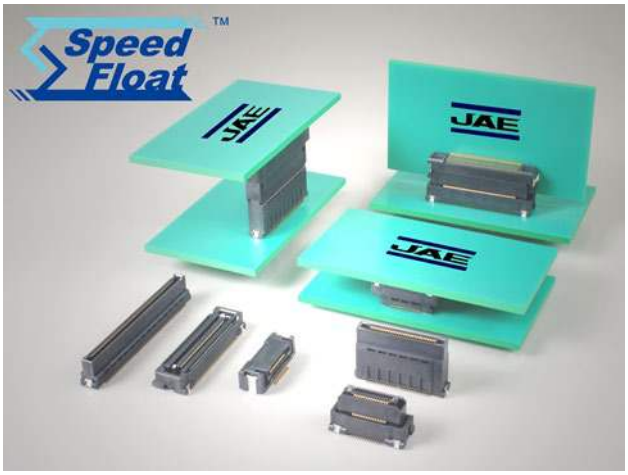
MA01Series

CONNECTOR

Automotive Grade, High-speed Transmission, Floating Board-to-board Connector

MB-0369-2
Mar.2022

RoHS Compliant



The MA01 Series is the next generation floating board-to-board connector. This product features a highly reliable two-point contact structure, achieving high-speed transmission exceeding 8Gbps. With an operation temperature range of -40℃ to 125℃ the connector is suitable for harsh temperature environments unique to the automotive industry.

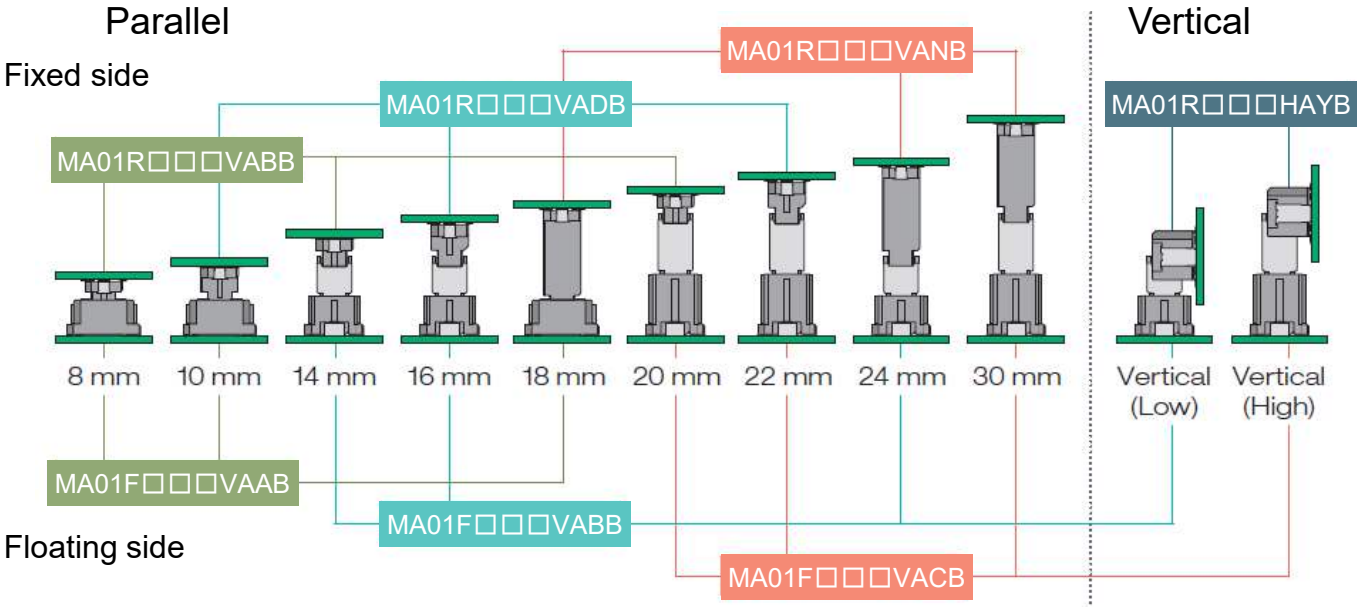
Applicable Markets

On board equipment (ADAS-ECU, Central gateway, etc.), Factory automation equipment, semiconductor manufacturing equipment, office machines, communication equipment, measuring equipment, broadcasting equipment and other various applications

Features

- Floating tolerance: ±0.5 mm in both X-axis & Y-axis directions
- Stacking height tolerance between boards: ±0.5 mm in Z-axis direction
- Two-point contact structure ensures high contact reliability
- Low insertion and removal forces achieved by roll surface contact structure
- Operating temperature range: -40° C to +125° C
- 8 Gbps+ high-speed transmission (10 GBASE-KR and PCIe Gen3 equivalent)
- Excellent mating process with large guides , supporting automatic assembly and mating (mating guide length: ±1.0 mm)
- Supports automatic mounting
- Multiple connectors can be used to interface between the same pair of PCB's
- Keyed to prevent mis-mating

MA01 Series Variations



Internal board-to-board connection, tolerance in Z direction: ±0.5 mm

Floating Side Connector Part Number	Fixed Side Connector Part Number	Mating Height (mm)	Number of Contacts							
			30	40	60	80	90	100	120	140
MA01F□□□VAAB	MA01R□□□VABB	8	●	●	●	●	●	●	●	●
MA01F□□□VAAB	MA01R□□□VADB	10	●	●	●	●	●	●	●	●
MA01F□□□VABB	MA01R□□□VABB	14	●	●	●	●	●	●	●	●
MA01F□□□VABB	MA01R□□□VADB	16	●	●	●	●	●	●	●	●
MA01F□□□VAAB	MA01R□□□VANB	18	●	●	●	●	●	●	●	●
MA01F□□□VACB	MA01R□□□VABB	20	●	●	●	●	●	●	●	●
MA01F□□□VACB	MA01R□□□VADB	22	●	●	●	●	●	●	●	●
MA01F□□□VABB	MA01R□□□VANB	24	●	●	●	●	●	●	●	●
MA01F□□□VACB	MA01R□□□VANB	30	●	●	●	●	●	●	●	●
MA01F□□□VABB	MA01R□□□HAYB	Vertical (L)	●	●	●	●	●	●	●	●
MA01F□□□VACB	MA01R□□□HAYB	Vertical (H)	●	●	●	●	●	●	●	●

□□□ Number of Contacts
(The squares in the Part Number represent pin count)

General Specifications

Pitch	0.635 mm pitch
Number of Contacts	30, 40, 60, 80, 90, 100, 120, 140 positions
Stacking Height	8, 10, 14, 16, 18, 20, 22, 24, 30 mm
Floating Movable Amount	X direction: ±0.5 mm, Y direction: ±0.5 mm
Operating Temperature Range	-40˚C to +125˚C (including conduction temperature rise)
Rated Current	0.5A
Rated Voltage	AC50V rms.
Contact Resistance	Initial: 50mΩ max. / After test: 100mΩ max.
Dielectric Withstanding Voltage	AC250V rms., conduction for 1 minute
Insulation Resistance	100MΩ min.
Durability	100 mating cycles

Materials and Finishes

Floating Connector

Component	Materials	Finishes
Fixed Insulator	LCP	N/A
Floating Insulator	LCP	N/A
Contact	Copper alloy	Au plating
Hold-down	Copper alloy	Sn plating
Cap	Stainless steel	N/A

Fixed Connector

Component	Materials	Finishes
Insulator	LCP	N/A
Contact	Copper alloy	Au plating
Hold-down	Copper alloy	Sn plating
Cap	Stainless steel	N/A

Ordering Information

Floating Straight Connector

MA01 F □□□ V A ○ ※ R***

- MA01: Series: MA01
- F: Floating Type
- □□□: Number of Contacts
- V: Straight Type, Contact SMT, with H/D
- A: Plating thickness of contact area — A: Au 0.1 μm min.
- ○: Height Code
  - A: Low-profile type (6.3 mm)
  - B: Standard type (12.3 mm)
  - C: High-profile type (18.3 mm)
- ※: Modification Code — A: Without boss, B: With boss
- R***: Reel quantity

Fixed Straight Connector

MA01 R □□□ V A ○ ※ R***

- MA01: Series: MA01
- R: Rigid Type
- □□□: Number of Contacts
- V: Straight Type, Contact SMT, with H/D
- A: Plating thickness of contact area — A: Au 0.1 μm min.
- ○: Height Code
  - B: 6.6 mm
  - D: 8.6 mm
  - N: 16.6 mm
- ※: Modification Code — A: Without boss, B: With boss
- R***: Reel quantity

Fixed Right-angle Connector

MA01 R □□□ H A Y ※ R***

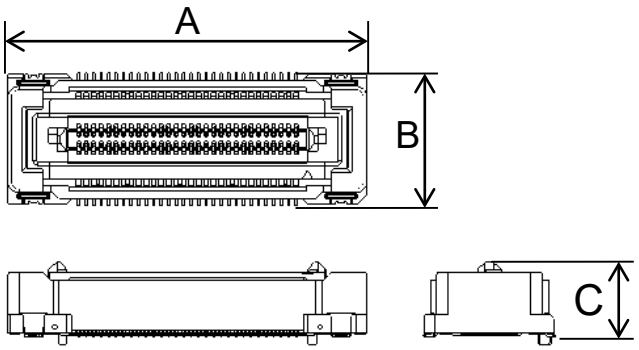
- MA01: Series: MA01
- R: Rigid Type
- □□□: Number of Contacts
- H: Angle Type, Contact SMT, with H/D
- A: Plating thickness of contact area — A: Au 0.1 μm min.
- Y: Height Code — Y: Vertical Connection Type
- ※: Modification Code — A: Without boss, B: With boss
- R***: Reel quantity

Note) Please contact JAE local Sales for details.

Outer Dimensions

Floating Connector (Low-profile type)

[MA01F□□□VAAB]

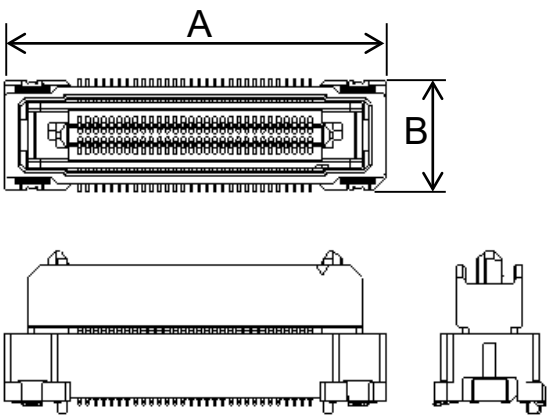


Unit: mm

Number of Contacts	A	B	C
30	20.925	11.2	6.3
40	24.1		
60	30.45		
80	36.8		
90	39.975		
100	43.15		
120	49.5		
140	55.85		

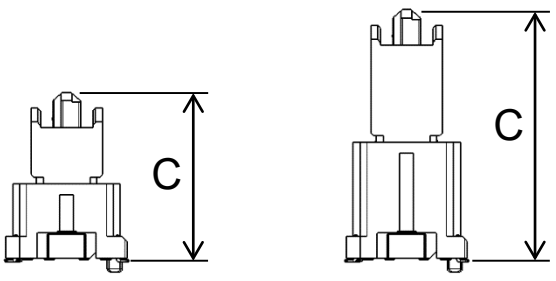
Floating Connector (Standard, High-profile type)

[MA01F□□□VABB] [MA01F□□□VACB]



Unit: mm

Number of Contacts	A	B
30	20.925	8.8
40	24.1	
60	30.45	
80	36.8	
90	39.975	
100	43.15	
120	49.5	
140	55.85	



[MA01F□□□VABB] [MA01F□□□VACB]

Unit: mm

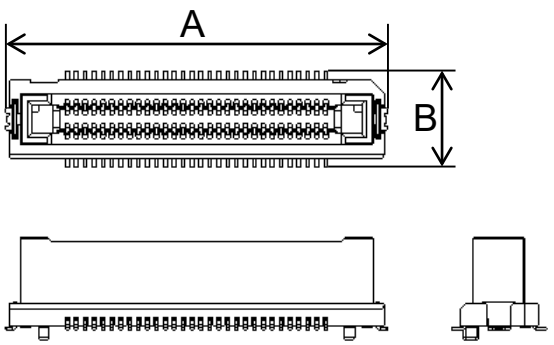
Part Number	C
MA01F□□□VABB	12.3
MA01F□□□VACB	18.3

Outer Dimensions

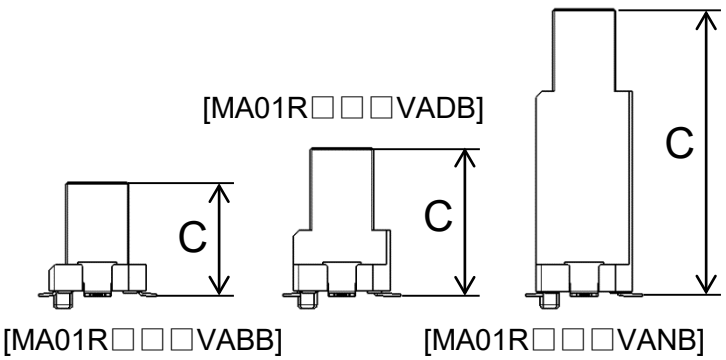
Fixed Straight Connector

[MA01R□□□VABB] [MA01R□□□VADB] [MA01R□□□VANB]

Unit: mm



Number of Contacts	A	B
30	17.745	6.8
40	20.92	
60	27.27	
80	33.62	
90	36.795	
100	39.97	
120	46.32	
140	52.67	



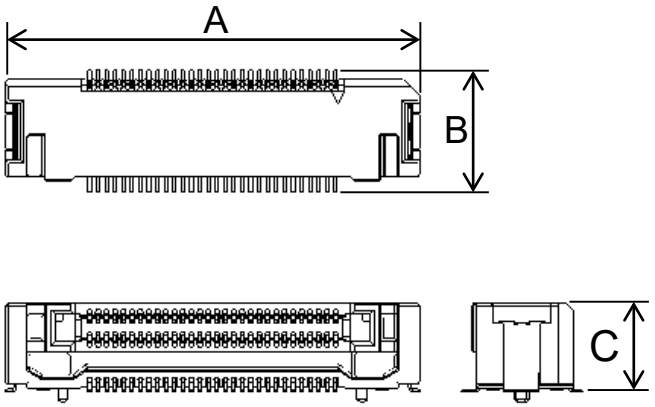
Unit: mm

Part Number	C
MA01R□□□VABB	6.6
MA01R□□□VADB	8.6
MA01R□□□VANB	16.6

Fixed Right-angle Connector

[MA01R□□□HAYB]

Unit: mm



Number of Contacts	A	B	C
30	21.425	9.0	6.6
40	24.6		
60	30.95		
80	37.3		
90	40.475		
100	43.65		
120	50.0		
140	56.35		

Part and Drawing Numbers

Part Numbers	Drawing Numbers	Specifications	Handling Instructions
MA01F□□□VAAB MA01F□□□VAABR500	SJ124128(Individual product) SJ124129(Reeled product)	JACS-11300	JAHL-11300
MA01F□□□VABB MA01F□□□VABBR300	SJ123188(Individual product) SJ123189(Reeled product)		
MA01F□□□VACB MA01F□□□VACBR150	SJ123194(Individual product) SJ123195(Reeled product)		
MA01R□□□VABB MA01R□□□VABBR600	SJ123190(Individual product) SJ123191(Reeled product)		
MA01R□□□VADB MA01R□□□VADBR500	SJ124126(Individual product) SJ124127(Reeled product)		
MA01R□□□VANB MA01R□□□VANBR200	SJ123196(Individual product) SJ123197(Reeled product)		
MA01R□□□HAYB MA01R□□□HAYBR600	SJ123192(Individual product) SJ123193(Reeled product)		

□□□: Number of Contacts (030, 040, 060, 080, 090, 100, 120, 140 positions)

Notice:

1. The values specified in this brochure are only for reference. The products and their specifications are subject to change without notice. Contact our sales staff for further information before considering or ordering any of our products.
For purchase, a product specification must be agreed upon.

2. Users are requested to provide protection circuits and redundancy circuits to ensure safety of the equipment, and sufficiently review the suitability of JAE's products to the equipment.

3. The products presented in this brochure are designed for the uses recommended below.
We strongly suggest you contact our sales staff when considering use of any of the products in any other way than the recommended applications or for a specific use that requires an extremely high reliability.

(1) Applications that require consultation:
(i) Please contact us if you are considering use involving a quality assurance program that you specify or that is peculiar to the industry, such as:
Automotive electrical components, train control, telecommunications devices (mainline), traffic light control, electric power, combustion control, fire prevention or security systems, disaster prevention equipment, etc.
(ii) We may separately give you our support with a quality assurance program that you specify, when you think of a use such as :
Aviation or space equipment, submarine repeaters, nuclear power control systems, medical equipment for life support, etc.

(2) Recommended applications include:
Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment, etc.

Japan Aviation Electronics Industry, Limited

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