

**Withwave's Board Edge 2.92 mm** connectors are specially designed for high frequency substrates to minimize electromagnetic transition effects from coaxial to Microstrip/CPW structure. We solve your performance and cost problems.



### ■ Features

- DC to 40 GHz
- Board Clearance : 0.6, 0.8, 1.0, 1.1, 1.2, 1.5, 1.6, 1.7, 2.1, 2.3 & 3.6 mm
- Easy Installation on designed substrate

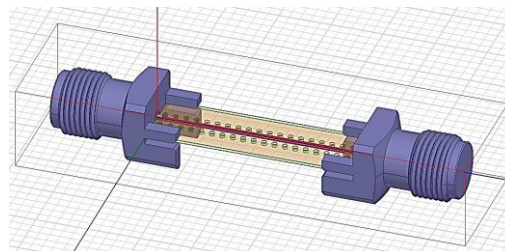
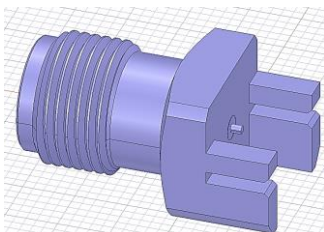
### ■ Application

- 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

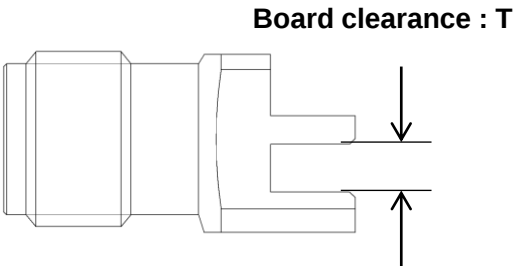


■ Specification

| Scope      | Items          | Specification                          |
|------------|----------------|----------------------------------------|
| Electrical | Freq. range    | DC to 40 GHz                           |
|            | Impedance      | 50 Ohm                                 |
|            | VSWR(Max)      | 1.20 : 1 (30 GHz)<br>1.40 : 1 (40 GHz) |
| Material   | Connector type | 2.92 mm(Female)                        |
|            | Body           | Brass (gold pated)                     |
|            | Contact        | BeCu (gold plated)                     |

\* RoHS Compliant

■ Ordering Information



| Board Clearance<br>(T : mm) | Part No.  |
|-----------------------------|-----------|
| 0.6                         | SM03FS007 |
| 0.8                         | SM03FS008 |
| 1.0                         | SM03FS009 |
| 1.1                         | SM03FS010 |
| 1.2                         | SM03FS011 |
| 1.5                         | SM03FS012 |
| 1.6                         | SM03FS013 |
| 1.7                         | SM03FS014 |
| 2.1                         | SM03FS015 |
| 2.3                         | SM03FS016 |
| 3.6                         | SM03FS017 |

### ■ Installation Procedure

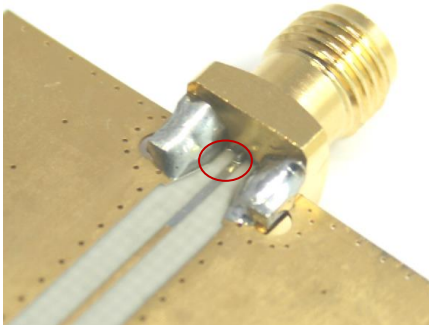
#### STEP 1 :

Insert Board Edge 2.92 mm connector at the edge position of substrate.



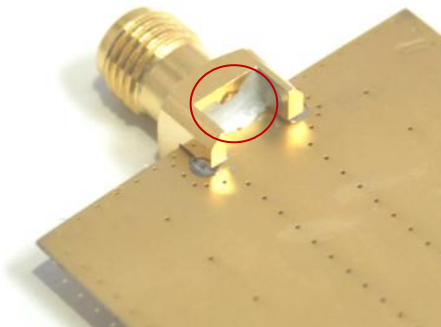
#### STEP 2 :

Make sure contact pin is aligned with the center of the signal trace. and, solder contact pin on the signal trace and two legs on the ground plane while ensuring the connector is held in the correct position.



#### STEP 3 :

Solder two legs and connector body on the back side of substrate (ground plane) to improve RF performance. Remove any excess solder and clean all flux and other residues from trace area.



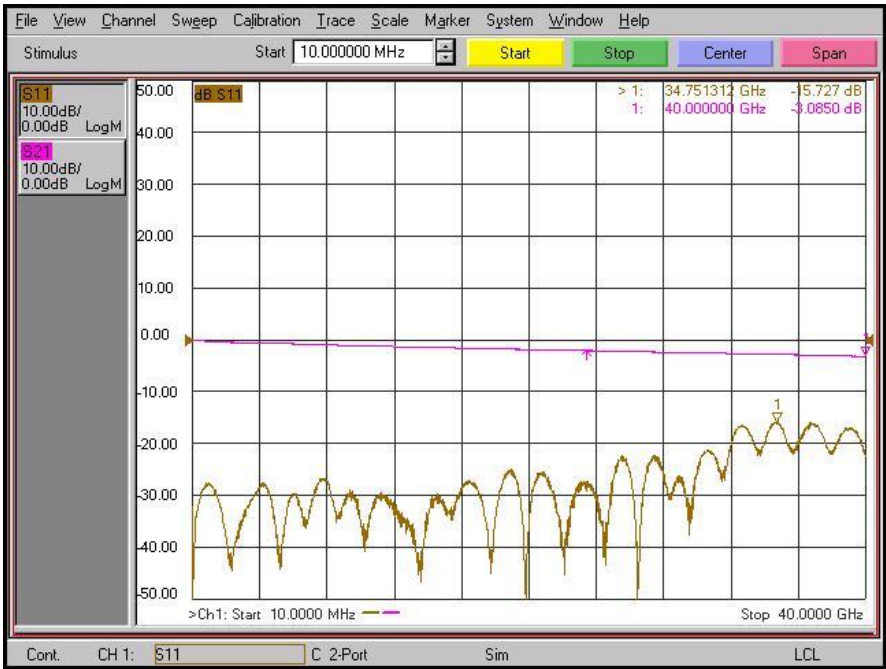
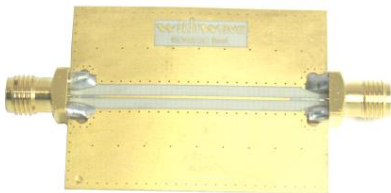
Measurement data

Microstrip type

Freq. : 10 MHz to 40 GHz

Substrate : RO4003C (8 mil)

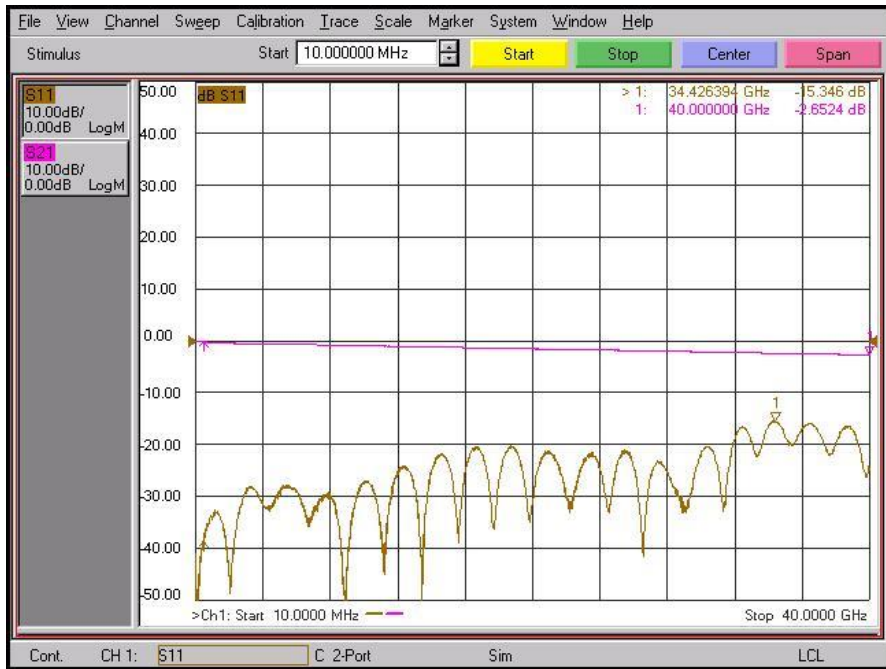
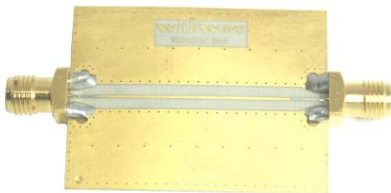
Part No. : SM03FS007



Freq. : 10 MHz to 40 GHz

Substrate : RO4003C (12 mil)

Part No. : SM03FS007



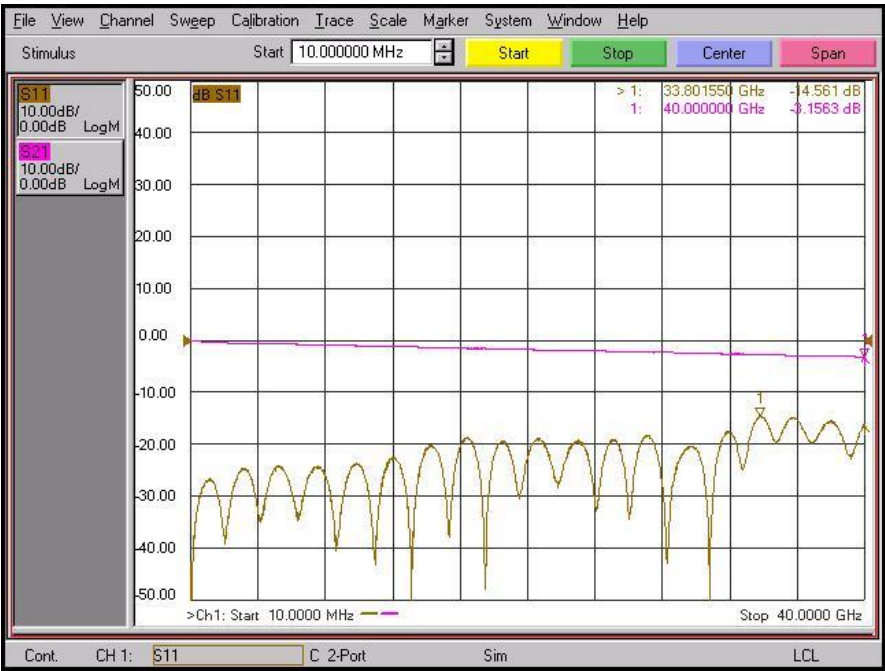
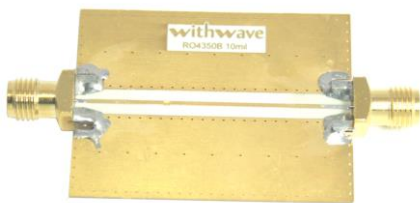
Measurement data

Microstrip type

Freq. : 10 MHz to 40 GHz

Substrate : RO4350B (10 mil)

Part No. : SM03FS007



Freq. : 10 MHz to 40 GHz

Substrate : Du5880 (5 mil)

Part No. : SM03FS007



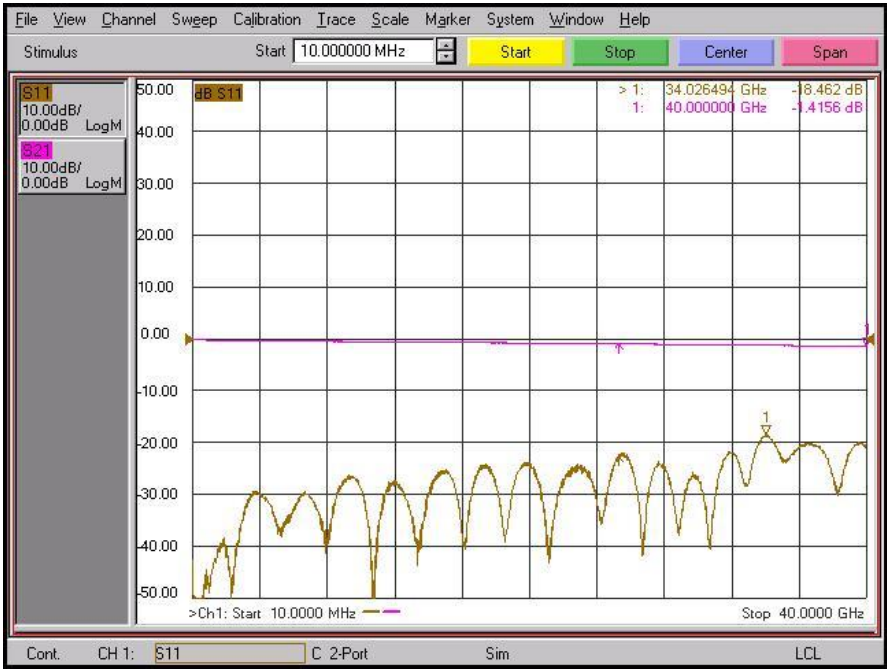
■ Measurement data

Microstrip type

Freq. : 10 MHz to 40 GHz

Substrate : Du5880 (10 mil)

Part No. : SM03FS007



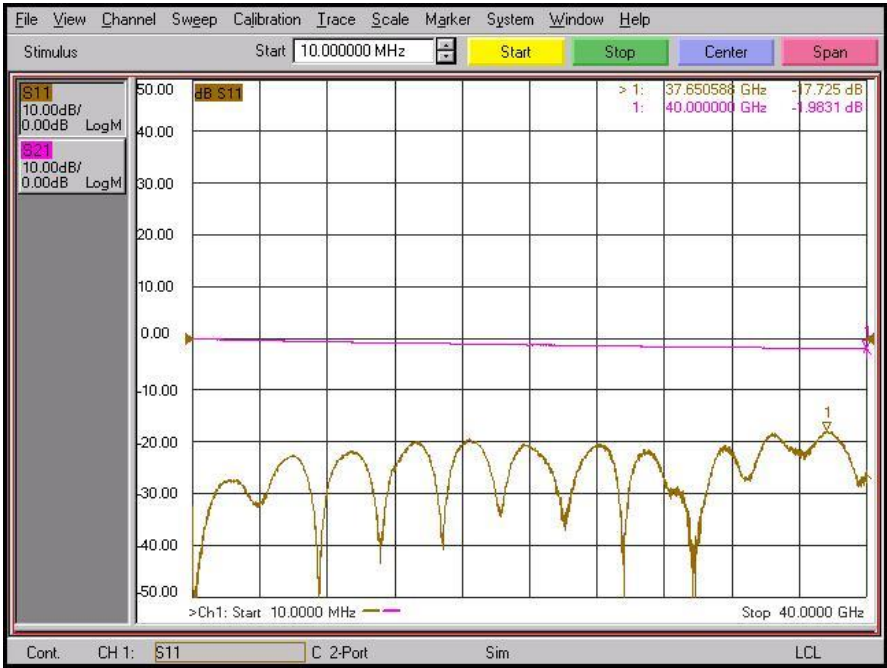
Measurement data

Top Ground Microstrip type

Freq. : 10 MHz to 40 GHz

Substrate : RO4003C (8 mil)

Part No. : SM03FS007

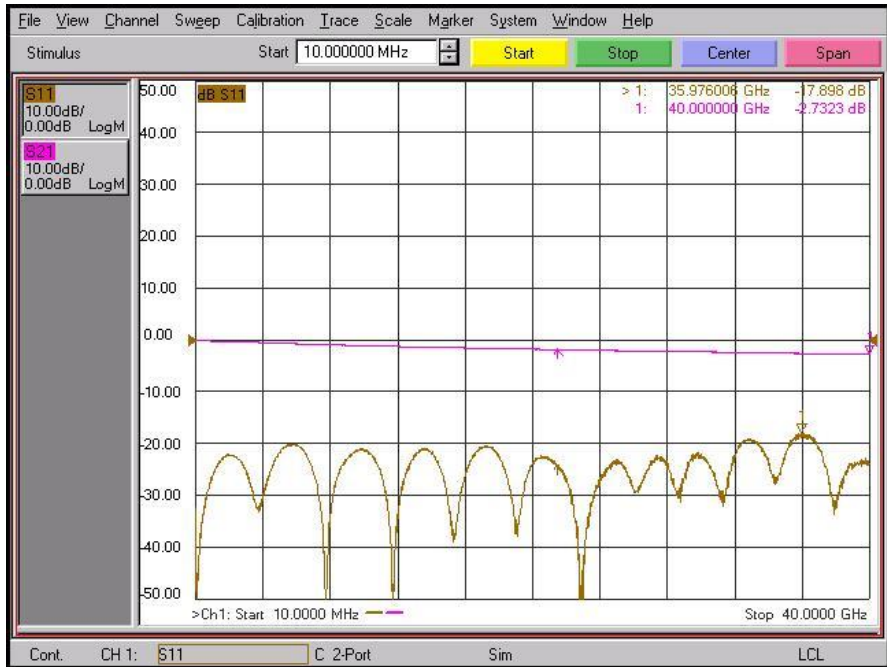


GCPWG type

Freq. : 10 MHz to 40 GHz

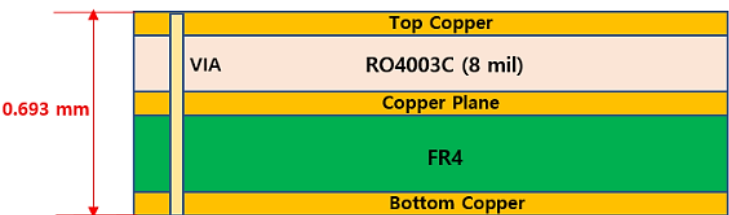
Substrate : RO4003C (8 mil)

Part No. : SM03FS007



Measurement data

Multilayer PCB (RO4003C 8 mil + FR4)



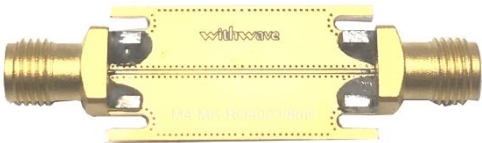
RO4003C (8 mil)  
FR4

GCPWG type

Freq. : 10 MHz to 40 GHz

Substrate : RO4003C (8 mil)+FR4

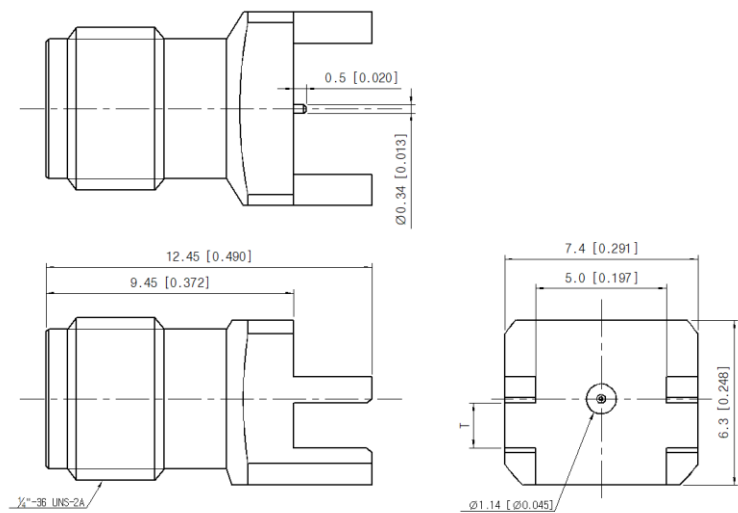
Part No. : SM03FS007



■ Drawing

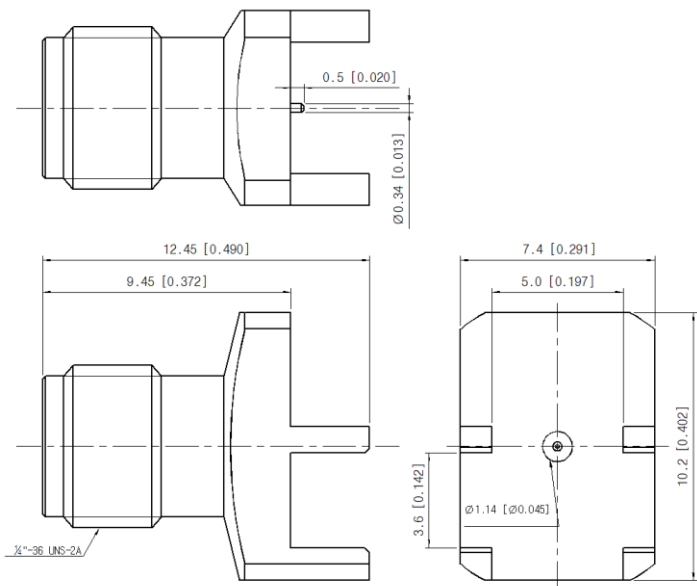
Unit : mm

| Board Clearance<br>(T : mm) | Part No.  |
|-----------------------------|-----------|
| 0.6                         | SM03FS007 |
| 0.8                         | SM03FS008 |
| 1.0                         | SM03FS009 |
| 1.1                         | SM03FS010 |
| 1.2                         | SM03FS011 |
| 1.5                         | SM03FS012 |
| 1.6                         | SM03FS013 |
| 1.7                         | SM03FS014 |
| 2.1                         | SM03FS015 |
| 2.3                         | SM03FS016 |



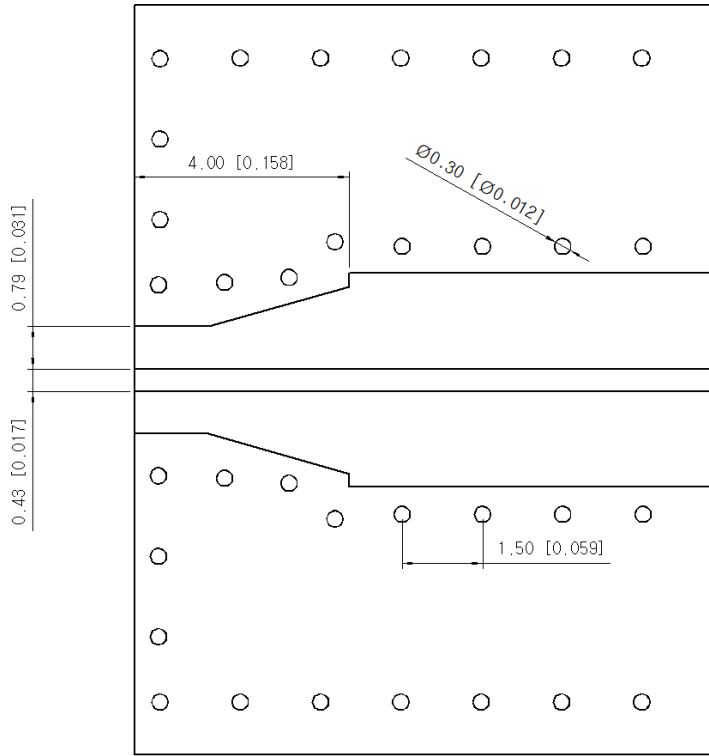
Unit : mm

| Board Clearance<br>(T : mm) | Part No.  |
|-----------------------------|-----------|
| 3.6                         | SM03FS017 |

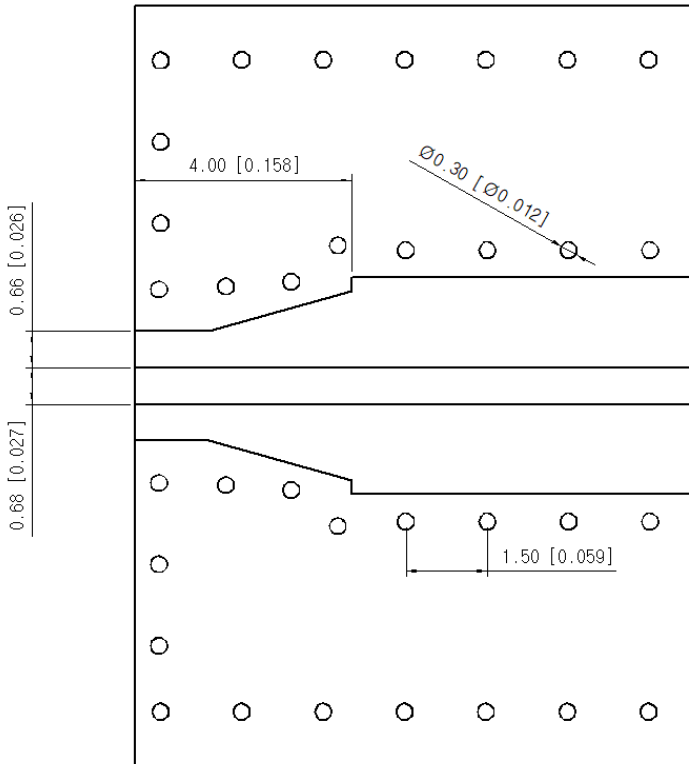


■ Recommended Patten

RO4003C 8 mil  
Microstrip type

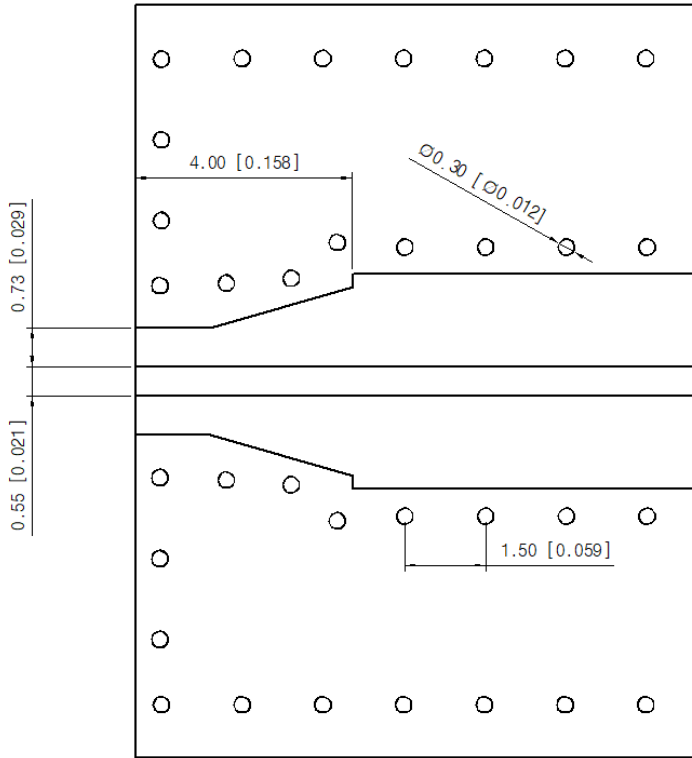


RO4003C 12 mil  
Microstrip type

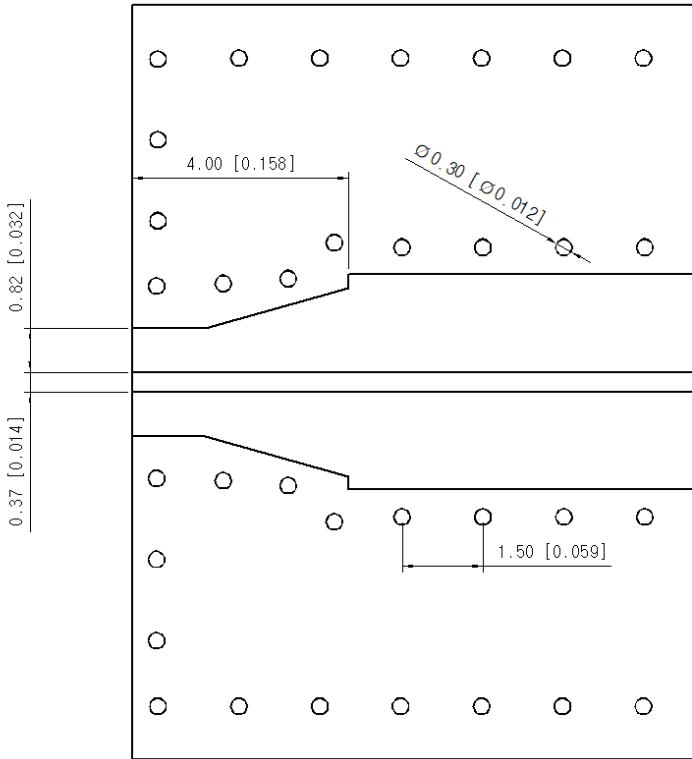


■ Recommended Patten

**RO4350B 10 mil  
Microstrip type**

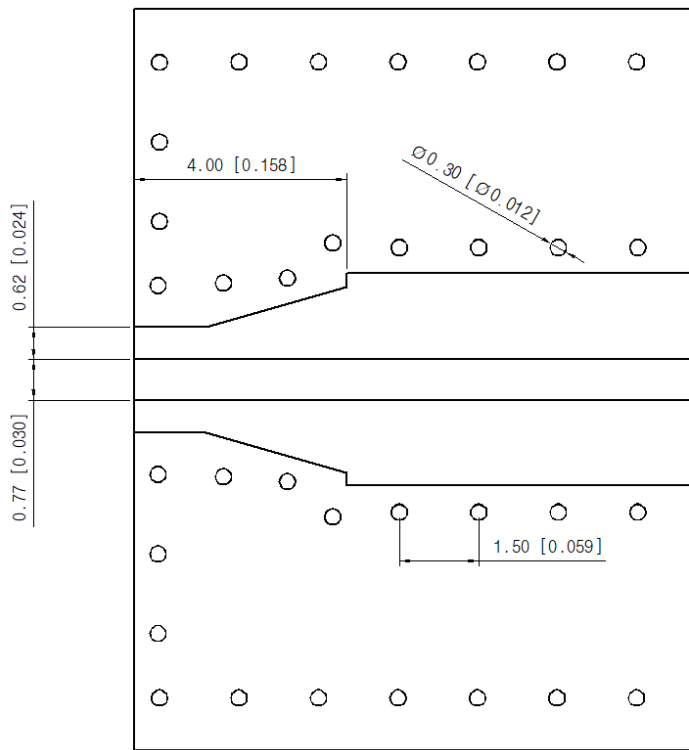


**Du5880 5 mil  
Microstrip type**



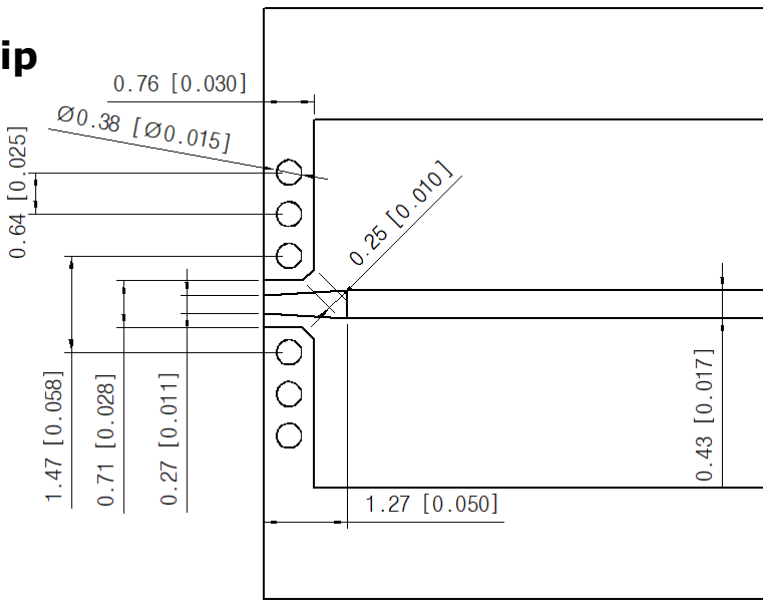
■ Recommended Patten

Du5880 10 mil  
Microstrip type

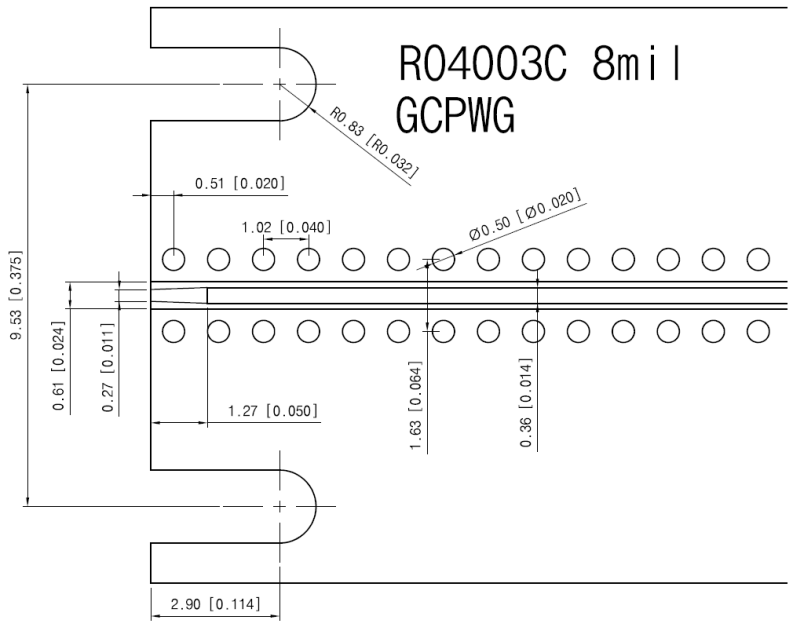


■ Recommended Patten

RO4003C 8 mil  
Top Ground Microstrip



RO4003C 8 mil  
GCPWG



■ Revision History

| Revision | Date       | Changes                                                  |
|----------|------------|----------------------------------------------------------|
| Ver 1.0  | 2018-11-15 | Release Board Edge 2.92 mm Connectors                    |
| Ver 1.1  | 2019-12-03 | Revised drawing                                          |
| Ver 1.2  | 2020-03-01 | Add Design Assistance for ANSYS HFSS 3D Simulation model |
| Ver 1.3  | 2020-11-05 | Add Test Result on Multilayer PCB                        |