Vertical Launch Connectors

SMA,2.92 mm,2.4 mm & 1.85 mm

withwave
Versatile RF & MW Test Solutions

Withwave's Vertical Launch Connectors are specially designed for solderless vertical PCB launch on test & measurement board.
These connectors have excellent electrical transition performance up to ***26.5 GHz, 40 GHz, 50 GHz & 67 GHz*** respectively as well as reduce installation time by eliminating soldering.

Features

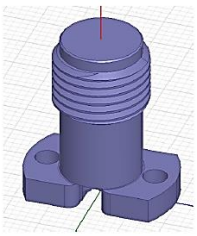
- DC to 26.5 GHz(SMA), 40 GHz(2.92 mm) ,50 GHz(2.4 mm) & 67 GHz(1.85 mm)
- SMA, 2.92 mm, 2.4 mm & 1.85 mm type (Female, Male)
- Excellent Vertical transition (VSWR <1.3, 1.85 mm type: VSWR <1.6)
- Easy & Solderless Installation on designed substrate

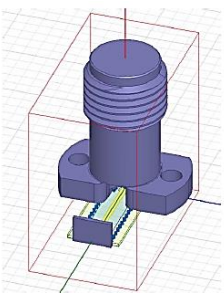
Application

- Test and measurement
- High Speed Digital Test Boards
- Test and Characterization Boards

Design Assistance

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





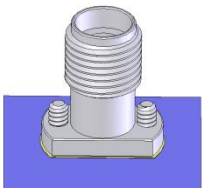
Specification (SMA Connector)

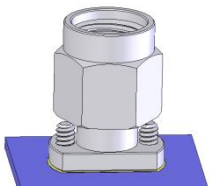
Scope	Items	Specification
Electrical	Freq. range	DC to 26.5 GHz
	Impedance	50 Ohm
	VSWR(Max)	1.3 : 1 (DC to 26.5 GHz)
Material	Connector type	SMA type (Female, Male)
	Body & Block	Stainless Steel
	PIN	BeCu with Gold Plated

** RoHS Compliant*

Ordering Information (SMA Connector)

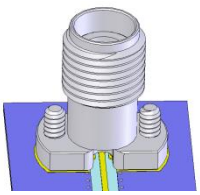
Stripline type

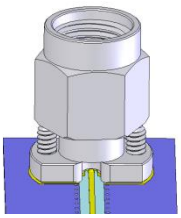




Application	Type	Part No.
Stripline	Female	VC06FS001
	Male	VC06MS001

Microstrip type





Application	Type	Part No.
Microstrip	Female	VC06FS002
	Male	VC06MS002

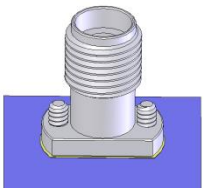
Specification (2.92 mm Connector)

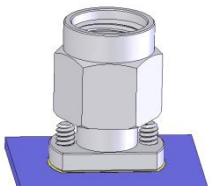
Scope	Items	Specification
Electrical	Freq. range	DC to 40 GHz
	Impedance	50 Ohm
	VSWR(Max)	1.3 : 1 (DC to 40 GHz)
Material	Connector type	2.92 mm type (Female, Male)
	Body & Block	Stainless Steel
	PIN	BeCu with Gold Plated

** RoHS Compliant*

Ordering Information (2.92 mm Connector)

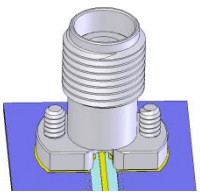
Stripline type

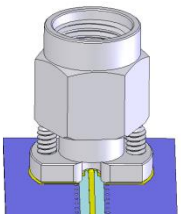




Application	Type	Part No.
Stripline	Female	VC03FS001
	Male	VC03MS001

Microstrip type





Application	Type	Part No.
Microstrip	Female	VC03FS002
	Male	VC03MS002

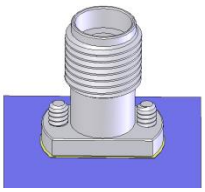
Specification (2.4 mm Connector)

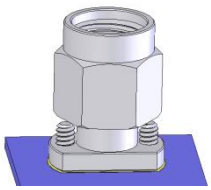
Scope	Items	Specification
Electrical	Freq. range	DC to 50 GHz
	Impedance	50 Ohm
	VSWR(Max)	1.3 : 1 (DC to 50 GHz)
Material	Connector type	2.4 mm type (Female, Male)
	Body & Block	Stainless Steel
	PIN	BeCu with Gold Plated

** RoHS Compliant*

Ordering Information (2.4 mm Connector)

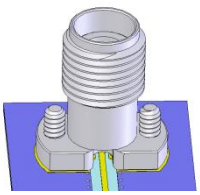
Stripline type

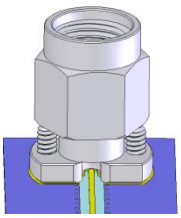




Application	Type	Part No.
Stripline	Female	VC02FS001
	Male	VC02MS001

Microstrip type





Application	Type	Part No.
Microstrip	Female	VC02FS002
	Male	VC02MS002

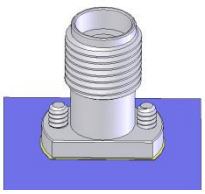
Specification (1.85 mm Connector)

Scope	Items	Specification
Electrical	Freq. range	DC to 67 GHz
	Impedance	50 Ohm
	VSWR(Max)	1.6 : 1 (DC to 67 GHz)
Material	Connector type	1.85 mm type (Female)
	Body & Block	Stainless Steel
	PIN	BeCu with Gold Plated

** RoHS Compliant*

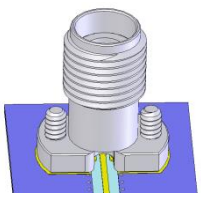
Ordering Information (1.85 mm Connector)

Stripline type



Application	Type	Part No.
Stripline	Female	VC01FS001

Microstrip type

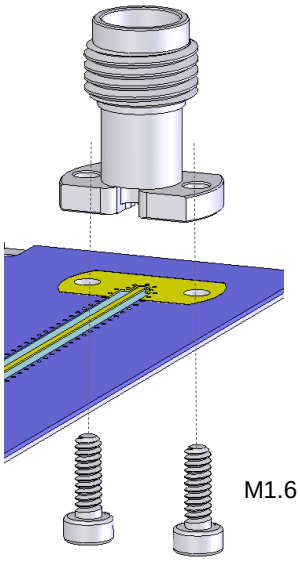


Application	Type	Part No.
Microstrip	Female	VC01FS002

Installation Procedure

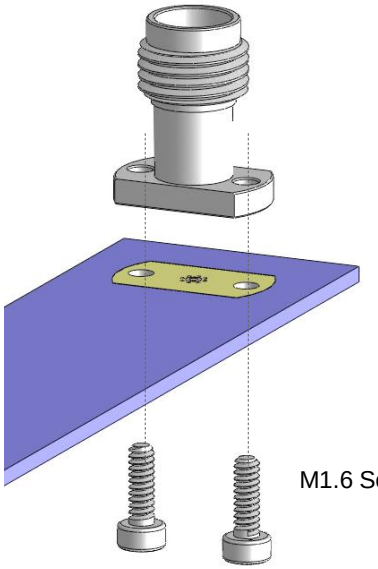
STEP 1 :
Launch vertical connector on the position of substrate.

Microstrip Line



M1.6 Screw Bolting

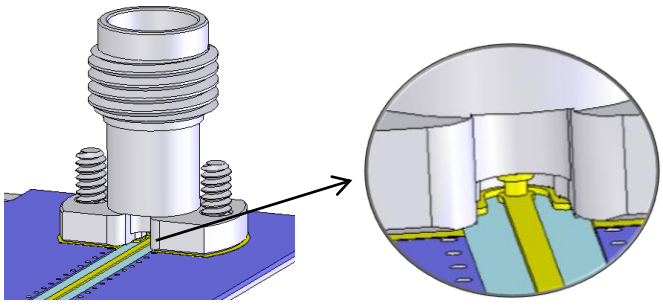
Stripline



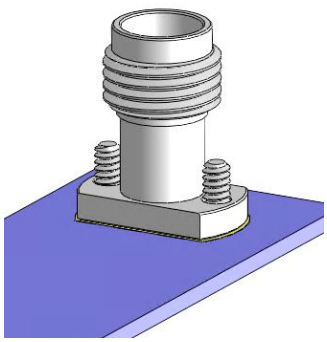
M1.6 Screw Bolting

STEP 2:
Ensure Connector Body should be tighten against the substrate using two screws while ensuring center pin should be centered on the trace.

Microstrip Line



Stripline

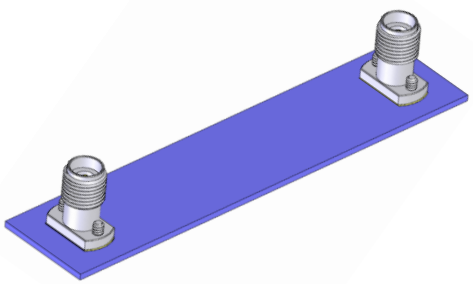


SMA Connector

■ *Test Result (Stripline type)*

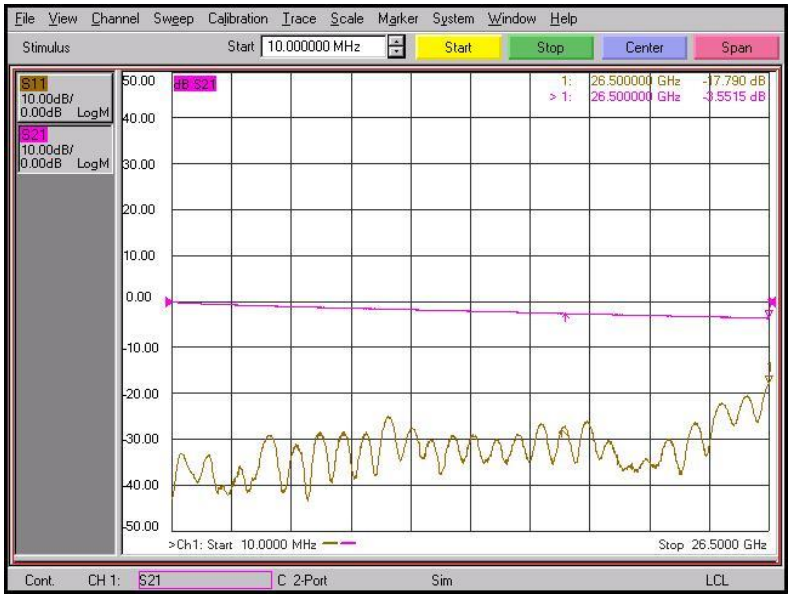
Female type

Part No. : VC06FS001



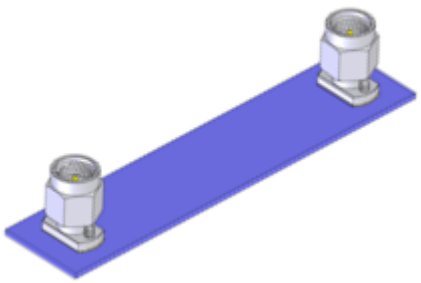
- Substrate : RO4003C(8 mil)
- Trace length : 70 mm (stripline)

Freq. : 10 MHz to 26.5 GHz



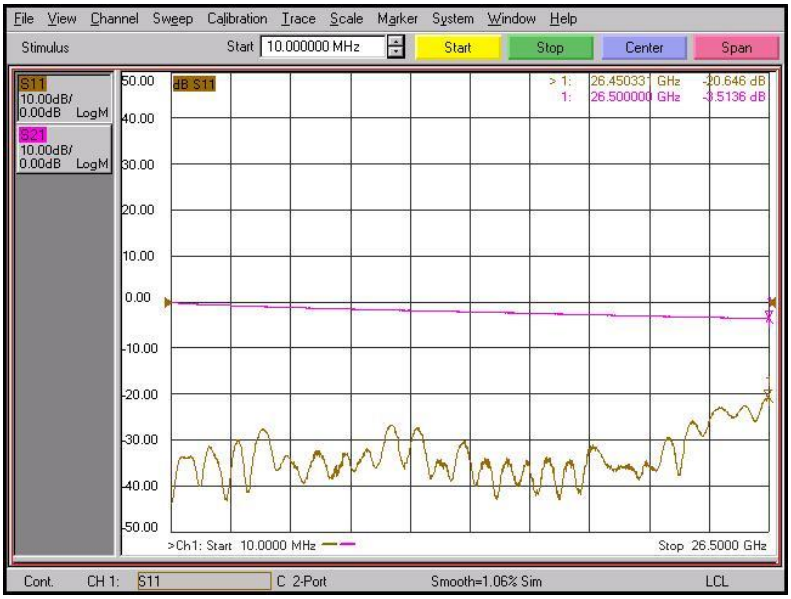
Male type

Part No. : VC06MS001



- Substrate : RO4003C(8 mil)
- Trace length : 70 mm (stripline)

Freq. : 10 MHz to 26.5 GHz

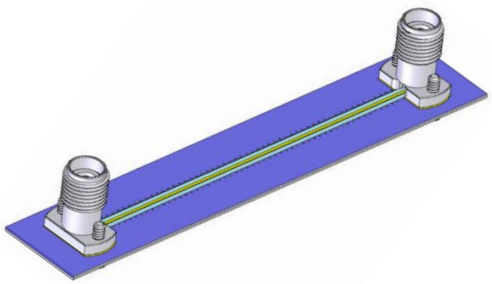


SMA Connector

■ *Test Result (Microstrip type)*

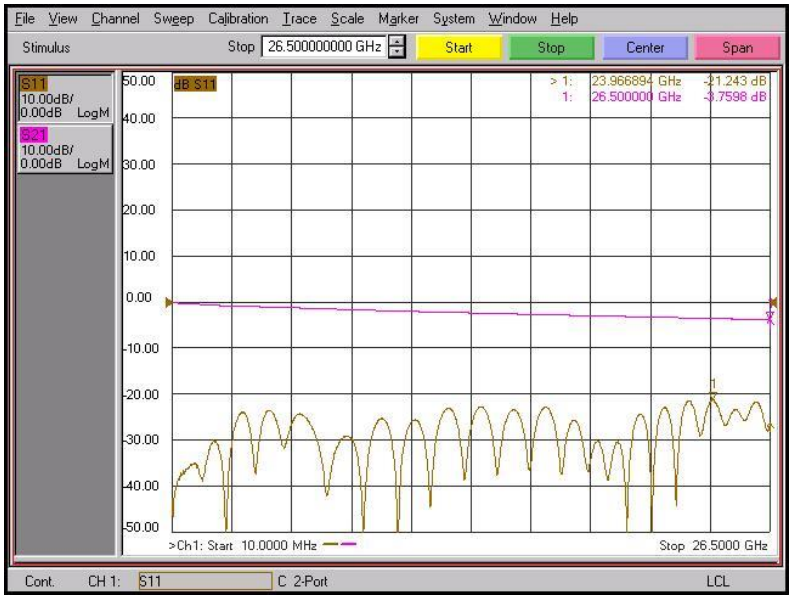
Female type

Part No. : VC06FS002



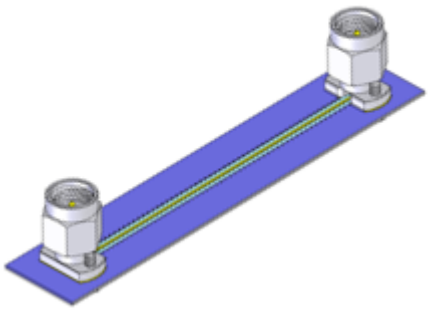
- Substrate : RO4003C(8 mil)
- Trace length : 60 mm (microstrip)

Freq. : 10 MHz to 26.5 GHz



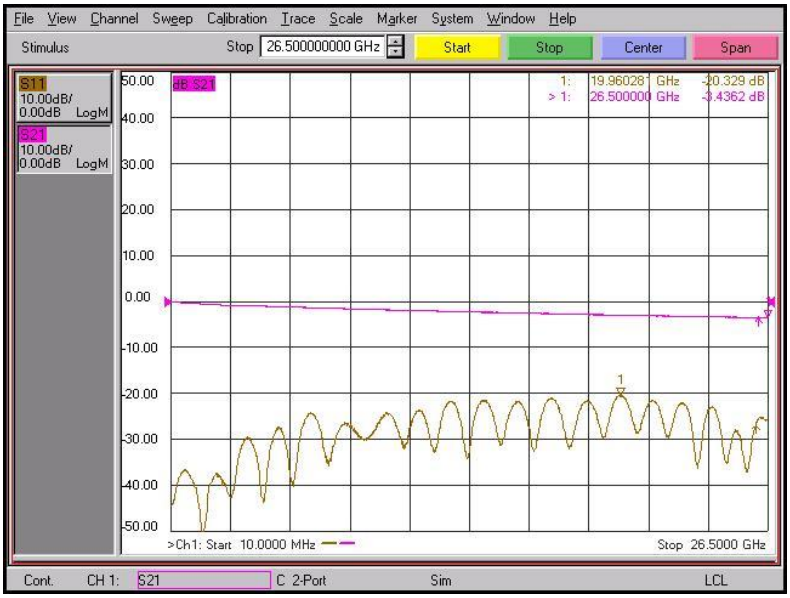
Male type

Part No. : VC06MS002



- Substrate : RO4003C(8 mil)
- Trace length : 60 mm (microstrip)

Freq. : 10 MHz to 26.5 GHz



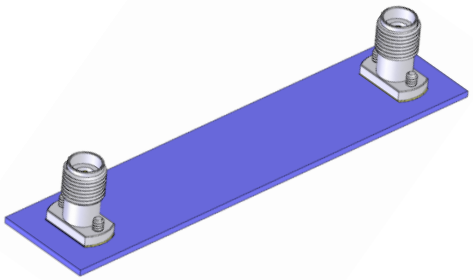
2.92 mm Connector

■ *Test Result (Stripline type)*

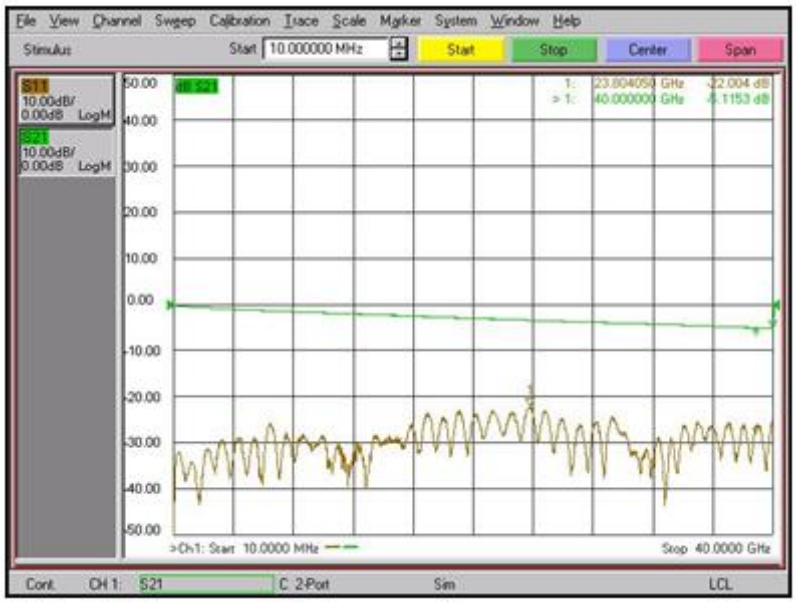
Female type

Part No. : VC03FS001

Freq. : 10 MHz to 40 GHz



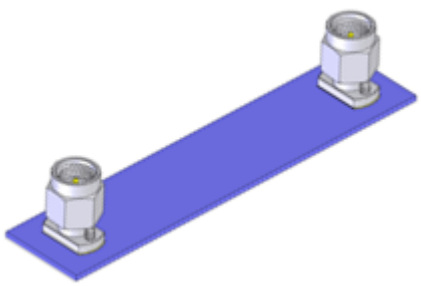
- Substrate : RO4003C(8 mil)
- Trace length : 70 mm (stripline)



Male type

Part No. : VC03MS001

Freq. : 10 MHz to 40 GHz



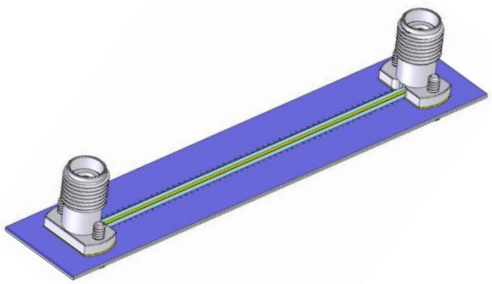
- Substrate : RO4003C(8 mil)
- Trace length : 70 mm (stripline)

2.92 mm Connector

■ *Test Result (Microstrip type)*

Female type

Part No. : VC03FS002

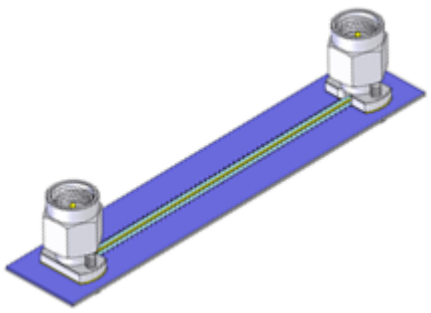


- Substrate : RO4003C(8 mil)
- Trace length : 60 mm (microstrip)

Freq. : 10 MHz to 40 GHz

Male type

Part No. : VC03MS002



- Substrate : RO4003C(8 mil)
- Trace length : 60 mm (microstrip)

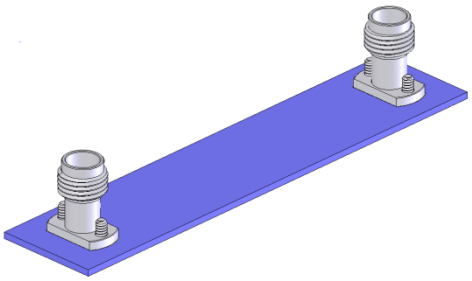
Freq. : 10 MHz to 40 GHz

2.4 mm Connector

■ *Test Result (Stripline)*

Female type

Part No. : VC02FS001

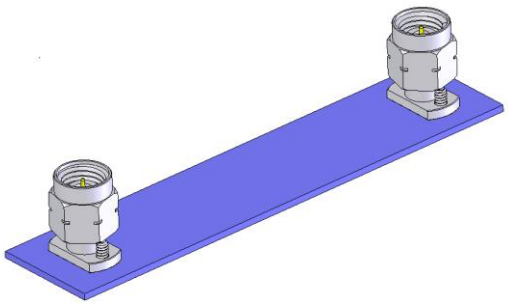


- Substrate : RO4003C(8 mil)
- Trace length : 70 mm (stripline)

Freq. : 10 MHz to 50 GHz

Male type

Part No. : VC02MS001



- Substrate : RO4003C(8 mil)
- Trace length : 70 mm (stripline)

Freq. : 10 MHz to 50 GHz

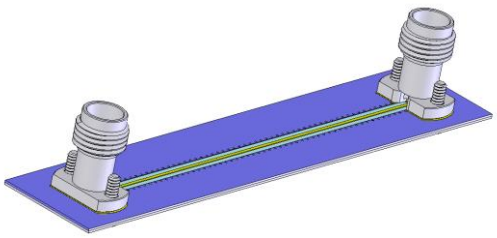
2.4 mm Connector

■ *Test Result (Microstrip type)*

Female type

Part No. : VC02FS002

Freq. : 10 MHz to 50 GHz

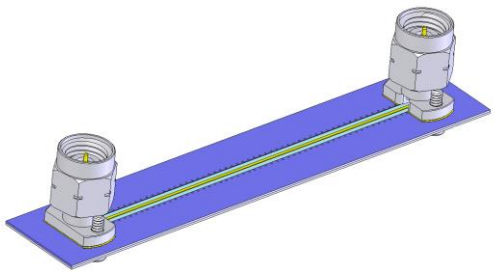


- Substrate : RO4003C(8 mil)
- Trace length : 60 mm (microstrip)

Male type

Part No. : VC02MS002

Freq. : 10 MHz to 50 GHz



- Substrate : RO4003C(8 mil)
- Trace length : 60 mm (microstrip)

1.85 mm Connector

■ *Test Result (Stripline)*

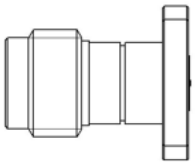
Female type

Part No. : VC01FS001

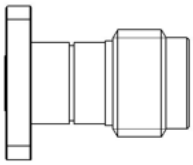
Freq. : 10 MHz to 67 GHz

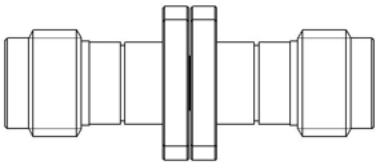
Back to Back Test

Vertical 1.85 mm



Vertical 1.85 mm



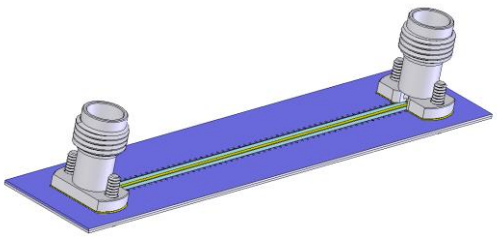


1.85 mm Connector

■ *Test Result (Microstrip type)*

Female type

Part No. : VC01FS002



- Substrate : RO4003C(8 mil)
- Trace length : 60 mm (microstrip)

Freq. : 10 MHz to 67 GHz

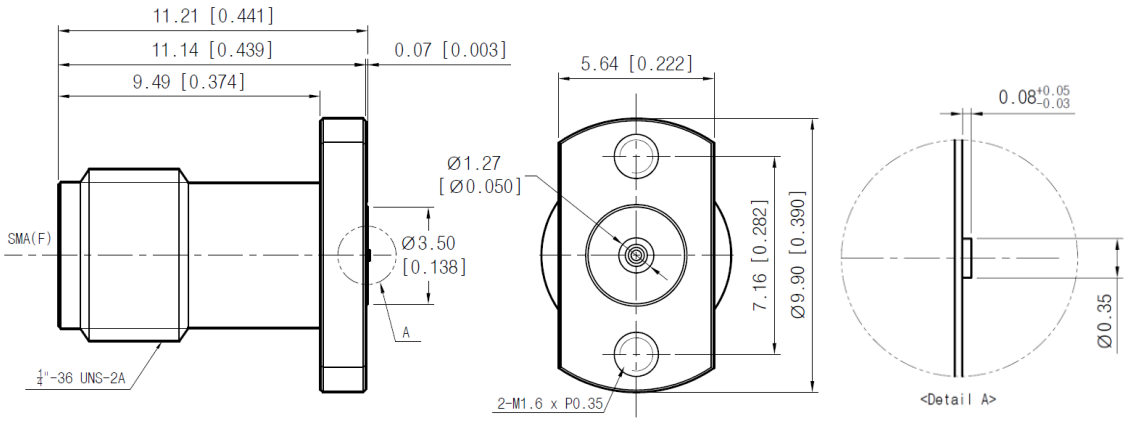
SMA Connector

■ *Drawing*

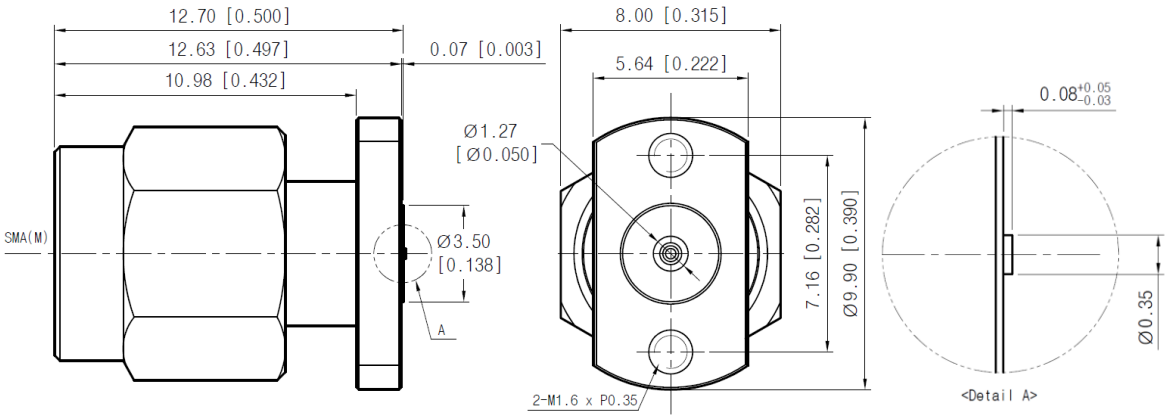
Stripline type

Unit : mm

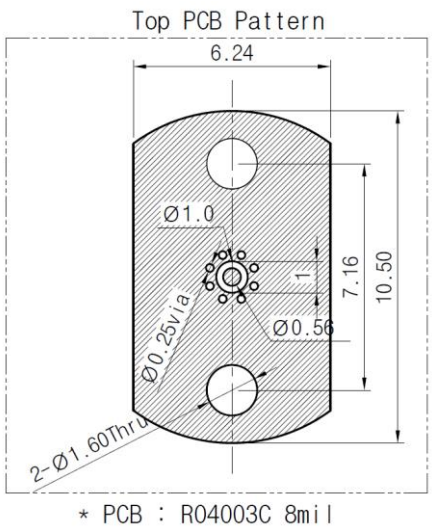
Female type



Male type



<Recommended PCB pattern>



* PCB : RO4003C 8mil

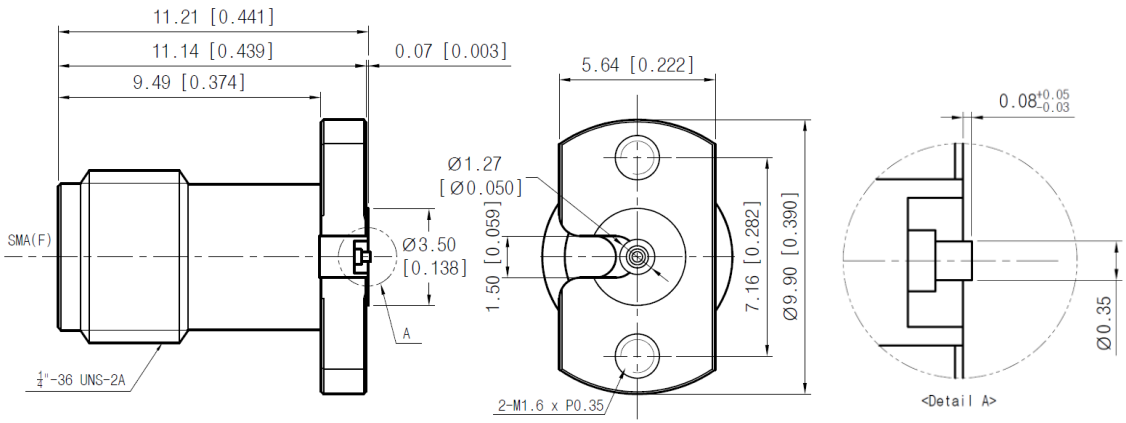
SMA Connector

■ *Drawing*

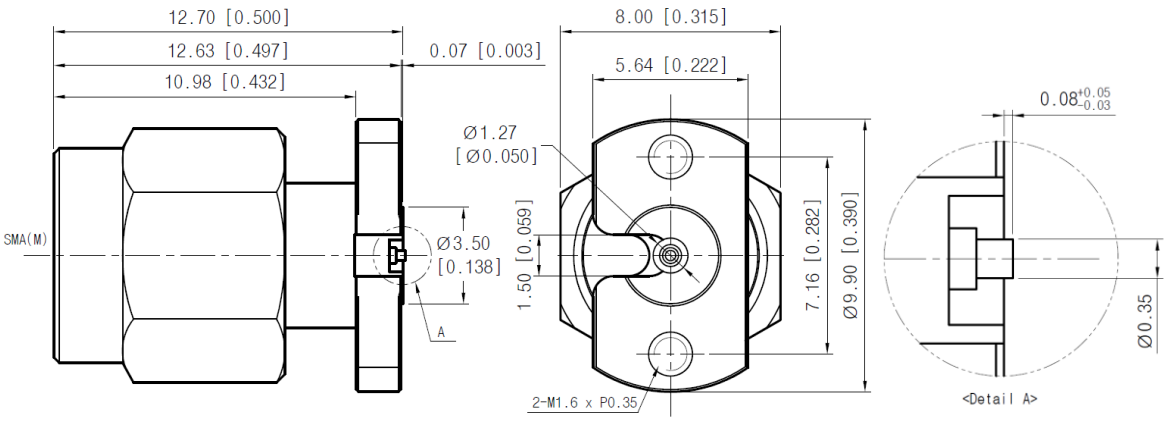
Microstrip type

Unit : mm

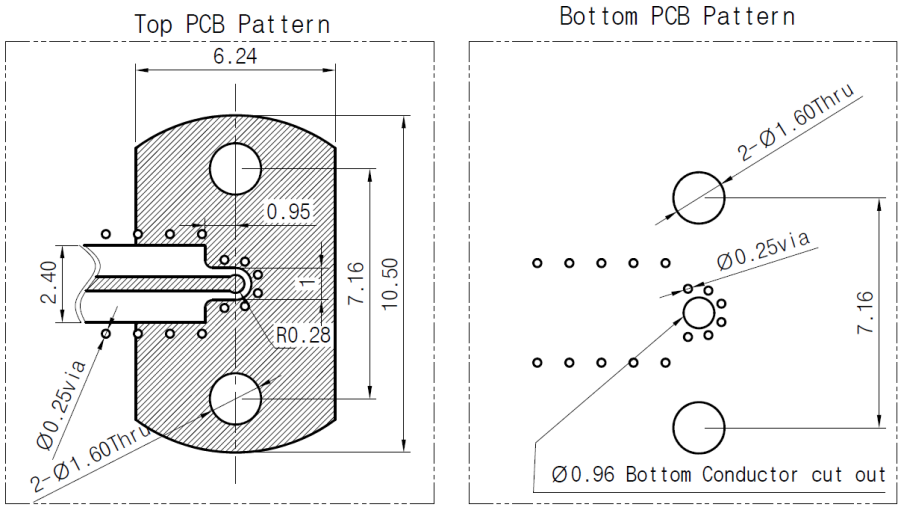
Female type



Male type



<Recommended PCB pattern>



* PCB : RO4003C 8mil

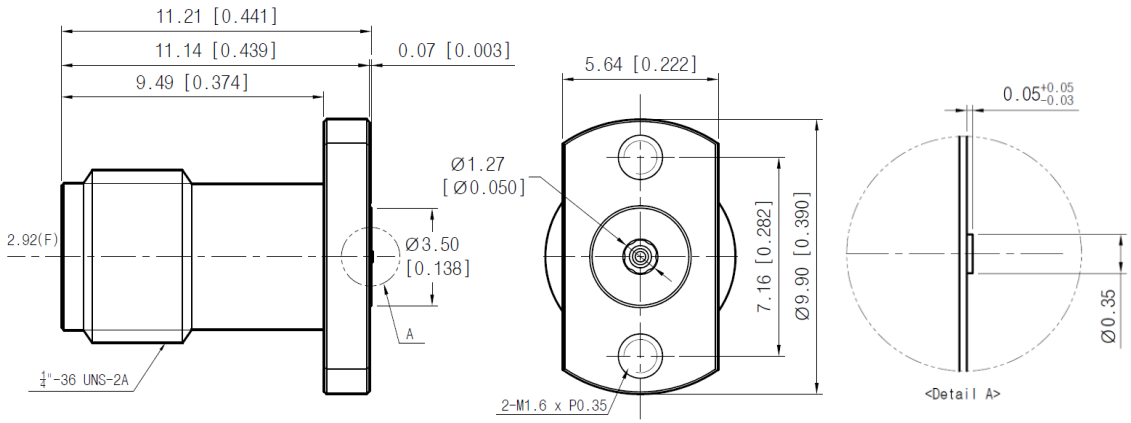
2.92 mm Connector

■ *Drawing*

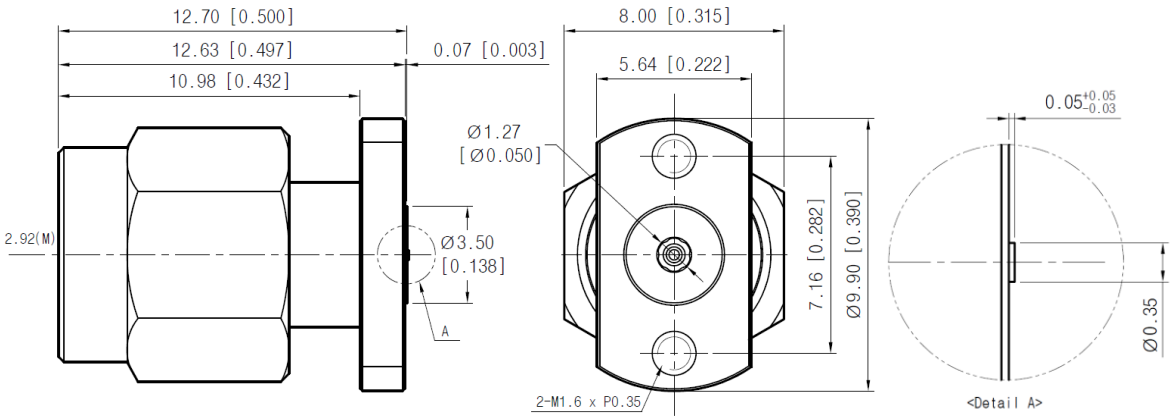
Stripline type

Unit : mm

Female type



Male type



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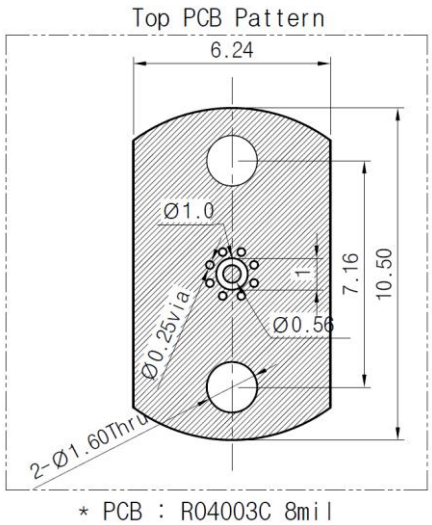


* PCB : RO4003C 8mil

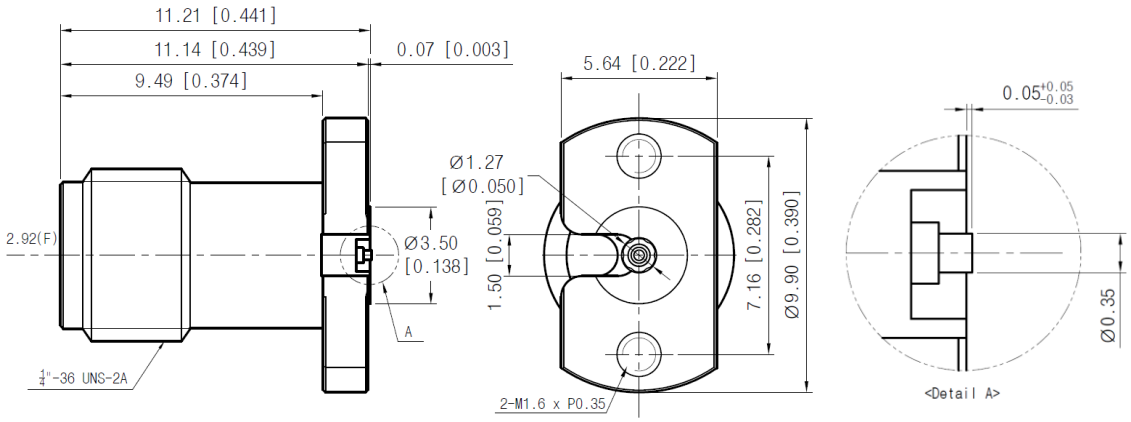
2.92 mm Connector

■ *Drawing*

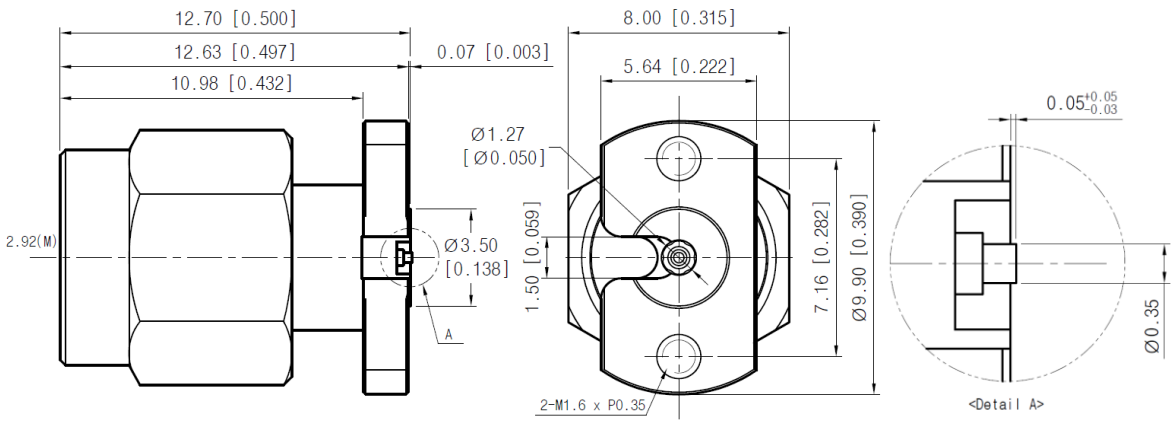
Microstrip type

Unit : mm

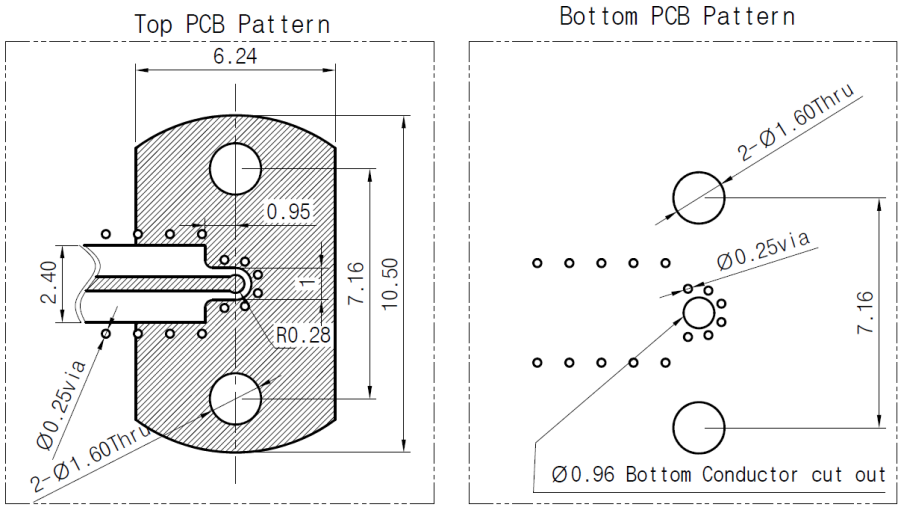
Female type



Male type



<Recommended PCB pattern>



* PCB : R04003C 8mil

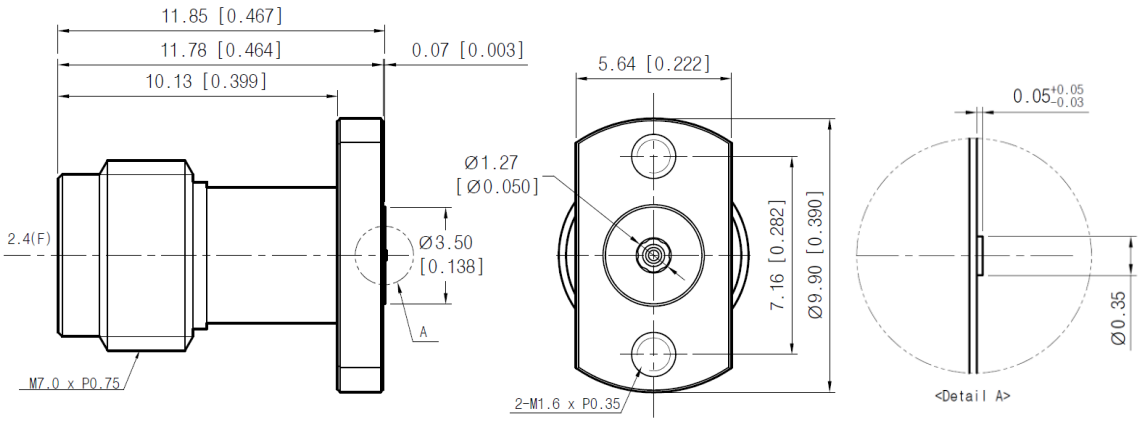
2.4 mm Connector

■ *Drawing*

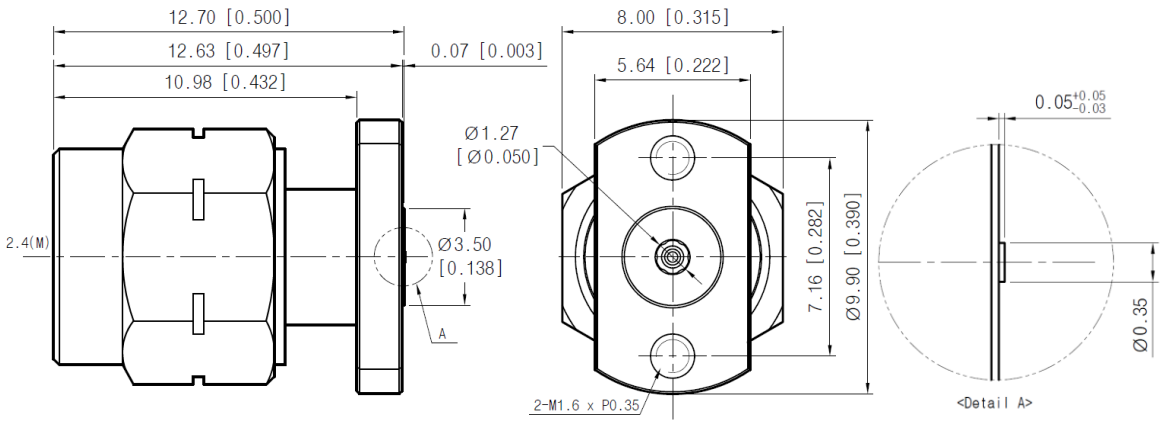
Stripline type

Unit : mm

Female type



Male type



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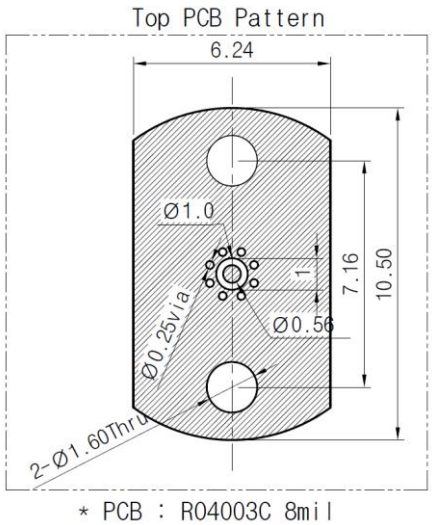


* PCB : RO4003C 8mil

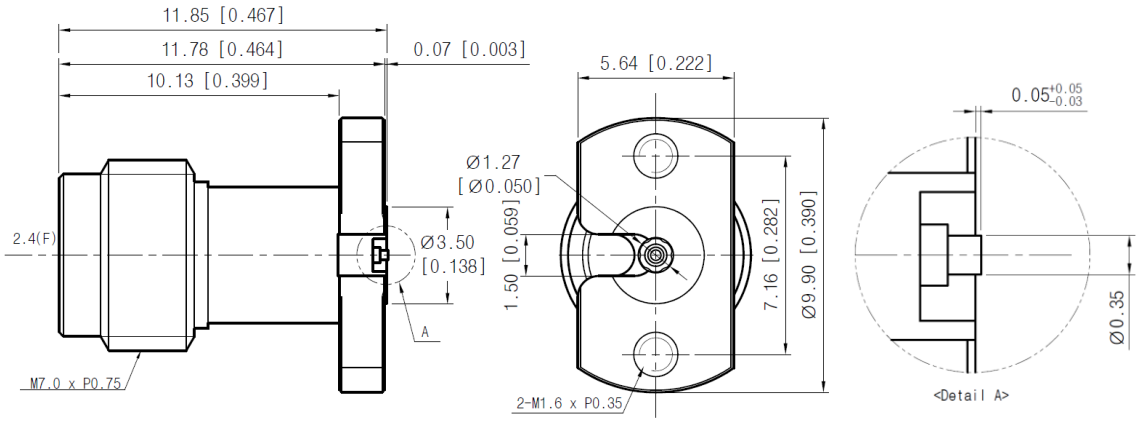
2.4 mm Connector

■ *Drawing*

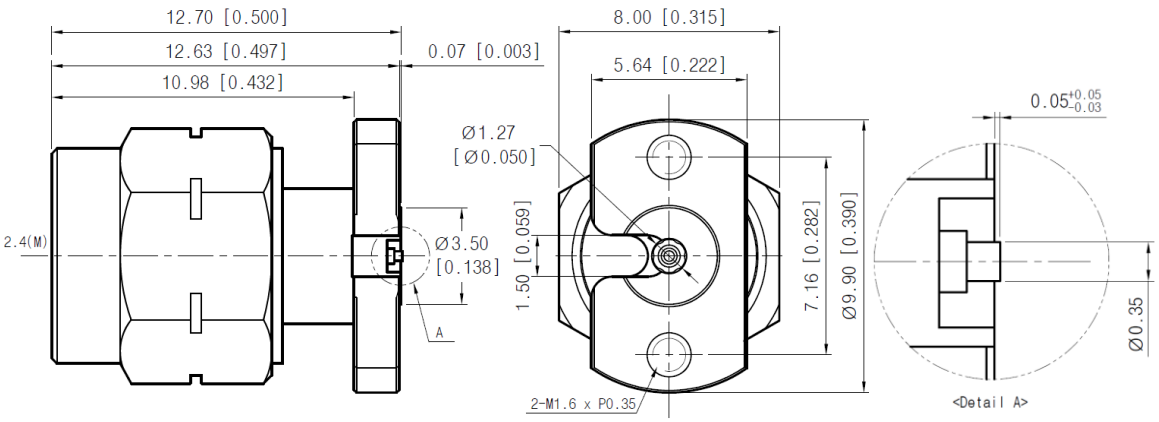
Microstrip type

Unit : mm

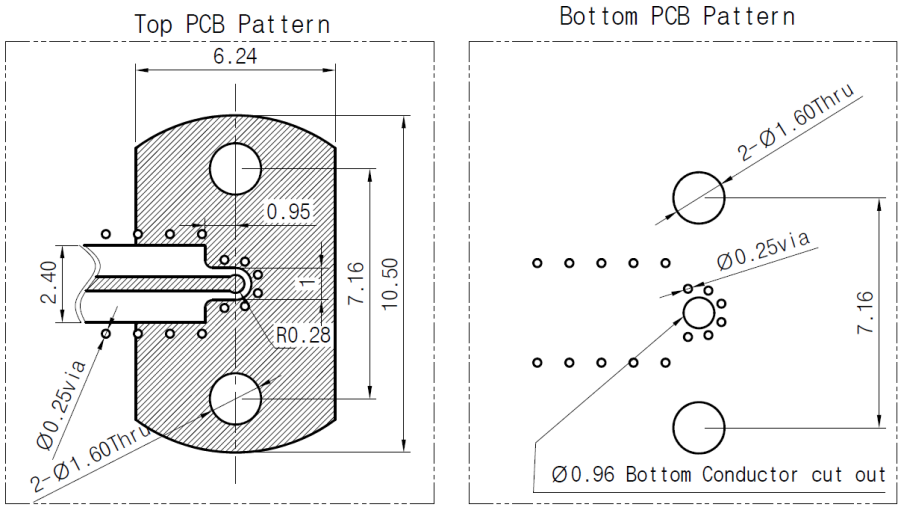
Female type



Male type



<Recommended PCB pattern>



* PCB : R04003C 8mil

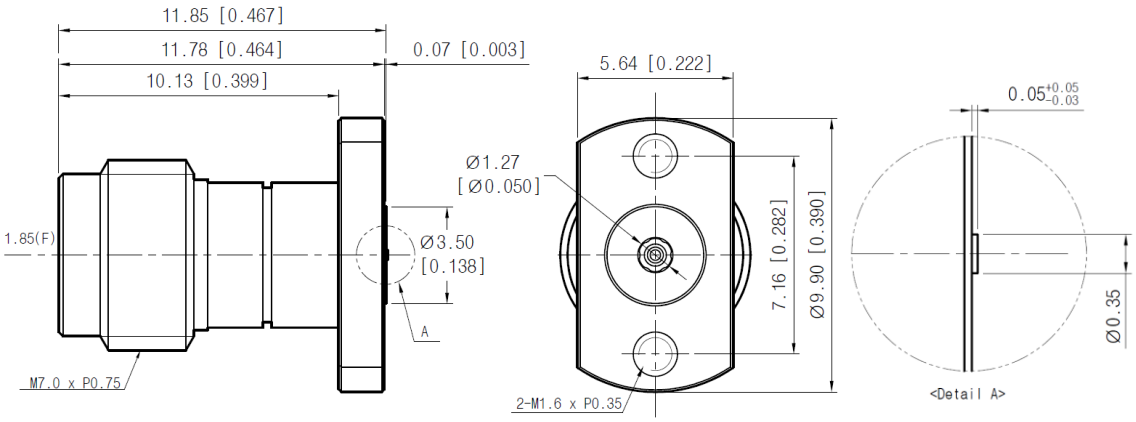
1.85 mm Connector

■ *Drawing*

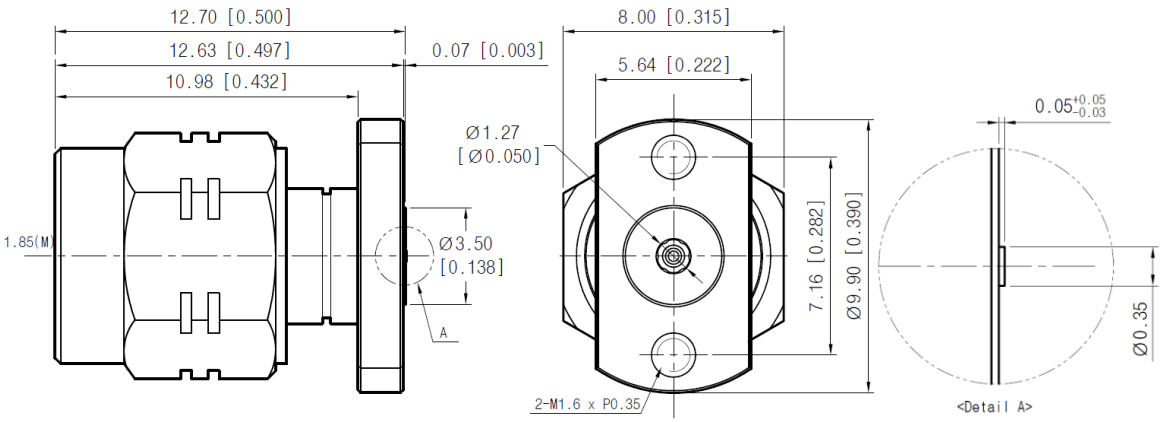
Stripline type

Unit : mm

Female type



Male type



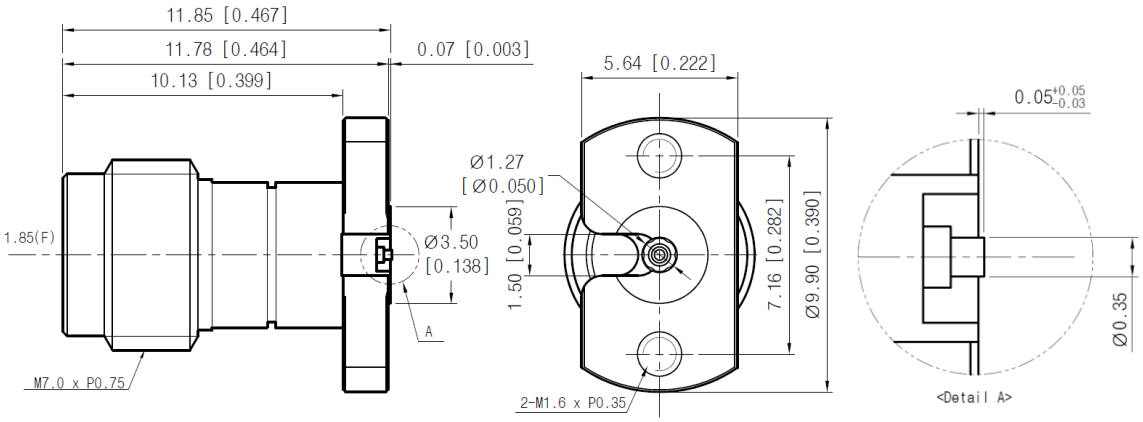
1.85 mm Connector

■ *Drawing*

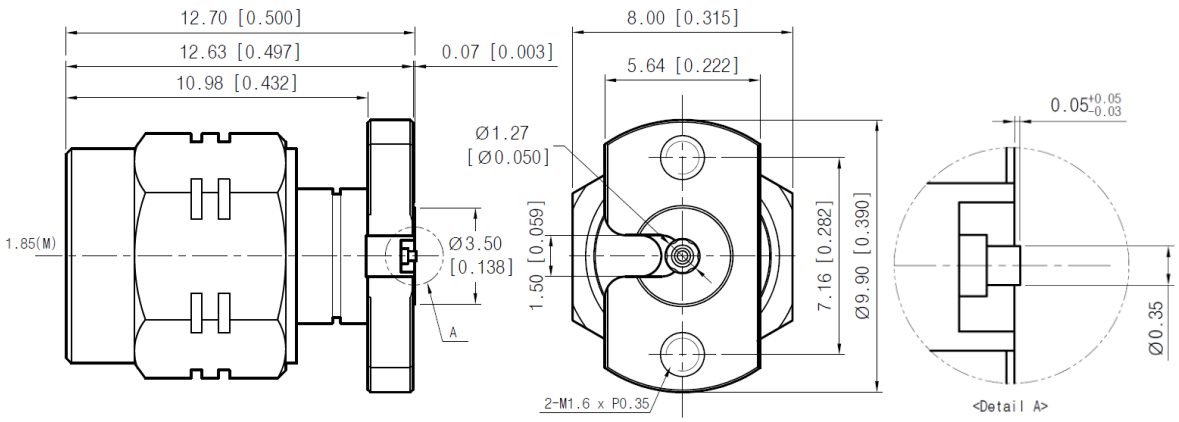
Microstrip type

Unit : mm

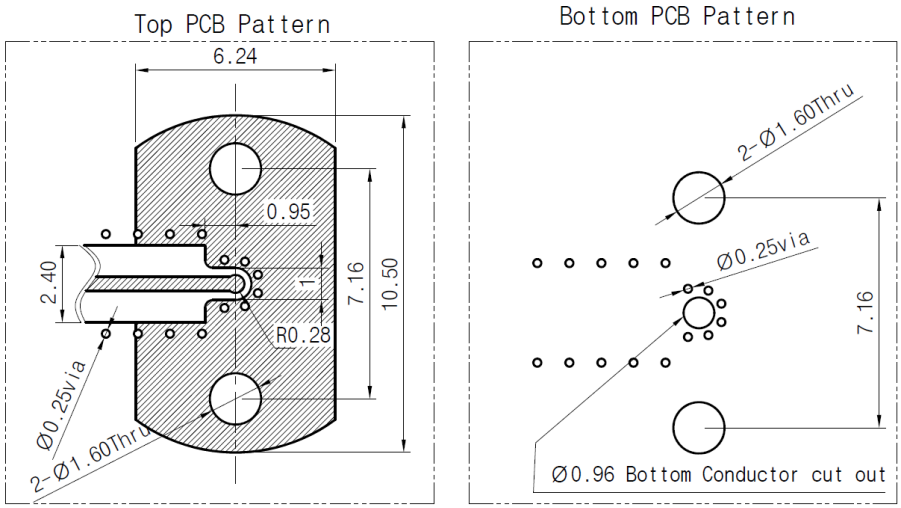
Female type



Male type



<Recommended PCB pattern>



* PCB : R04003C 8mil

Revision History

Revision	Date	Changes
Ver 1.1	2017-06-30	Changed Test result for Stripline type
Ver 2.0	2017-07-28	Add Vertical Launch 2.92 mm Connectors
Ver 2.1	2017-10-12	Updated Recommended PCB pattern
Ver 2.2	2018-01-02	Updated Drawing
Ver 3.0	2018-02-27	Add Vertical Launch SMA connectors
Ver 3.1	2018-05-24	Add installation procedure for Stripline type
Ver.4.0	2019-02-14	Add Vertical Launch 1.85 mm Connectors
Ver 5.0	2020-03-01	Add Design Assistance for ANSYS HFSS 3D model
Ver 5.1	2020-05-07	Updated drawings