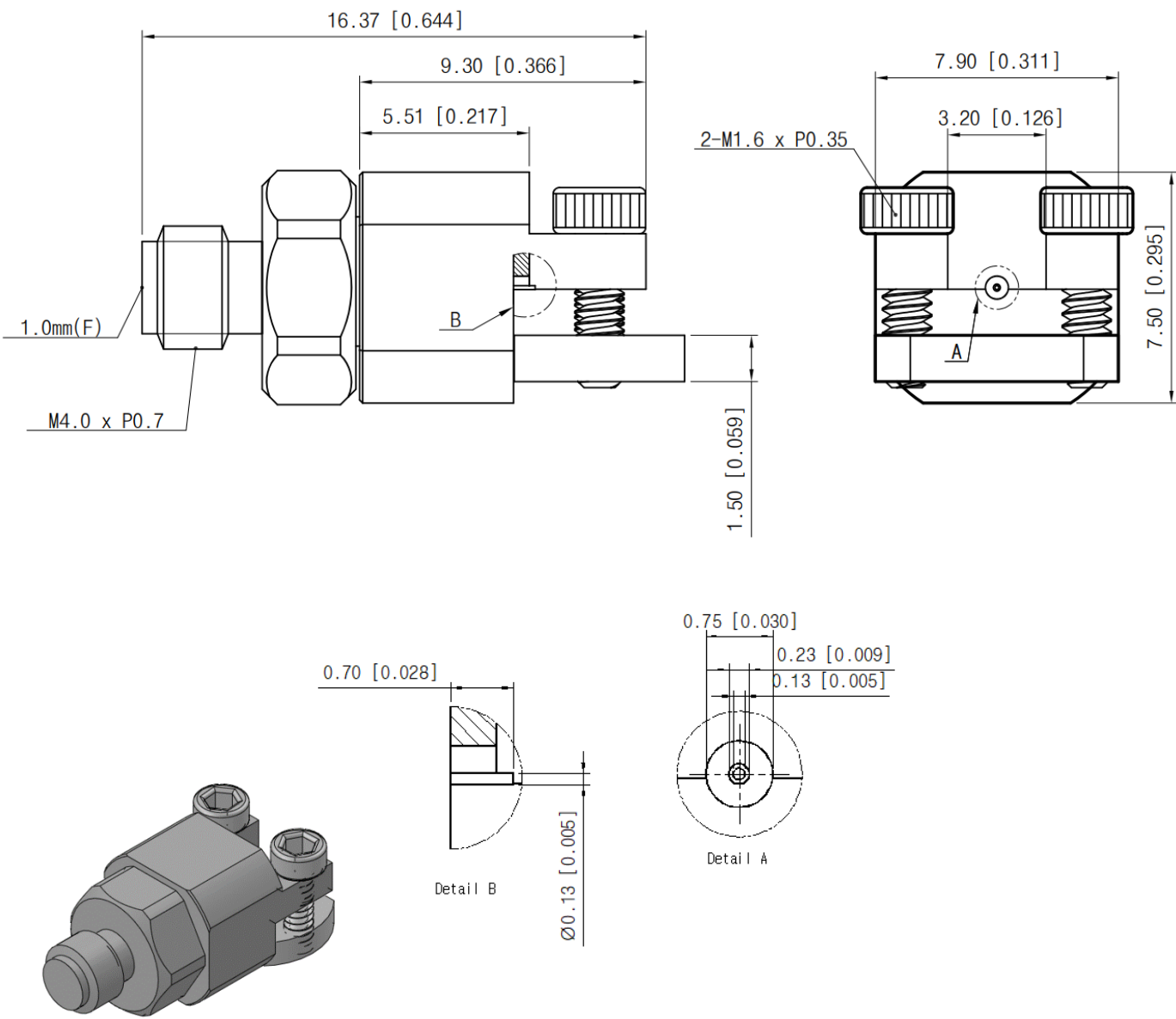


1.0 mm Type (Female)

Drawing

Part No. : NE00FS001

Unit : mm[inch]

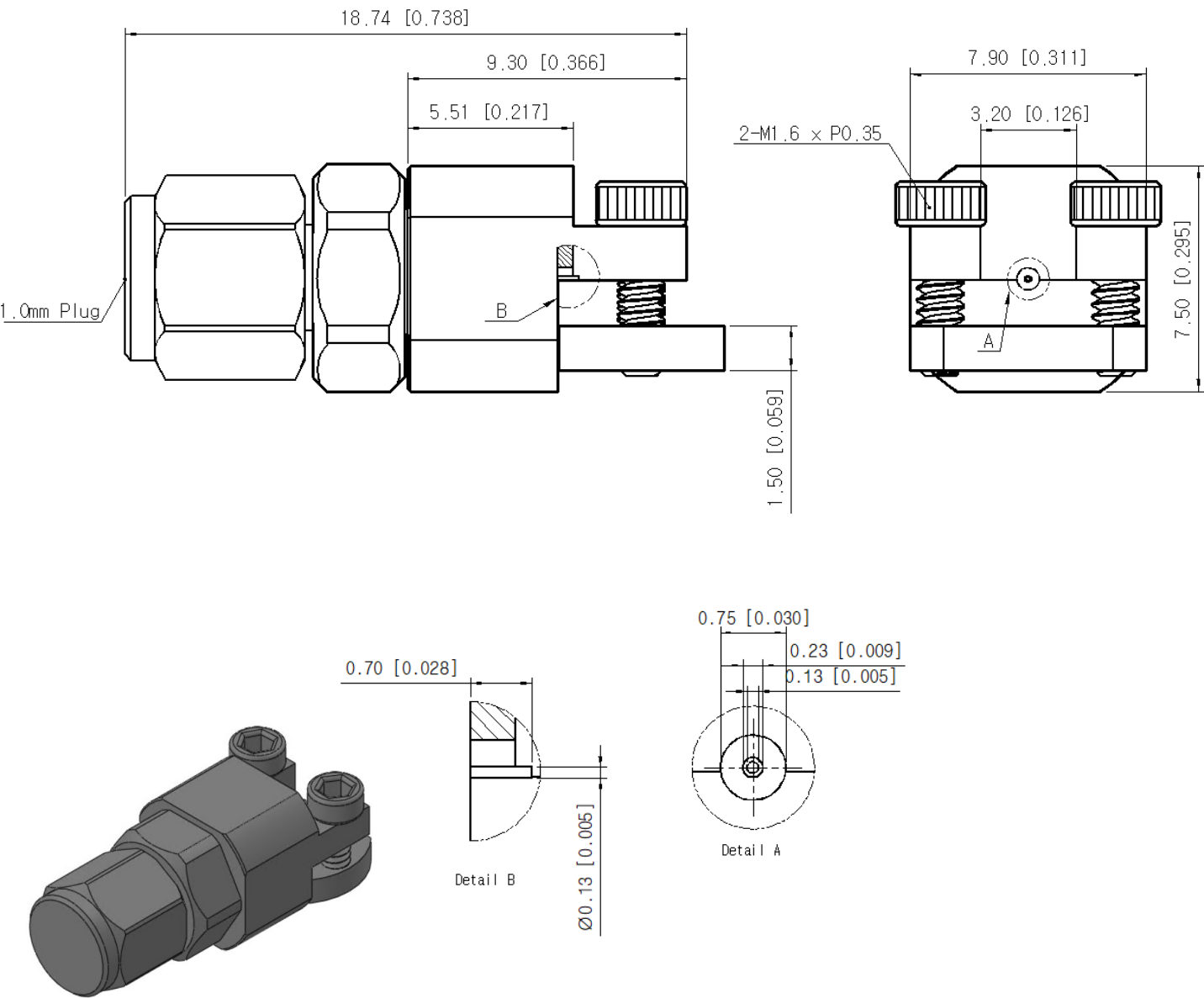


1.0 mm Type (Male)

Drawing

Part No. : NE00MS001

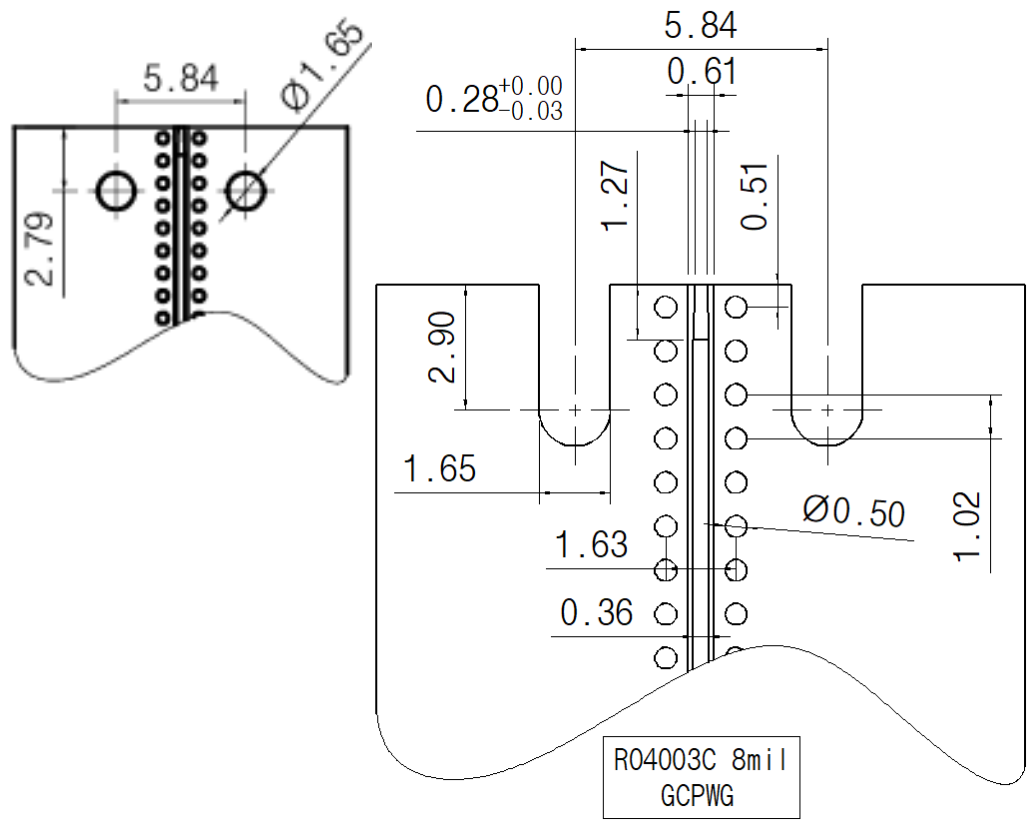
Unit : mm[inch]



■ PCB Layout

GCPWG (R04003C 8mil)

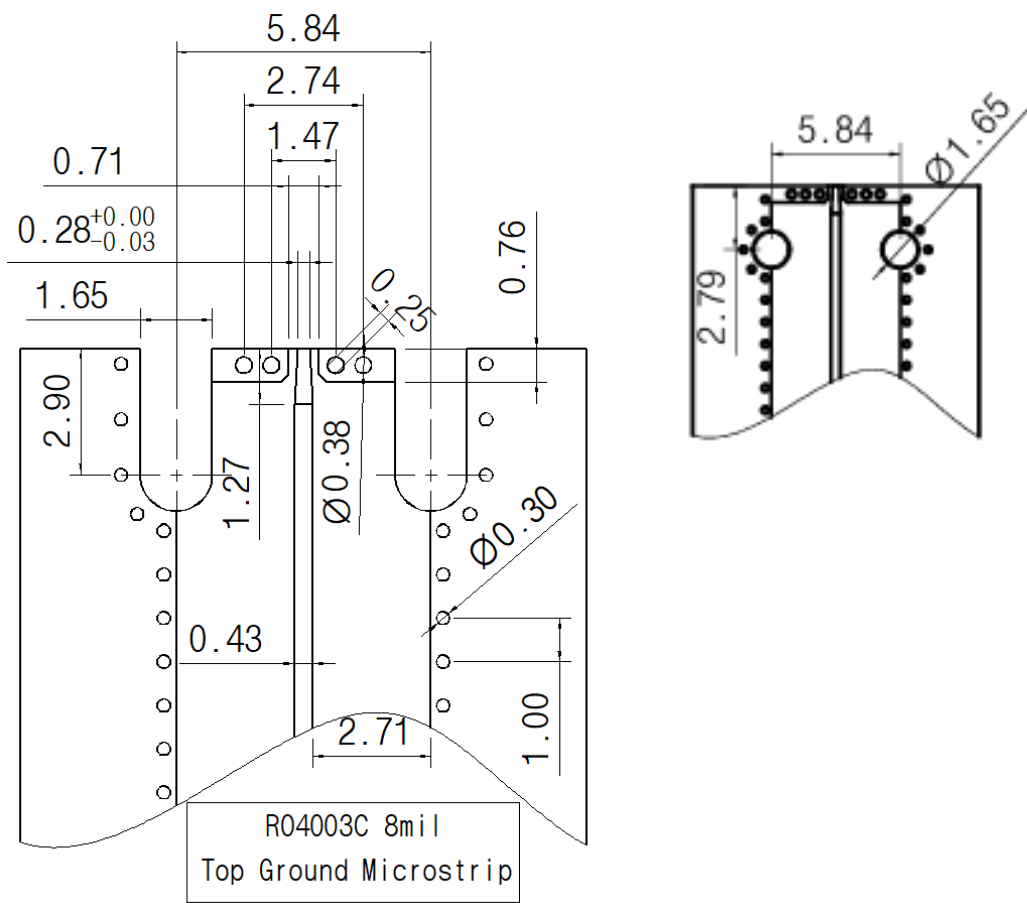
Unit : mm



■ PCB Layout

Top Ground Microstrip (R04003C 8mil)

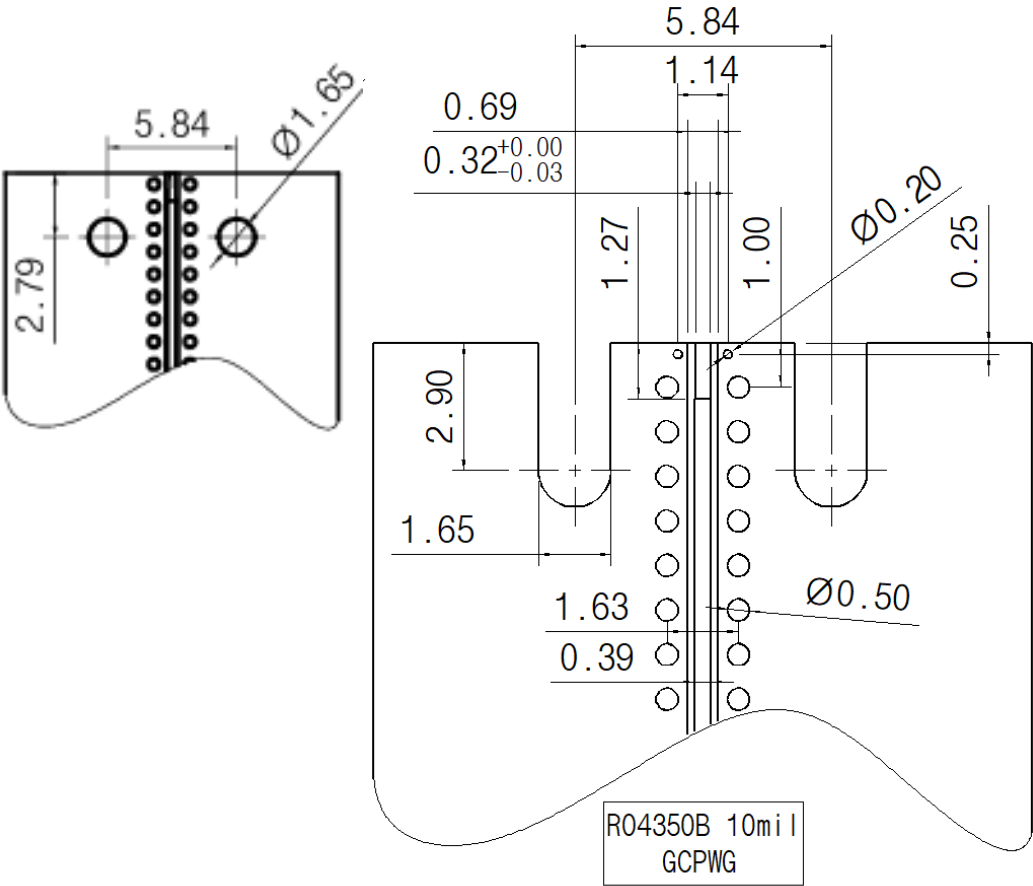
Unit : mm



■ PCB Layout

GCPWG (R04350B 10 mil)

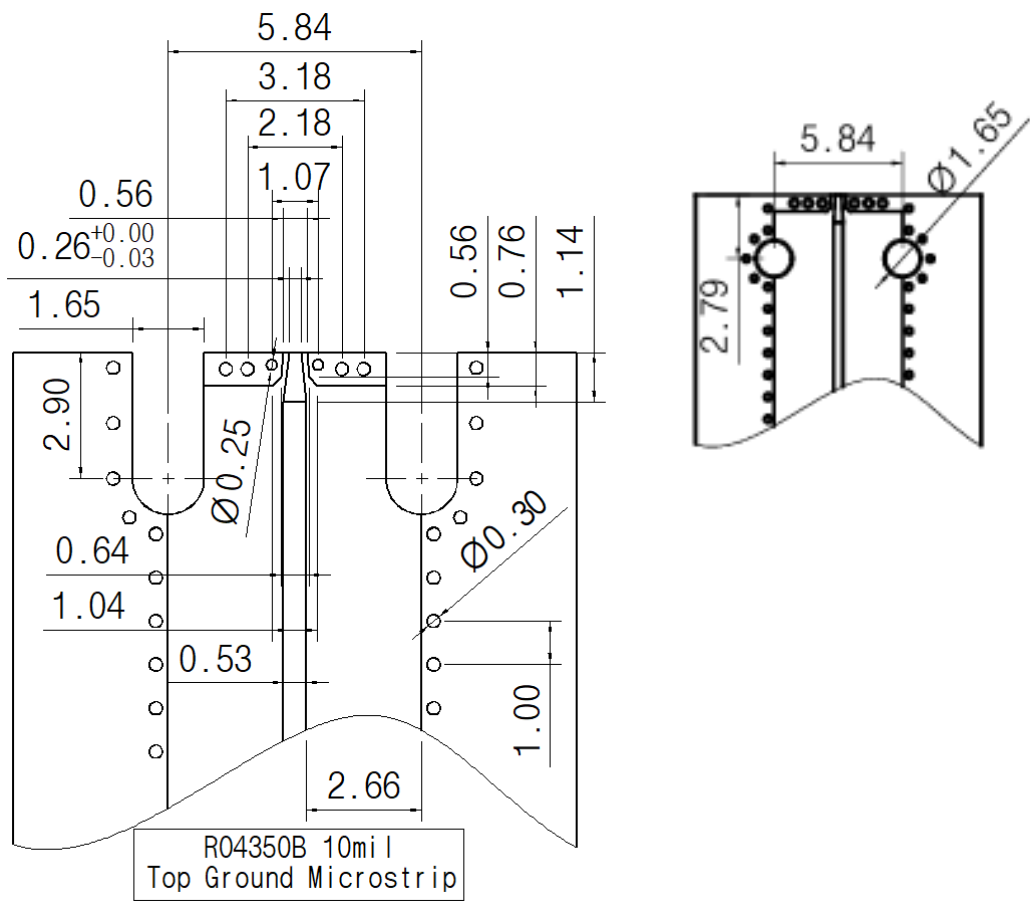
Unit : mm



■ PCB Layout

Top Ground Microstrip (R04350B 10 mil)

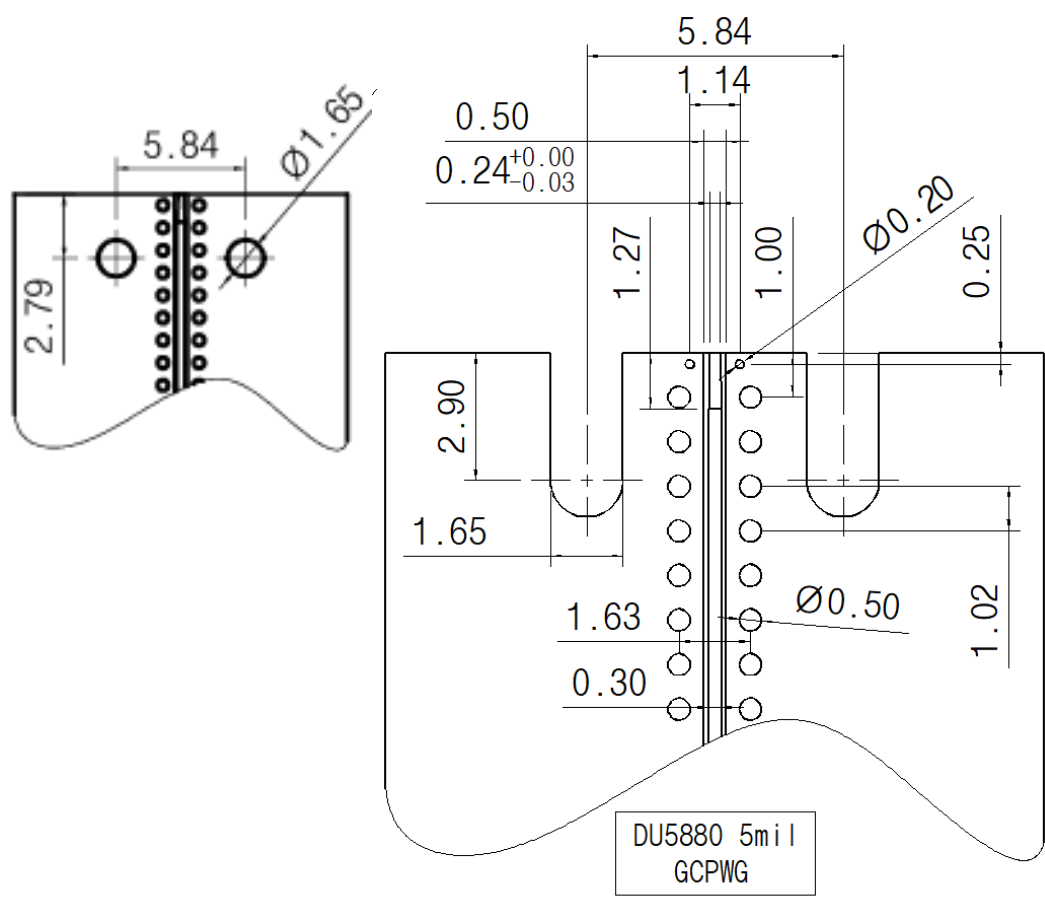
Unit : mm



■ PCB Layout

GCPWG (Duroid 5880 5mil)

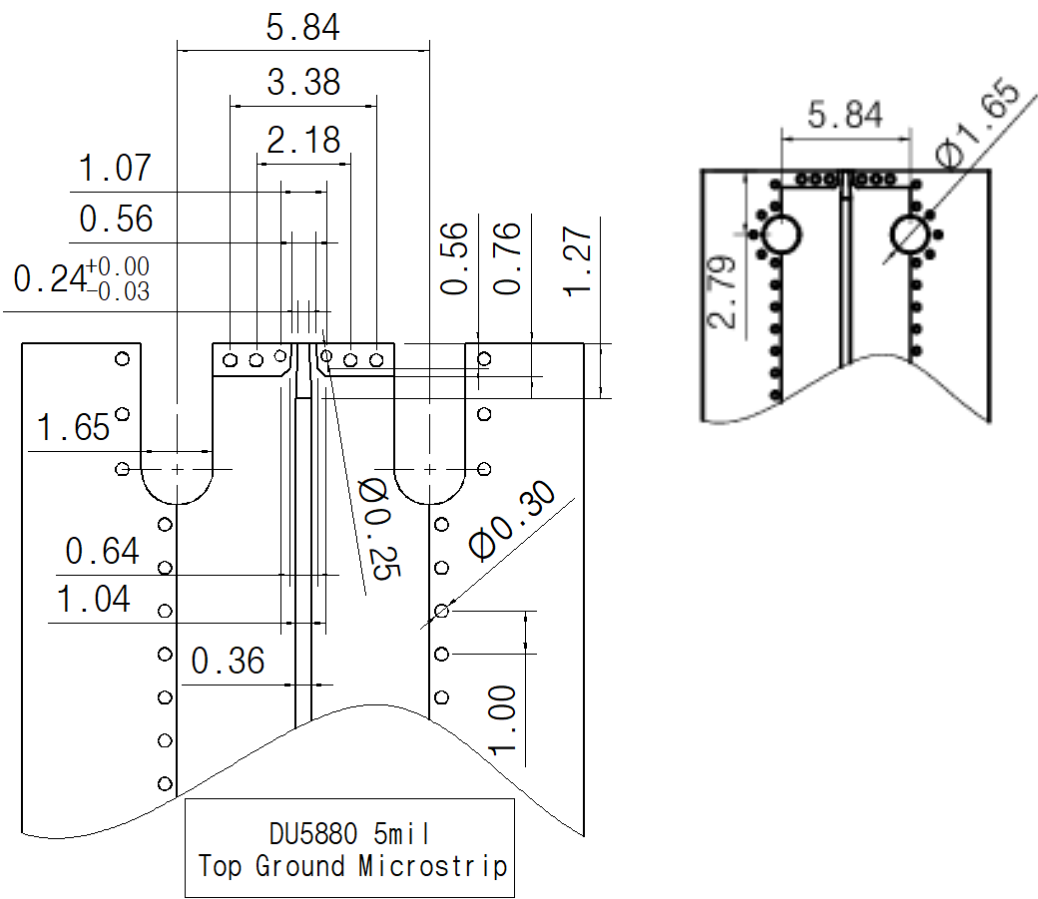
Unit : mm



■ PCB Layout

Top Ground Microstrip (Duroid 5880 5 mil)

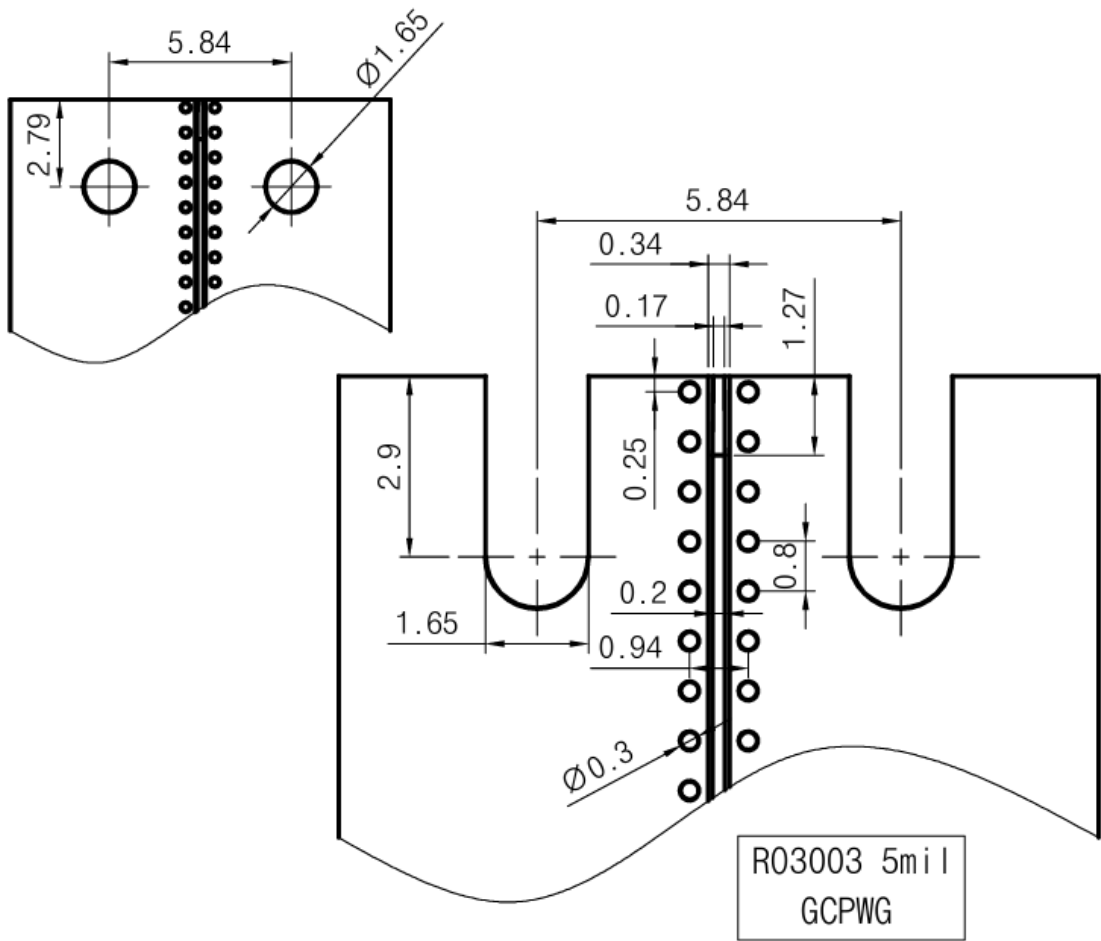
Unit : mm



■ PCB Layout

GCPWG (R03003 5 mil)

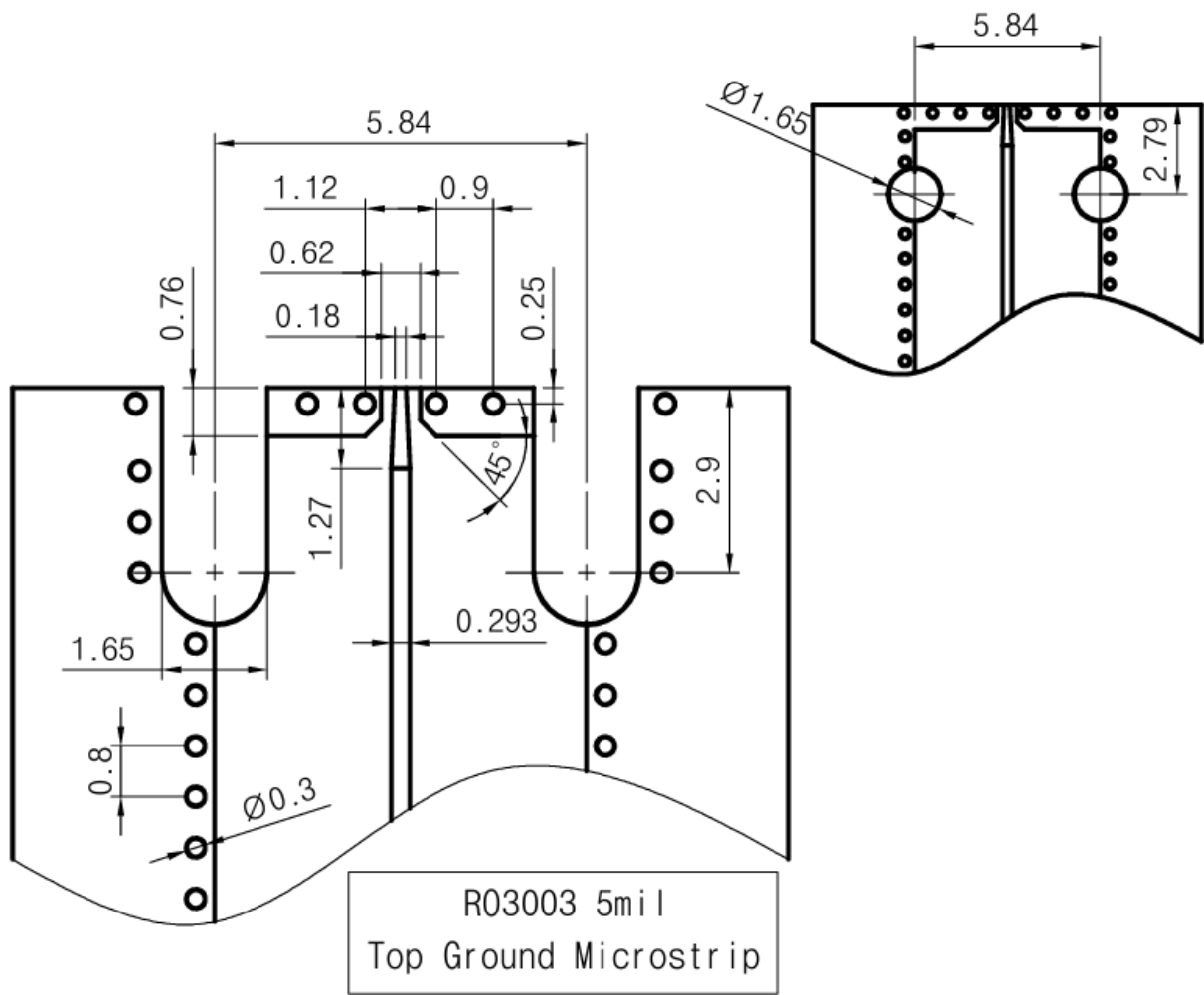
Unit : mm



■ PCB Layout

Top Ground Microstrip (R03003 5 mil)

Unit : 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
Ver 1.5	2025-10-13	Updated PCB Layout