

Solderless Compression Mount type, solderless probe-type and Edge-Launch connectors are among the most widely choices for high-speed digital component testing and test and measurement today. Focusimple offers a wide range of PCB solderless connectors in a variety of configurations, and has been in the microwave industry for over 10 years, designed to provide the lowest VSWR solution for single and multi-layer microstrip or grounded coplanar PCBs, with a modeless wide response up to 110 GHz.

These termination End Launch connectors feature a unique two-piece bottom fixture that accommodates board thicknesses up to 300 mil (7.62mm) for effective grounding between the connector and the PCB. The connector pins are designed to mate with the board trace, eliminating the need for soldering. The combination of the bottom fixture and solderless pins provides for easy removal and reuse.

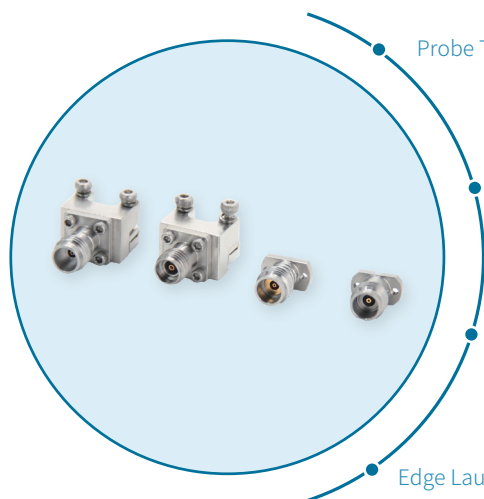
■ Features & Benefits

- Easy to install and remove, diverse optional types
- Low VSWR, low insertion loss
- Rugged & durable
- Excellent repeatability

■ Application

- Test & measurement
- Research & development
- High-speed digital component testing
- Precision PCB board thin base material interconnection installation

■ Product type



Probe Type: Stripline, vertical installation.

- When in contact with the PCB sheet, the centre conductor elastically retracts to ensure the integrity of the contact surface of the PCB sheet, resulting in more stable product performance.

Compression Mount Type: Stripline, vertical installation.

- Robust mechanical construction, especially suitable for thicker and harder plates;
- Stable RF signal transmission, an efficient and economical solution for stripline connections.

Compression Mount Type: Microstrip line, vertical installation.

- Robust mechanical construction, especially suitable for thicker and harder plates;
- Stable RF signal transmission, an efficient and economical solution for Microstrip line connections.

Edge Launch Type: Microstrip line, Edge panel mounting.

- Mounting at the edge of the PCB;
- Signal transfer traces of connector inner conductor is co-linear with the PCB signal transfer;
- Suitable for high frequency operation.

■ Solderless PCB Connectors at a Glance

		1.0	1.85	2.4	2.92
Frequency		DC ~ 110 GHz	DC ~ 67 GHz	DC ~ 50 GHz	DC ~ 40 GHz
Probe Type	Probe Type - Stripline - Vertical Installation		●	●	●
Standard	Compression Mount Type- Stripline- Vertical Installation	●	●	●	●
	Compression Mount Type- Microstrip - Vertical Installation	●	●	●	●
	Edge Launch Type- Microstrip Line- Edge Panel Mounting		●	●	●

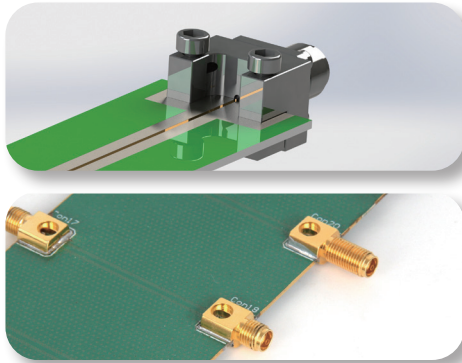
■ Specifications

Electrical Specifications	
Impedance	50 Ohms
Mechanical Specifications	
Mechanical durability (times)	≥ 500
Enviromental Specifications	
Temperature Range	-55°C ~ 85°C

Material / Structure	
Component	Material
Inner conductor	Beryllium copper C17300/gold plated
Main body	Stainless steel/passivation
Tail-board	Brass/Ternary Alloy
Insulator	PTFE/PEI

■ Background

- ① While traditional RF PCB connectors require solder to be applied to the PCB, FS offers a full range of solderless PCB connectors that are easier and quicker to install and remove in use.



Solderless PCB connectors

- Reusable, easy to replace, low total cost;
- Easy to adjust;
- Easy to install;

- ② PCB solderless connectors can typically be mounted anywhere on the top of the board and provide a smooth transition to microstrip or stripline signal paths. Focusimple offers two types of PCB solderless connectors: standard Compression Mount PCB solderless connectors and Probe Type PCB solderless connectors.

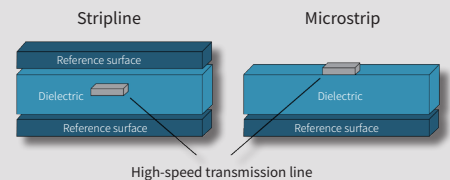
What is Microstrip & Stripline?

Stripline

- A type of transmission line that consists of a conductor sandwiched between two ground planes, all embedded within a dielectric material
- Excellent external EMI shielding
- Thicker and more difficult to manufacture

Microstrip

- A type of transmission line that consists of a single conducting strip separated from a ground plane by a dielectric layer
- More susceptible to external electromagnetic interference
- Easier to manufacture and cost-efficient



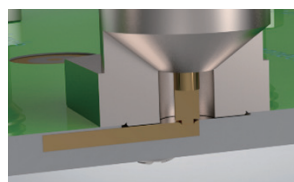
NOTE

Compression Mount

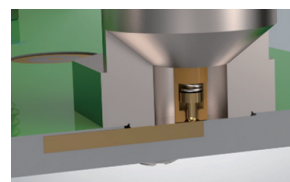
- Focusimple Compression Mount Connectors boast a sturdy mechanical build and excellent RF performance. They provide a budget-friendly solution for diverse PCB application, particularly suited for scenarios utilizing denser, harder PCB materials.

Probe-Type

- Probe-type PCB solderless connectors address issues associated with attaching to soft high-frequency dielectric materials. Unlike standard Compression Mount connectors with fixed center pins, which can distort traces and cause damage, Probe Type connectors use a spring pin design. This design retracts the contacts into the connector housing, safeguarding the PCB from harm. This is particularly crucial for thin substrates under 10 mils thickness, where unwanted impedance changes could significantly impair RF performance.



Compression Mount



Probe-Type

* Frequently Asked Questions (FAQs) : Which is better, Compression Mount or Probe Type?

Neither Compression Mount nor Probe Type is inherently better than the other. The choice between the two depends on the specific requirements of the application. Compression Mount offer excellent durability and repeatability, making them suitable for ruggedized applications. Probe-type, with its harmless structure and signal integrity, is a versatile choice for high frequency soft applications.

③ Edge Launch vs. Vertical launch

Edge Launch Connectors

- Edge Launch Connectors are named for their location on the board, as they are mounted to the edge of the PCB. As shown in Figure 1, the transmission line of an Edge Launch Connector is colinear to the axis of the PCB trace.

Vertical launch connector

- As for vertical launch connector, the transmission path is at a right angle, as shown in Figure 7. The direct signal path in an Edge Launch Connector typically means that it's able to operate at higher RF frequencies, without unwanted modes affecting RF performance.

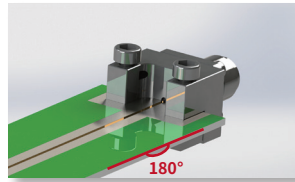


Figure 1: Straight signal path from the back of the connector to the PCB trace.

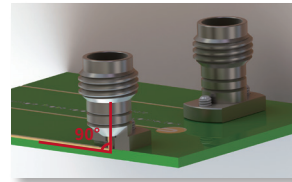


Figure 2: The signal path travels at right angle to the PCB trace.

■ Schematic diagram

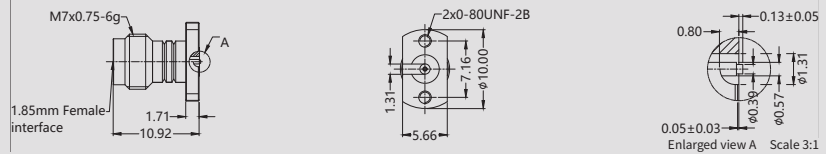
Solderless - Compression Mount Type - Vertical installation - Stripline

PM-29F-G P/N: 04-FP007 DC ~ 40 GHz VSWR ≤ 1.30			<p>Enlarged view A Scale 3:1</p>
PM-24F-G P/N: 05-FP008 DC ~ 50 GHz VSWR ≤ 1.30			<p>Enlarged view A Scale 3:1</p>
PM-18F-B P/N: 06-FP002 DC ~ 67 GHz VSWR ≤ 1.30			<p>Enlarged view A Scale 3:1</p>
PM-10F-FL2-B P/N: 68-FP008 DC ~ 110 GHz VSWR ≤ 1.45			<p>Enlarged view A Scale 3:1</p>

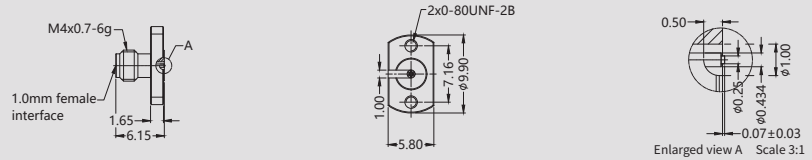
Solderless - Compression Mount Type - Vertical installation - Microstrip line

PM-29F-A P/N: 04-FP001 DC ~ 40 GHz VSWR ≤ 1.30			<p>Enlarged view A Scale 3:1</p>
PM-24F-FL2-F P/N: 05-FP021 DC ~ 50 GHz VSWR ≤ 1.30			<p>Enlarged view A Scale 3:1</p>

DC ~ 67 GHz VSWR \leq 1.30

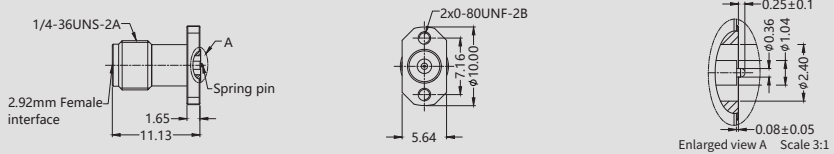


DC ~ 110 GHz VSWR \leq 1.45

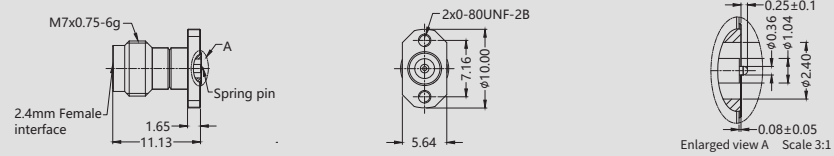


Solderless - Probe Type - Vertical installation- Stripline

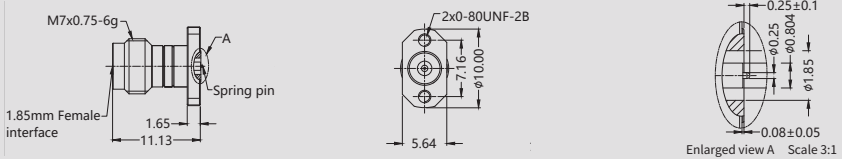
DC ~ 40 GHz VSWR \leq 1.30



DC ~ 50 GHz VSWR \leq 1.30

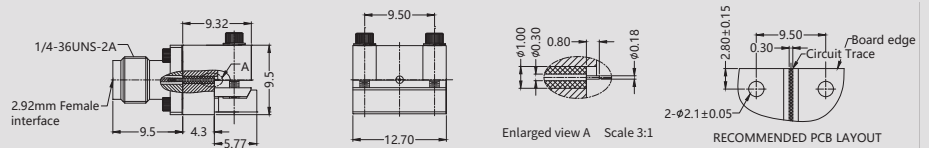


DC ~ 67 GHz VSWR \leq 1.30

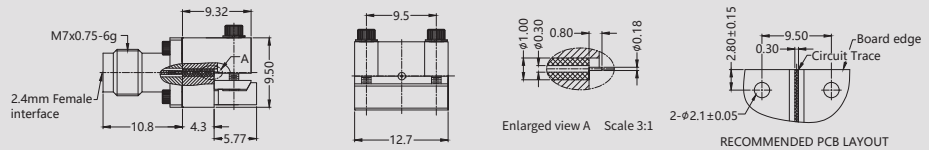


Solderless-Edge Launch Type-Edge panel mounting-Microstrip line

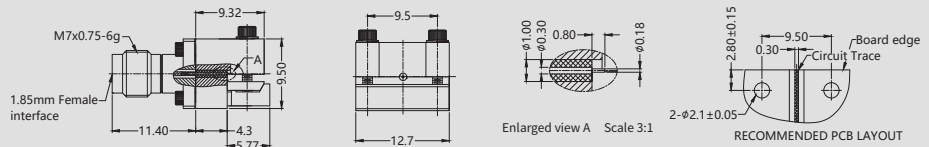
DC ~ 40 GHz VSWR \leq 1.30



DC ~ 50 GHz VSWR \leq 1.30



DC ~ 67 GHz VSWR \leq 1.30



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