

High Speed Board to Board Connector



Withwave's high-speed connectors are hermaphroditic and based on differential pair 100 Ohm (or 92 Ohm) nominal impedance, providing excellent high-bandwidth applications **56 Gbps NRZ, 112 Gbps PAM-4** with high pin count and high pitch depending on the product type.

These products are designed based on Surface Mount BGA Pin design technology.



**HSB00**  
1.0 mm pitch  
Differential 100ohm



**HSB01, HSB02**  
0.9 mm pitch  
Differential 92ohm



**New Small Size**

## Benefits

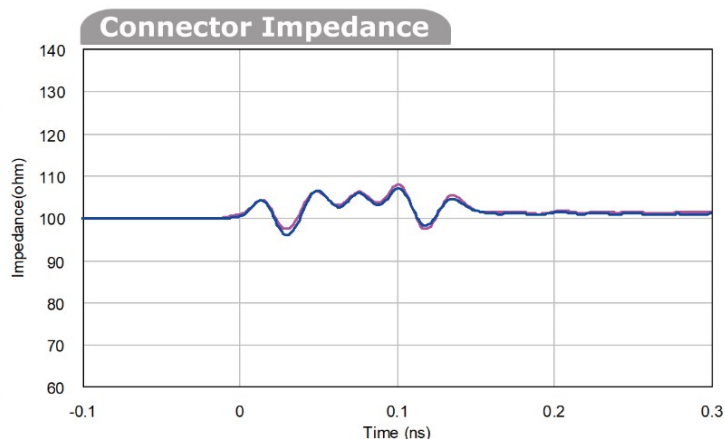
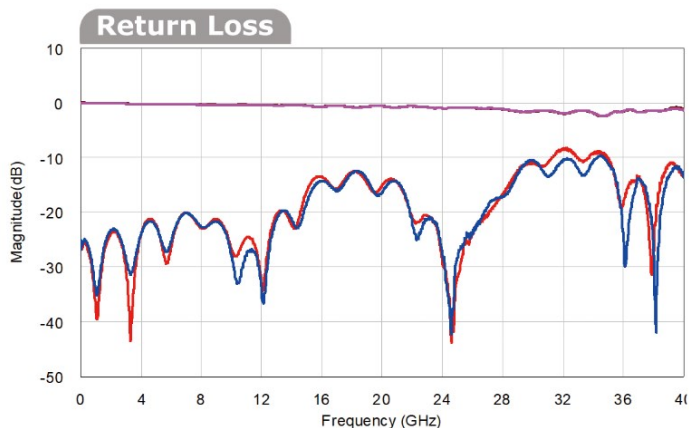
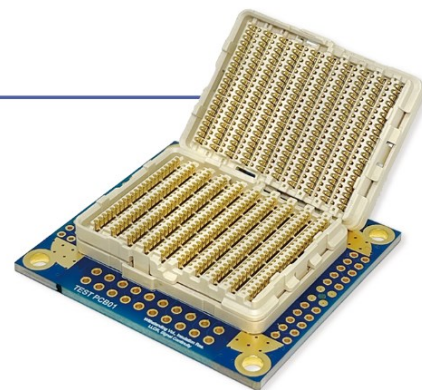
- Minimizes impedance discontinuities
- Excellent insertion and return loss performance
- Low crosstalk noise and resonances
- Biggest forced-offset (Rigid alignment) tolerance

## Application

- Telecommunication and Data Embedded
- Data Servers and Storage
- Industrial Controls and Equipment
- Test & Measurement Electronics

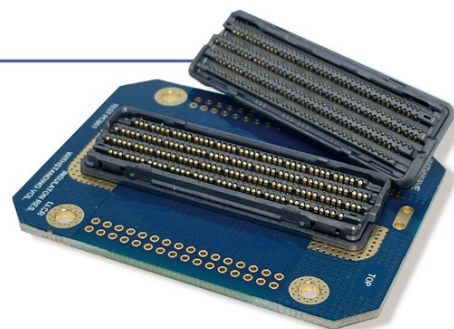
## High speed connector 1.0 mm Pitch Systems

- Higher bandwidth applications 56 Gbps NRZ, 112 Gbps PAM-4
- Stack heights from 8.4mm
- Connector Size : 35.6mm x 26.6mm
- High pin counts : 418 total contacts (95 differential pairs)
- Pitch 1.0mm x 1.6mm
- Differential pair 100ohm nominal impedance
- Surface Mount BGA Pin Design

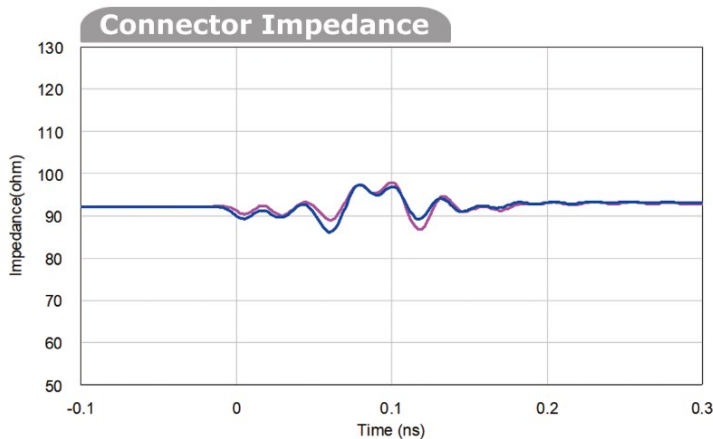
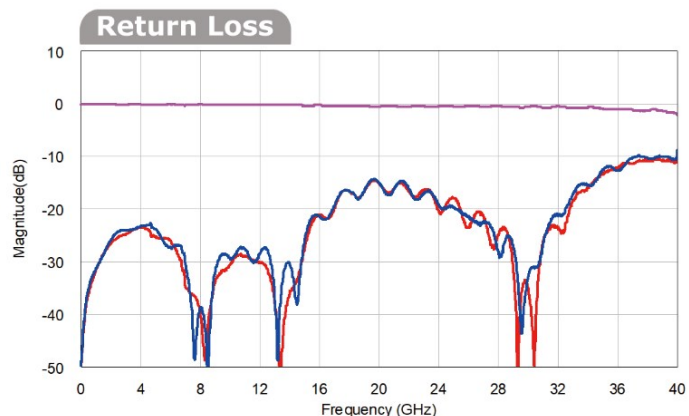


## High speed connector 0.9 mm Pitch Systems

- Higher bandwidth applications 56 Gbps NRZ, 112 Gbps PAM-4
- Stack heights from 5.0mm
- Pitch 0.9mm x 1.5mm
- Differential pair 92ohm nominal impedance
- Surface Mount BGA Pin Design



Connector Size	High pin counts	Part No.
48.0 x 15.6	292 (66 Differential pairs)	HSB01_M292S01H050A
32.0 x 12.6	120 (25 Differential pairs)	HSB02_M120S01H050A



**ELECTRICAL PERFORMANCE**

Test items	International Standard	Test Condition
Contact Resistance (Low Level)	EIA-364-23	20 mV Max., 100 mA <10mΩ change from initial reading after environmental exposure>
Insulation Resistance	EIA-364-21	500Vrms (DC), 60Sec., 1000Mohm
Withstanding Voltage (Dielectric)	EIA-364-20	500Vrms (AC), 60Sec.
Temperature Rise	EIA-364-70 Test Condition 3	0.5A, Temperature rise : 30 °C

**MECHANICAL PERFORMANCE**

Test items	International Standard	Test Condition
Durability	EIA-364-09	200 Cycles
Mating Un-mating	EIA-364-13	Mating Force 0.45N max. per contact Un-mating Force 0.1N min. per contact

**ENVIRONMENTAL**

Test items	International Standard	Test Condition
Vibration	EIA-364-28 Test Condition III	15G, 15 – 2000 - 15Hz, 15minutes. (X, Y, Z) LLCR : <10mΩ change
Mechanical Shock	EIA-364-27 Test Condition A	490m/s <sup>2</sup> (50G), Normal Duration of 11ms (X, Y, Z) LLCR : <10mΩ change
Thermal Shock	EIA-364-32 Method A Test condition I	-55°C ~ +85°C, 1/2 Hours, 25cycles LLCR : <10mΩ change
Temperature life	EIA-364-17	105 ± 2°C, 250Hours LLCR : <10mΩ change

**MATERIAL**

Housing	High-Temperature LCP, UL94V-01
Contacts	High performance Copper Alloy
Plating(s)	Contact Area Gold(Au) Nickel(Ni) Overall