

# Series MFBX – medium float board connectors

## Description

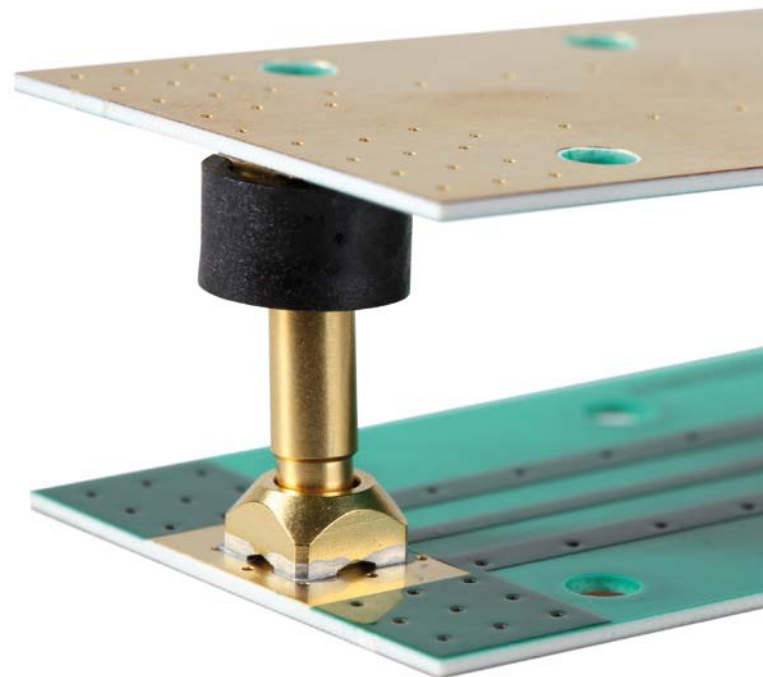
HUBER+SUHNER connectors are especially developed for board-to-board and board-to-module RF interconnections. The mechanical design is outstanding, allowing the MFBX to cope with mechanical misalignment in radial and axial directions and still hold an excellent electrical performance.

MFBX is a medium float board-to-board connector series which allow besides very good board-to-board shielding values very small board-to-board distances.

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Characteristics	Requirements
Frequency	DC to 3.5 GHz
Axial float (misalignment)	± 8 mm
Radial float (misalignment)	± 0.6 mm
Min. board-to-board distance	13 mm
Power	typical 130 W at 2.4 GHz at room temperature



# Series MFBX – design guideline

## Working range (axial and radial)

In mated condition, the two PCB connector have to be aligned within the dimension given for the axial and radial working range.

The axial working range is  $\pm 0.8$  mm, the radial working range is  $\pm 0.8$  mm and allows a sufficient electrical and mechanical connection.

## Connecting range

The two PCB connector have to be aligned within the dimension given for connecting range. The connecting range is  $\pm 0.8$  mm and is equivalent to the max. allowed misalignment between two PCB boards when mating.

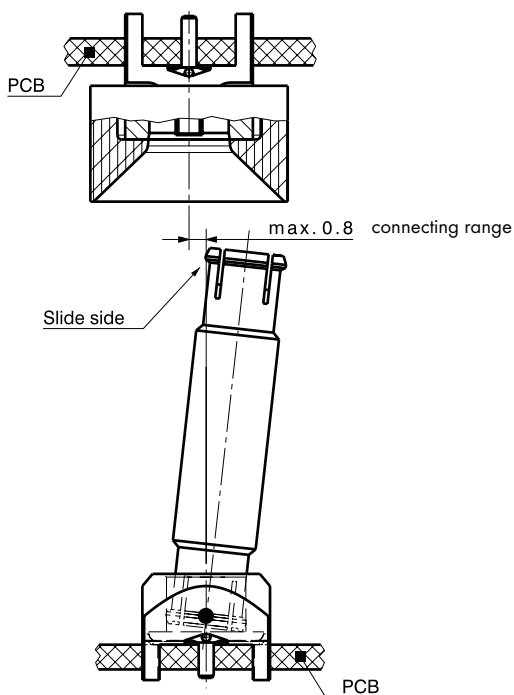
Blind mateability is given when keeping the misalignment of two boards within specified connecting range. Blind mateability depends on the funnel size, the barrel length and the angle of the barrel. The HUBER+SUHNER specified connecting range includes all these variables and guarantees therefore blind mateability.

## Recommendation

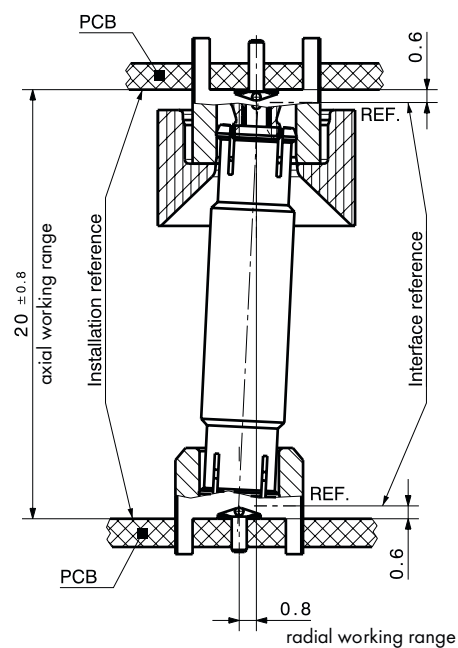
HUBER+SUHNER recommends using guiding pins to align the boards within the connecting range and working range. Distance holders to maintain the axial misalignment within working range are also of benefit.

HUBER+SUHNER provides outline drawings for every application with the relevant mechanical dimensions that need to be considered when designing-in MFBX. 3D STEP files are available on [www.hubersuhner.com](http://www.hubersuhner.com).

Connecting range



Working range



# Series MFBX – technical data

## MFBX PCB connectors – board-to-board/adaptors within series

Electrical data	Requirements	
Impedance	50 $\Omega$	
Frequency range	DC to 3.5 GHz	
Dielectric withstanding voltage (at sea level)	1 kV rms, 50 Hz	
Working voltage (at sea level)	$\leq$ 330 V rms, 50 Hz	
Insulation resistance	$\geq$ 1 G $\Omega$	
Contact resistance		
• Centre contact	$\leq$ 5 m $\Omega$	
• Outer contact	$\leq$ 5 m $\Omega$	
Return loss/VSWR	typical values for a board-to-board connection (measured on a board)	
	axial misalignment	DC to 3.5 GHz
	$\pm$ 0.8 mm	20 dB/1.22
	$\pm$ 0.4 mm	22 dB/1.17
RF-leakage (interface only)	$\geq$ 60 dB (DC to 3.5 GHz)	
Power (at room temperature)	typical 130 W at 2.4 GHz for board-to-board typical 160 W at 2.4 GHz for board-to-panel	

Mechanical data	Requirements
Engagement force (slide-side)	$\leq$ 15 N/3.4 lbs
Disengagement force (slide-side)	$\leq$ 15 N/3.4 lbs
Durability (matings)	50
Axial float (misalignment)	$\pm$ 0.8 mm
Radial float (misalignment)	$\pm$ 0.8 mm

Environmental data	Test conditions
Temperature range	-55 to + 125 °C/-67 to + 257 °F
High temperature endurance	IEC 61169-1 §9.4.5
Rapid change of temperature	IEC 60068-2-14, Test Na
Damp heat steady state	IEC 60068-2-78, Test Ca
Vibration	IEC 60068-2-64, Test Fc
Mechanical shock	IEC 60068-2-27, Test Ea

Processing data	Requirements
Adherent to the print	
• Shearing	$\geq$ 150 N/33.7 lbs
• Pulling (vertical to PCB)	$\geq$ 150 N/33.7 lbs

Material data		
Connector parts	Material	Plating
Centre contact	brass/bronze/copper-beryllium alloy	SUCOPRO® gold plating
Outer contact	brass/bronze	SUCOPRO® gold plating/SUCOPLATE®
Body	brass	SUCOPRO® gold plating/SUCOPLATE®
Insulators	LCP/PTFE/PFA	
Funnel	PA	

# Series MFBX – PCB connectors

## Straight PCB jacks (female)

### Surface mount type SMT

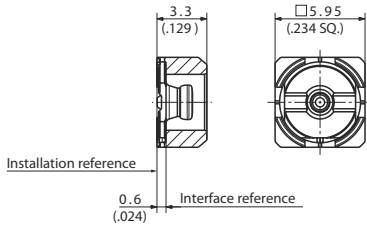


Fig. 1

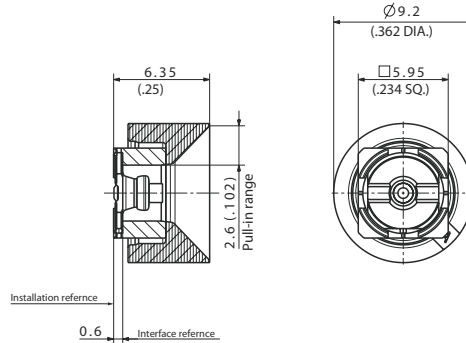


Fig. 2



82_MFBX-S50-0-8/111_NE	85025296	single	ML 173	1
82_MFBX-S50-0-8/111_NM	85025295	tape and reel		
82_MFBX-S50-0-6/111_NE	85025293	single		2
82_MFBX-S50-0-6/111_NM	85025282	tape and reel		

### Through hole type THT

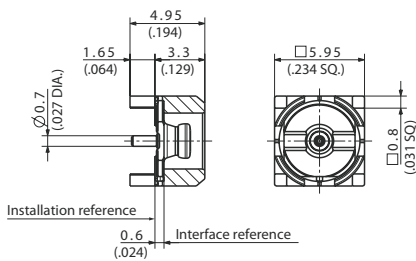


Fig. 1

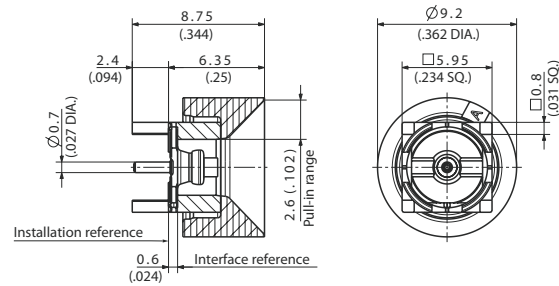


Fig. 2

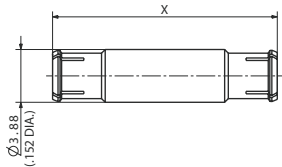


82_MFBX-50-0-3/111_NE	85025488	single	ML 182	1
82_MFBX-50-0-3/111_NM	85025089	tape and reel		
82_MFBX-50-0-4/111_NE	85025490	single		2
82_MFBX-50-0-4/111_NM	85025096	tape and reel		

# Series MFBX – adaptors within series

Straight adaptors

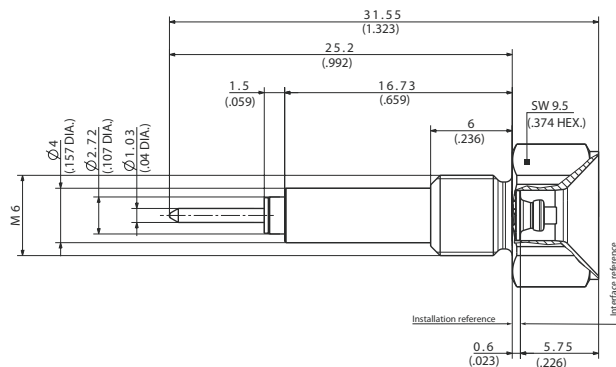
Plug to plug (male)



32_MFBX-50-0-1/111_NE 32_MFBX-50-0-1/111_NH	85025361 85008489	single bulk 100 pcs.	18.9 mm/0.74 in.	16.52 mm/0.65 in.
32_MFBX-50-0-2/111_NE 32_MFBX-50-0-2/111_NH	85025484 85014018	single bulk 100 pcs.	20 mm/0.79 in.	17.62 mm/0.69 in.

# Series MFBX – receptacle with solder end

Receptacle, jack (female)



22_MFBX-50-0-3/133_NY	85013940	industrial 100 pcs.	screwed-in
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# Series MFBX – assembly tool



74_Z-0-0-622	85022707	single	0000470325
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