

SELECTION GUIDE

1.00 mm
RF Connectors

DC to 110 GHz precision connector solutions for PCB launch, solderless validation, fixtures, panels and advanced microwave / millimeter-wave test structures.

110 GHz
SERIES CAPABILITY

50 Ω
PRECISION INTERFACE

PCB to Fixture
INTEGRATION RANGE

INTRODUCTION

What Is a 1.00mm Connector?

DEFINITION

A 1.00mm connector is a precision 50 ohm RF interface designed for ultra-high-frequency signal transmission through 110 GHz. It is used where interface integrity, dimensional control and repeatable mating performance are critical.

Typical use cases include W-band instrumentation, semiconductor validation boards, precision fixtures, laboratory development systems and millimeter-wave module interfaces.



WHY ENGINEERS USE IT

- Supports ultra-high-frequency applications through 110 GHz
- Provides a compact precision interface for advanced microwave and millimeter-wave RF paths.
- Fits PCB launch, fixture, panel and board-level interconnect requirements.
- Useful where mating repeatability and interface accuracy matter.

TYPICAL APPLICATIONS

- Millimeter-wave test systems
- High-frequency instrumentation
- Precision RF fixtures and front-panel interfaces
- Microwave and mmWave module evaluation
- Laboratory development platforms

WHY THIS CATALOG

- Organized around first-round structure and model selection
- Focused on real engineering comparison logic
- Built for drawing-based review after initial filtering
- Designed for ultra-high-frequency interface work

REFERENCE

Core Electrical & Mechanical Overview

Series-level reference information for first-round evaluation of 1.0mm connector capability, interface characteristics and key mechanical constraints.

ELECTRICAL OVERVIEW

Frequency Range	DC to 110 GHz
Impedance	50 ohms
VSWR	According to verified series data and structure
Contact Resistance	Center and outer conductor values per latest verified data
Insulation Resistance	According to series specification

MECHANICAL OVERVIEW

Interface Type	1.00mm precision RF interface
Styles	PCB launch, solderless vertical launch, straight PCB, board-mount, panel-mount, glass bead / feedthrough-style and representative flange-mount structures
Gender Options	Male and female
Mounting	PCB geometry, board mounting, panel wall, fixture structure, pin-accepting interface or removable flange interface
Selection Basis	Drawing, hole pattern, contact geometry, mating condition and frequency target

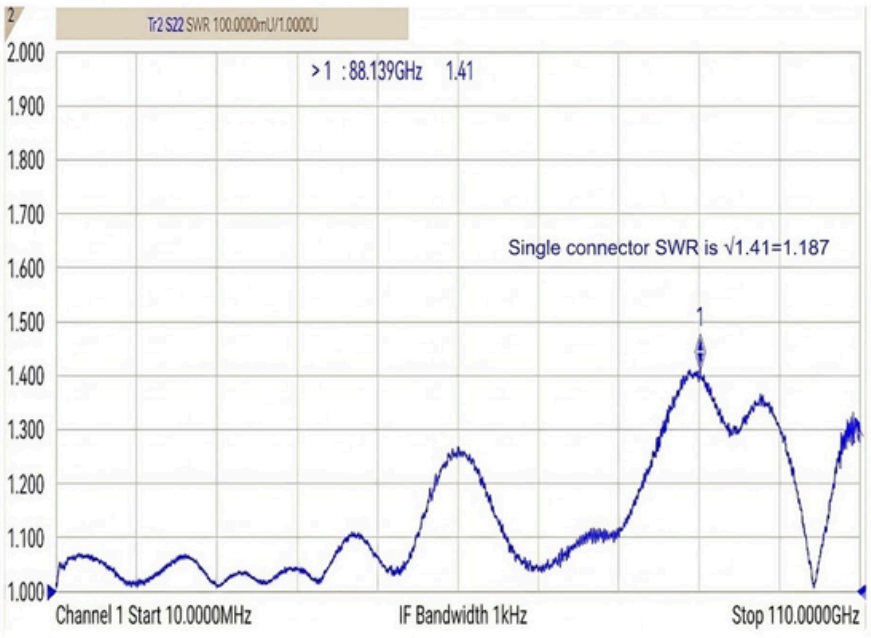
FINAL NOTE

Final RF and mechanical suitability depend on connector structure, mating condition, tolerance control and end-use configuration. Confirm against the latest drawing before final approval.

TECHNICAL REFERENCE

Representative Performance Reference

Representative RF test data for first-round evaluation of 1.0mm connector performance through 110 GHz.



ENGINEERING TAKEAWAYS

- Representative performance supports first-round evaluation through 110 GHz
- RF results are highly sensitive to connector geometry, mating condition and assembly quality
- Final-use configuration should be considered before confirming model suitability

TECHNICAL NOTE

Representative data is for first-round selection reference only. Final RF performance depends on connector structure, mating condition, interface quality and installation geometry.
Representative connector-level reference data through 110 GHz should be read together with the latest verified drawing and actual mating configuration.

SELECTION ENTRY

Selection Structure Overview

For 1.00mm connector selection, begin with the installation environment, then narrow by mounting style, interface gender, PCB or panel geometry and final mating condition.

APPLICATION NEED	RECOMMENDED CONNECTOR STRUCTURE	SELECTED / REPRESENTATIVE EXAMPLES	BEST FIT
PCB edge transition	1.00mm End Launch PCB Connector	VST-CPM10RF-01 / RF-02	Controlled 110 GHz board-edge transition
Reusable mmWave board testing	1.00mm Solderless Vertical Launch Connector	VST-CPM10F-04 / F05	No-solder validation boards and reusable fixtures
Vertical / straight PCB launch	1.00mm Straight PCB Connector	VST-CPM10F-03 / F06 / F08 / F09	Compact board-level RF transition
Board-mounted RF port	1.00mm Board Mount Connector	VST-CPM10F-02	Module or fixture board interface
Panel or fixture-wall interface	1.00mm Panel Mount Connector	VST-CPM10F-01	Fixed front-panel or fixture-wall RF port
Pin-accepting fixture interface	Glass Bead / Feedthrough-Style Connector	VST-CPM10F-13	Drawing-based fixture interface review
Replaceable panel / fixture interface	Representative Flange-Mount Structure	VST-CPS10F23 / VST-CPS10M23 family	Removable drawing-based panel or fixture interface

HOW TO USE THIS PAGE

- Choose by connector structure, not by cable assembly configuration.
- Start with PCB launch, board mount, panel mount, glass bead or flange-mount requirement.
- Then confirm model, drawing, hole pattern and mating condition.

METHOD

How to Choose the Right 1.00mm Connector

The correct connector is defined by frequency target, PCB or panel structure, launch direction, interface gender, mounting logic, available space, mating condition and final RF tolerance.

STEP 1

Define the Connector Location

Decide whether the connector sits on a PCB edge, vertical PCB launch, board surface, panel wall or removable fixture interface.

STEP 2

Confirm the frequency target

Confirm the required operating frequency and whether the application requires performance through 110 GHz.

STEP 3

Check PCB or panel geometry

For board-level connectors, review PCB thickness, stack-up, trace transition, screw position and available installation space.

STEP 4

Confirm mating side and gender

Verify male/female interface requirements, mating condition, torque practice and any replaceability requirement.

STEP 5

Review critical dimensions

Check bore, pin, flange size, hole pattern, launch geometry and structure-specific constraints using the drawing.

STEP 6

Request drawing-based confirmation

Send board drawing, panel drawing or fixture constraints to confirm the recommended connector before quotation.

BEFORE REQUESTING A QUOTE

share target frequency, connector structure, interface gender, PCB thickness or panel geometry, available installation space, final mating condition and whether 2D drawing or 3D file is needed.

AVAILABLE CONNECTOR STRUCTURES

1.00mm Connector Family Map

This page aligns the catalog with the online 1.00mm connector collection while keeping the selection logic connector-only and open for additional variants.

PCB EDGE LAUNCH

End Launch Connectors

For controlled-impedance board-edge transitions and W-band PCB test structures.

- VST-CPM10RF-01
- VST-CPM10RF-02

SOLDERLESS PCB

Vertical Launch Connectors

For reusable fixtures, test boards and board-level validation without soldering.

- VST-CPM10F-04
- VST-CPM10F-05

PCB MOUNT

Straight PCB Variants

For compact board-level RF transitions where geometry and installation space define fit.

- VST-CPM10F-03 / F06
- VST-CPM10F-08 / F09

BOARD / PANEL

Board & Panel Mount

For module-level, front-panel and fixture-wall RF port integration.

- VST-CPM10F-01
- VST-CPM10F-02

FIXTURE INTERFACE

Glass Bead / Feedthrough

For pin-accepting fixture or feedthrough-style interface review.

- VST-CPM10F-13

DRAWING REFERENCE

Flange-Mount Structures

For removable fixture and panel interface discussions. Representative structures only.

- VST-CPS10F23 series
- VST-CPS10M23 series

RELATED SOLUTION NOTE

1.00mm cable assemblies can be discussed separately when the project requires connector-to-cable matching, cable length, loss, phase stability or bend-radius evaluation.

REPRESENTATIVE MODEL LIST

Representative 1.00mm Connector Model List

Selected 1.00mm connector models are listed for quick reference. This page is intended as a compact model index after the selection guide, not as a complete product catalog.

MODEL	CONNECTOR TYPE	FREQUENCY	REFERENCE PERFORMANCE	KEY SELECTION NOTE
VST-CPM10RF-01	End Launch Low Profile PCB Connector	DC–110 GHz	VSWR ≤1.45	Low-profile PCB edge launch
VST-CPM10RF-02	End Launch PCB Connector	DC–110 GHz	VSWR ≤1.45	End launch option for thicker board condition
VST-CPM10F-04	Female Solderless RF Connector	DC–110 GHz	VSWR ≤1.65	Solderless PCB validation
VST-CPM10F-05	Solderless Vertical Launch PCB Connector	DC–110 GHz	Return loss ≥15 dB	Vertical launch / reusable board testing
VST-CPM10F-03	Female Straight PCB Connector	DC–110 GHz	Return loss ≥12.7 dB	Straight PCB mount
VST-CPM10F-06	Female Straight PCB Connector	DC–110 GHz	Return loss ≥15 dB	Straight PCB variant
VST-CPM10F-08	Female Straight PCB Connector	DC–110 GHz	VSWR ≤1.45	PCB layout / grounding variant
VST-CPM10F-09	Female Straight PCB Connector	DC–110 GHz	VSWR ≤1.45	PCB layout / grounding variant
VST-CPM10F-13	Glass Bead / Feedthrough-Style Connector	DC–110 GHz	VSWR ≤1.35	Accepts Ø0.23 mm pin
VST-CPM10F-02	Jack Board Mount RF Connector	DC–110 GHz	VSWR ≤1.4	Board-mounted RF port
VST-CPM10F-01	Jack Panel Mount RF Connector	DC–110 GHz	VSWR ≤1.4	Panel / fixture-wall interface

ADDITIONAL 1.00MM VARIANTS ARE AVAILABLE.

The models above are representative references. Vinstronics can recommend additional 1.00mm connector variants for different PCB layouts, grounding patterns, board thicknesses, panel structures and fixture requirements.

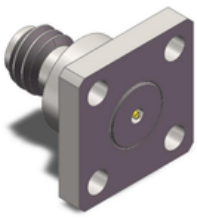
FOR FASTER MATCHING, PLEASE PROVIDE:

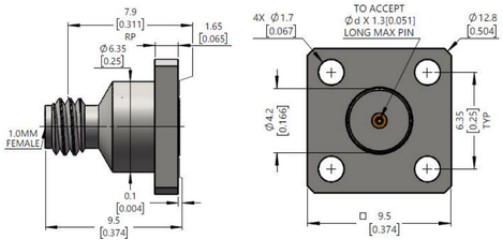
- Target frequency and interface requirement
- PCB thickness, stack-up or panel drawing
- Grounding pattern, signal pad or fixture constraints
- Required drawing, 3D file or quote quantity

DRAWING-BASED REFERENCE

Representative 1.00mm Flange-Mount Structures

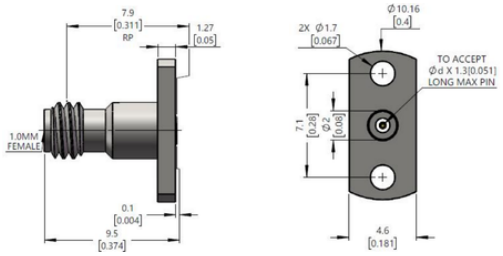
These flange-mount structures are representative drawing references only. They do not represent the full Vinstronics 1.00mm connector range. For PCB launch, solderless, straight PCB, board-mount, panel-mount and glass bead variants, refer to the selected model matrix or request the latest drawing.



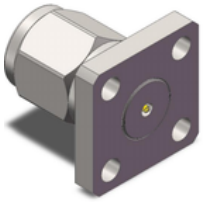


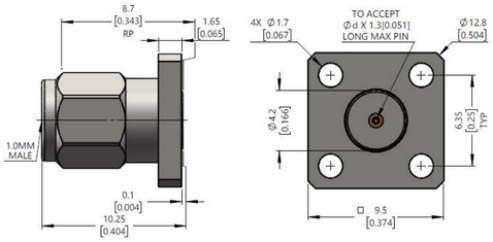
PRODUCT MODEL	SOCKET BORE ØD
VST-CPS10F23-F02	0.23 [0.009]



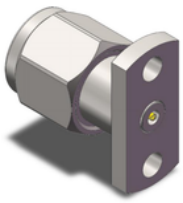


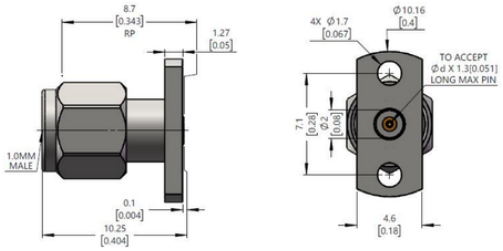
PRODUCT MODEL	SOCKET BORE ØD
VST-CPS10F23-F12	0.23 [0.009]





PRODUCT MODEL	SOCKET BORE ØD
VST-CPS10M23-F02	0.23 [0.009]





PRODUCT MODEL	SOCKET BORE ØD
VST-CPS10M23-F12	0.23 [0.009]

Precision RF Interconnect Solutions

Send your PCB layout, panel drawing or fixture constraints for drawing-based 1.00mm connector matching.

Vinstronics

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