

The logo for JAE, consisting of the letters 'JAE' in a bold, black, sans-serif font, centered between two horizontal blue bars.

Power Train Systems

Safety Systems

Body/Chassis Systems

Information/Communications Systems



AUTOMOTIVE ELECTRONICS CONNECTORS CATALOGUE



JAE AUTOMOTIVE ELECTRONICS CONNECTORS CATALOGUE

Japan Aviation Electronics Industry, Ltd. (JAE) is an international manufacturer and supplier of electronic components and systems. For over four decades, JAE has provided the automotive industry with solutions to complex design requirements. Our connectors are used in many areas of a vehicle, from conventional body and chassis applications to the most technologically advanced safety systems.

Our range of automotive products is simply the best. That is why the world's major automotive manufacturers and suppliers work in partnership with us. Our experience and knowledge of the road help us create durable interconnection systems, which perform under the harshest environments.

We work with the world's leading car makers to improve manufacturing processes, offering advice and delivering connectors that speed up vehicle production while increasing interconnection quality. JAE is heavily involved in the development of a variety of connectors for electronic control modules and infotainment. Our products are designed to make the most of advances in connector miniaturisation, giving automotive designers more freedom and options.

In addition to the standard range of products, high levels of in-house design and production expertise allows JAE to rapidly engineer and manufacture custom interconnection solutions in as little as 12 weeks. These bespoke solutions include connectors controlling functions as diverse as lighting systems, ABS, mirror movement, airbag detection or satellite/DVD navigation.

JAE can also combine separate parts into a single assembly, saving valuable space and generating cost-effective solutions.

This automotive connector catalogue has been specifically assembled to help engineers incorporate electronics into their vehicle designs.

For more information about JAE connectors, please contact our European office or visit www.jae-europe.com.

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• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

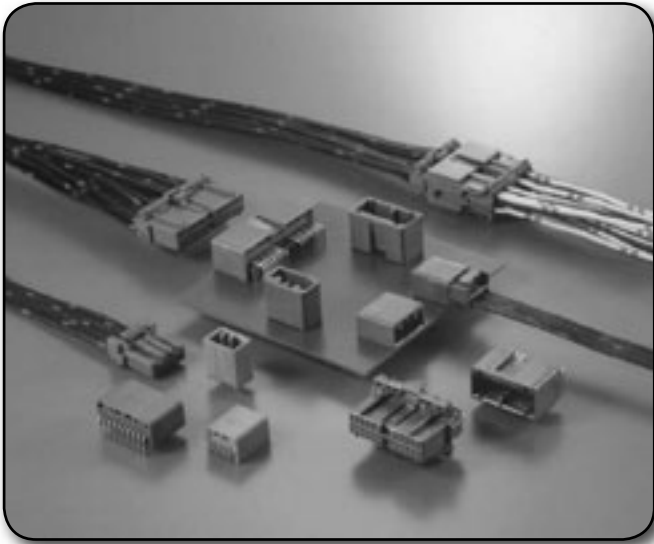
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• Please consult JAE for verification of product availability.
Dimensions in mm.

IL-AG5 Series

Relay connector for automobiles



FEATURES

- 2.5mm pitch compact relay type connector using 025 contact tab (0.64 x 0.64) terminals.
- With rib to prevent incorrect insertion, and key to prevent mis-mating and insertion in the wrong direction.
- Mechanical lock system to withstand vibration and tension, and enabling blind mating with a "click".
- Double hook mold-in housing structure to prevent incomplete insertion, and also to prevent contacts from removal by pulling.
- Double spring socket contact structure with high contact reliability.

The IL-AG5 Series is a series of relay type connectors for automobile devices (A 22 pin model is already available, and these products expand the series).

The connectors have a 025 terminal tab and 2.5mm pitch compact connector compliant with JASO standards (standards for automobile connectors). A double hook housing structure prevents incomplete terminal insertion and inadvertent terminal removal.

GENERAL SPECIFICATIONS

No. of contacts	16, 6, 5 (22 in the existing series)
Contact resistance	Less than 10m ohm
Withstand voltage	AC100Vr.m.s. for 1 minute
Operating temperature	-40°C to +85°C
Insulation resistance	Greater than 100M ohm
Lifetime	50 times

Applicable Wire

Cable type	AV,AVS,AVSS	AVS,AVSS
Conductive area	0.3 to 0.5mm ²	0.85mm ²
A.W.G No.	#22 to #20	#18
Sheath diameter	1.4dia. to 2.4dia. mm	

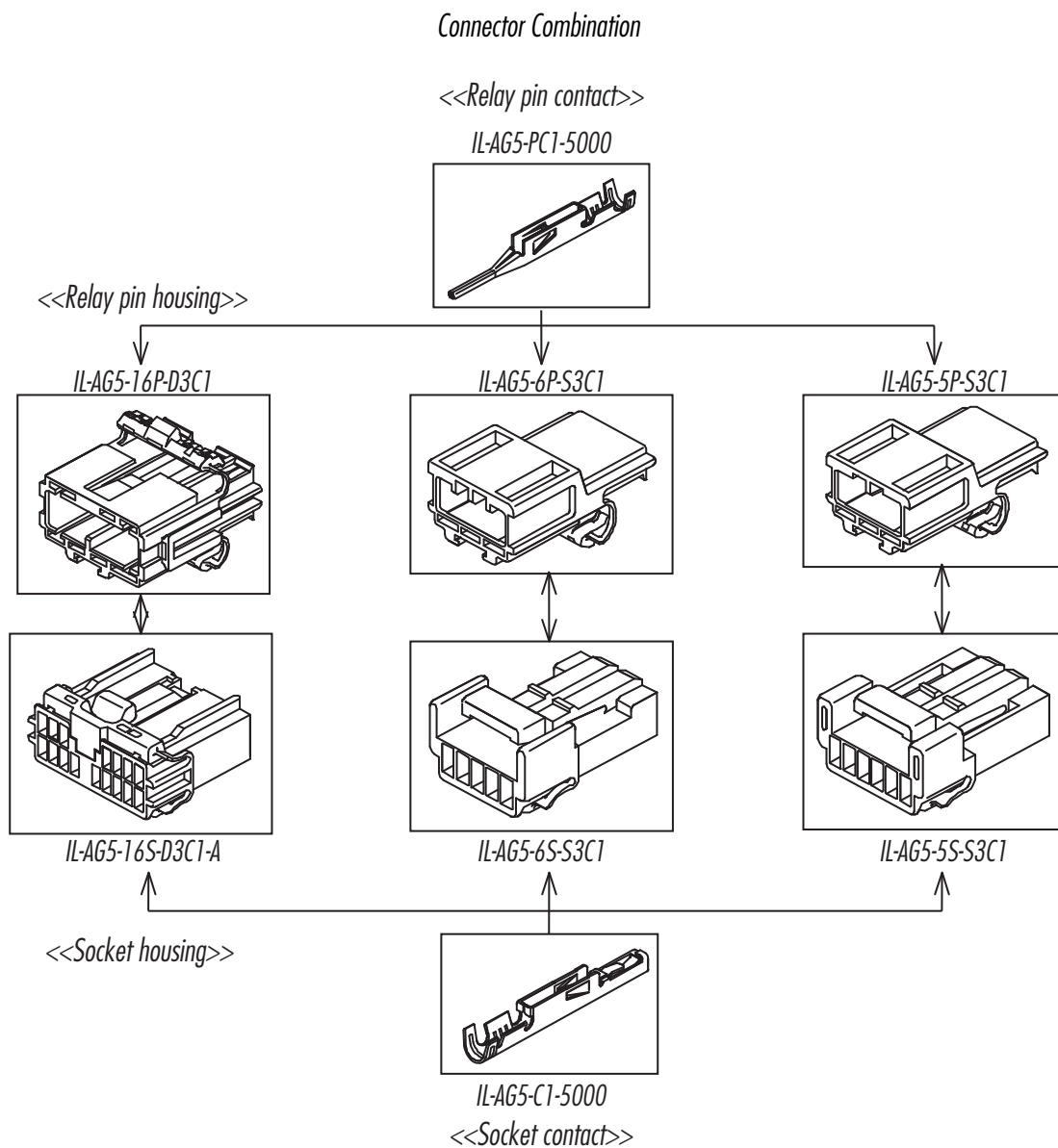
MATERIALS AND FINISHES

Component	Materials and finishes
Insulator	PBT
Relay pin contact	High conductive copper alloy/tin plating
Socket contact	Phosphor bronze/tin plating

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

IL-AG5 Series

Relay connector for automobiles



Crimp jig and removal jig (Relay pin connector)

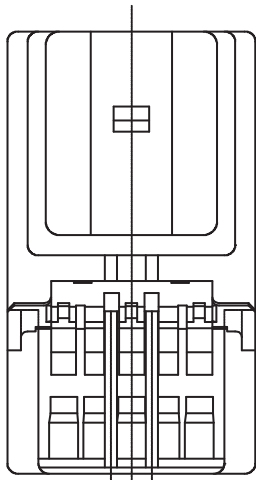
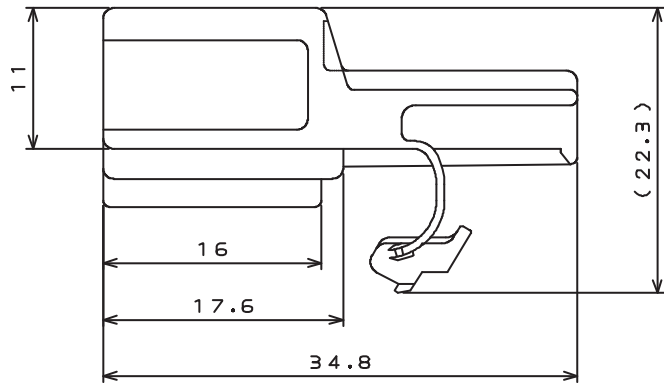
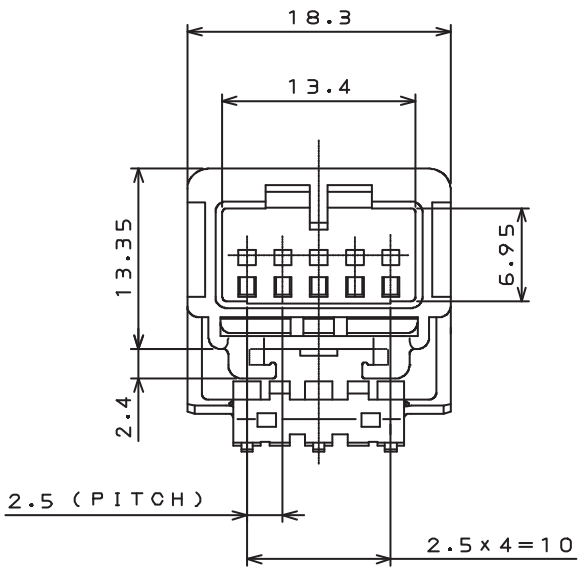
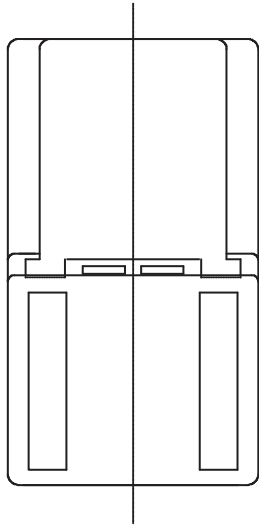
Type	Product Name
Applicator	350-AG5P-3B
Press	JAE CP310-1 or CRIMPER press
Removal jig	ET-AG5
Flap release jig	RT-AG5●EX5

• Please consult JAE for verification of product availability.
Dimensions in mm.

IL-AG5 Series

Relay connector for automobiles

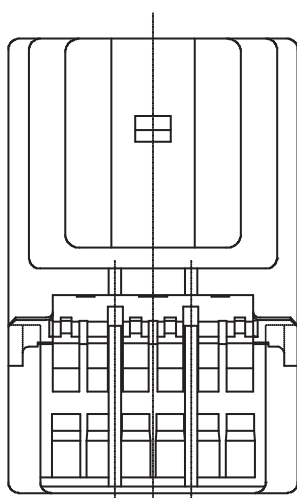
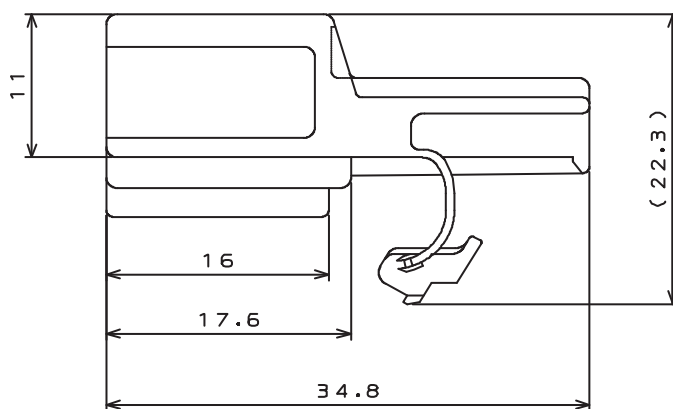
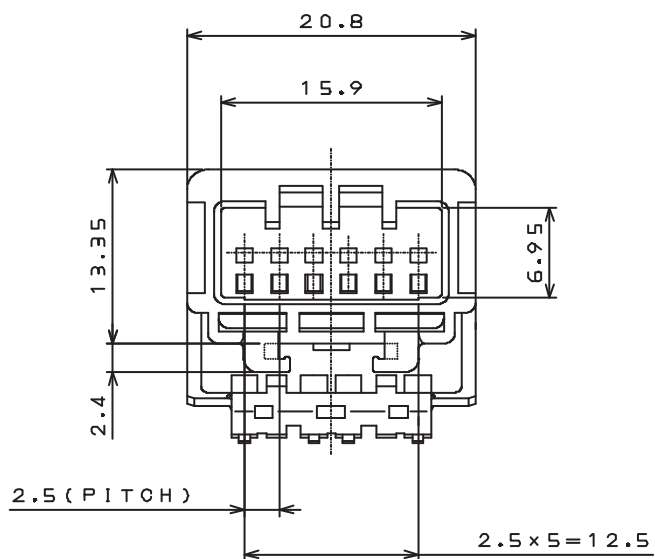
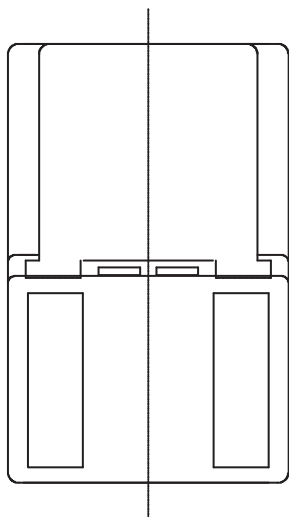
1) 5 contact replay pin housing (IL-AG5-5P-S3C1)



IL-AG5 Series

Relay connector for automobiles

2) 6 contact relay housing (IL-AG5-6P-S3C1)

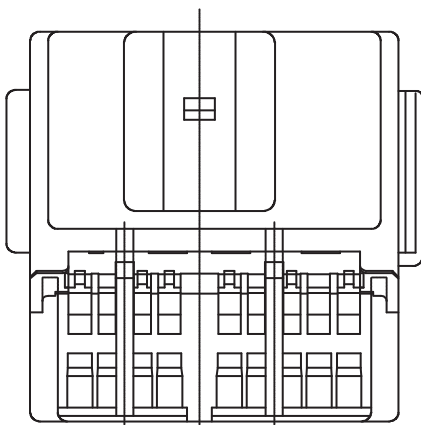
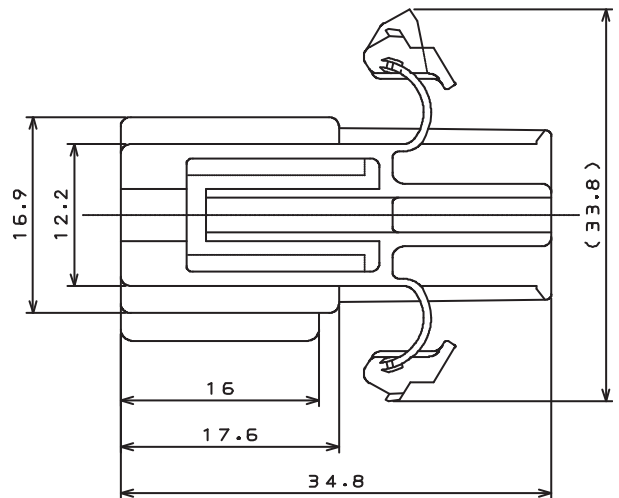
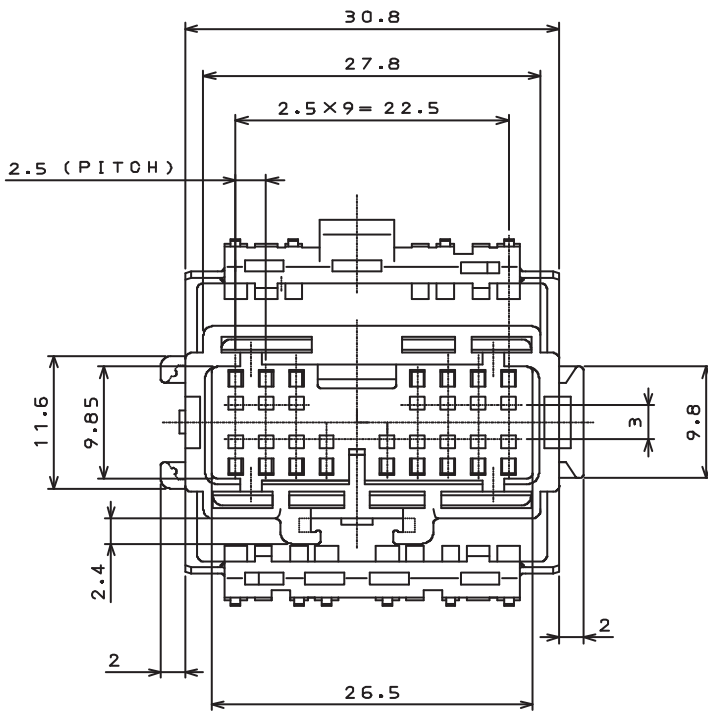
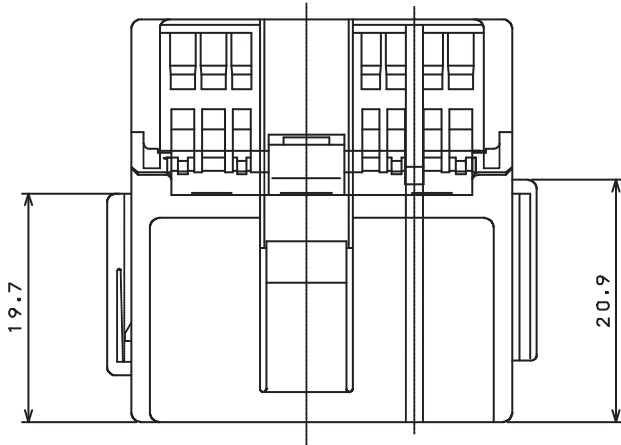


• Please consult JAE for verification of product availability.
Dimensions in mm.

IL-AG5 Series

Relay connector for automobiles

3) 16 contact relay pin housing (IL-AG5-16P-D3C1)

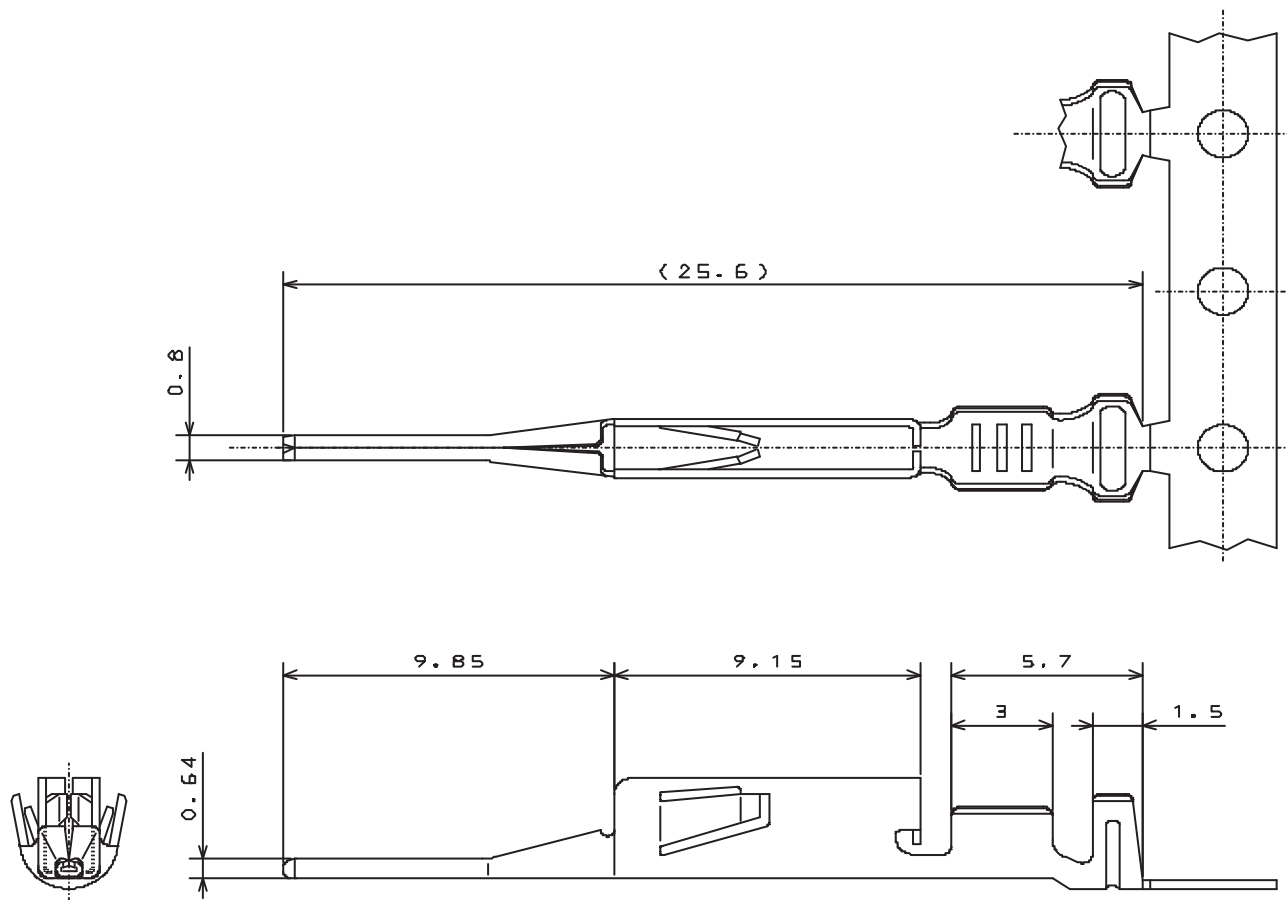


• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

IL-AG5 Series

Relay connector for automobiles

4) Relay pin contact (IL-AG5-PC1-5000)

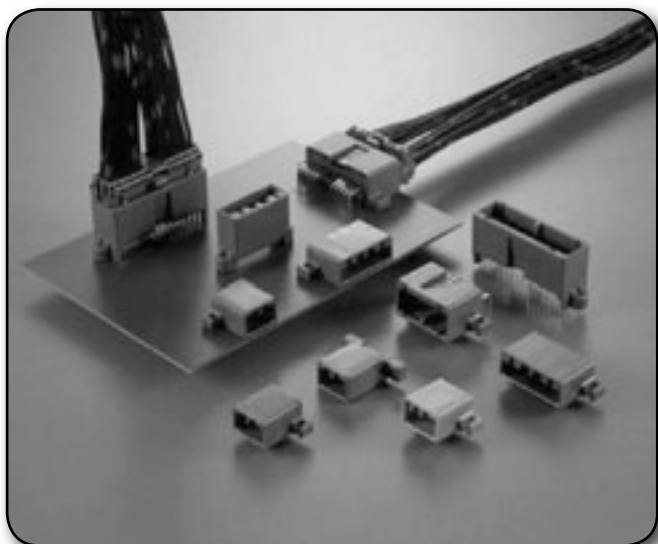


• Please consult JAE for verification of product availability.
Dimensions in mm.

IL-AG7 Series

2.5mm (.098") Contact Spacing, 025 Crimp Contacts, PCB-to-Cable

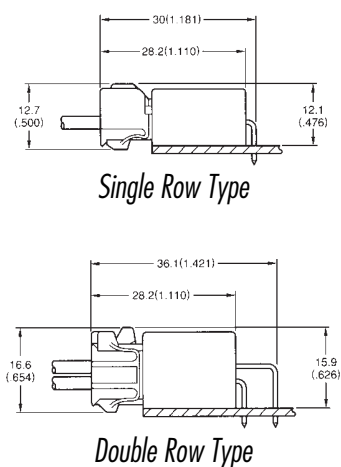
BODY CHASSIS SYSTEMS



FEATURES

- Designed for automotive instrument panel applications
- Mechanical lock assures positive mating
- Unique housing configuration helps prevent mismatching
- Double locking mechanism prevents dislodging of contacts
- IL-AG5 is used for socket side

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

No. of contacts	5, 10 (single row) 14, 22, 30 (double row) 16 (straight only)
Contact Spacing	2.5mm (.098")
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	10 milliohms max.
Operating Temperature	-40°C to +85°C
Applicable PCB Thickness	1.6 to 2.4mm (.063" to .094")

Applicable Wire (Stranded)

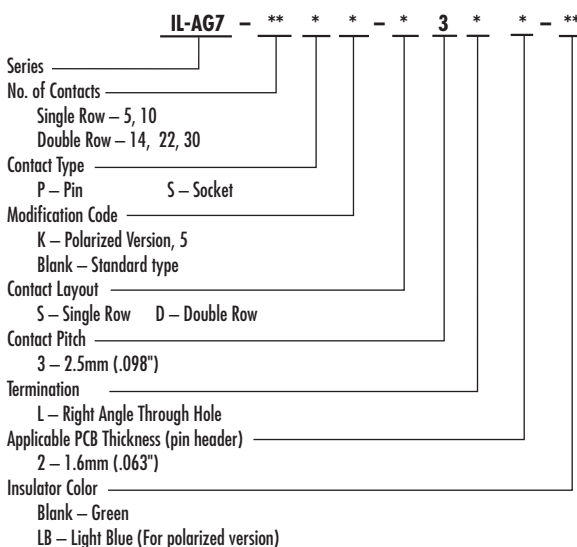
Wire Type JIS	AV, AVS, AVSS	AVS, AVSS
AWG	#22 to #20	#18
Conductor Cross Section Area	0.3 to 0.5mm ²	0.85mm ²
Insulation Outer Diameter	1.4 to 2.4mm (.055 to .094")	

MATERIALS AND FINISHES*

Components	Materials/Finishes
Insulator	PBT, Yellow (Green or Light Blue for polarized version)
Pin Contact	Brass/Tin Plating
Socket Contact	Phosphor Bronze /Tin Plating

Note: The standard finish of contacts is tin plating. Gold plating is available as an option. Consult JAE for details.

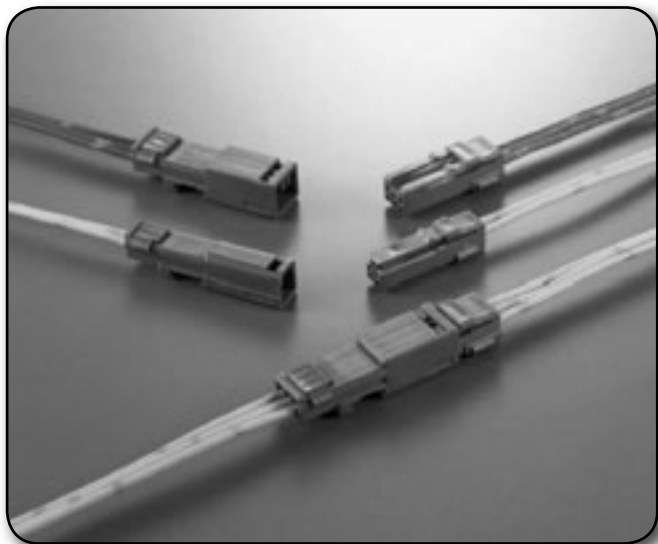
ORDERING INFORMATION



• Please consult JAE for verification of product availability.
 Dimensions and specifications subject to change without notice.

IL-AG9 Series

Compact Relay Connector for Vehicles



FEATURES

- A 2.5mm pitch compact relay connector with a small number of contacts uses the existing 0.25 contact tab size (0.64 x 0.64) IL-AG5 terminals.
- Structure with a key to prevent twisted mating, mis-mating or reverse insertion.
- Mechanical lock method for withstanding vibration and pulling. The lock strength is enhanced to withstand loads using a double-holding spring.
- The housing has a built-in double hook mechanism to prevent contacts from being inserted incompletely or removed inadvertently.
- Socket contacts have a contact reliable double spring mechanism. The outer form is a box shape, and it can withstand external forces.
- A nylon clip can be attached to the pin housing.
- The height and width are short so that the connector can be mated through a small hole.

JAE has developed a compact relay connector with a small number of contacts (2 to 3 contacts). The terminal tab size is a small 0.25 size, and a nylon clip can be attached to the pin housing. Furthermore, the connector is equipped with a hinge type double hooking mechanism to prevent incomplete terminal insertion and inadvertent removal. The contacts of IL-AG5 can be used as terminals.

GENERAL SPECIFICATIONS

No. of contacts	2, 3 pos.
Contact resistance	Less than 10m ohm (initial)
Withstand voltage	AC1000Vr.m.s. for 1 minute
Operating temperature	-40°C to +85°C
Insulation resistance	Greater than 100M ohm (initial)
Lifetime	50 times

Applicable Wire

Cable type	AV,AVS,AVSS	AVS,AVSS
Conductive area	0.3 to 0.5mm ²	0.85mm ²
A.W.G No.	#22 to #20	#18
Sheath diameter	1.4dia. to 2.4dia. mm	

MATERIALS AND FINISHES

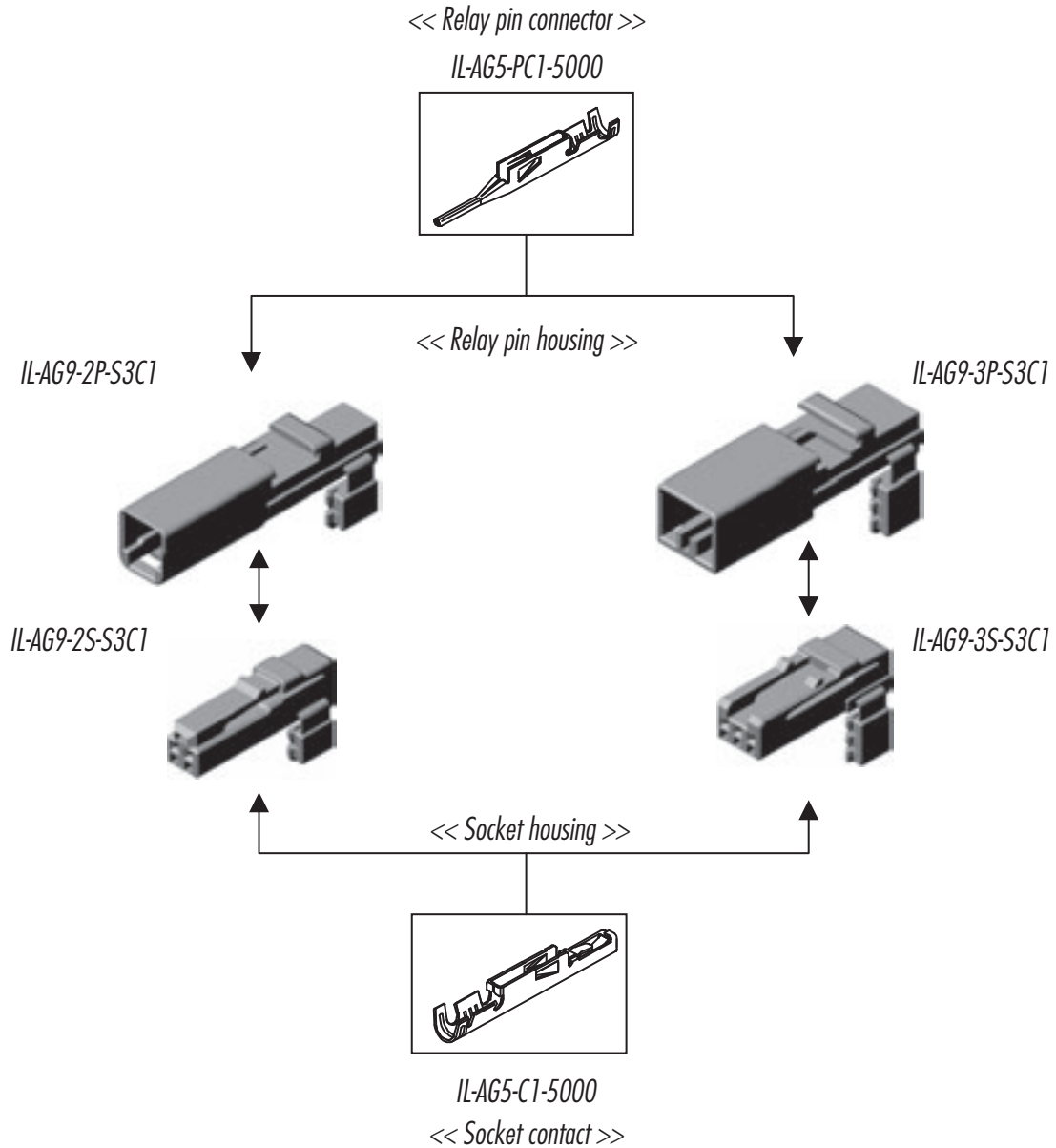
Component	Materials and finishes
Insulator	PBT/ Color: green
Relay pin contact	Copper alloy/Tin plating
Socket contact	Phosphor bronze/Tin plating

• Please consult JAE for verification of product availability.
Dimensions in mm.

IL-AG9 Series

Compact Relay Connector for Vehicles

Connector Combination



Crimp tool and release jig

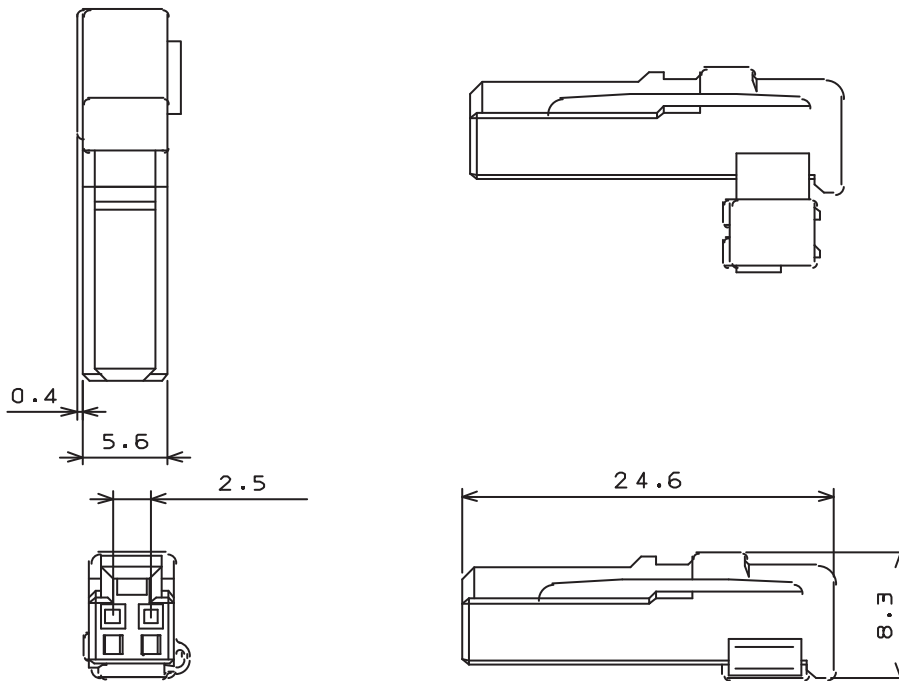
Type	Socket contact	Relay pin contact
Hand crimping tool	CT150-1-AG5	
Semi automatic applicator	350-AG5-2	350-AG5P-3B
Release jig	ET-AG9	

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

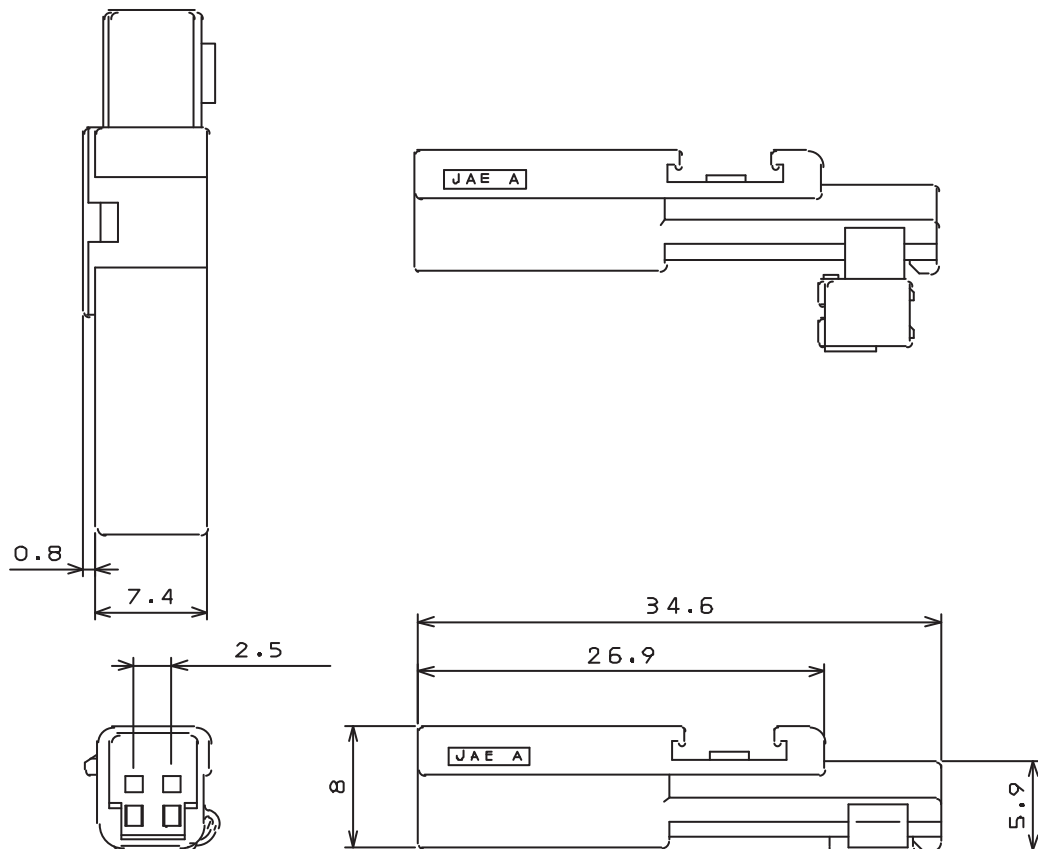
IL-AG9 Series

Compact Relay Connector for Vehicles

1) 2 contact socket housing (IL-AG9-2S-S3C1)



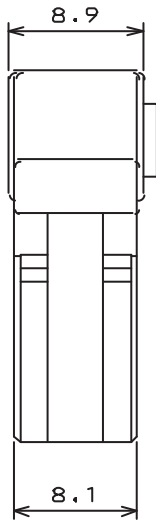
2) 2 contact relay pin housing (IL-AG9-2P-S3C1)



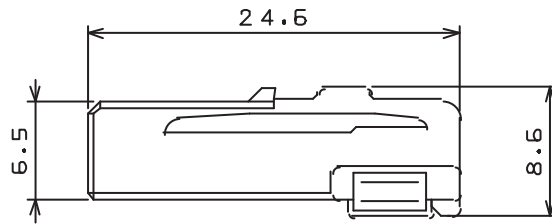
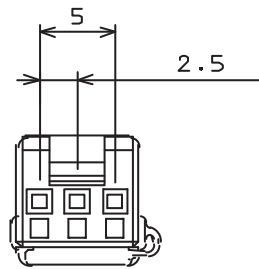
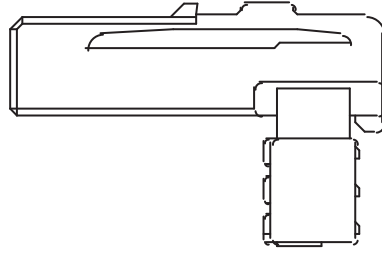
• Please consult JAE for verification of product availability.
Dimensions in mm.

IL-AG9 Series

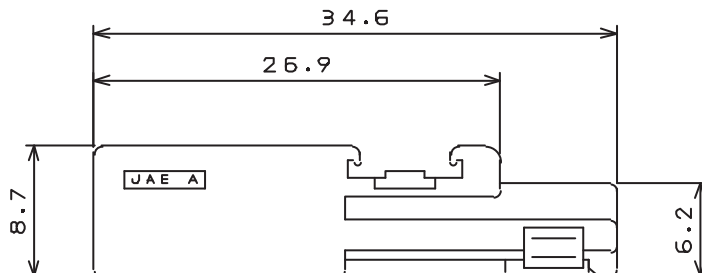
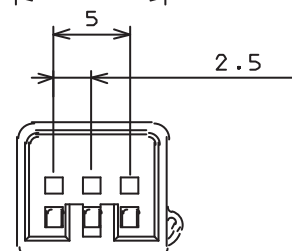
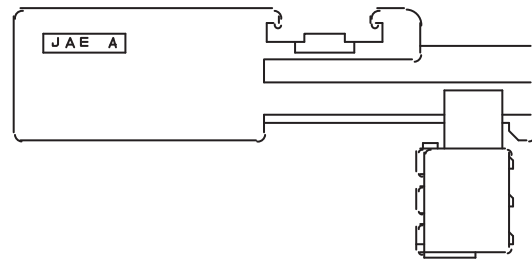
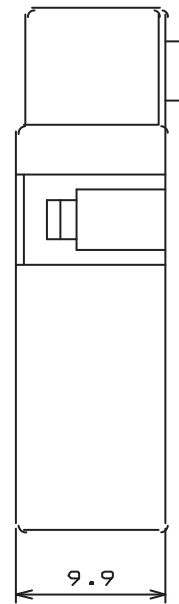
Compact Relay Connector for Vehicles



3) 3 contact socket housing (IL-AG9-3S-S3C1)



4) 3 contact relay pin housing (IL-AG9-3P-S3C1)



• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX19 Series

Small waterproof relay connector



FEATURES

- Mechanical lock mechanism prevents incomplete mating, and improved insertion and removal.
- Improved harness assembly and insertion of terminals into housing thanks to a grommet with rear cover.
- Rear cover protects the grommet from damage on terminal insertion, withstands cable flaps, and improves waterproof reliability.
- Terminals have a two-plate spring mechanism with long beam length, which results in a low force insertion and stress dispersion. The highly reliable contact mechanism can withstand the particular types of vibration caused by an automobile.

These small waterproof relay connectors are designed for use in automobiles. The connectors are designed to withstand harsh environments, and provide an improved harness assembly process thanks to a grommet with a rear cover. The small, proven two-plate spring mechanism improves contact reliability.

GENERAL SPECIFICATIONS

No. of contacts	2, 4 (Color: Black (standard) gray)
Contact resistance	Less than 10mΩ
Withstand voltage	AC1000C (for 1 minute)
Operating temperature	-40°C to +105°C (including temperature rise due to applied current)
Waterproofing	Compliant with JIS D0203 S1
Insulation resistance	Greater than 100MΩ

Applicable Wire

Cable type	CAVS, AVSS
Cross section of conductor	0.3 to 0.5mm ²
A.W.G No.	22 to 20
Outer diameter of cable	1.4 dia. to 1.7 dia mm

Note) Only 0.5mm² is available for AVSS.

MATERIALS AND FINISHES

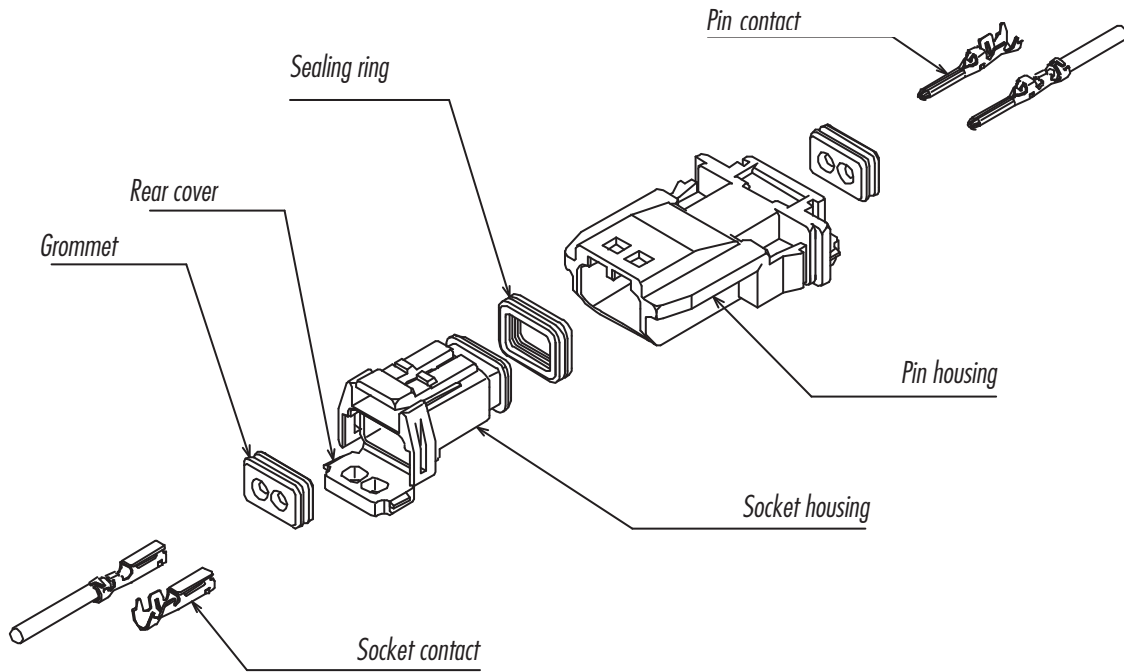
Component	Materials and finishes
Insulator	PBT (black (standard) or gray)
Contact	Copper alloy
Grommet	Silicon rubber (brown)
Sealing Ring	Silicon rubber (brown)

• Please consult JAE for verification of product availability.
Dimensions in mm.

MX19 Series

Small waterproof relay connector

Part Configuration (2 pos.)



Crimping tool/Extraction tool

Type	Part Number
Semi automatic applicator	350-MX19-2
Automatic applicator	350-MX19-3B
Extraction tool	ET-MX19

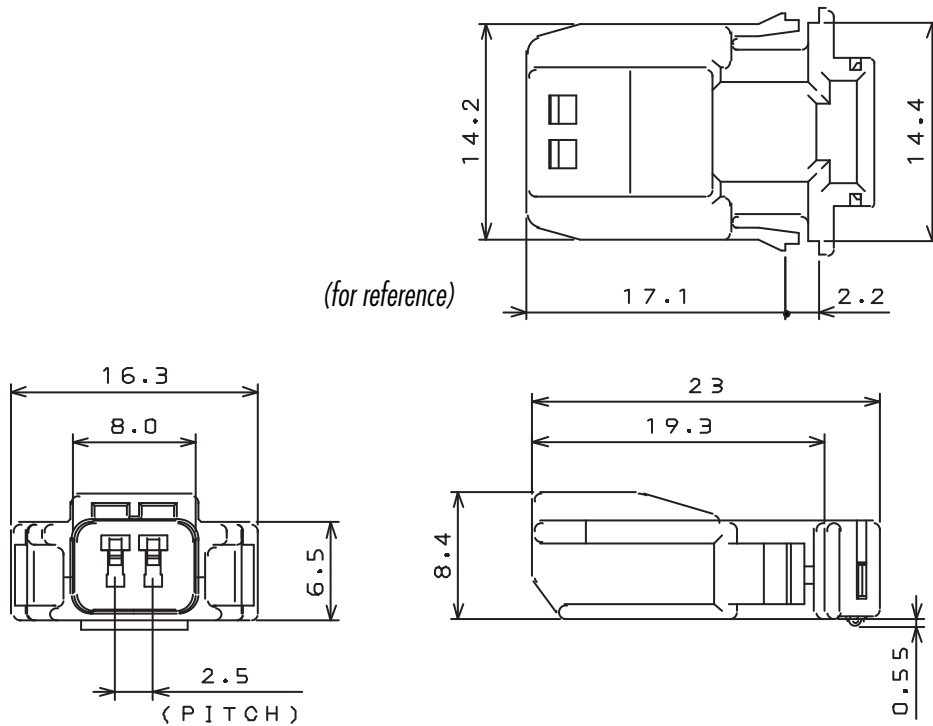
Note) Pin and socket can be used in common

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

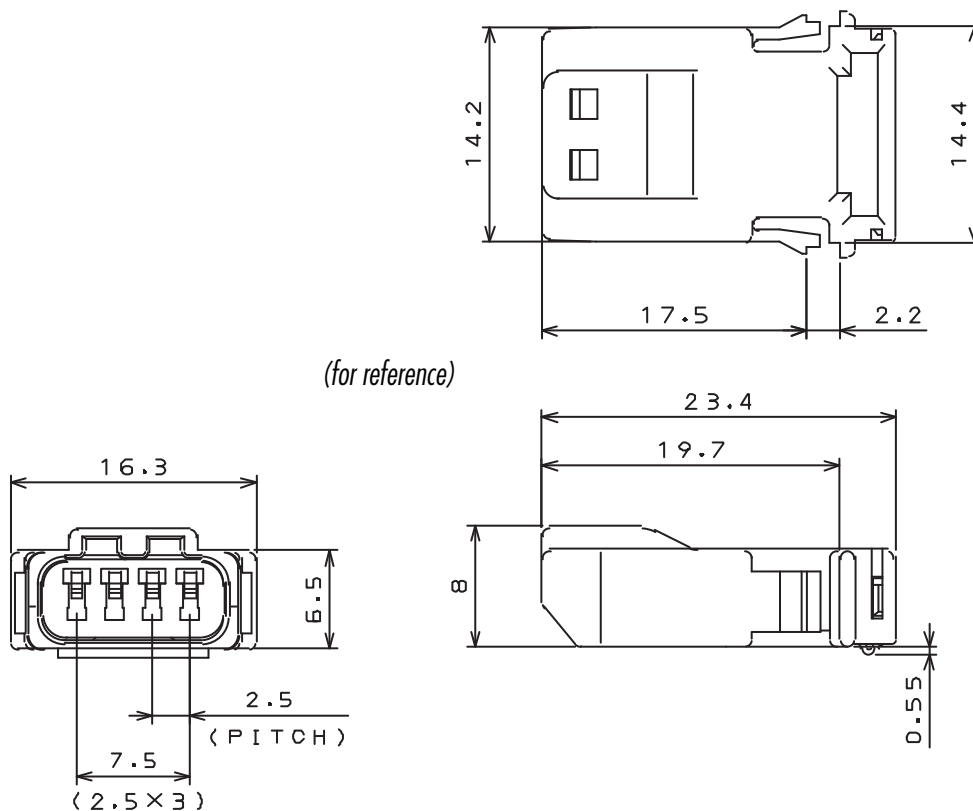
MX19 Series

Small waterproof relay connector

1) 2 pos. Pin housing (MX19002P51, MX19002P52)



2) 4 pos. Pin housing (MX19004P51, MX19004P2)

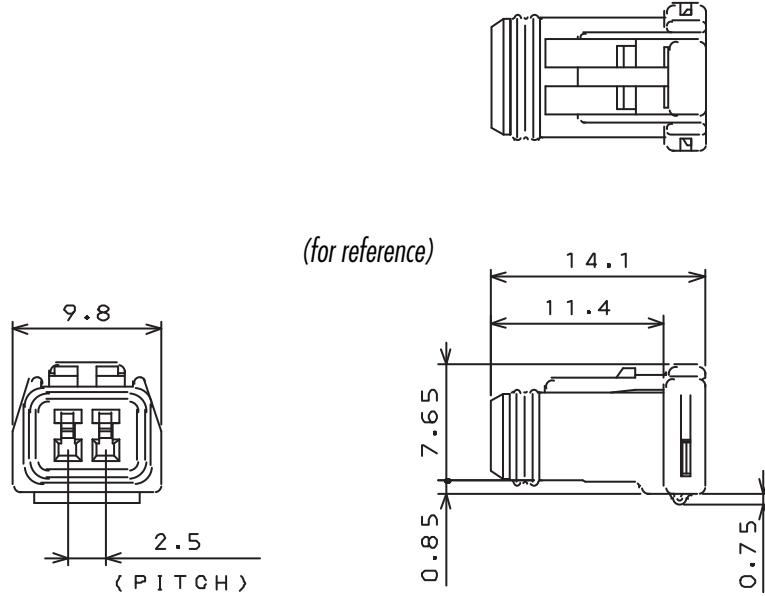


• Please consult JAE for verification of product availability.
Dimensions in mm.

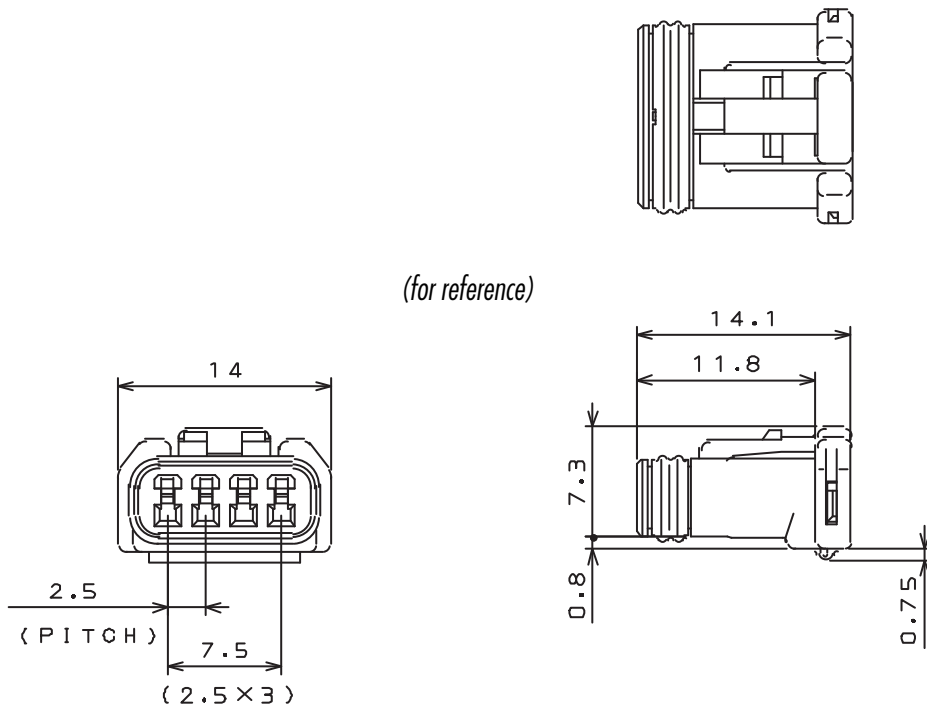
MX19 Series

Small waterproof relay connector

3) 2 pos. Socket housing (MX19002S51, MX19002S52)



4) 4 pos. Socket housing (MX19004S51, MX19004S52)

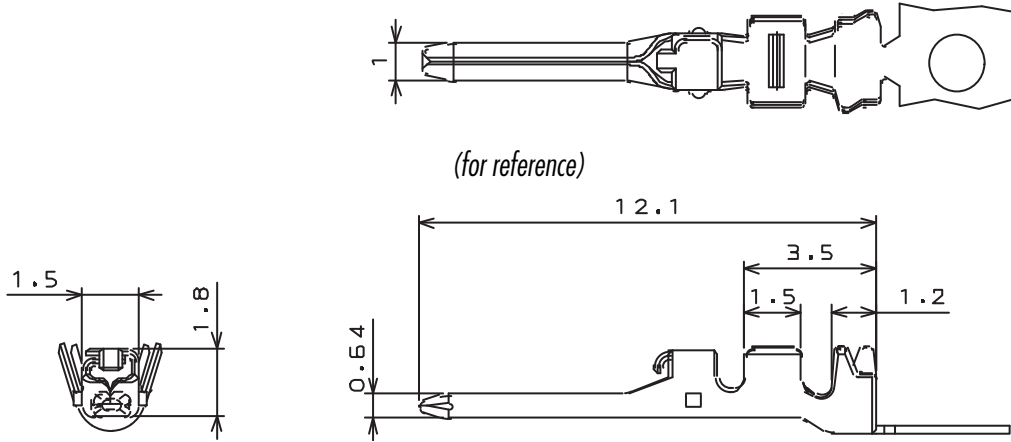


• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

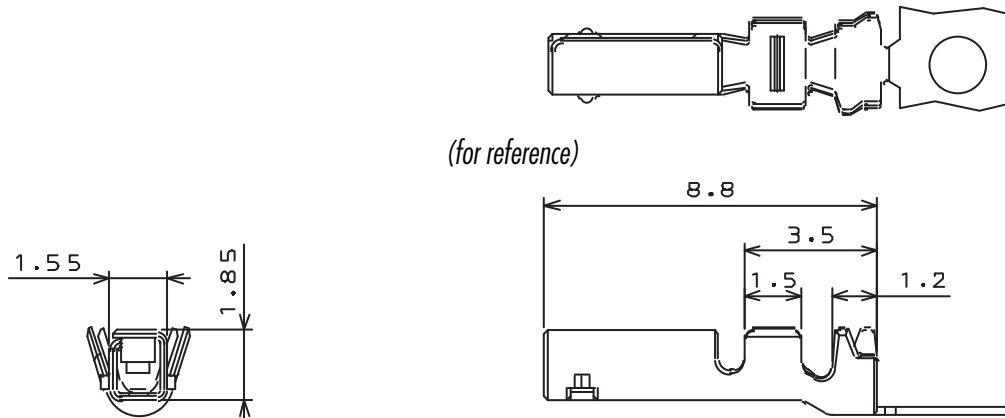
MX19 Series

Small waterproof relay connector

5) Pin contact (MX19P10K451)



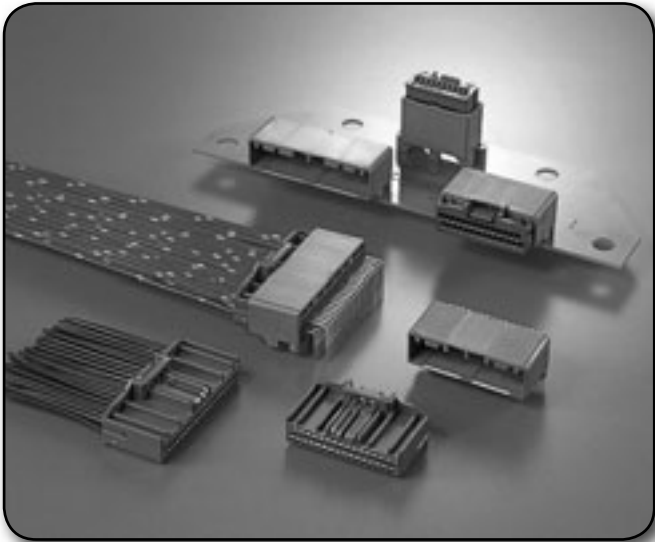
6) Socket contact (MX19S10K451)



• Please consult JAE for verification of product availability.
Dimensions in mm.

MX34 Series

Compact Automotive Connectors for PCB-to-Cable Applications



FEATURES

- Compact, lightweight, double row PCB-to-cable connector with 2.2 mm horizontal pitch and 3 mm diagonal pitch.
- Up to 40 poles reduces the mating and unmating force to 80N or less.
- Socket contact with box-type pin header is durable to external force; contact part is highly resistant to twisting and equipped with a proven double leaf spring.
- Adoption of a preset-type retainer facilitates easy wire harness operation. If retainer is not completely inserted in housing, the connector is not engaged, and incomplete contact insertion is detected.
- Lock connector spring is equipped with a bridge protecting the contacts from external load.

The MX34 Series connectors are compact, non-waterproof connectors with a double row of contacts, and are developed for automotive use.

The up to 40 poles reduces mating and unmating force to 80N or less and improves workability. Furthermore, automotive connector requirements such as the preset type of double locking mechanism and box type of pin header are satisfied.

GENERAL SPECIFICATIONS

No. of contacts	12, 16, 20, 24, 28, 32, 36, 40 pos.
Contact resistance	5m ohm max. (initial)
Dielectric withstanding voltage	AC 1000V (per minute)
Operating temperature	-40°C to +85°C
Insulation resistance	100M ohm min

Applicable Wire

Part Number	Applicable Wire	SJ Drawing
M34S75C4F2	"AVSS0.5mm2, CHFUS0.5mm2~0.75mm2"	SJ038528
M34S75C4F3	CAN_SD_0.35mm2(note1)	SJ038747
M34S75C4F4	AVSS0.85mm2(note2)	SJ038893

MATERIALS AND FINISHES

Components	Materials/Finishes
Socket Connector	
Socket housing	66NY+PPE(ALLOY)
Retainer	66NY+PPE(ALLOY)
Pin Connector	
Pin insulator	SPS GF 30
Pin contact	Brass/Sn plating
Pin contact2	Brass/Sn plating
Socket Contact	
Socket contact	Highly conductive material/Sn plating

• Please consult JAE for verification of product availability. Dimensions and specifications subject to change without notice.

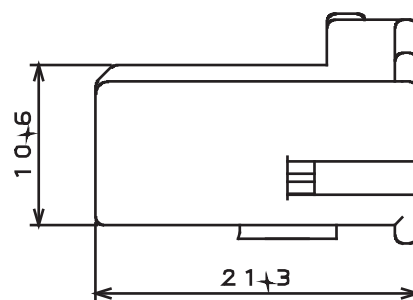
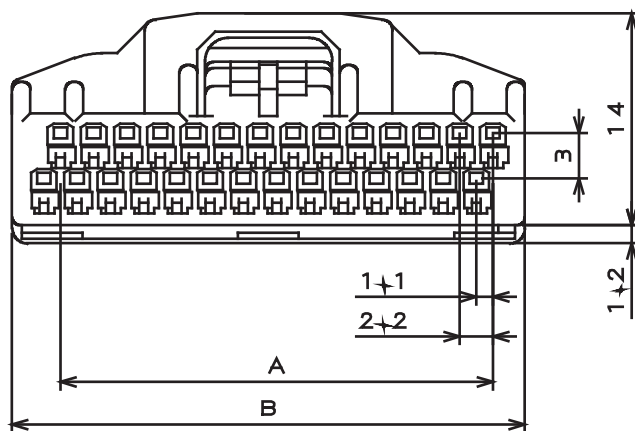
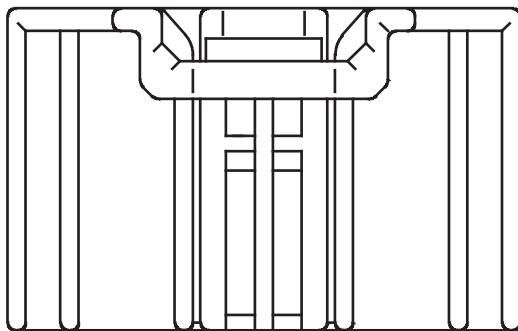
MX34 Series

Compact Automotive Connectors for PCB-to-Cable Applications

Crimp tool

Part Number	Hand Crimp Tool	Semi Automatic Applicator	Automatic Applicator
M34S75C4F1	CT150-2-MX34	350-MX34B-2	350-MX34B-3B
M34S75C4F2	CT150-1-MX34		
M34S75C4F3, 4	—	350-MX34C-2	350-MX34C-3B

Socket housing



No. of pos.	Part Number	SJ Drawing	Diameter(A)	Diameter(B)
12	MX34012SF1	SJ100717	11.0	16.3
16	MX34016SF1	SJ038754	15.4	20.7
20	MX34020SF1	SJ038752	19.8	25.1
24	MX34024SF1	SJ100271	24.2	29.5
28	MX34028SF1	SJ038623	28.6	33.9
32	MX34032SF1	SJ038756	33.0	38.3
36	MX34036SF1	SJ100270	37.4	42.7
40	MX34040SF1	SJ038526	41.8	47.1

• Please consult JAE for verification of product availability.

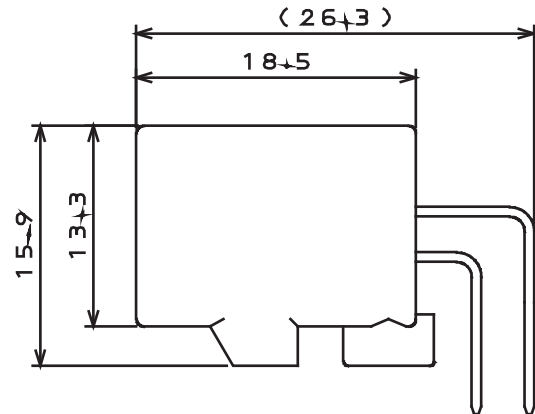
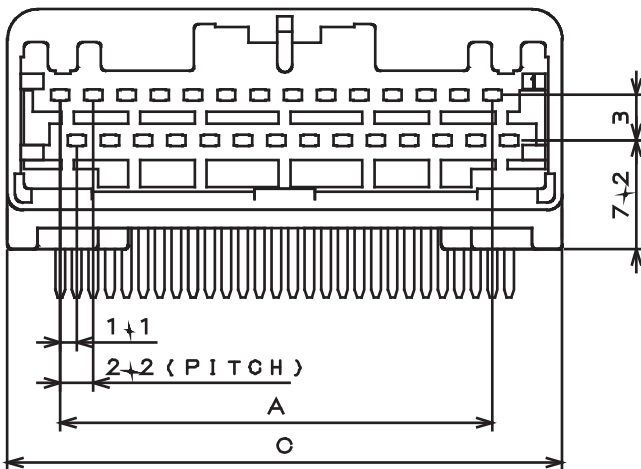
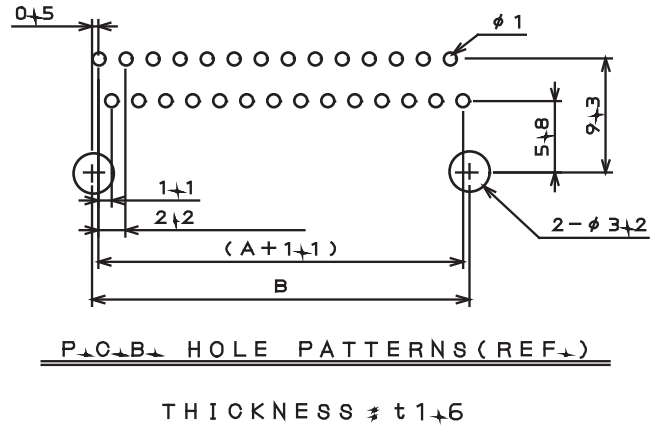
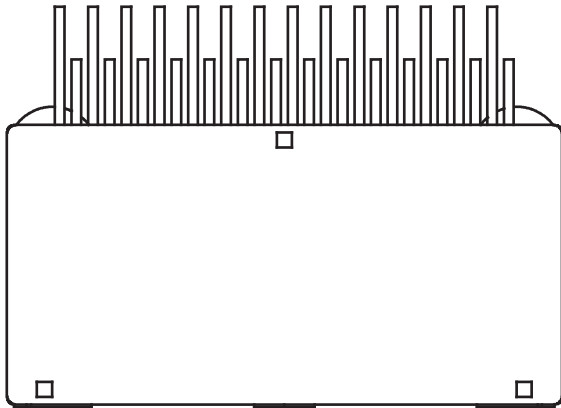
Dimensions in mm.

MX34 Series

Compact Automotive Connectors for PCB-to-Cable Applications

Angle Pin Header

BODY CHASSIS SYSTEMS



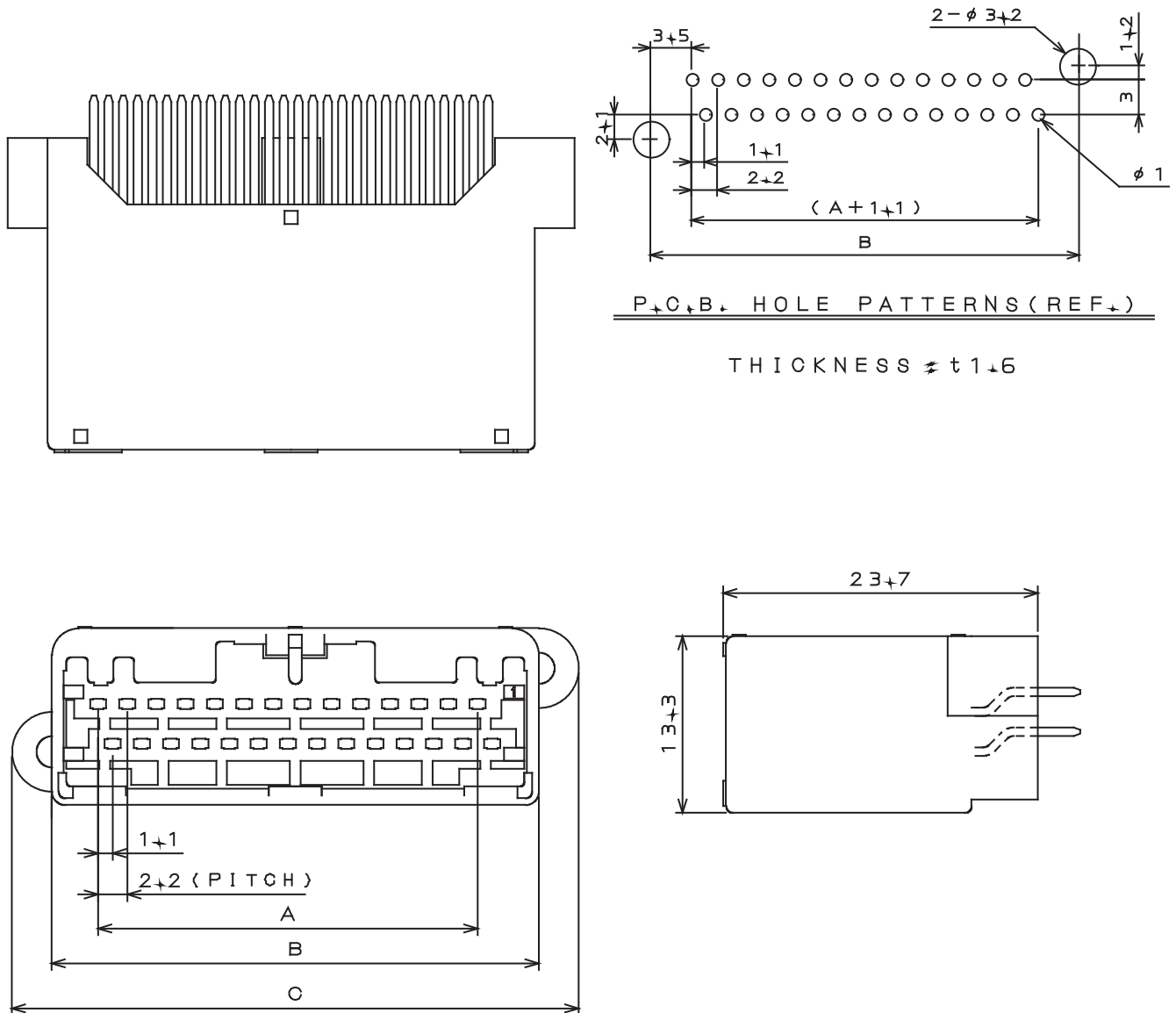
No. of pos.	Part Number	SJ Drawing	Diameter(A)	Diameter(B)	Diameter(C)
12	MX34012NF1	SJ100715	11.0	13.1	19.1
16	MX34016NF1	SJ038753	15.4	17.5	23.5
20	MX34020NF1	SJ038751	19.8	21.9	27.9
24	MX34024NF1	SJ100269	24.2	26.3	32.3
28	MX34028NF2	SJ106304	28.6	30.7	36.7
32	MX34032NF2	SJ106305	33.0	35.1	41.1
36	MX34036NF2	SJ106307	37.4	39.5	45.5
40	MX34040NF2	SJ106309	41.8	43.9	49.9

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX34 Series

Compact Automotive Connectors for PCB-to-Cable Applications

Straight Pin Header



BODY CHASSIS SYSTEMS

No. of pos.	Part Number	SJ Drawing	Diameter(A)	Diameter(B)	Diameter(C)
12	MX34012UF1	SJ100716	11.0	19.1	25.1
16	MX34016UF1	SJ038766	15.4	23.5	29.5
20	MX34020UF1	SJ038765	19.8	27.9	33.9
24	MX34024UF1	SJ100221	24.2	32.3	38.3
28	MX34028UF2	SJ106312	28.6	36.7	42.7
32	MX34032UF2	SJ106313	33.0	41.1	47.1
36	MX34036UF2	SJ106314	37.4	45.5	51.5
40	MX34040UF2	SJ106315	41.8	49.9	55.9

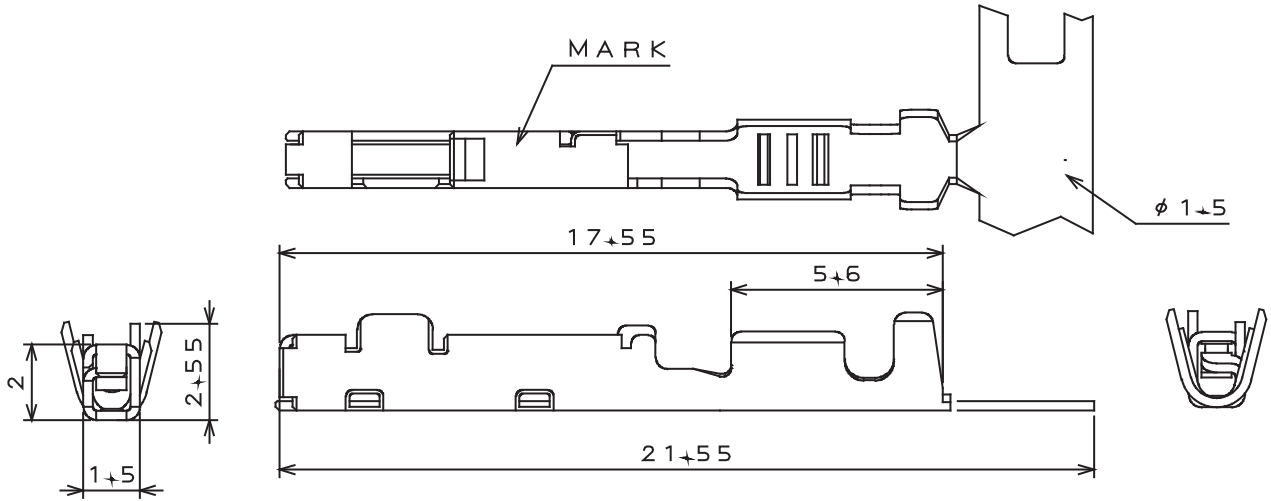
• Please consult JAE for verification of product availability.
Dimensions in mm.

MX34 Series

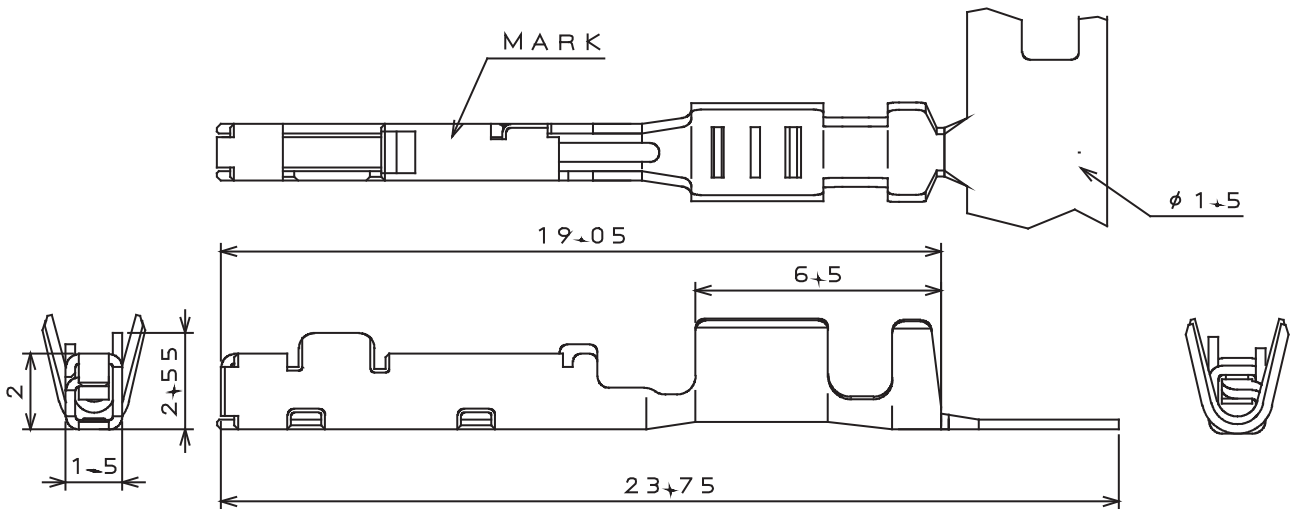
Compact Automotive Connectors for PCB-to-Cable Applications

Socket Contact

1) M34S75C4F1, F2



2) M34S75C4F3, F4



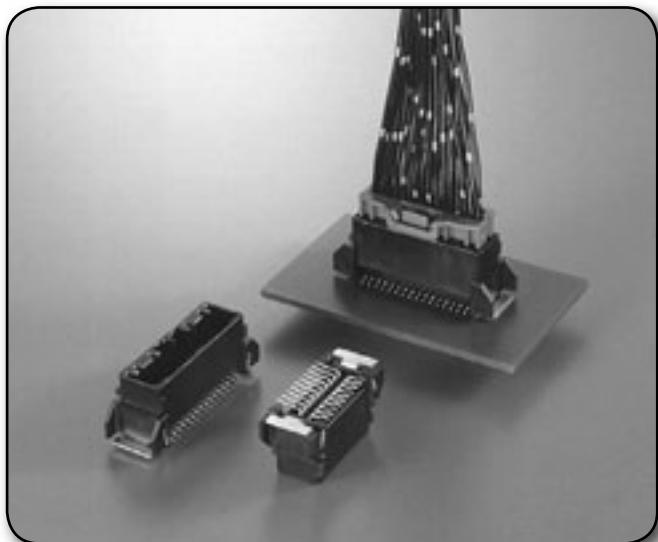
Others

Specification	JACS-1754
Handling Instructions	JACS-1754

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX34R Series

Compact SMT Type Automotive Connectors



FEATURES

- Compact straight SMT type with double row staggered 2.2 mm side pitch. (Available in 20-position and 32-position.)
- Fixed to board by hold-downs on both sides, screw mounting is not necessary.
- Can be mated with existing MX34 Series socket connector.
- Adopts heat resistant PPS resin and is compatible with soldering by reflow mounting.
- Soldering area of terminal appears on both sides of the connector so soldering can be easily confirmed.
- Has a shape with consideration for pick-and-place by automated mounting.



An SMT (Surface Mount Technology) type has been added to the automotive use MX34 Series. The new type is a straight pin-header available in 20-position and 32-position. It adopts PPS as the housing resin to withstand the reflow mounting temperature. Screws are not necessary due to the hold-downs equipped on both sides for board mounting.

GENERAL SPECIFICATIONS

Contact Resistance	5m ohm max. (initial)
Dielectric Withstanding Voltage	AC 1000V (per minute)
Operating Temperature	-40°C to +85°C
Insulation Resistance	100M ohm min
Durability	50 mating cycles
Applicable Board Thickness:	±1.6 mm

MATERIALS AND FINISHES

Components	Materials/Finishes
Housing	PPS GF40
Pin terminal	Copper alloy/ Sn plating over Ni
Hold-down	Brass/ Sn plating over Ni

• Please consult JAE for verification of product availability.
Dimensions in mm.

MX34R Series

Compact SMT Type Automotive Connectors

Part Number and SJ Drawing

No. of Contacts	Part Number	SJ Drawing
20	MX34R20VF1	SJ106351
32	MX34R32VF1	SJ106352

* Connectors for the opposite side (for reference)

Socket housing

No. of Contacts	Part Number	SJ Drawing
20	MX34020SF1	SJ038752
32	MX34032SF1	SJ038756

Socket Contact

Part Number	Applicable Wire	SJ Drawing
M34S75C4F1	AVSS0.3mm ² , CHFUS0.22mm ² ~0.35mm ²	SJ038527
M34S75C4F2	AVSS0.5mm ² , CHFUS0.5mm ² ~0.75mm ²	SJ038528
M34S75C4F3	CAN SD 0.35mm ² (note1)	SJ038747
M34S75C4F4	AVSS0.85mm ² (note2)	SJ038893

Note 1: M34S75CF3 and M34S75CF4 can only be inserted in double row cavities on both ends, four housing cavities in total.

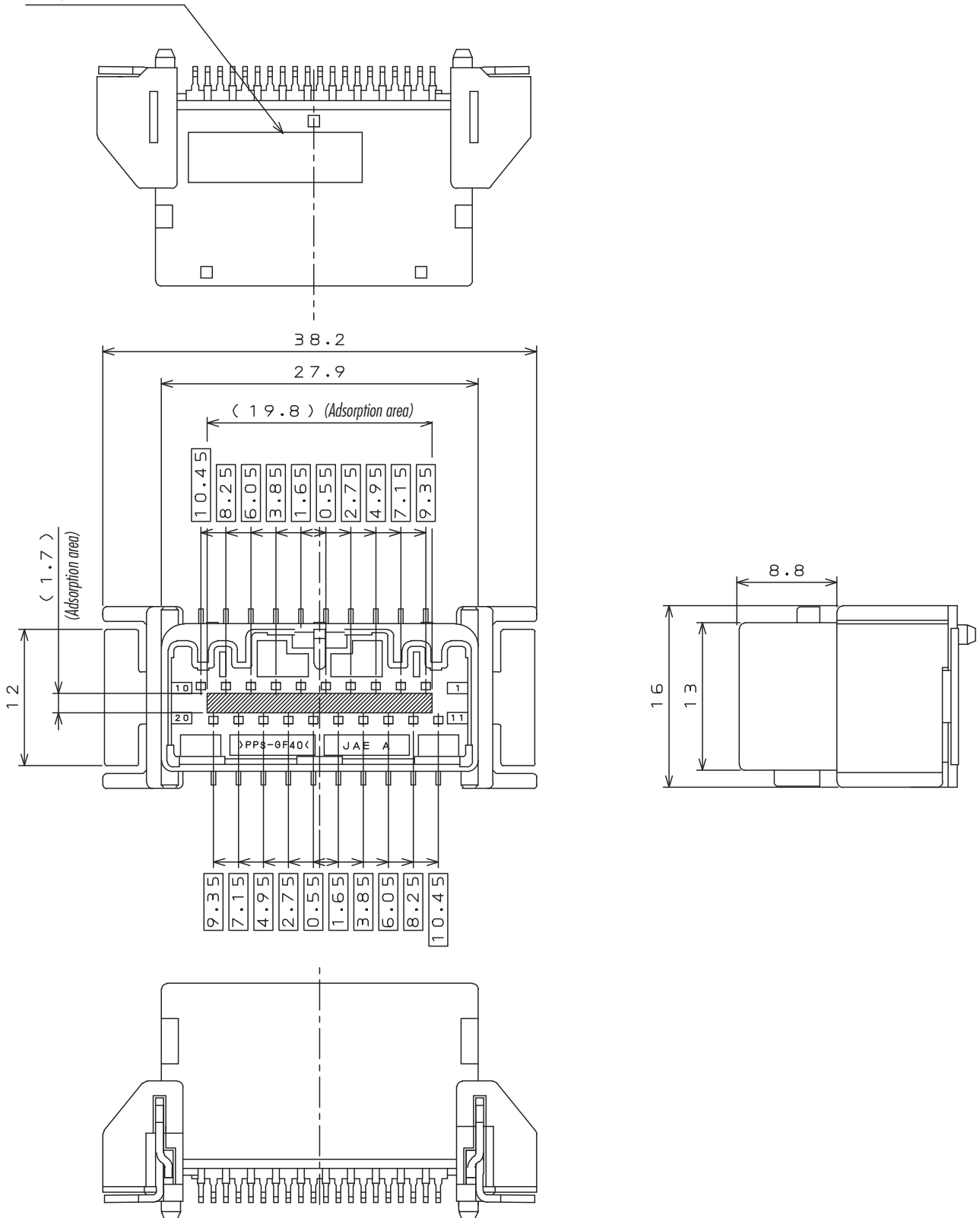
• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX34R Series

Compact SMT Type Automotive Connectors

1) MX34R20VF1 (SJ Drawing: SJ106351)

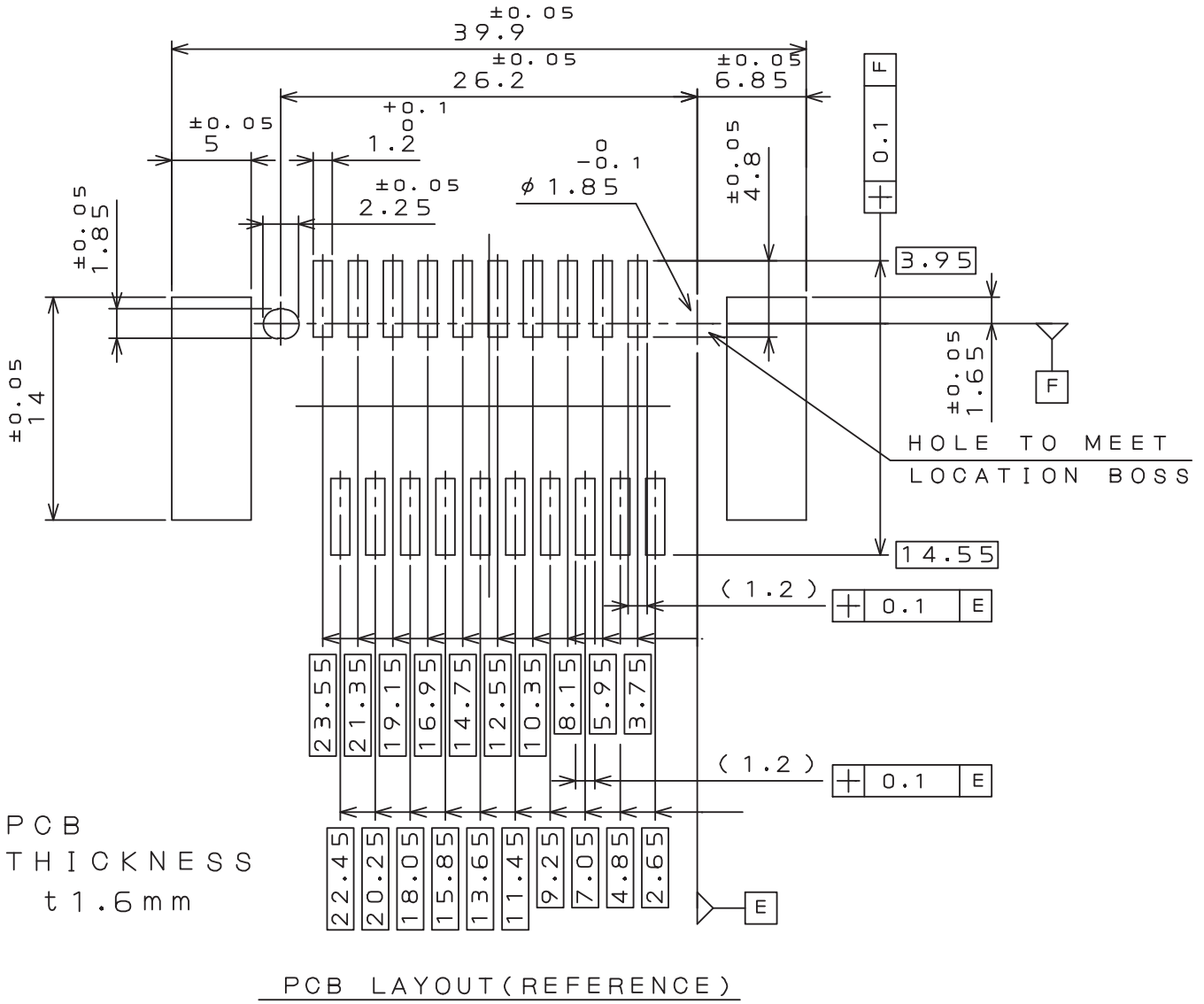
Assembly Lot No.



• Please consult JAE for verification of product availability.
Dimensions in mm.

MX34R Series

Compact SMT Type Automotive Connectors



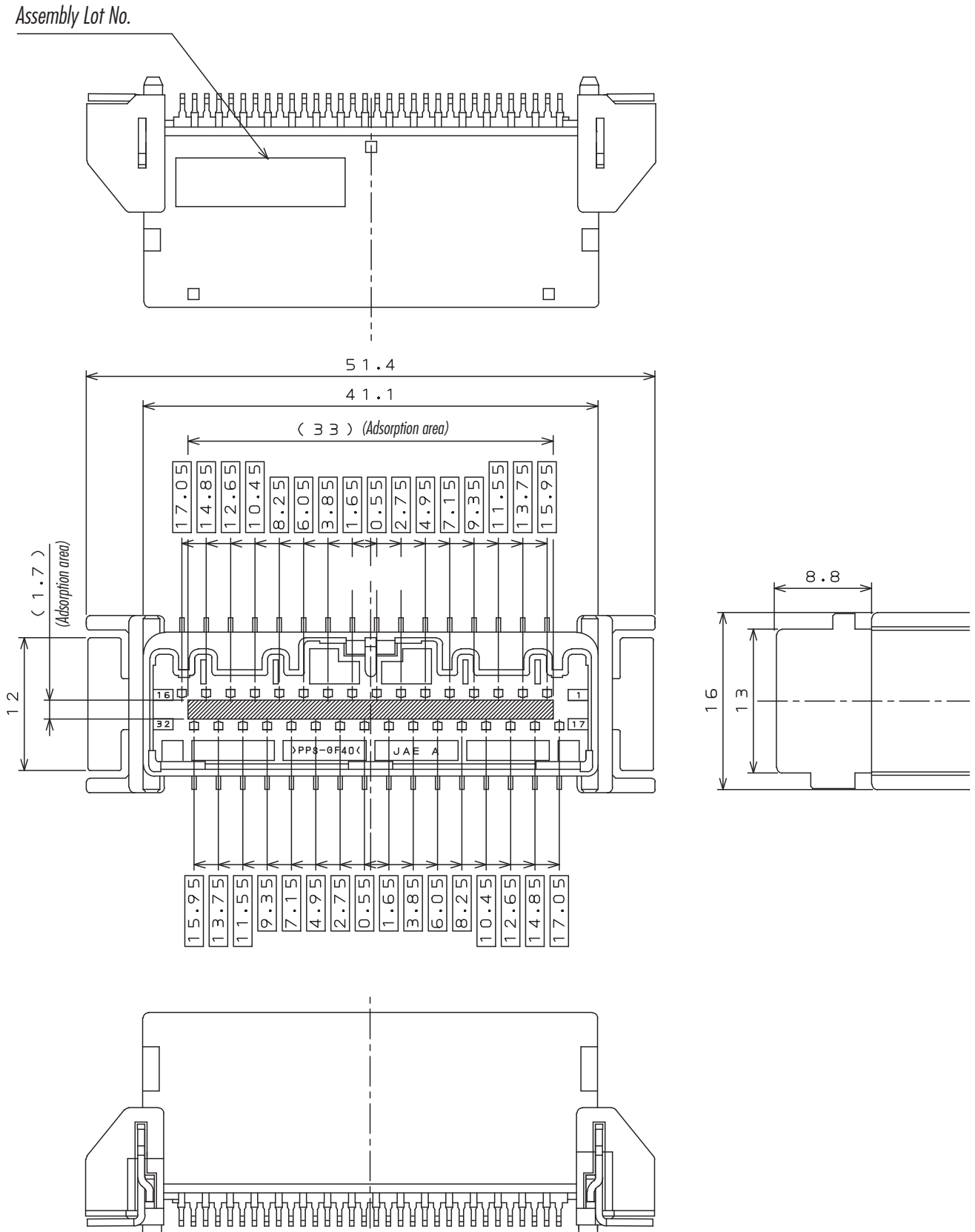
PCB
THICKNESS
t 1.6 mm

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX34R Series

Compact SMT Type Automotive Connectors

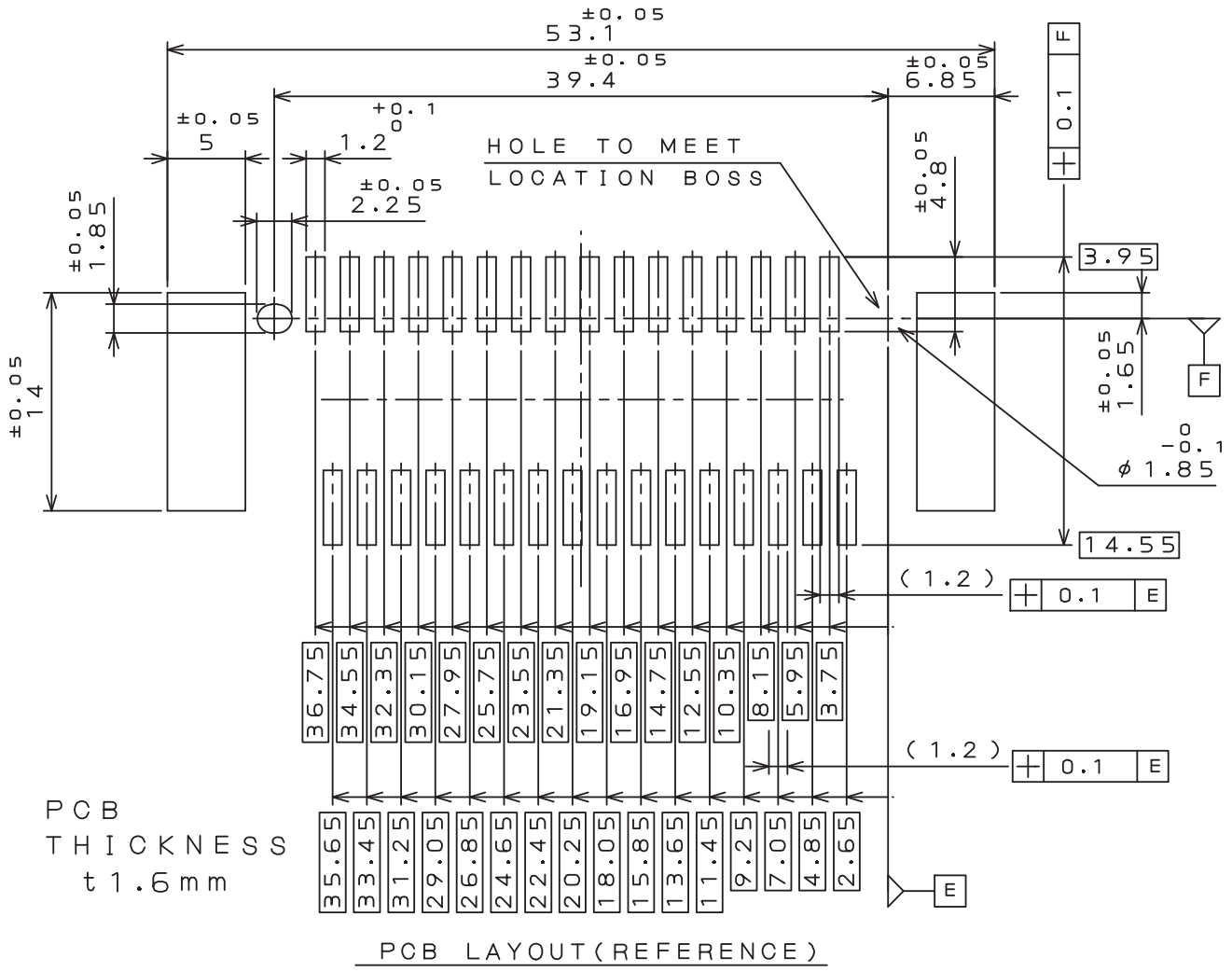
2) MX34R32VF1 (SJ Drawing: SJ106352)



• Please consult JAE for verification of product availability.
Dimensions in mm.

MX34R Series

Compact SMT Type Automotive Connectors



Others

Specification	JACS-1754-10
Handling Instructions	JACS-1754

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX5 Series

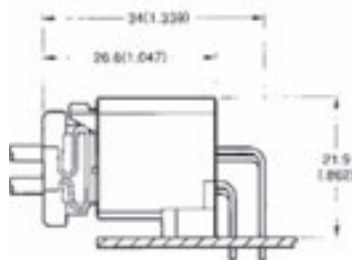
040/070 Crimp Contacts, PCB-to-Cable Applications



FEATURES

- Designed for interconnections for automotive electronic equipment.
- Designed for high density packaging with numerous contacts in an engine control unit.
- Signal contacts (4 Amps) and power contacts (8 Amps) are housed in the same connector.
- Several wire-terminated sockets are coupled with a pin header mounted on a board.
- Mechanical lock assures positive mating.
- Double locking mechanism avoids contact dislodging.
- Highly reliable socket contacts.
- Simplified crimp type termination.

Connector Profile (Ref.)



• Please consult JAE for verification of product availability.
Dimensions in mm.

GENERAL SPECIFICATIONS

No. of contacts	Pin: 26, 34, 42, 48, 54, 64, 76 Socket: 12, 16, 22, 26
Contact Spacing	Signal: 3.0mm (.118") Power: 3.5mm (.138")
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	5 milliohms max.
Operating Temperature	-40°C to +85°C
Applicable PCB Thickness	1.6mm (.063")

Applicable Wire

Contact Type	Signal	Power
Wire Type JIS	AVS, AVSS, AVX	
AWG	#24 to #18	#22 to #16, #14 (AVSS)
Conductor Cross Section Area	0.2 to 0.85mm ²	0.3 to 2mm ²
Insulation Outer Diameter	1.2 to 2.2mm (.047 to .087")	1.4 to 2.9mm (.055 to .114")

Note: 2mm² for AVSS only.

MATERIALS AND FINISHES

Components	Materials/Finishes
Insulator	Glass-filled PBT (green or light blue for 34 contacts only, note 2)
Socket Housing	PBT (Green, note 2)

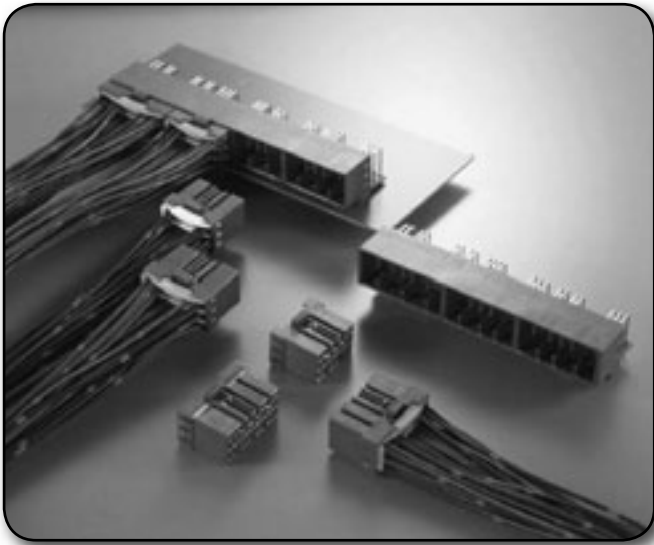
Note 1: For pin contacts, tin plating is standard finish. Gold plated contacts can be supplied with standard contacts in the same connector. Please consult JAE for details.

Note 2: The standard color of insulator and socket housings is green. Other colors are available. For details, please consult JAE.

Consult JAE for "Ordering Information".

MX7 Series

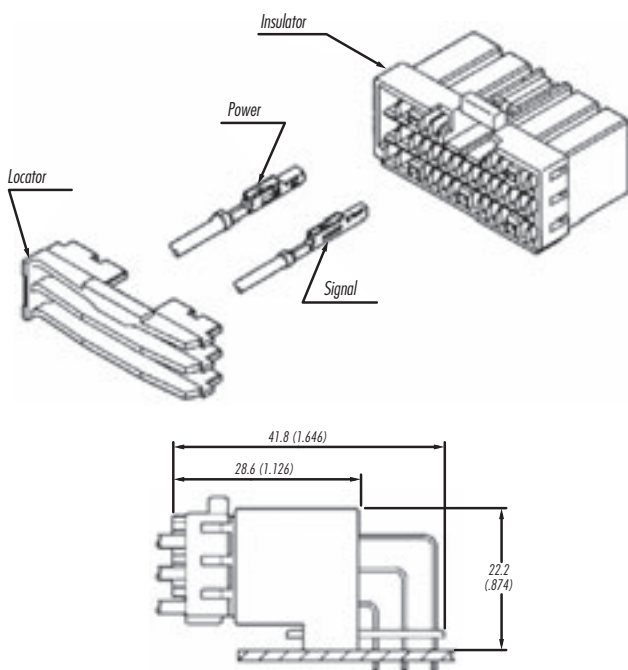
025 Crimp Contacts, PCB-to-Cable Connectors



FEATURES

- Signal contacts (5 Amps) and Power contacts (7 Amps) are housed in the same connector
- Mechanical lock assures positive mating
- Double locking mechanism prevents contact from dislodging
- Several wire terminated sockets are coupled with a pin header mounted on a board
- Designed for Engine Control Unit

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of contacts	Pin: 35, 48, 93, 109, 119 Socket: 20, 26, 28, 30, 35
Contact Spacing	Signal: 2.3mm (.091") Power: 3.0mm (.118")
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	3 milliohms max.
Operating Temperature	-40°C to +85°C
Applicable PCB Thickness	1.6mm (.063")

Applicable Wire (Stranded)

Contact Type	Signal		Power
Wire Type JIS	AVS	AVSS	AVS, AVSS
Conductor Cross Section Area	0.3~0.5mm ²	0.3~0.85mm ²	0.5~1.25mm ²
AWG	#22-#20	#22-#18	#20-#16
Insulation Outer Diameter	ø1.4~ø2.1mm (ø.055~ø.083")		ø1.6~ø2.6mm (ø.063~ø.102")

MATERIALS AND FINISHES*

Description	Materials/Finishes
Insulator	Glass-filled PBT (Dark Gray)
Socket	PBT (Dark Gray)
Insulator	Glass-filled PPS (UL94V-0) Black
Locator	Glass-filled PBT (Dark Gray)
Pin Contact	High Conductive Copper Alloy/Tin Plating or Gold (Connecting points)
Socket Contact	High Conductive Copper Alloy/Tin Plating or Gold (Connecting points) with Solder (Tin-Lead terminal area) Plating over Nickel
Retainer	Glass-filled PBT (20 Position: White, 26/35 Position: Light Blue, 28 Position: Orange, 30 Position: Green)

Note 1: Insert the number of gold plated contact for Power and Signal contacts

P*The Number of Power Contacts

S*The Number of Signal Contacts

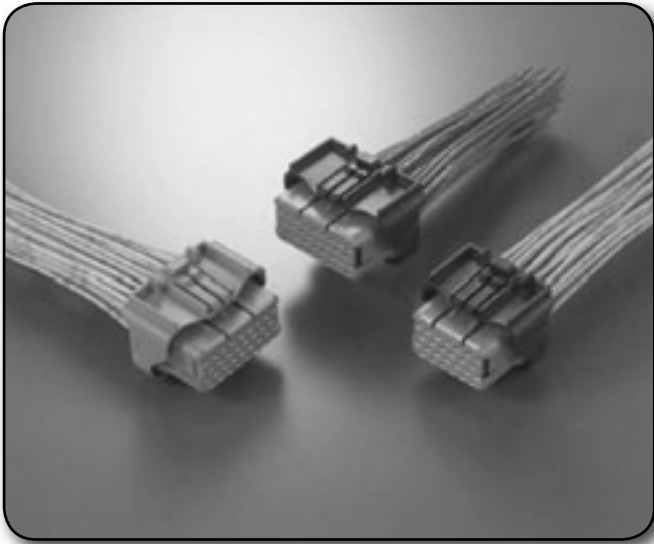
- The above shows the general group of products. Please contact JAE Customer Service when placing an order.
- Suggested screws: M3 tapping screws (2 or 4 grade) per JIS B1115, 1122 or 1123
- Drawing shown is for 35 positions. The stacking design varies according to the number the positions.

Consult JAE for "Ordering Information".

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX12 Series

Waterproof socket connector for automobiles



FEATURES

- Highly reliable, proven two-plate spring mechanism.
- Front cap detects incomplete insertion to the housing.
- Each cable connection is individually sealed with waterproof rubber seal.
- Three types of waterproof rubber cable seals are available. Select for the cable diameter.
- Waterproof seal ring in the connection area is completely protected by insulator walls.
- The mating pin connector can be customized to provide an integrated waterproof casing, different wire bonding specifications, and to attach water repellent filters.



This waterproof connector is designed for use in the engine compartment of an automobile. The connector is designed for harsh environments, and has sealing rings around the connector mating area. Individual contact connections are sealed with a waterproof rubber seal attached to the cable.

POWER TRAIN SYSTEMS

GENERAL SPECIFICATIONS

No. of contacts	26, 34 (For 34 contacts, different notch spec available.)
Contact resistance	Less than 10mΩ
Withstand voltage	AC1000V for 1 minute
Operating temperature	-40°C to +125°C (including temperature rise due to applied current)
Insulation resistance	Greater than 100MΩ
Lifetime	50 times

Applicable Cable

Cable type	AVSS, AVS
Cross section of conductor	0.3mm ² to 1.25mm ²
A.W.G No.	#22 to #16
Outer diameter of cable	ø1.4 to ø2.6

(Note) There are two types of contacts in accordance with the cable size.

MATERIALS AND FINISHES

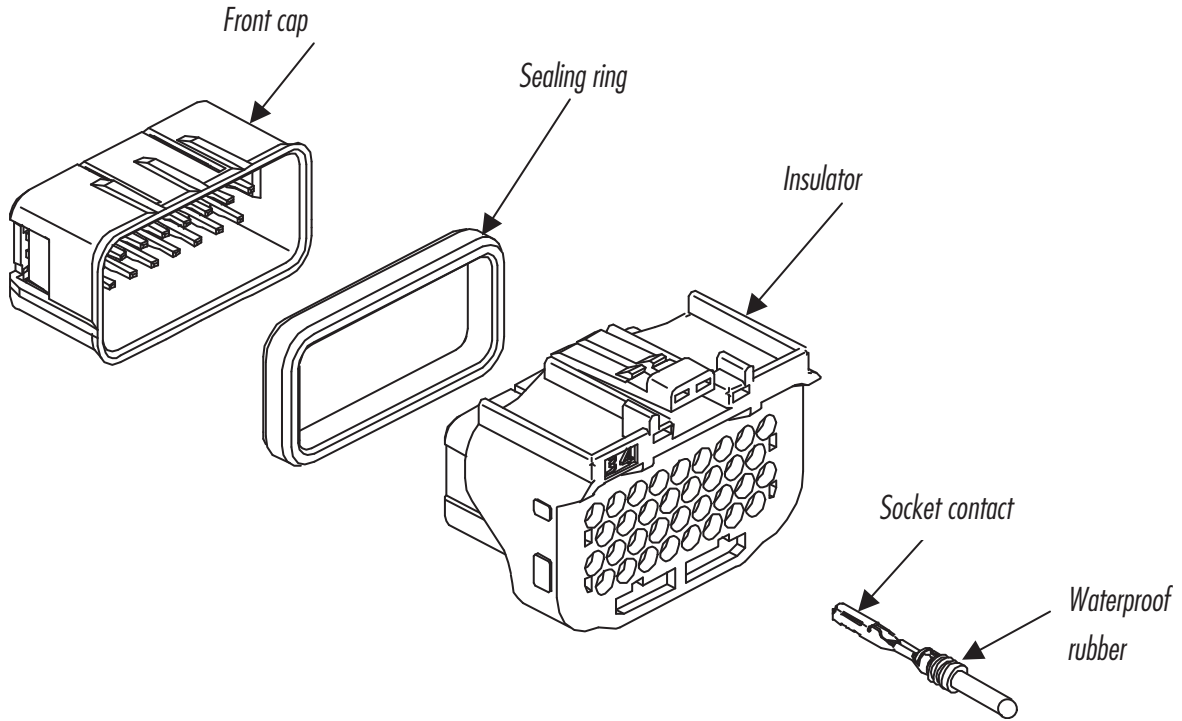
Components	Materials/Finishes
Insulator	Glass filled PBT
Sealing ring	Silicon rubber
Front cap	Glass filled PBT
Socket contact	Copper alloy/ Sn or Au plating
Rubber plug	Silicon rubber
Dummy plug	Silicon rubber

• Please consult JAE for verification of product availability.
Dimensions in mm.

MX12 Series

Waterproof socket connector for automobiles

Part Configuration



Tooling

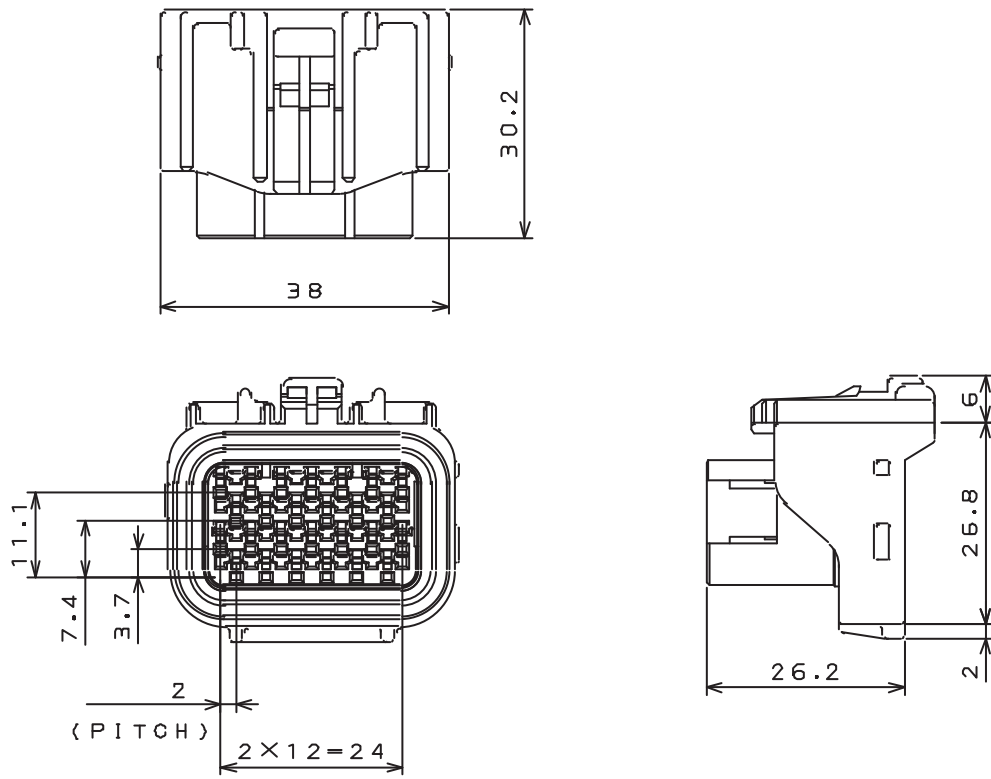
Applicable contact	Hand crimping tool	Semi automatic applicator	Automatic applicator
M12S04K953, M12S04K921	CT160-3-W2C2	350-MX12C2-2B	350-MX12C2-3B
M12S04K954 M12S04K922	CT160-3-W2C3	350-MX12C3-2B	350-MX12C3-3B

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

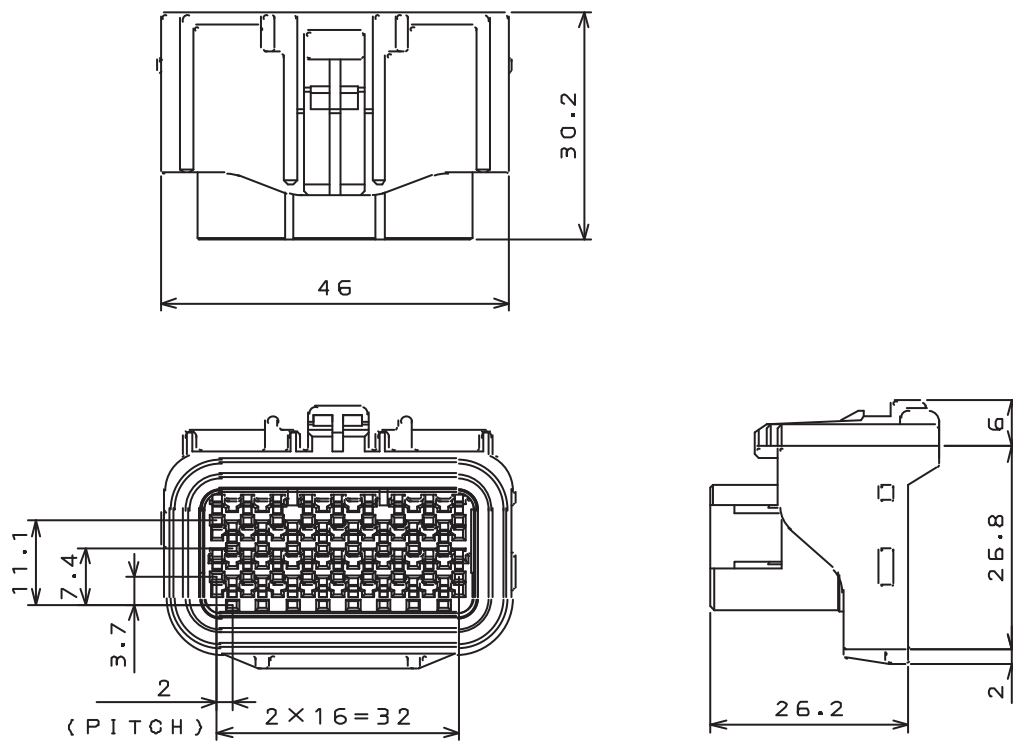
MX12 Series

Waterproof socket connector for automobiles

1) 26 pos. Socket housing (MX12026S91)



2) 34 pos. Socket housing (MX12034S91)

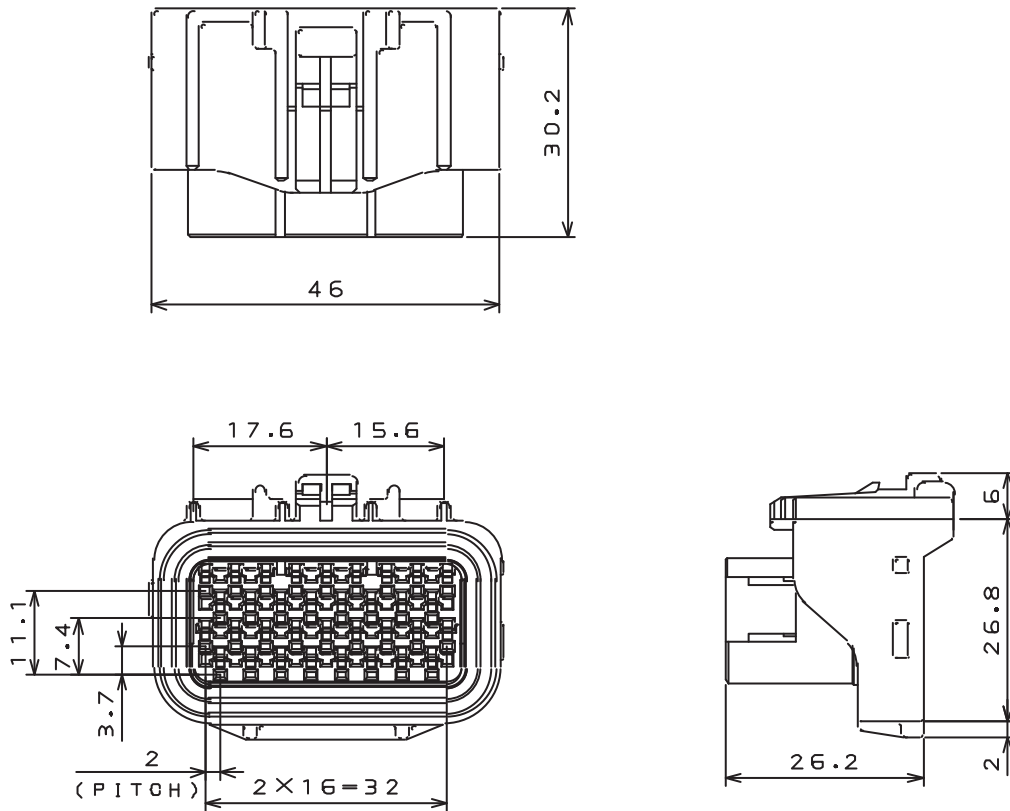


• Please consult JAE for verification of product availability.
Dimensions in mm.

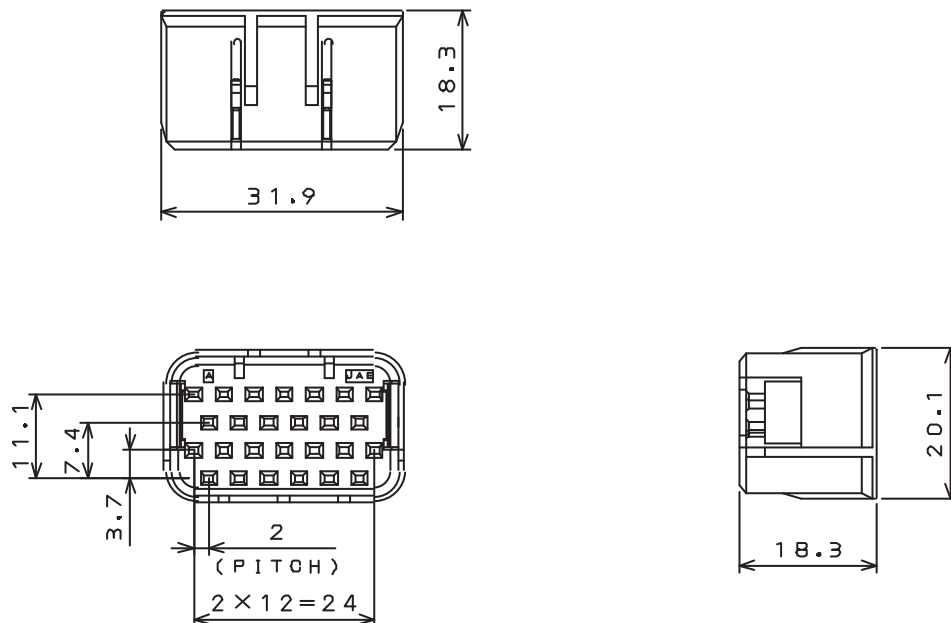
MX12 Series

Waterproof socket connector for automobiles

3) 34 pos. Socket housing (MX12034SN2)



4) 26 pos. Front cap (M120-54937)

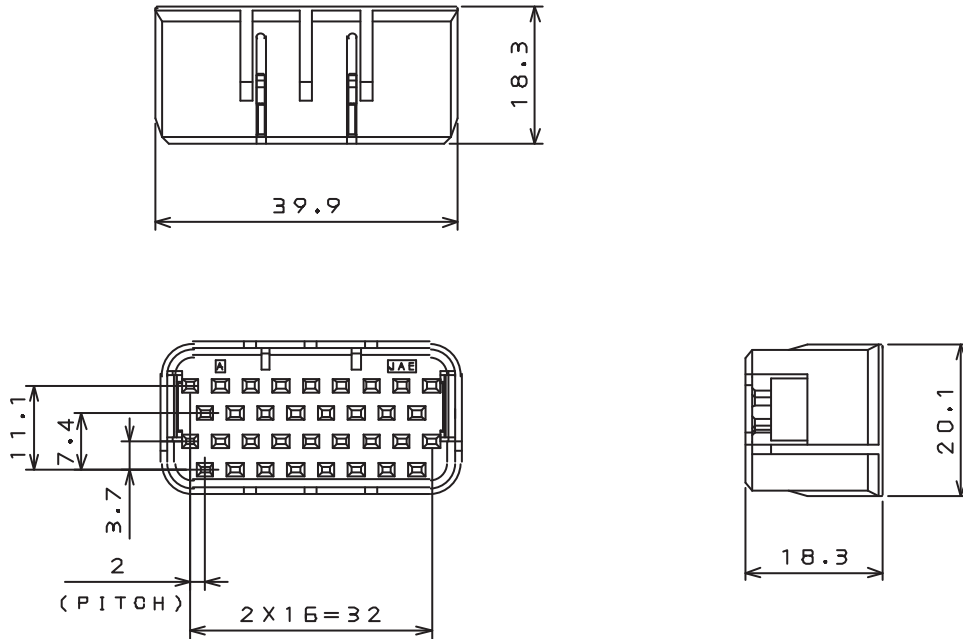


• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX12 Series

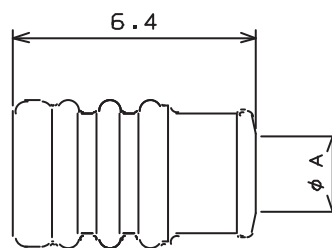
Waterproof socket connector for automobiles

5) 34 pos. Front cap (M120-54938) common use with different key product

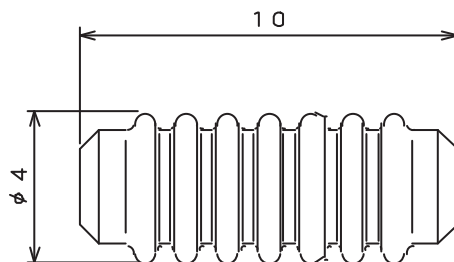


6) Rubber plug

Part Number	ø A Dimension	Applicable covered outer diameter	Color
M351-50174	2	ø2.2 to ø2.6	blue
M351-50175	1.6	ø1.8 to ø2.2	black
M351-50176	1	ø1.4 to ø1.8	green



7) Dummy plug (M225-50022)



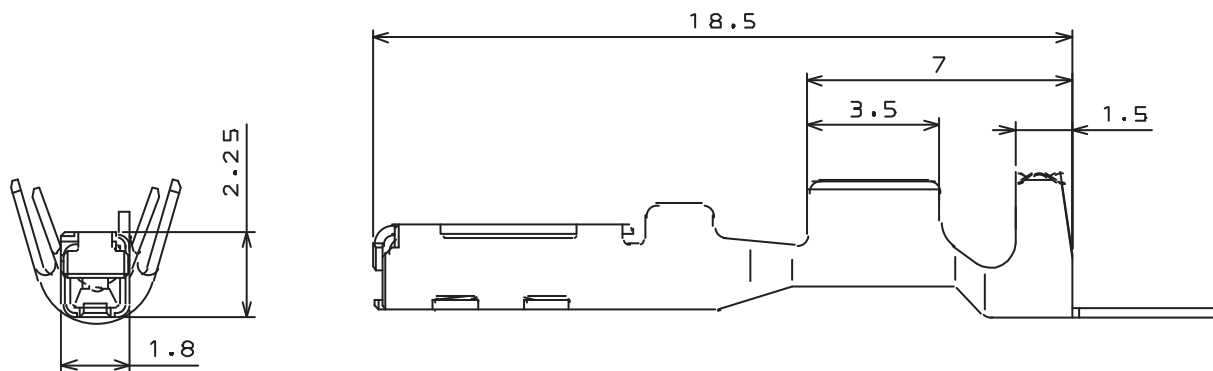
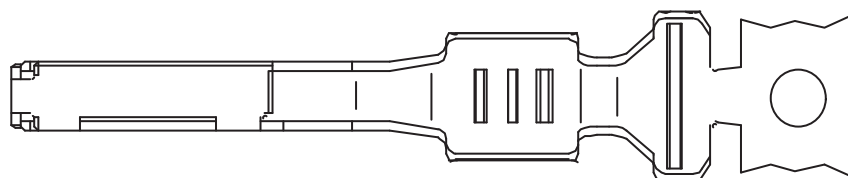
• Please consult JAE for verification of product availability.
Dimensions in mm.

MX12 Series

Waterproof socket connector for automobiles

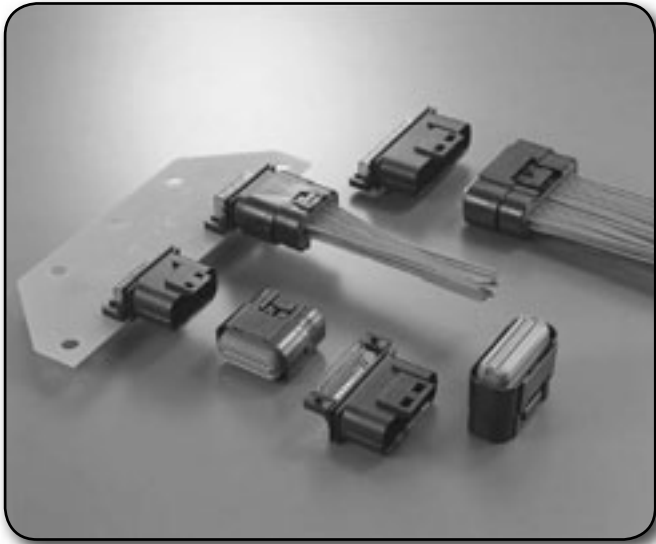
8) Socket contact

Part Number	Applicable wire
M12S04K953 M12S04K921	0.5~1.25mm ² AVSS0.5 to AVS1.25
M12S04K954 M12S04K922	0.3 to 0.85mm ² AVSS0.3 to AVS0.85



MX23A Series

Compact Type Low-profiled Waterproof Connector



FEATURES

- Low profile type with board mounting height of 18.3mm and socket connector height of 22.2mm max.
- Double fin structure with high reliability is adopted for socket contact and large chamfer is prepared in the front-edge side to prevent grommet from damaging.
- Incomplete insertion of socket contact into its housing can be detected with the front cap mounting process.
- Full water proof grommet is used for socket contact crimping area in order to reduce size.
- Water protection seal ring is used in connector's mating area. It realizes full protection from hands touching on insulator wall.
- Reverse type pin connector (with pins facing up) is also available.

MATERIALS AND FINISHES

Socket Contact

Components	Materials/Finishes
Socket Contact	Copper alloy/Sn plating

MX23A connector can be used for wide range water proof equipment including automobiles, motorcycles and so on. This connector has high environmental capability with waterproof structure by sealing in its mating area and by grommet in its wire crimping area for full protection against water. Reverse type pin connector (with pins facing up) is also available in consideration of mounting space.

GENERAL SPECIFICATIONS

No. of contacts	12, 18, 26, 34 pos. (Pin side 2 types: Reverse and Standard **excluding 12 pos.)
Contact resistance	10m ohm max.
Dielectric withstanding voltage	AC 1000 Vr.m.s (1 minute)
Operating temperature	-40°C to +125°C (Including temperature rise caused by power distribution)
Insulation resistance	100M ohm min.
Life time	50 times

Applicable Wire

Cable type	AVSS, AVS (partially)
Cross section of conductor	0.3 to 1.25mm ²
A.W.G No.	#22 to #16
Outer diameter of cable	1.6dia. to 2.2dia. mm

MATERIALS AND FINISHES

Socket Connector

Components	Materials/Finishes
Socket housing	Glass filled PBT
Front cap	Glass filled PBT
Rear cover	Glass filled PBT
Grommet	Silicon rubber
Seal ring	Silicon rubber
Dummy pin	Glass filled PBT

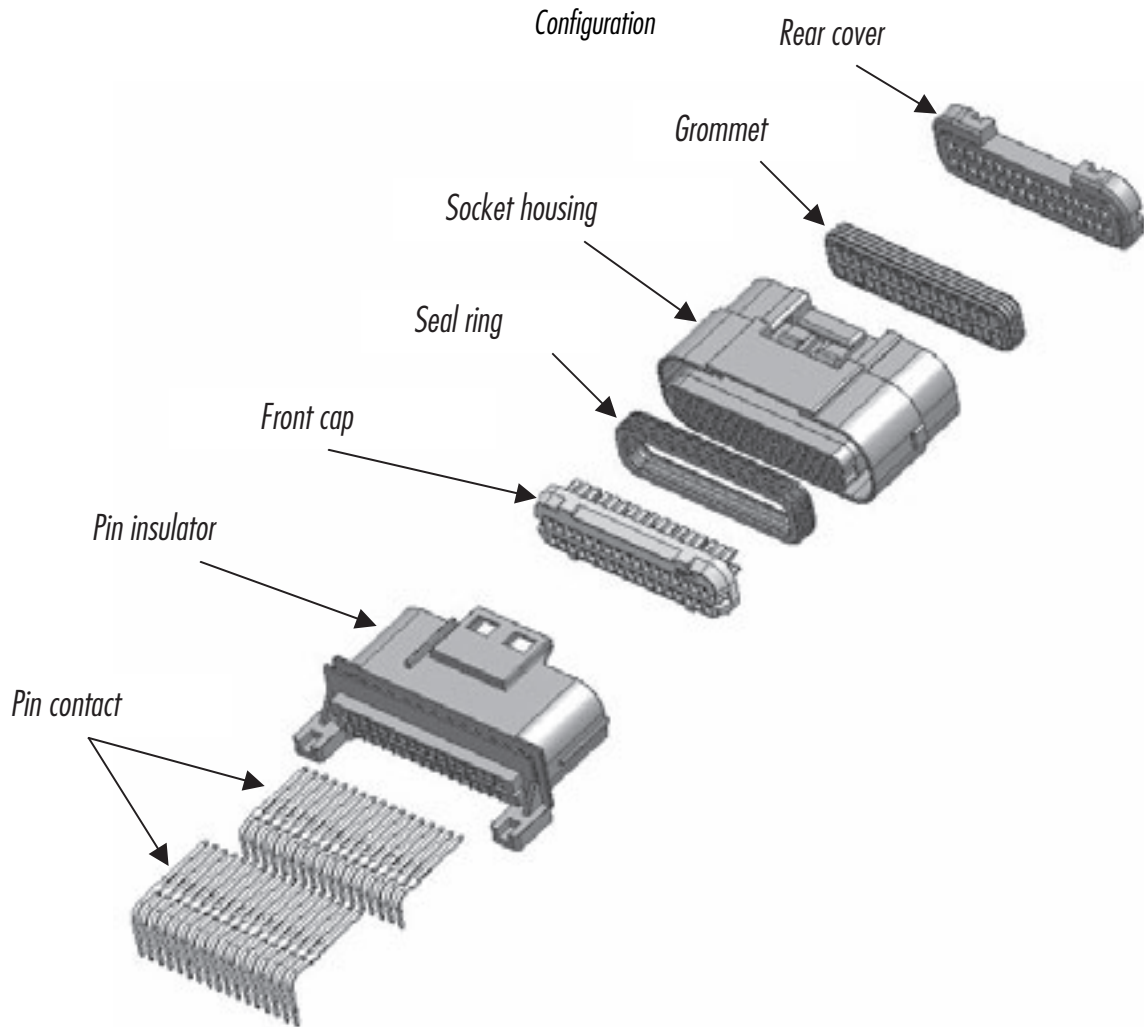
Pin Connector

Components	Materials/Finishes
Pin insulator	Glass filled PBT
Pin contact	Copper alloy/Sn plating

- Please consult JAE for verification of product availability. Dimensions in mm.

MX23A Series

Compact Type Low-profiled Waterproof Connector



Part Numbers

		JAE Part Number
Socket housings	12 pos	MX23A12SF1
	18 pos	MX23A18SF1
	26 pos	MX23A26SF1
	34 pos	MX23A34SF1
Front Cap	12 pos	MX23A12XF1
	18 pos	MX23A18XF1
	26 pos	MX23A26XF1
	34 pos	MX23A34XF1
Pin connectors (STD type)	12 pos	MX23A12NF1
	18 pos	MX23A18NF1
	26 pos	MX23A26NF1
Pin connectors (Reverse type)	18 pos	MX23A18NF2
	26 pos	MX23A26NF2
	34 pos	MX23A34NF2

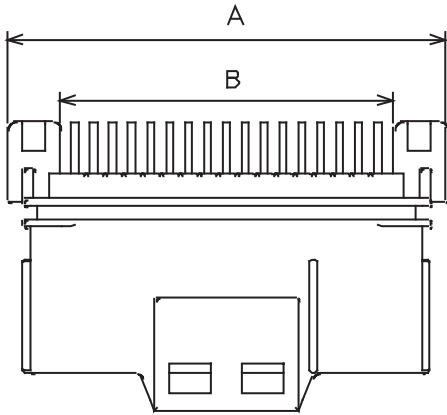
	JAE Part Number
Socket contacts	MX23S05K351
Dummy pin	M120-55780
Hand Crimp Tool	CT160-3B-MX23
Semi automatic applicator	350-MX23-2
Contact release jig	ET-MX23

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

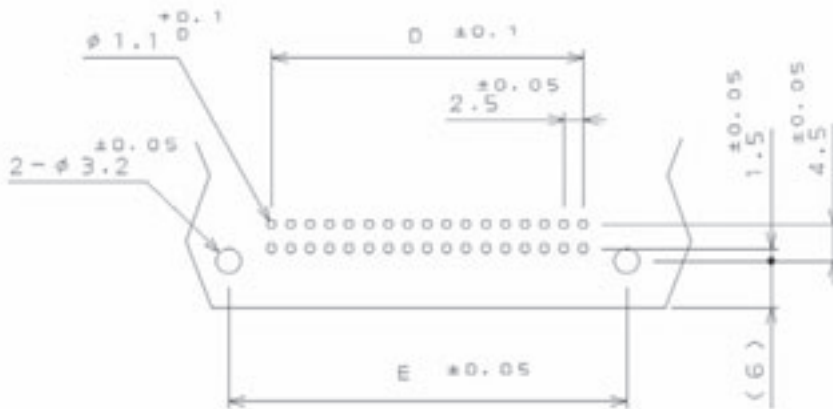
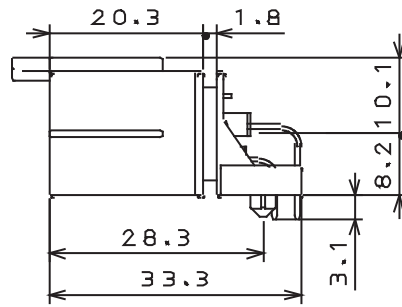
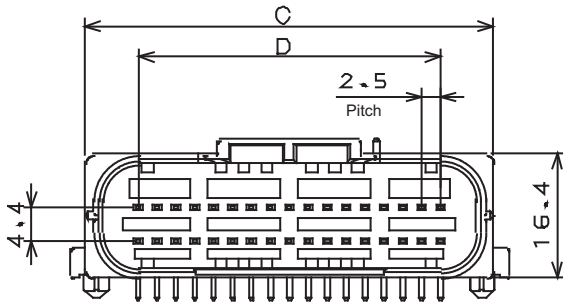
MX23A Series

Compact Type Low-profiled Waterproof Connector

1) Pin connector (Standard)



	A	B	C	D	E
12 pos.	30.5	16.5	26.5	12.5	23.5
18 pos.	38	24	34	20	31
26 pos.	48	34	44	30	41
34 pos.	58	44	54	40	51



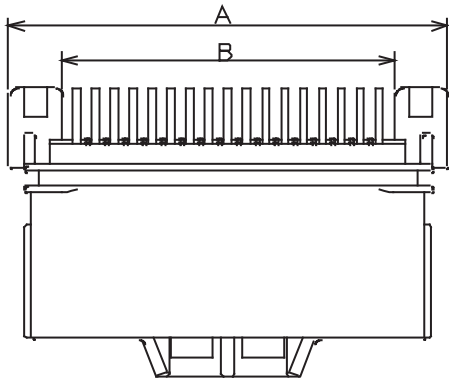
Recommended foot-pattern for PWB (reference)

• Please consult JAE for verification of product availability.
Dimensions in mm.

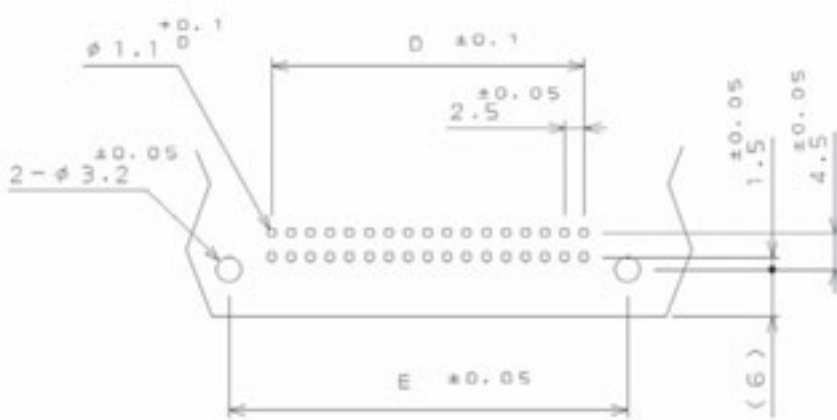
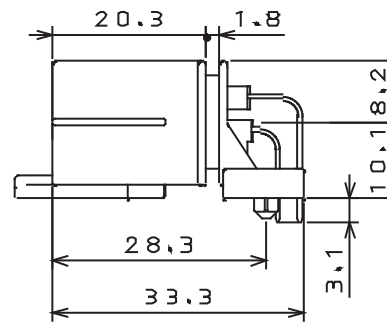
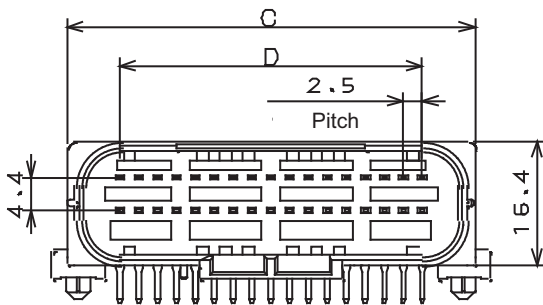
MX23A Series

Compact Type Low-profiled Waterproof Connector

2) Pin connector (Reverse)



	A	B	C	D	E
18 pos.	38	24	34	20	31
26 pos.	48	34	44	30	41
34 pos.	58	44	54	40	51



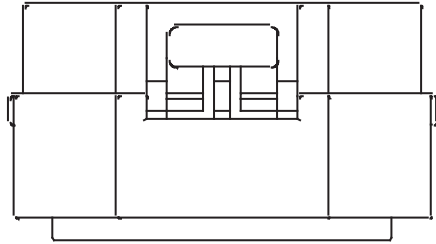
Recommended foot-pattern for PCB (reference)

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

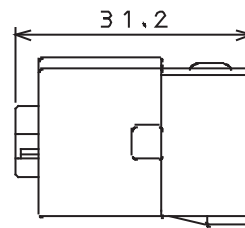
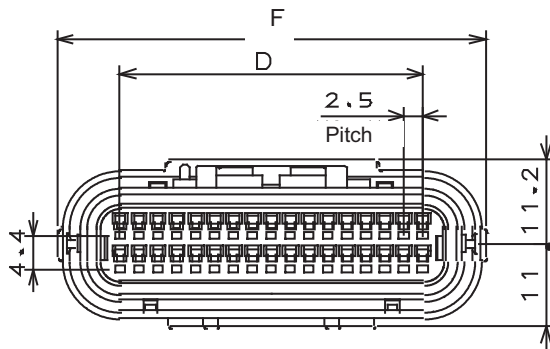
MX23A Series

Compact Type Low-profiled Waterproof Connector

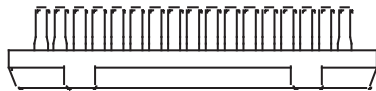
3) Socket housing



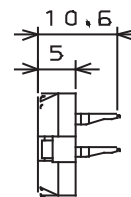
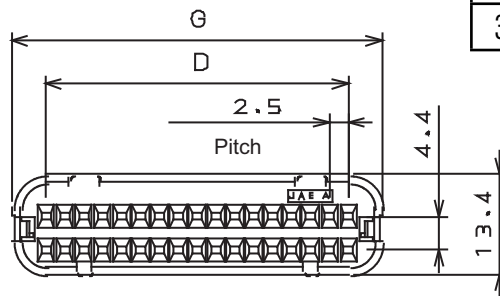
	D	F
12 pos.	12.5	29.1
18 pos.	20	36.6
26 pos.	30	46.6
34 pos.	40	56.6



4) Front cap



	D	F
12 pos.	12.5	21.7
18 pos.	20	28.9
26 pos.	30	38.9
34 pos.	40	48.9

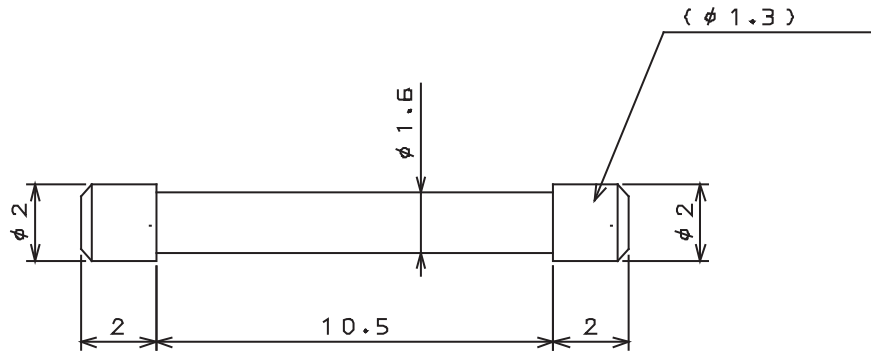


• Please consult JAE for verification of product availability.
Dimensions in mm.

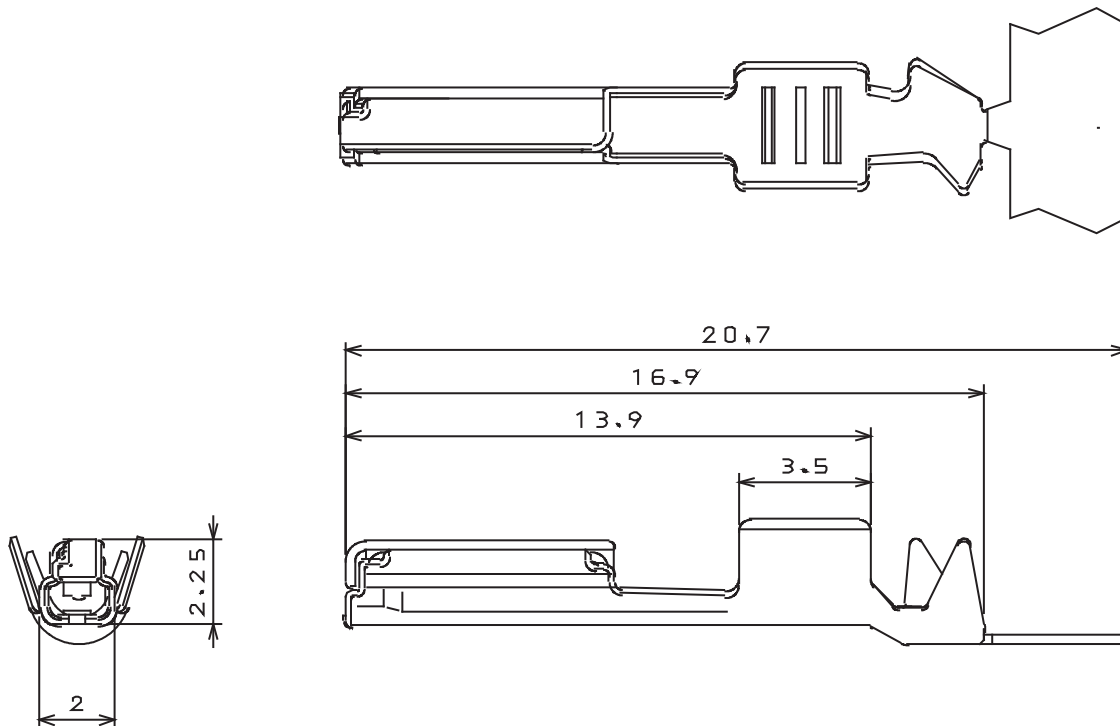
MX23A Series

Compact Type Low-profiled Waterproof Connector

5) Dummy pin (M120-55780)



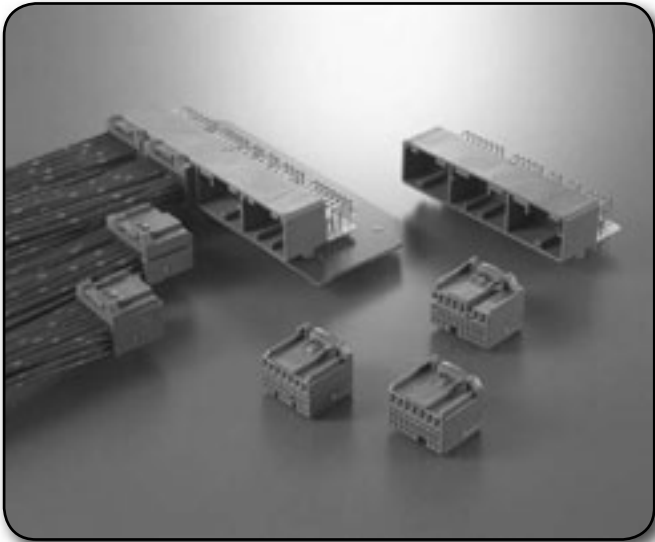
6) Socket contact (M23S05K351)



• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX31 Series

Board to Cable Connection High Density Connector for Automotive



High density and non-water proof type of MX31 series is developed to meet the demands for compact and lighter connectors with multi pin counts, due to increase of computerized control in automotives. Pitch of signal terminal is 2.2mm, and the pitch of power terminal is 3.2mm. Compact and 4row type and the variation of the number of terminal is from 70pos. to 135pos. (pin header) This connector meets with automotive specs. and the application is for Automotive EUC (Engine, transmission, etc)

FEATURES

- 2.2mm terminal pitch for signal, 3.2mm terminal for power are 4 row type compact high density connector.
- Hybrid connector with terminals for both signal and power.
- Connector insertion force is under 70N and it enables easy mating work.
- Socket terminal is a newly developed terminal with countermeasure for corrosion.
- Pb-free mounting compatible by using heat resistant resin (SPS material)
- Plating type of terminal: Sn plating or Au plating

GENERAL SPECIFICATIONS

No. of contacts	70, 98, 104, 135 (pin side)
Contact resistance	8m ohm max. (initial)
Dielectric withstanding voltage	AC1000V per minute
Operating temperature	-40°C to +85°C
Insulation resistance	100M ohm max.
Mating cycle	50 cycles
Applicable wire	Please refer to next page
Applicable board thickness	±1.6mm

• Please consult JAE for verification of product availability.
Dimensions in mm.

MX31 Series

Board to Cable Connection High Density Connector for Automotive

MATERIALS AND FINISHES

Socket connector

Components	Materials/Finishes
Socket Housing	PBT
Retainer	30% GF PBT

Socket contact

Components	Materials/Finishes
Socket Contact	High conductivity material/ Sn plating or Au plating

Pin connector

Components	Materials/Finishes
Pin Insulator	30% GF SPS
Locator	30% GF PBT
Pin Contact	Brass/ Sn plating or Au plating

Applicable Wire

Applicable wire (Unit:mm2) Part Number	AVSS/CAVS/CAVUS			CPEX/ CHFUS	CHFUS			
	0.3 to 0.5	0.3 to 0.85	0.85 to 1.25	0.22	0.35 to 0.5	0.35 to 0.75	0.75 to 1	1 to 1.5
M31S07K4FA (Sn plating for signal)	*				*			
M31S07K4QA (Au plating for signal)	*				*			
M31S07K4FB (Sn plating for signal)				*				
M31S05K2FA (Sn plating for power)			*(1.25 only)					*
M31S05K3FA (Sn plating for power)			*				*	
M31S05K4FA (Sn plating for power)		*				*		
M31S05K4QA (Au plating for power)		*				*		

Crimping Tool

Contact Part number	Extraction tool	Semi-automatic applicator	Automatic applicator
M31S07K4FA, 4QA	ET-MX31B-1	350-MX31A-2	350-MX31A-3B
M31S07K4FB			
M31S05K4FA, 4QA	ET-MX31A-1	350-MX31B-2	350-MX31B-3B
M31S05K2FA			
M31S05K3FA			

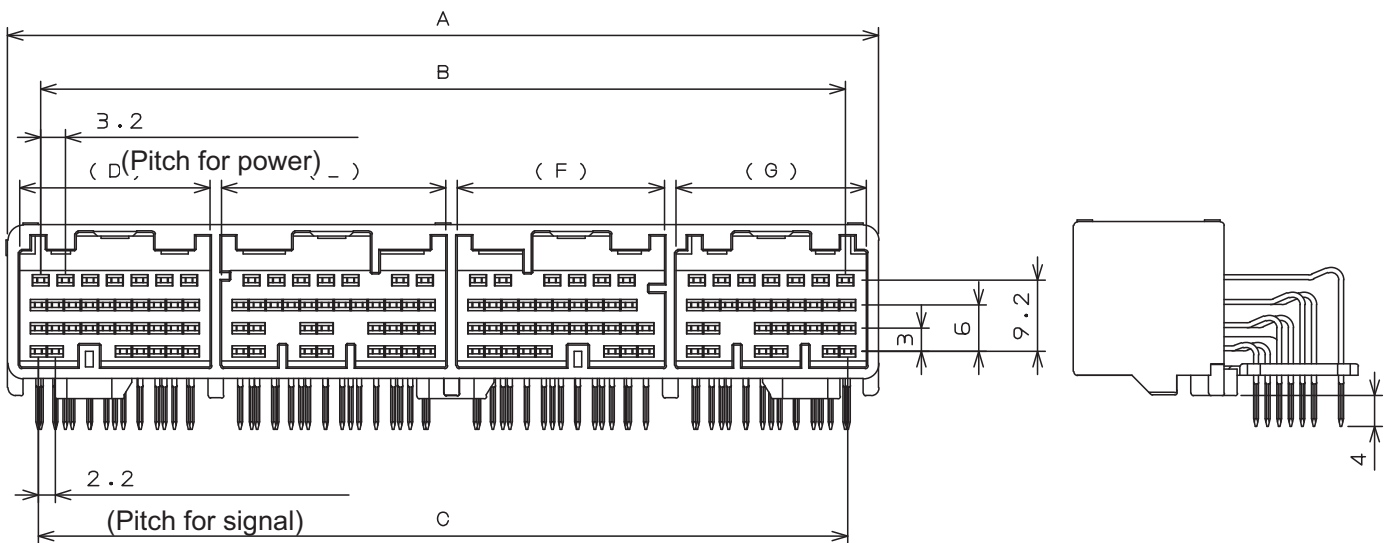
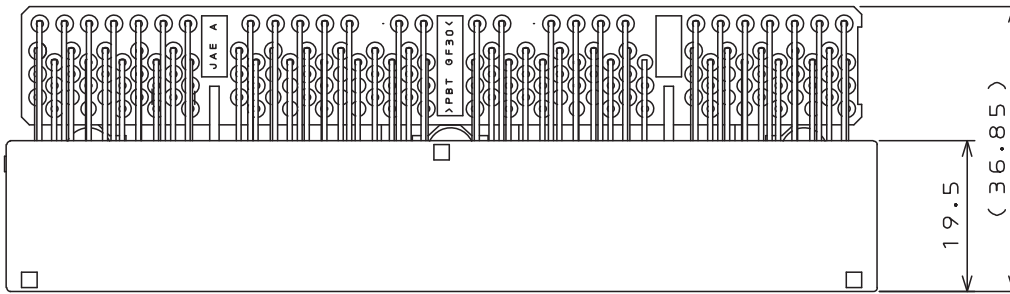
Note: Every contact uses different crimping die.
However crimping die for 4FA and 4QA is common.

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX31 Series

Board to Cable Connection High Density Connector for Automotive

1) Male connector



Key Position	No. of contacts	Part Number	Dimensions						
			A	B	C	(D)	(E)	(F)	(G)
Standard	70	MX31070NFC	60.5	48.5	52.5	-	29.0	26.8	-
	98	MX31135NFA	112.7	104.1	104.7	24.6	29.0	26.8	24.6
	104	MX31104NFA	86.6	75.8	78.6	24.6	29.0	26.8	-
	135	MX31135NQA	112.7	104.1	104.7	24.6	29.0	26.8	24.6
Sub (Compatible to mis-mating)	70	MX31070NFD	60.5	48.5	52.5	-	29.0	26.8	-
	135	MX31135NQB	112.7	104.1	104.7	24.6	29.0	26.8	24.6

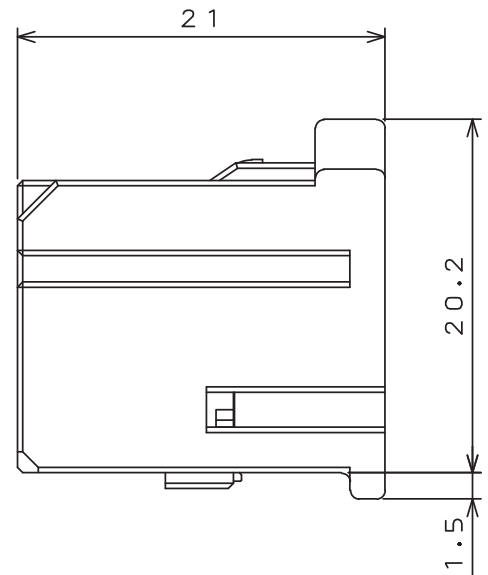
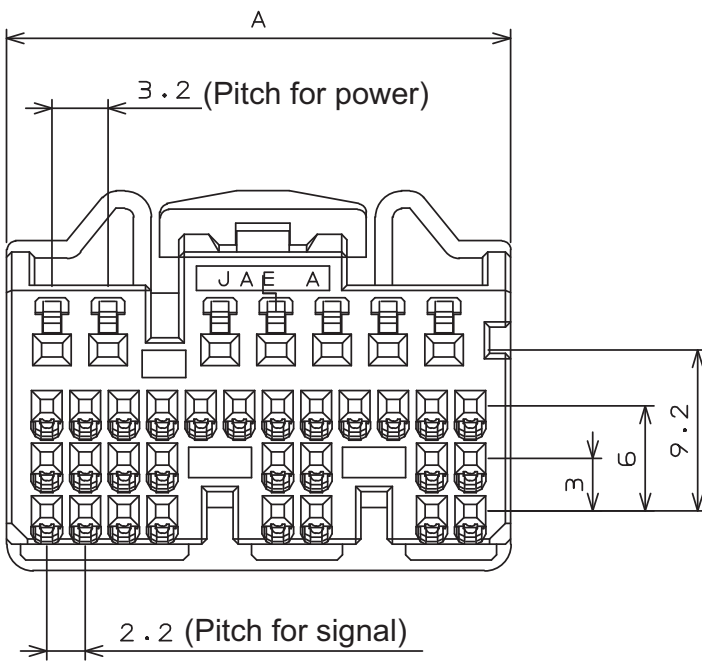
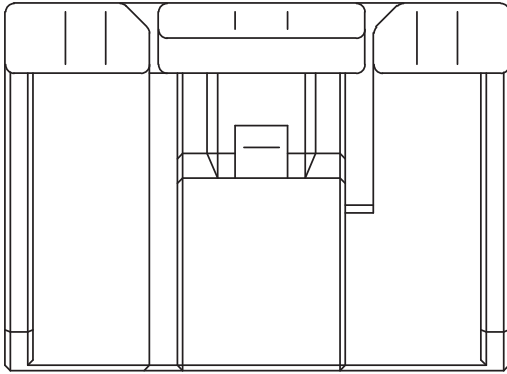
- Note
- Product with 98pos. type is the same as 135pos. type without the one lowest pin terminal row.
 - NF* -> All Sn plating type
 - NQ* -> Sn plating and Au plating mixture type.

• Please consult JAE for verification of product availability.
Dimensions in mm.

MX31 Series

Board to Cable Connection High Density Connector for Automotive

2) Female connector



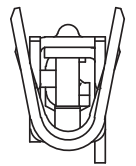
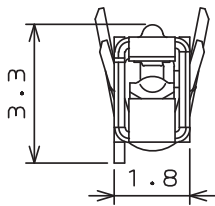
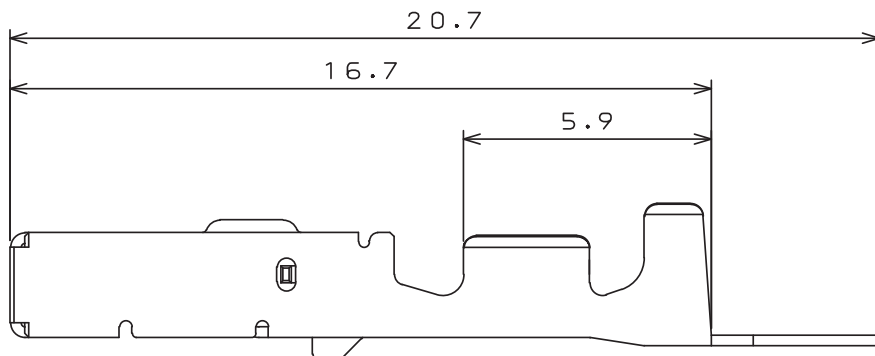
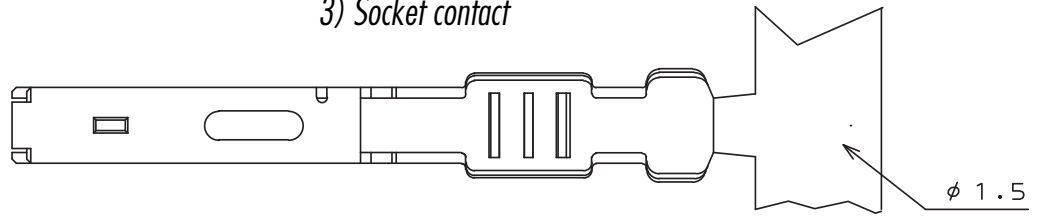
Key position	No. of contacts	Part Number	Dimensions
			A
Normal	31	MX31031SGA	24.4
	34	MX31034SGA	24.4
	35	MX31035SGA	28.8
	35	MX31035SGB	26.6
Sub (Compatible to mis-mating)	31	MX31031SGB	24.4
	34	MX31034SGB	24.4
	35	MX31035SGC	28.8
	35	MX31035SGD	26.6

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

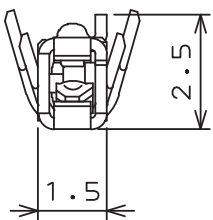
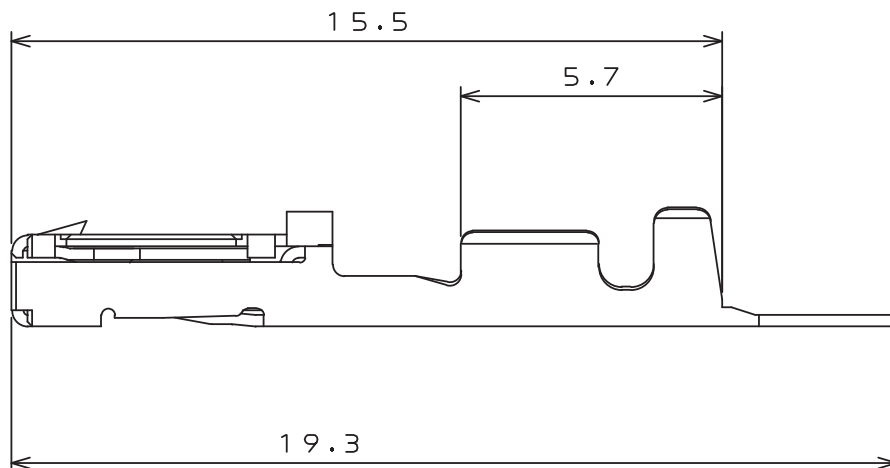
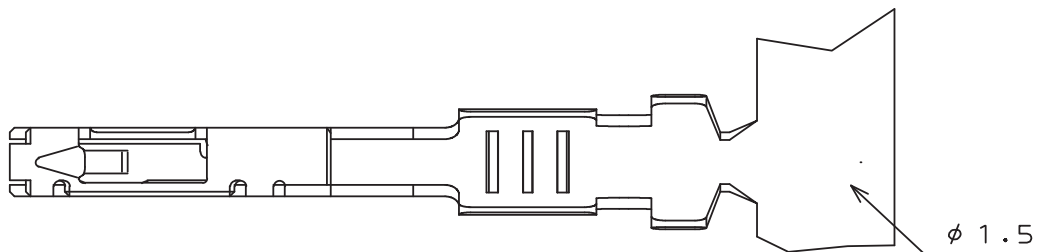
MX31 Series

Board to Cable Connection High Density Connector for Automotive

3) Socket contact



M31S07K4FA, 4QA, 4FB

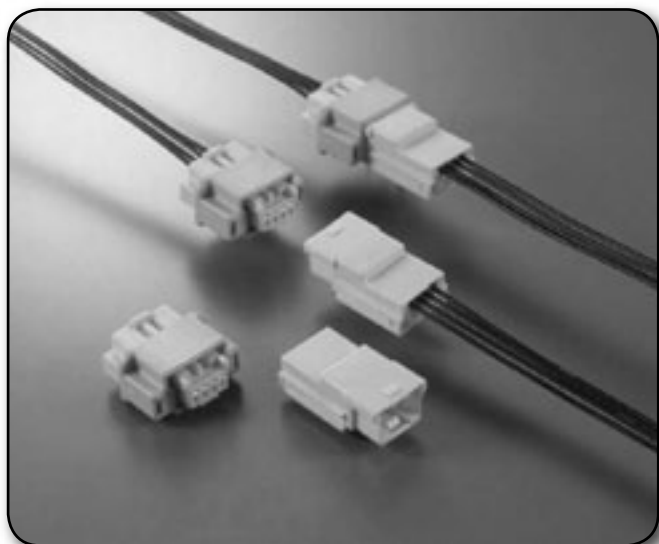


M31S05K2FA, 3FA, 4FA, 4QA

• Please consult JAE for verification of product availability.
Dimensions in mm.

MX10 Relay Series

Secure mating connector for air-bag



FEATURES

- Highly reliable connector developed specifically for air-bags.
- If the connectors are not mated completely, the socket housing is pushed back by the coil spring in the housing. This mechanism ensures perfect mating.
- Enables double locking by inserting the retainer, and prevents incomplete mating. This mechanism enables high contact retention.
- Socket contact has a double spring mechanism, which ensures high contact reliability. Box shape resists external force.
- Key prevents twist insertion, rib mis-mating, and insertion in the wrong direction.
- The shorting contact installed in the pin housing prevents malfunction due to static electricity when mis-mating. (Product without shorting contact is also available. Short circuit function is disabled on mating with a socket connector.)

This product is designed for car air-bags. This product has a coil spring mechanism that pushes back the socket housing if the connectors are not mated completely. This mechanism prevents incomplete mating. In addition, the shorting contact installed in the pin housing prevents malfunction due to static electricity before mating.

GENERAL SPECIFICATIONS

No. of contacts	4
Contact resistance	Less than 5mΩ (initial)
Withstand voltage	AC 1000V r.m.s. (for 1 minute)
Operating temperature	-40°C to +85°C
Insulation resistance	Greater than 100MΩ
Contact pitch	3.0mm

Applicable Cable

	AVSS f	AVSS	AVS
Cable type	TA,AVSSX	AVSS	AVS
Cross section of conductor	0.5 to 0.75mm ²	0.3 to 0.85 mm ²	0.3 mm ²
A.W.G No.	Equivalent to #20 - #19	Equivalent to #22 - #18	Equivalent to #22
Outer diameter of cable	ø1.6 to 1.9mm	ø1.4 to 1.9mm	ø1.9mm

MATERIALS AND FINISHES

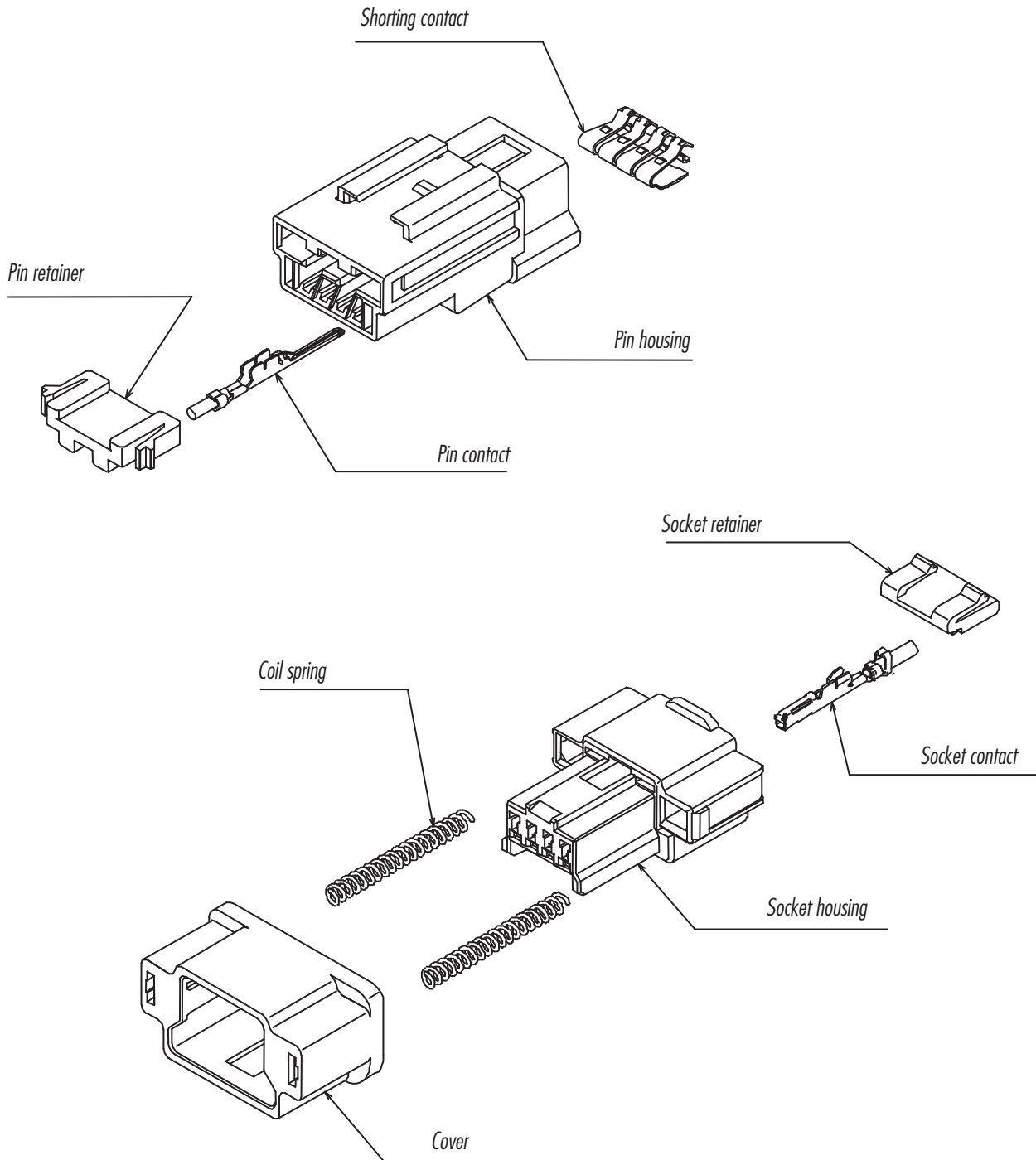
Components	Materials/Finishes
Pin	
Pin housing	PBT
Short contact	Copper alloy/Au plating
Pin retainer	PBT
Pin contact	Copper alloy/Au plating
Socket	
Socket housing	PBT
Cover	Glass filed PBT
Coil spring	Stainless
Retainer	PBT
Socket contact	Copper alloy/Au plating

• Please consult JAE for verification of product availability. Dimensions and specifications subject to change without notice.

MX10 Relay Series

Secure mating connector for air-bag

Ordering information

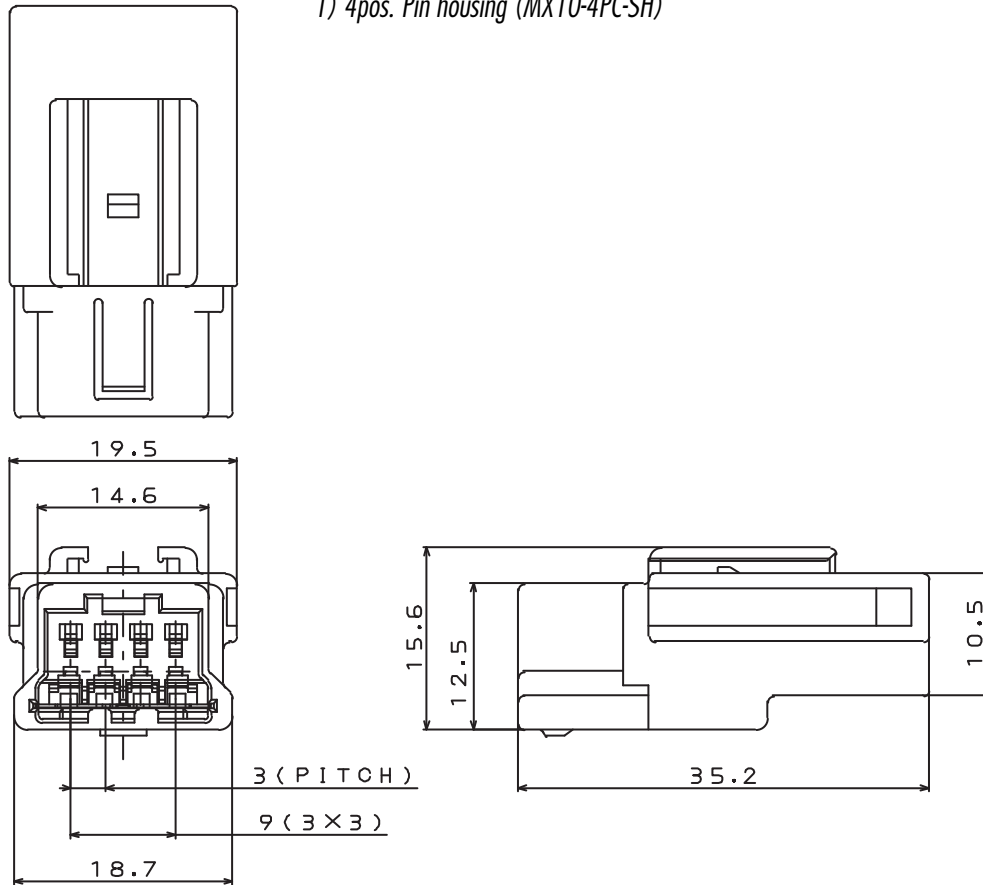


• Please consult JAE for verification of product availability.
Dimensions in mm.

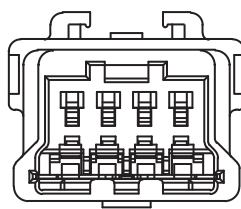
MX10 Relay Series

Secure mating connector for air-bag

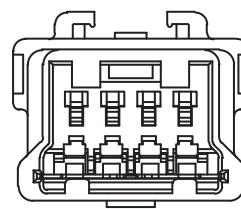
1) 4pos. Pin housing (MX10-4PC-SH)



Key shapes (Key: for anti mis-mating)



MX10-4PC-SH



MX10-4PC-SH-01

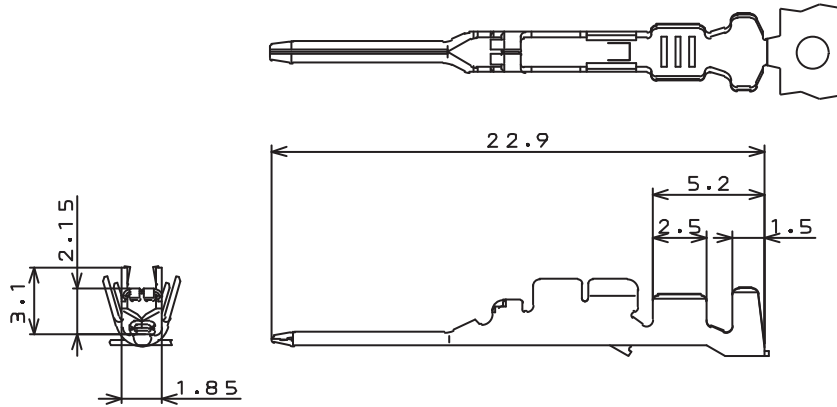
2) 4pos. Pin retainer (MX10-4PCR)



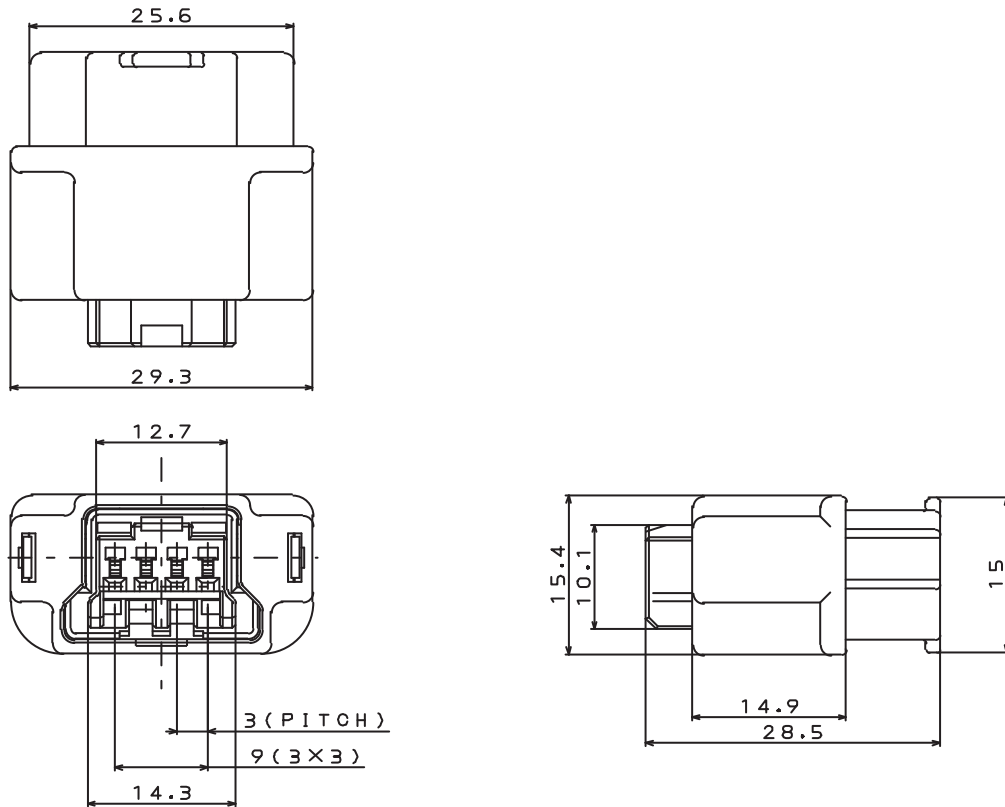
MX10 Relay Series

Secure mating connector for air-bag

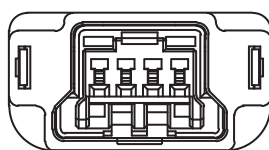
3) Pin contact (MX10-SG-PC2-1)



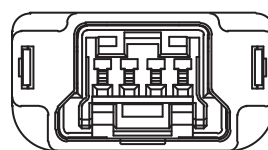
4) 4pos. Socket housing (MX10-4SC)



Key shapes (Key: for anti mis-mating)



MX10-4SC



MX10-4SC-01

• Please consult JAE for verification of product availability.
Dimensions in mm.

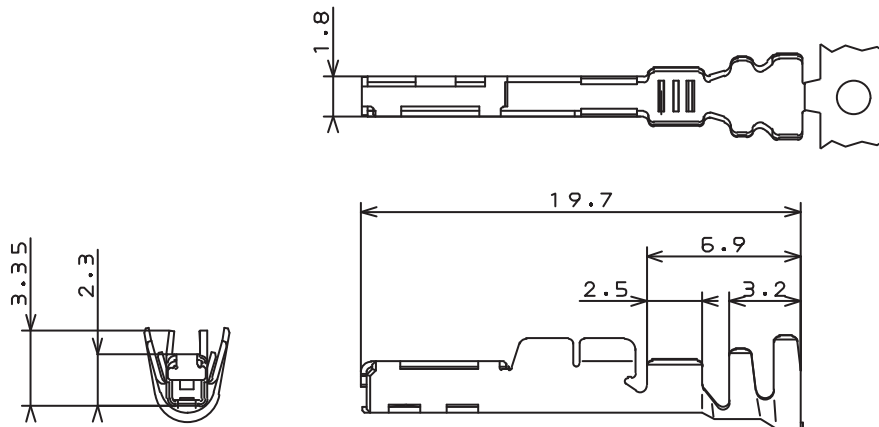
MX10 Relay Series

Secure mating connector for air-bag

5) 4pos. Socket retainer (MX10-4SCR)



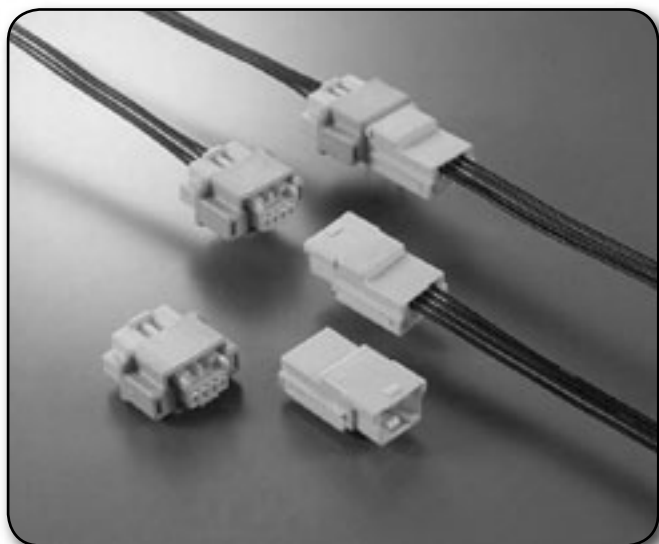
6) Socket contact (MX10-SG-C2-1)



• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX10 Series

Secure mating connector for air-bags



FEATURES

- Highly reliable connector developed specifically for air-bags.
- If the connectors are not mated completely, the socket housing is pushed back by the coil spring in the housing.
- Enables double locking by inserting the retainer, and prevents incomplete mating. This mechanism enables high contact retention.
- Socket contact has a double spring mechanism, which ensures high contact reliability. Box shape resists external force.
- Key prevents twist insertion, rib mis-mating, and insertion in the wrong direction.



This product is designed for car air-bags. This product has a coil spring mechanism that pushes back the socket housing if the connectors are not mated completely. This perfect mating configuration mechanism prevents incomplete mating.

GENERAL SPECIFICATIONS

No. of contacts	18, 14
Contact resistance	Less than 5 milliohms (initial)
Withstand voltage	AC 1000V r.m.s. (for 1 minute)
Operating temperature	-40°C to +85°C
Insulation resistance	Greater than 100 megaohms min.
Contact pitch	2.5mm

Applicable Wire

Cable type	AVSS f TA,AVSSX	AVSS	AVS
Cross section of conductor	0.5 to 0.75mm ²	0.3 to 0.85 mm ²	0.3 mm ²
A.W.G No.	Equivalent to #20 - #19	Equivalent to #22 - #18	Equivalent to #22
Outer diameter of cable	1.6 dia. to 1.9 dia. mm	1.4 dia. to 1.9 dia. mm	1.9 dia. mm

MATERIALS AND FINISHES

Pin

Components	Materials/Finishes
Insulator	PBT
Pin Contact	Brass/Au plating

Socket

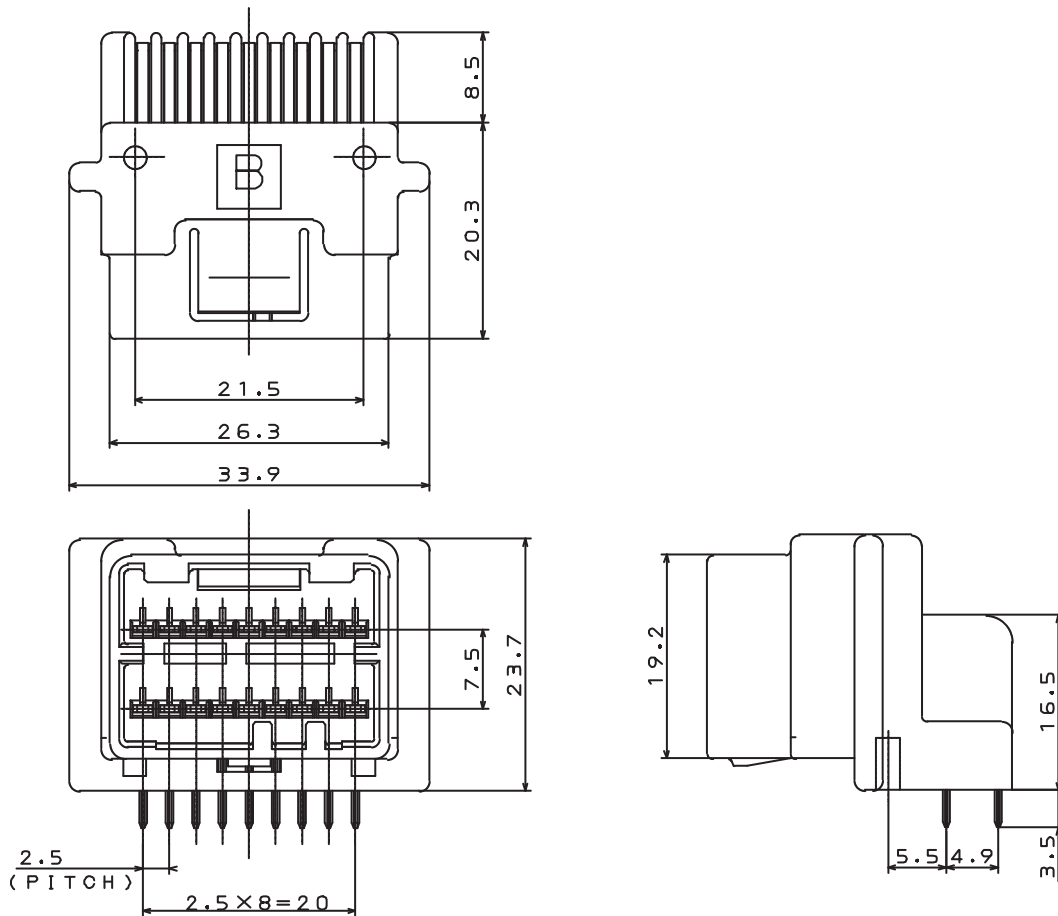
Components	Materials/Finishes
Insulator	PBT
Cover	Glass filled PBT
Coil spring	Stainless
Retainer	PBT
Socket contact	Copper alloy/Au plating

• Please consult JAE for verification of product availability.
Dimensions in mm.

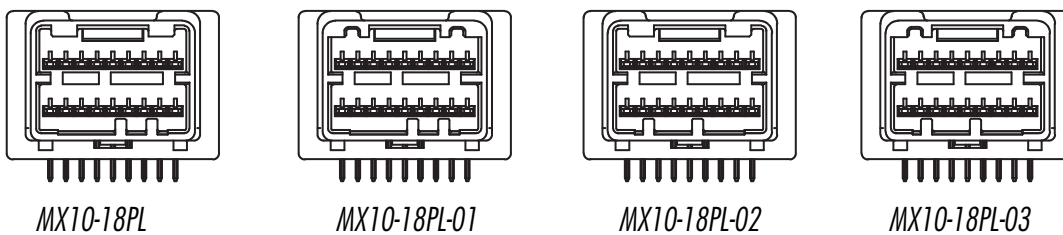
MX10 Series

Secure mating connector for air-bags

1) 18pos. Pin header (MX10-18PL)



Key shapes (Key: for anti mis-mating)

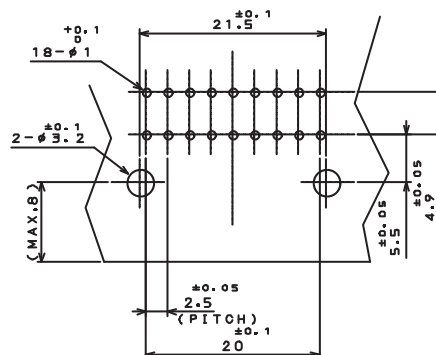


Board attachment hole dimension
(for reference)

Board thickness $t=1.6^{\pm 0.15}$

Suggested screws

M3×6 tapping screws (2 grades)
per JIS B 1115, 1122 or 1123

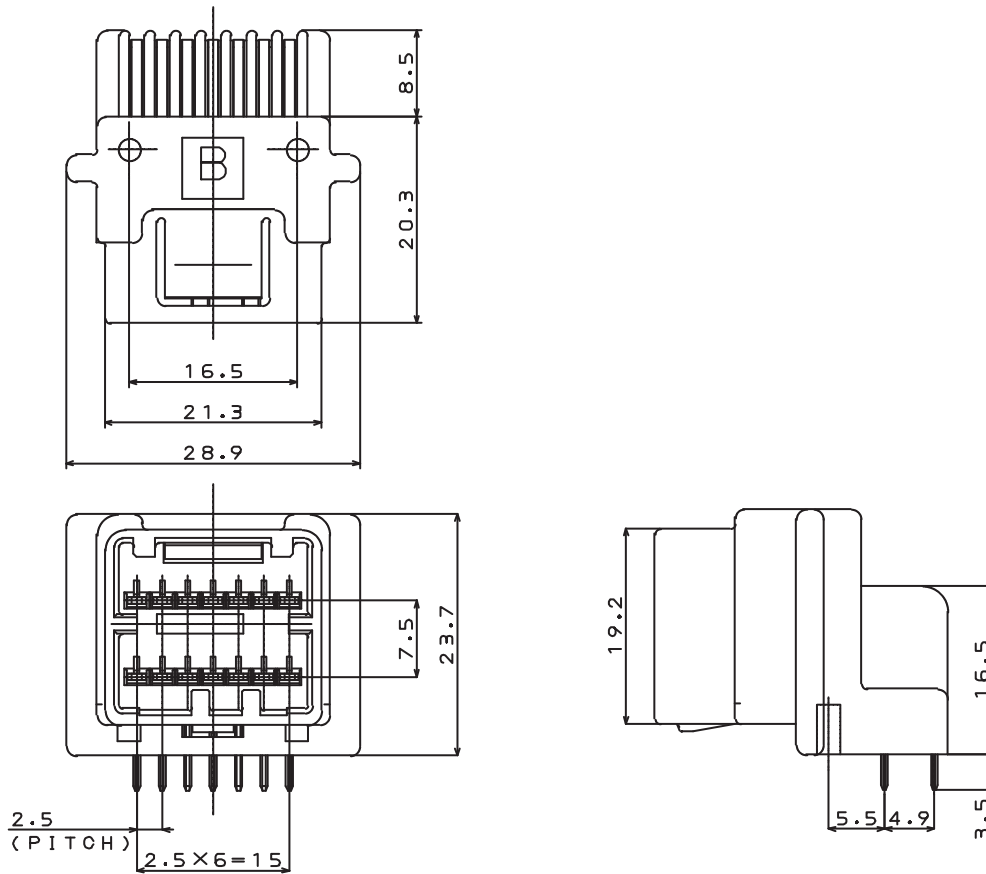


• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

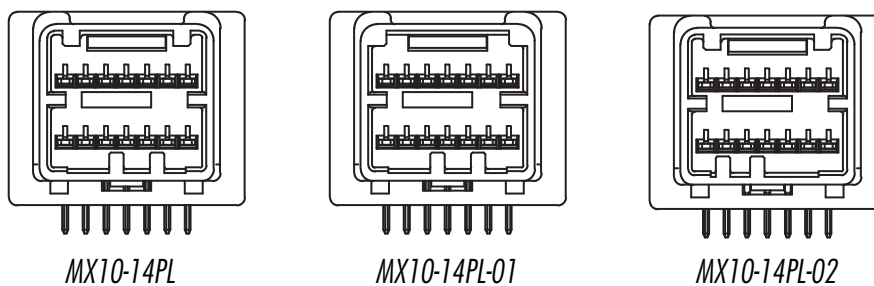
MX10 Series

Secure mating connector for air-bags

2) 14pos. Pin header (MX10-14PL)



Key shapes (Key: for anti mis-mating)

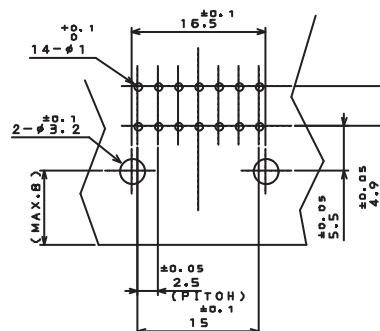


Board attachment hole dimension
(for reference)

Board thickness $t=1.6^{\pm 0.15}$

Suggested screws

M3×6 tapping screws (2 grades)
per JIS B 1115, 1122 or 1123

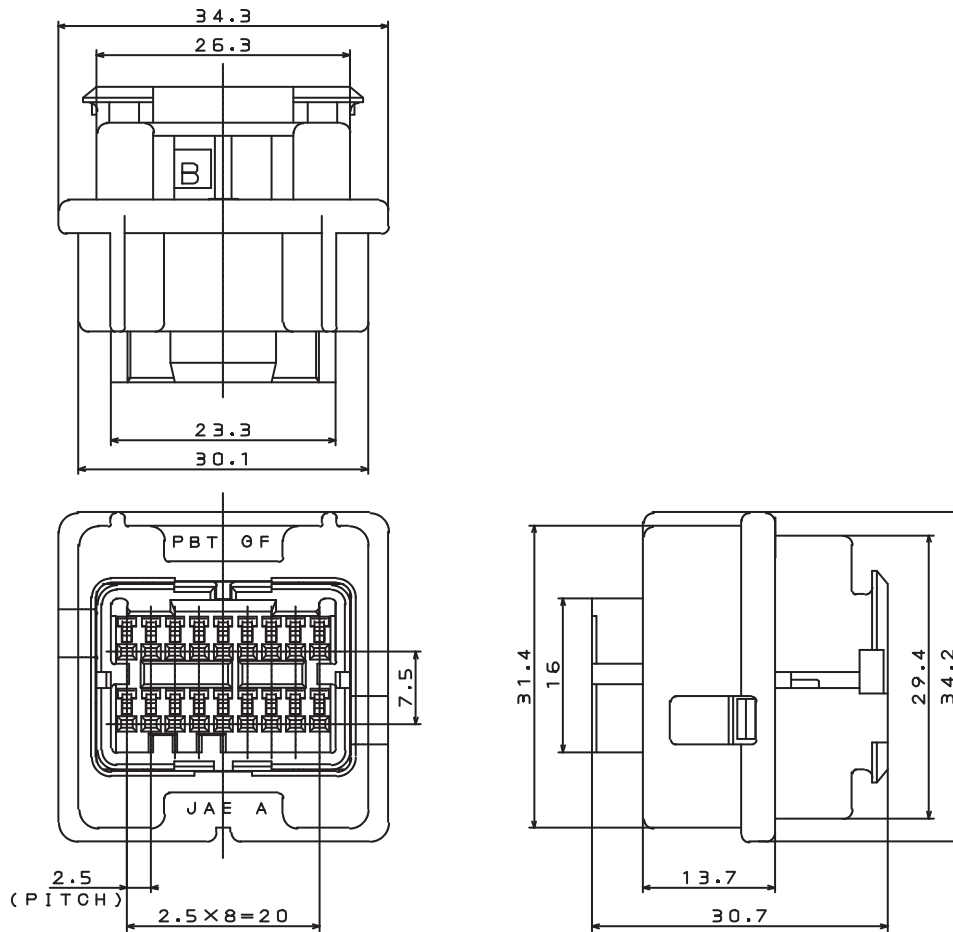


• Please consult JAE for verification of product availability.
Dimensions in mm.

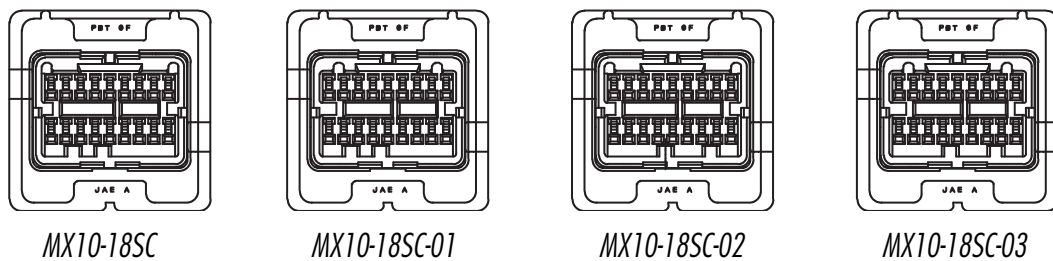
MX10 Series

Secure mating connector for air-bags

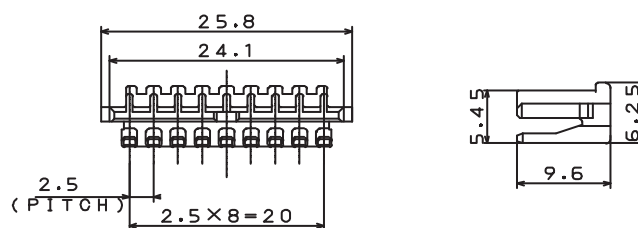
3) 18pos. Socket housing (MX10-18SC)



Key shapes (Key: for anti mis-mating)



4) 18pos. Retainer (MX10-18SCR)

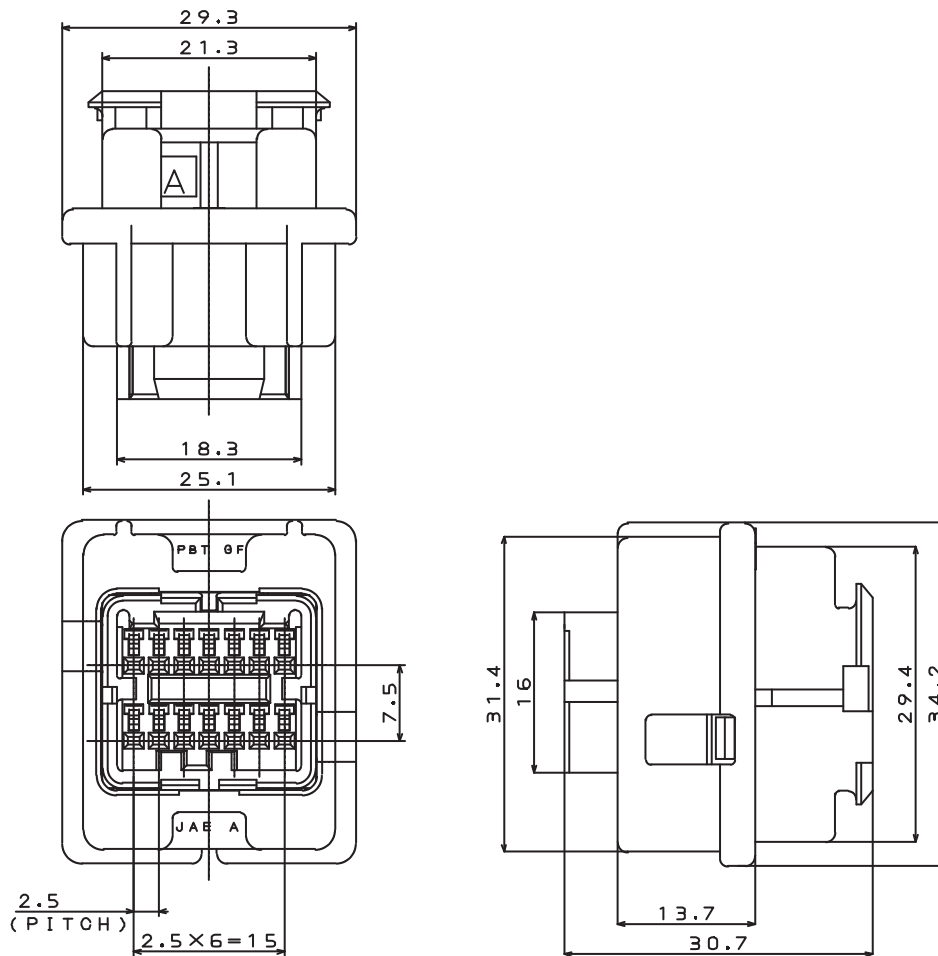


• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

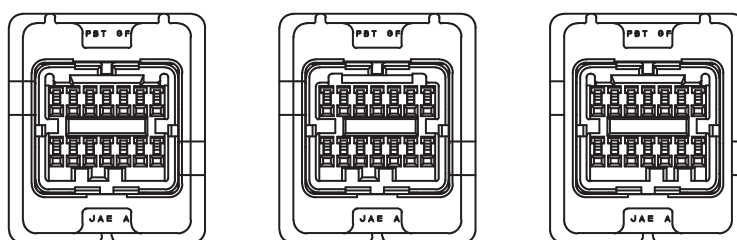
MX10 Series

Secure mating connector for air-bags

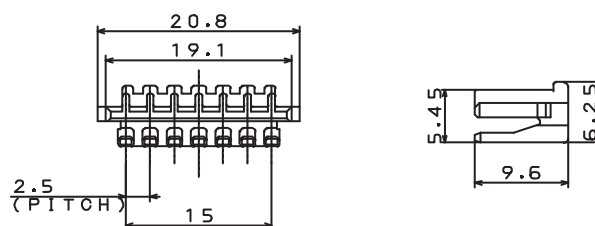
5) 14pos. Socket housing (MX10-14SC)



Key shapes (Key: for anti mis-mating)



6) 14pos. Retainer (MX10-14SCR)

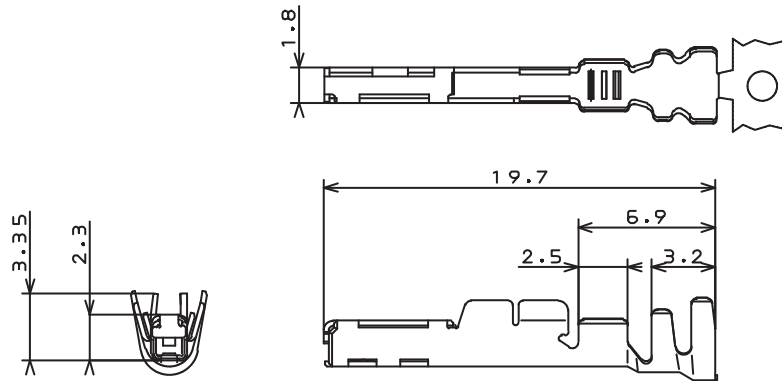


• Please consult JAE for verification of product availability.
Dimensions in mm.

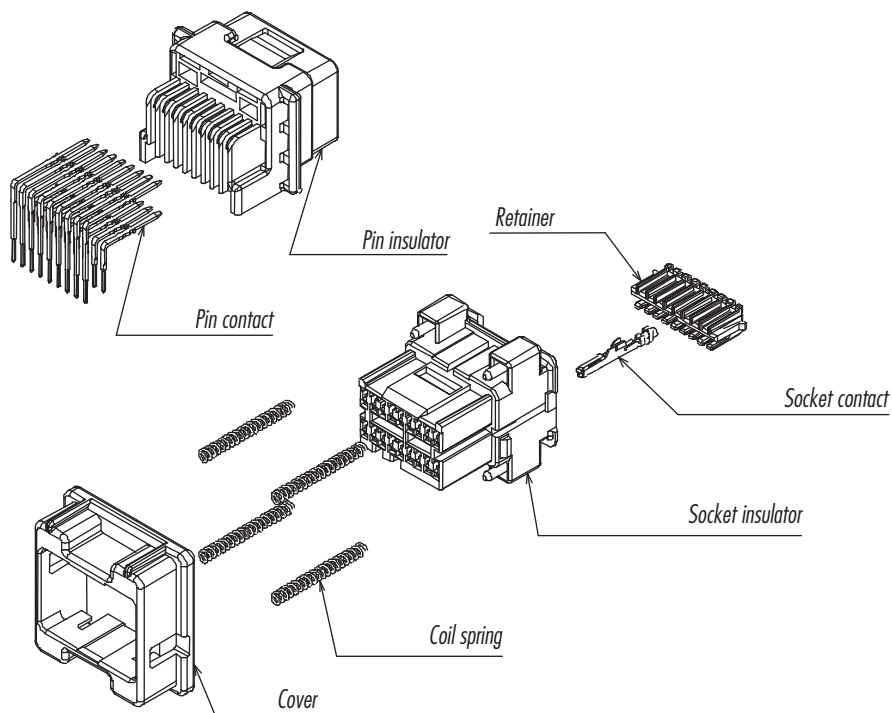
MX10 Series

Secure mating connector for air-bags

7) Socket contact (MX10-SG-C2-1)



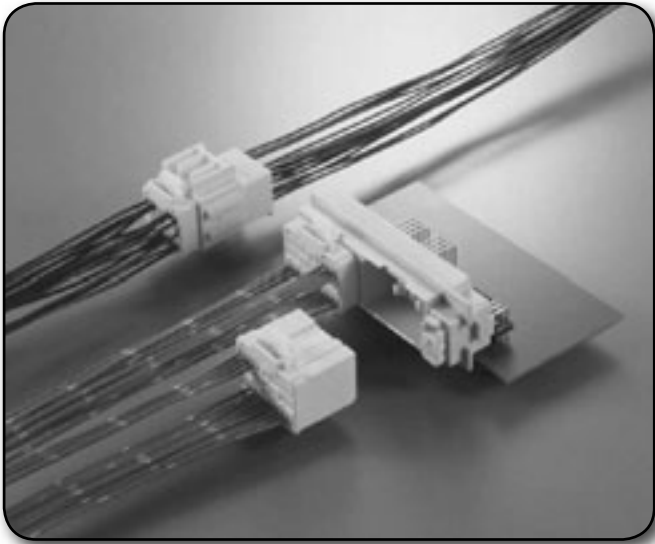
Ordering Information



• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX17 Series

Complete Mating Connector for Air Bags



FEATURES

- Connector insertion force is less than 70N.
- The conductivity will be cut by pushing back the socket connector with a coil spring, which is built into the socket housing, if the connector is not completely mated.
- The preset retainer detects incomplete mating, and also maintains a high contact retention force.
- The socket contact is a box type, and has a highly reliable double spring mechanism which can withstand external forces.
- Screws are required because the connector is temporarily anchored by snapping in, then inserted with a case.
- Malfunction due to static electricity, etc. will be prevented by building shorting contacts (max. 10) into the socket connector because adjacent socket contacts are short circuited. (Short circuits will be released when the socket connector is mated.)
- The lock spring is slide type which can withstand deformation and bending.
- Mating can be recognized by a clear click feeling and a mating sound because of the mechanical mating method.
- This connector has a waste connector.
- The height and width are short so that the connector can be mated through a small hole.
- Please consult JAE for verification of product availability.

Dimensions in mm.

This connector was developed for car air-bags. A mechanical complete mating method is used to cut conductivity by pushing back the socket housing with a coil spring if the connector is not mated completely. Furthermore, a shorting contact (short circuit) is built into the socket connector to prevent malfunction due to static electricity etc. when the connector is not completely mated.

GENERAL SPECIFICATIONS

No. of contacts	61 pos. (Including 5pos. for disposal)
Contact resistance	Less than 5mΩ (initial)
Withstand voltage	AC1000Vr.m.s. for 1 minute
Operating temperature	-40°C to +85°C
Insulation resistance	Greater than 100MΩ (initial)

Applicable Cables

Cable type	AVSS f-TA	AVSS, CAVS
Conductive area	0.5 mm ²	0.3 to 0.5 mm ²
A.W.G No.	Equivalent to #20	Equivalent to #20 to 322
Sheath diameter	ø1.7 to 1.9 mm	ø1.7 to 1.9 mm

MATERIALS AND FINISHES

Components	Materials/Finishes
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Angle pin header

Insulator	Glass filled PBT
Pin contact	Copper alloy/Au plating, Tin plating
Locator	Glass filled PBT

Relay pin connector

Pin housing	PBT
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Socket connector

Socket housing	PBT
Slider	Glass filled PBT
Coil spring	Stainless
Retainer	Glass filled PBT
Short contact	Copper alloy/Au plating, Tin plating

Socket & relay pin contact

Socket contact	Copper alloy/Au plating, Tin plating
Relay pin contact	Copper alloy/Au plating, Tin plating

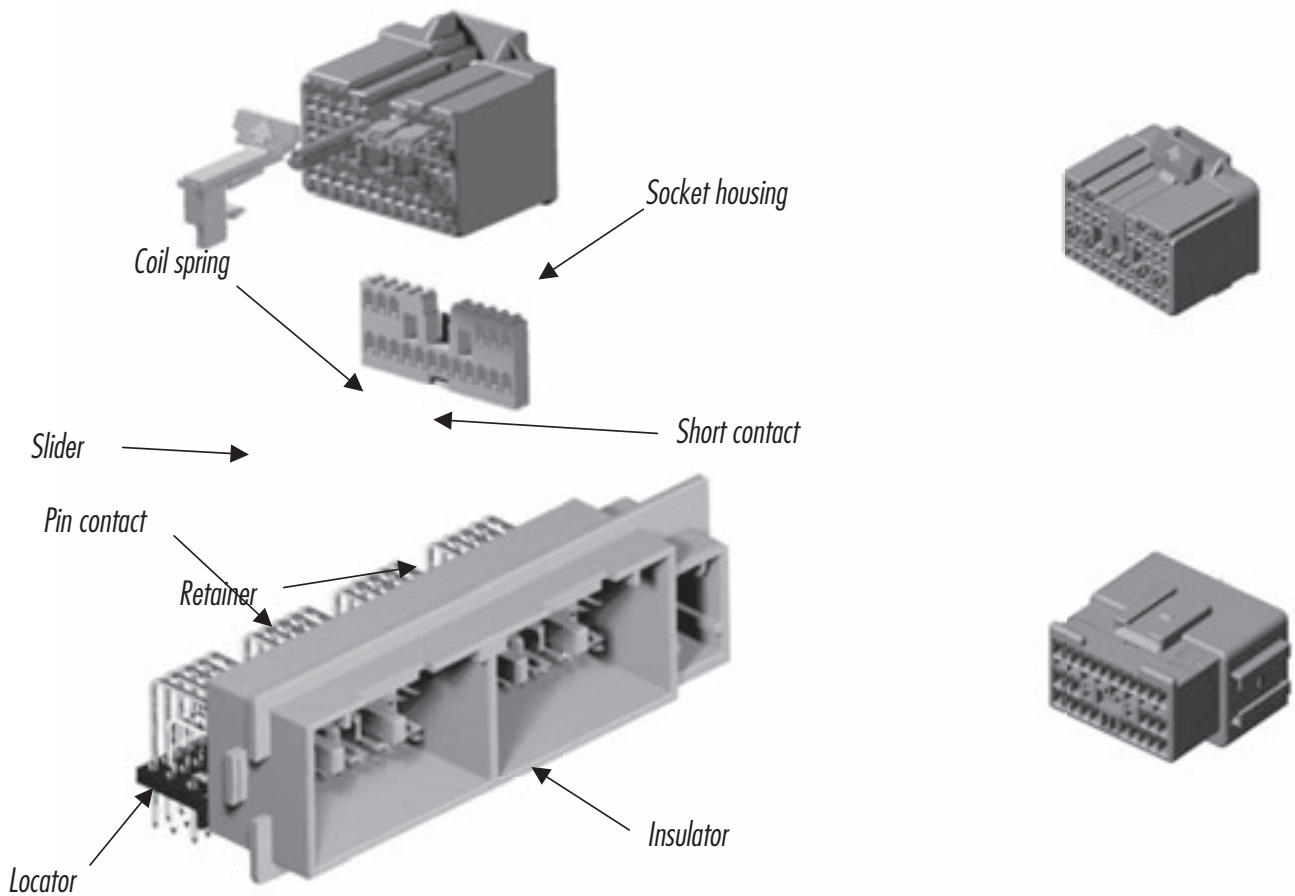
MX17 Series

Complete Mating Connector for Air Bags

Crimping and Release tools

Type	Socket contact	Relay pin contact
Hand crimping tool	CT160-3-MX10	CT160-3-MX10P2, CT160-3B-MX10P2
Semi automatic applicator	350-MX17-2	350-MX10P2-2
Release jig	ET-MX17	—

Connector Combination

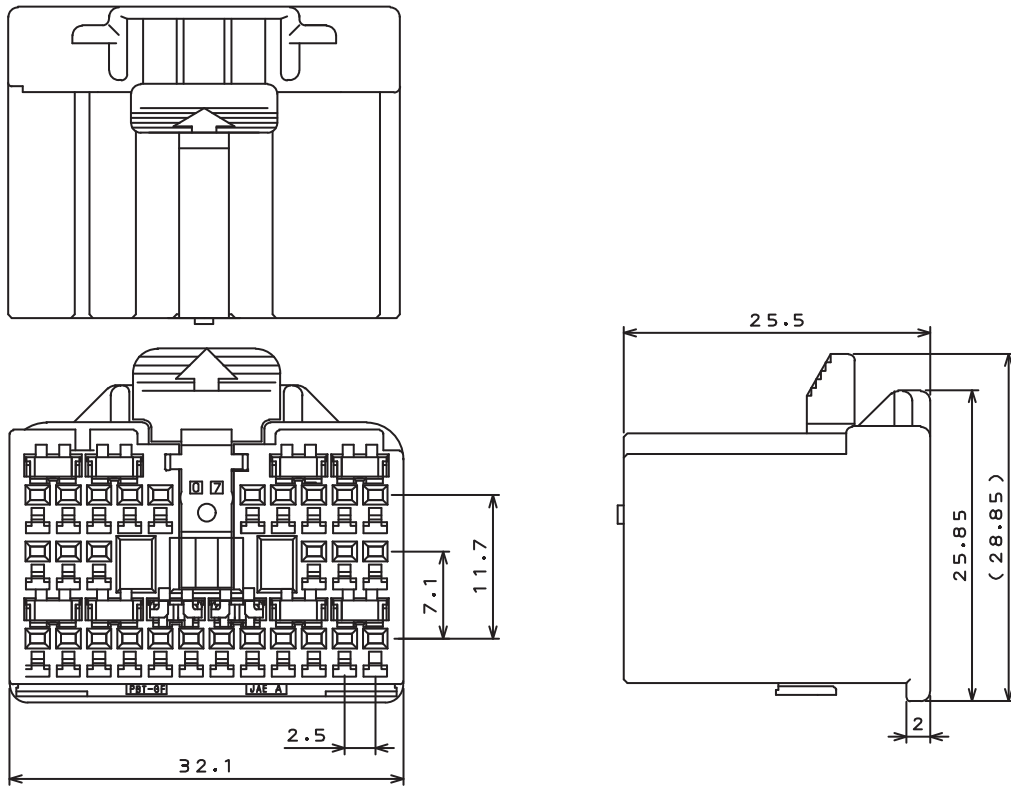


• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

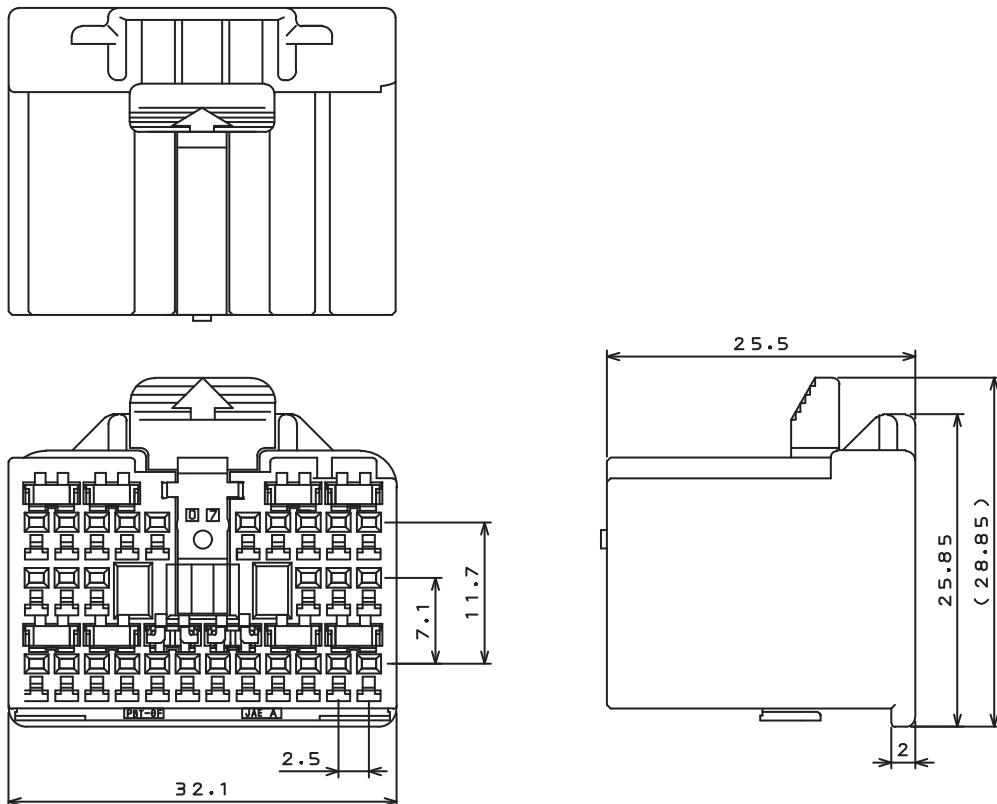
MX17 Series

Complete Mating Connector for Air Bags

1) 28 contact socket housing (MX17028SN1)



2) 28 contact socket housing (M17028SN2)

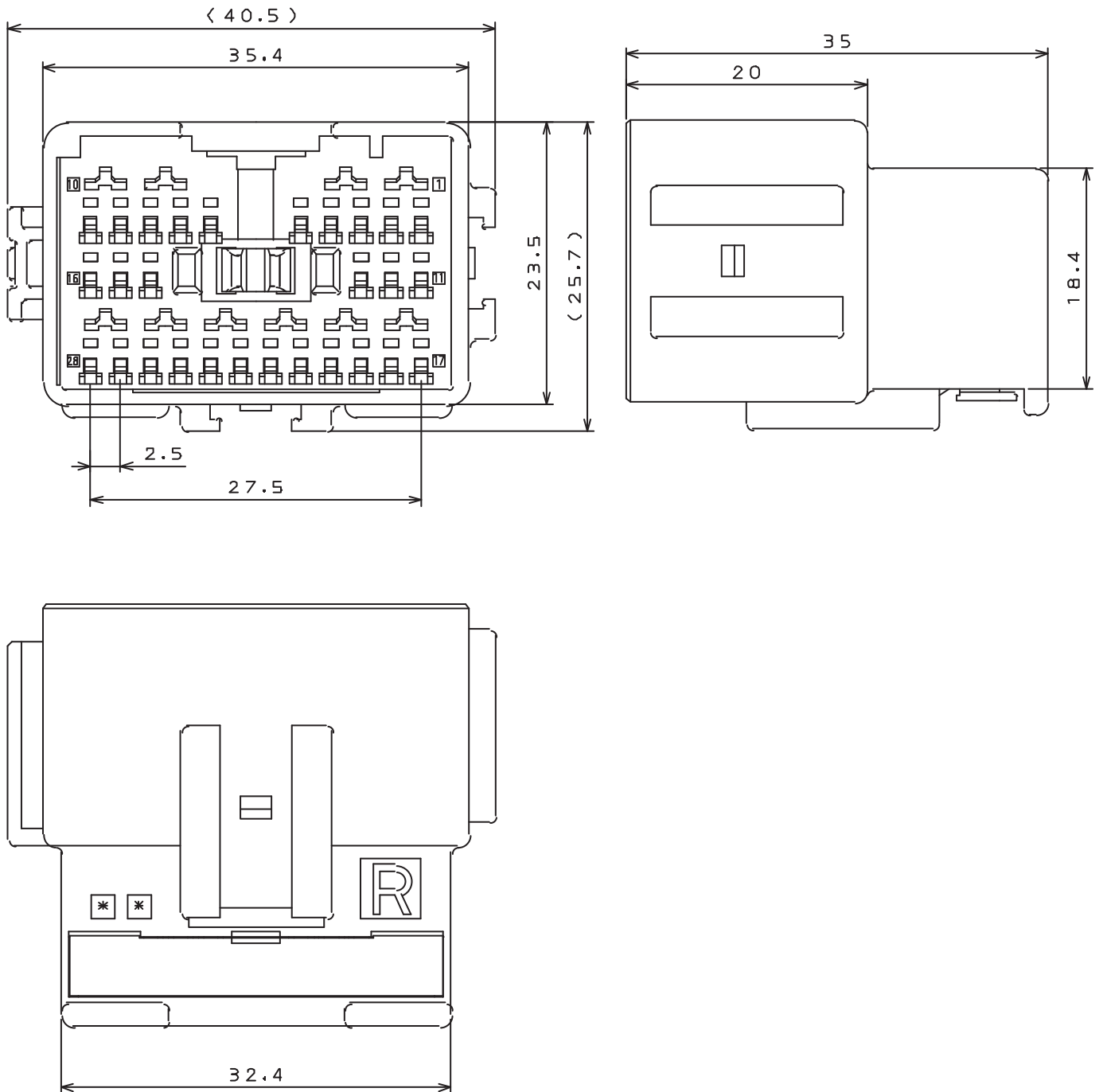


• Please consult JAE for verification of product availability.
Dimensions in mm.

MX17 Series

Complete Mating Connector for Air Bags

4) 28 contact relay housing (M17028PN1)



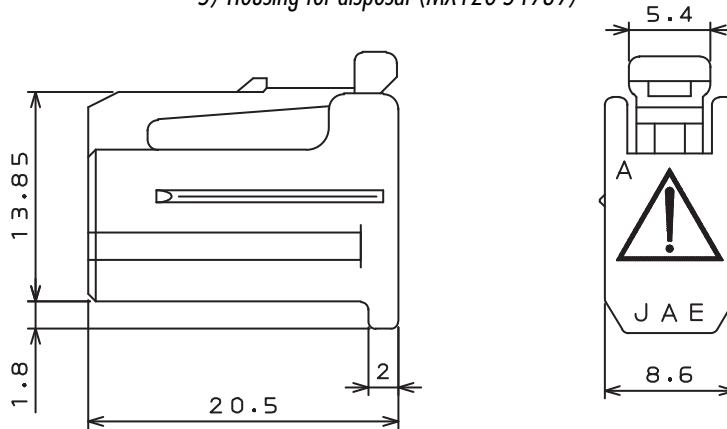
SAFETY SYSTEMS

• Please consult JAE for verification of product availability.
Dimensions in mm.

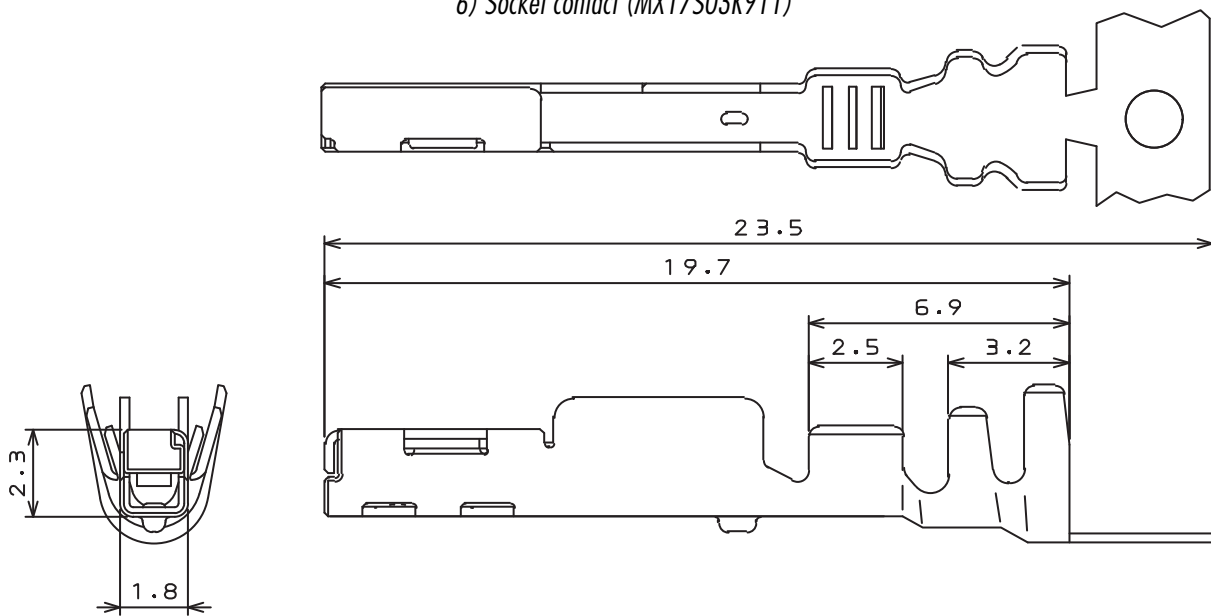
MX17 Series

Complete Mating Connector for Air Bags

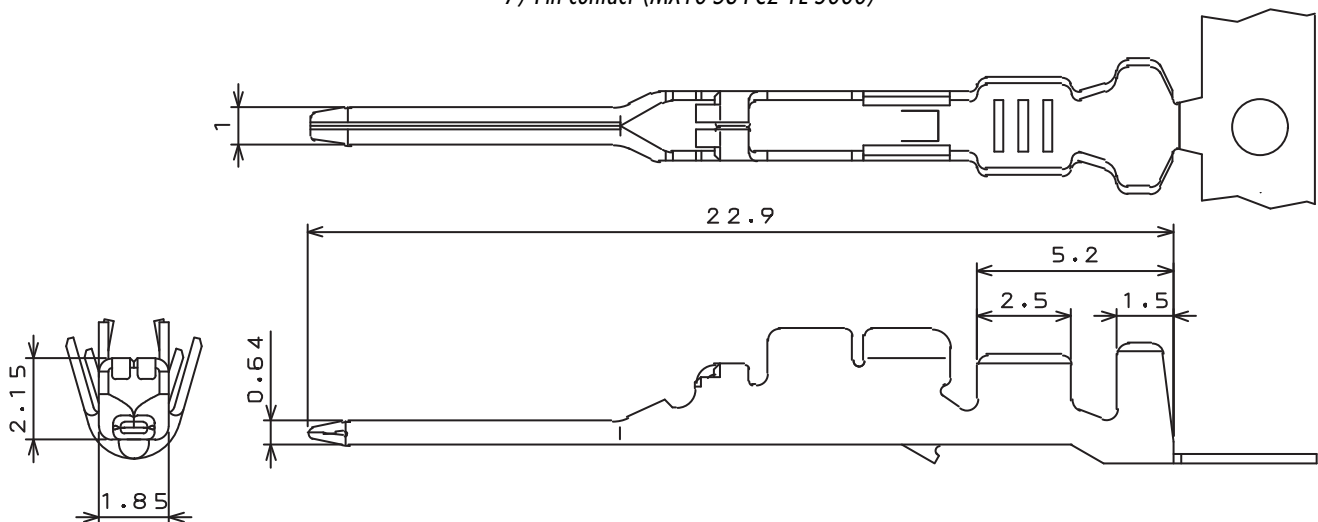
5) Housing for disposal (MX120-54939)



6) Socket contact (MX17S03K911)



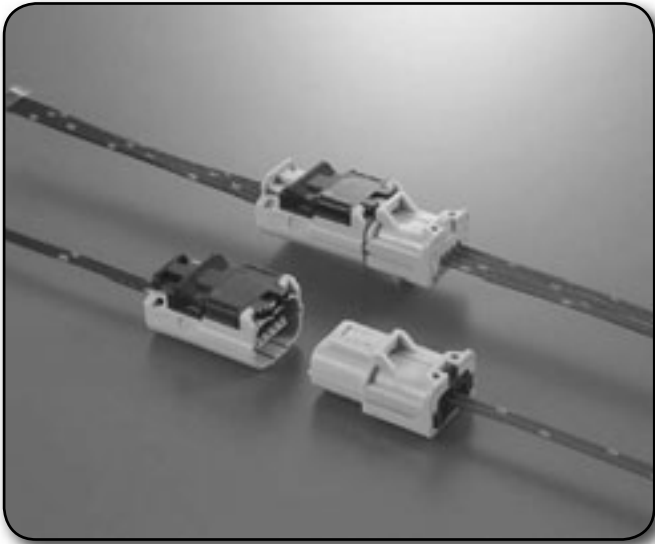
7) Pin contact (MX10-SG-PC2-1E-5000)



• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX36 Series

Waterproof Complete Mating Relay Connector for Airbags



FEATURES

- A highly reliable waterproof compact connector developed for automotive air-bags.
- The connection of the contacts will be separated by the repulsion of the coil spring, if the connectors are not locked by a complete mating.
- Secure waterproof seal achieved by a neoprene grommet on each mating half.
- Mating can be recognized by a clear click feeling by the mechanical lock.
- Malfunction due to static electricity will be prevented by the shorting contacts built-in the pin connector.
- The preset retainer detects incomplete mating.

This waterproof compact relay (inline) connector was developed for automotive air-bags. It has a structure which separates the connection of the contacts with the repulsion of the coil spring when the connectors are not mated completely (mechanical perfect mating design). This connector has accomplished waterproof performance by the sealing rings used on each mating halves.

GENERAL SPECIFICATIONS

No. of contacts	2, 4 pos.
Contact resistance	5m ohm max. (initial)
Dielectric withstanding voltage	AC 1000 V (per minute)
Operating temperature	-40°C to+105°C
Waterproofing	98kPa min. (initial)
Insulation resistance	100M ohm min.

Applicable Wire

Cable type	AVSS0.5, AVSSC0.5f, AVSSX0.5f, TVSSX0.5f
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• Please consult JAE for verification of product availability.
Dimensions in mm.

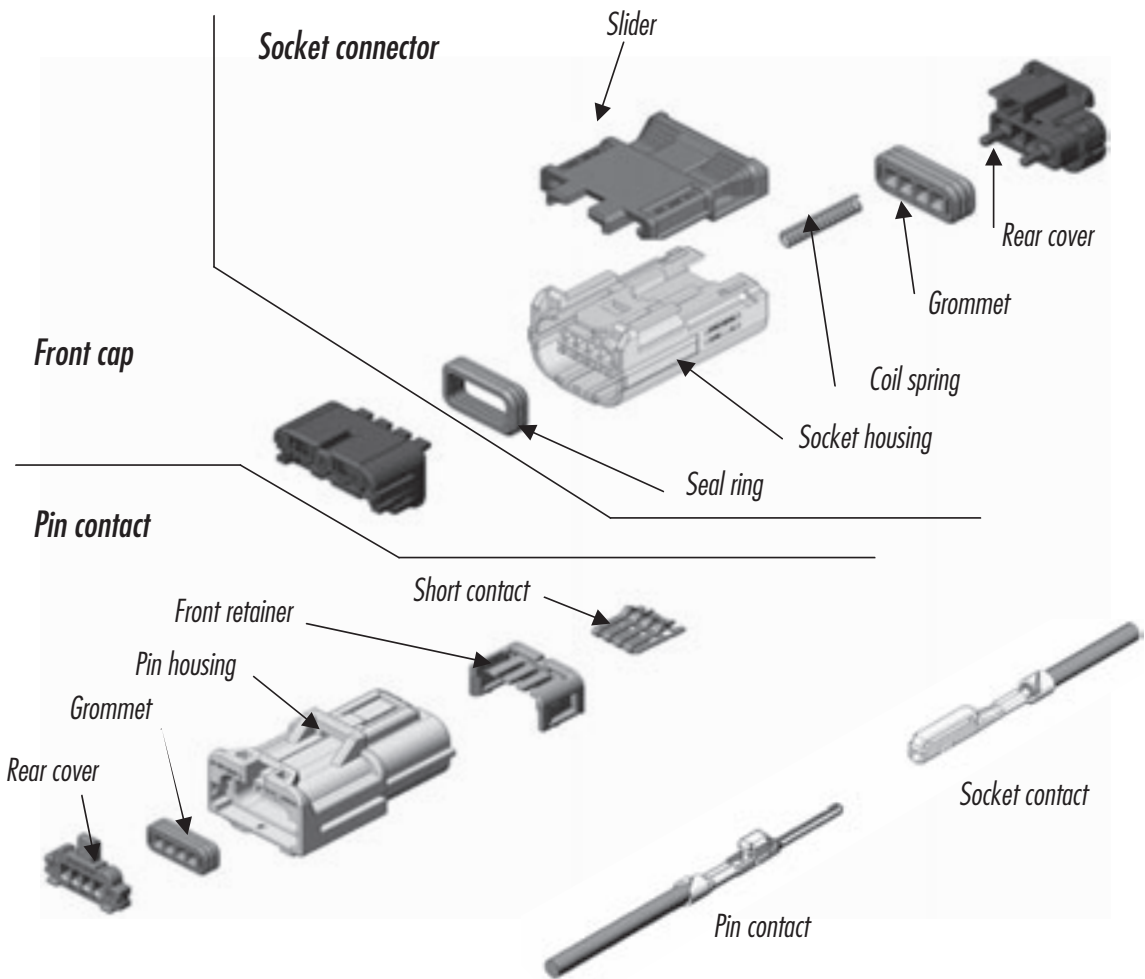
MX36 Series

Waterproof Complete Mating Relay Connector for Airbags

SAFETY SYSTEMS

MATERIALS AND FINISHES

Products	Components	Materials	Finishes/Colours
Socket connector	Socket housing	30% GF PBT	Yellow
	Slider	30% GF PBT	Black
	Rear cover	30% GF PBT	2pos.: Black, 4pos.: Yellow
	Coil spring	Stainless steel	-
	Seal ring	Silicon rubber	Green
	Grommet	Silicon rubber	Green
Front cap	Front cap	30% GF PBT	Black
Pin connector	Pin housing	30% GF PBT	Yellow
	Front retainer	30% GF PBT	Black
	Rear cover	30% GF PBT	2pos.: Black, 4pos.: Yellow
	Short contact	Copper alloy	Partially Au plating
	Grommet	Silicon rubber	Green
Contact	Socket contact	High conductive material	Partially Au plating
	Pin contact	High conductive material </td <td>Partially Au plating</td>	Partially Au plating

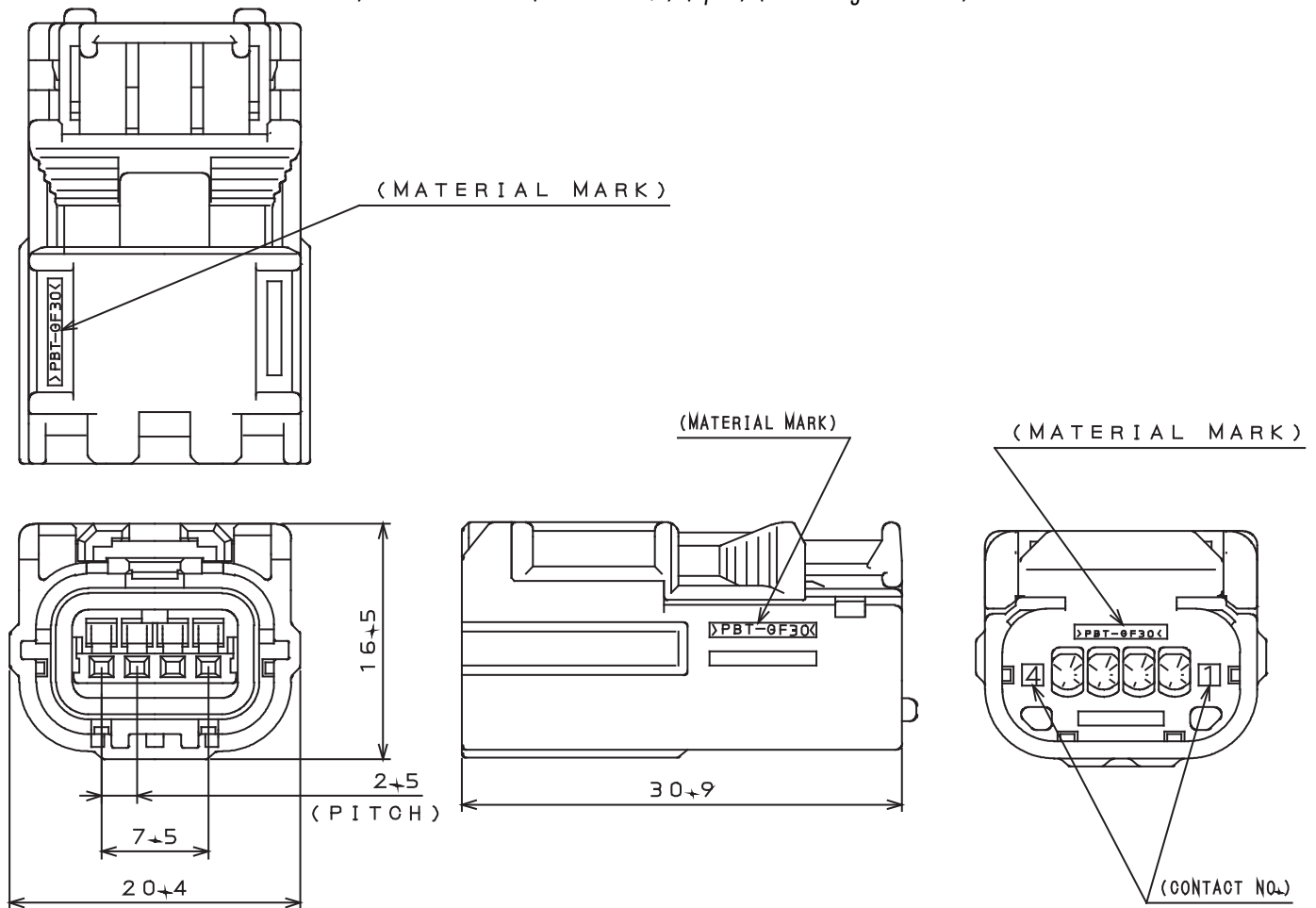


• Please consult JAE for verification of product availability. Dimensions and specifications subject to change without notice.

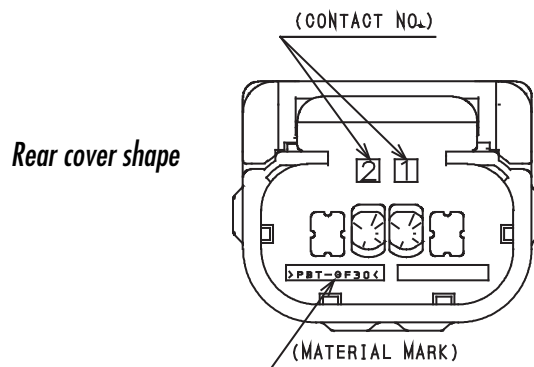
MX36 Series

Waterproof Complete Mating Relay Connector for Airbags

1) Socket Connector (MX36004SQ3) (4pos.) (SJ Drawing SJ101633)



For 2pos. (MX36002SQ3) only the rear cover(shape, color) will be different (SJ Drawing SJ101632)



Others: 2pos. Available in different key (MX36002SQ4) (SJ Drawing SJ102864)

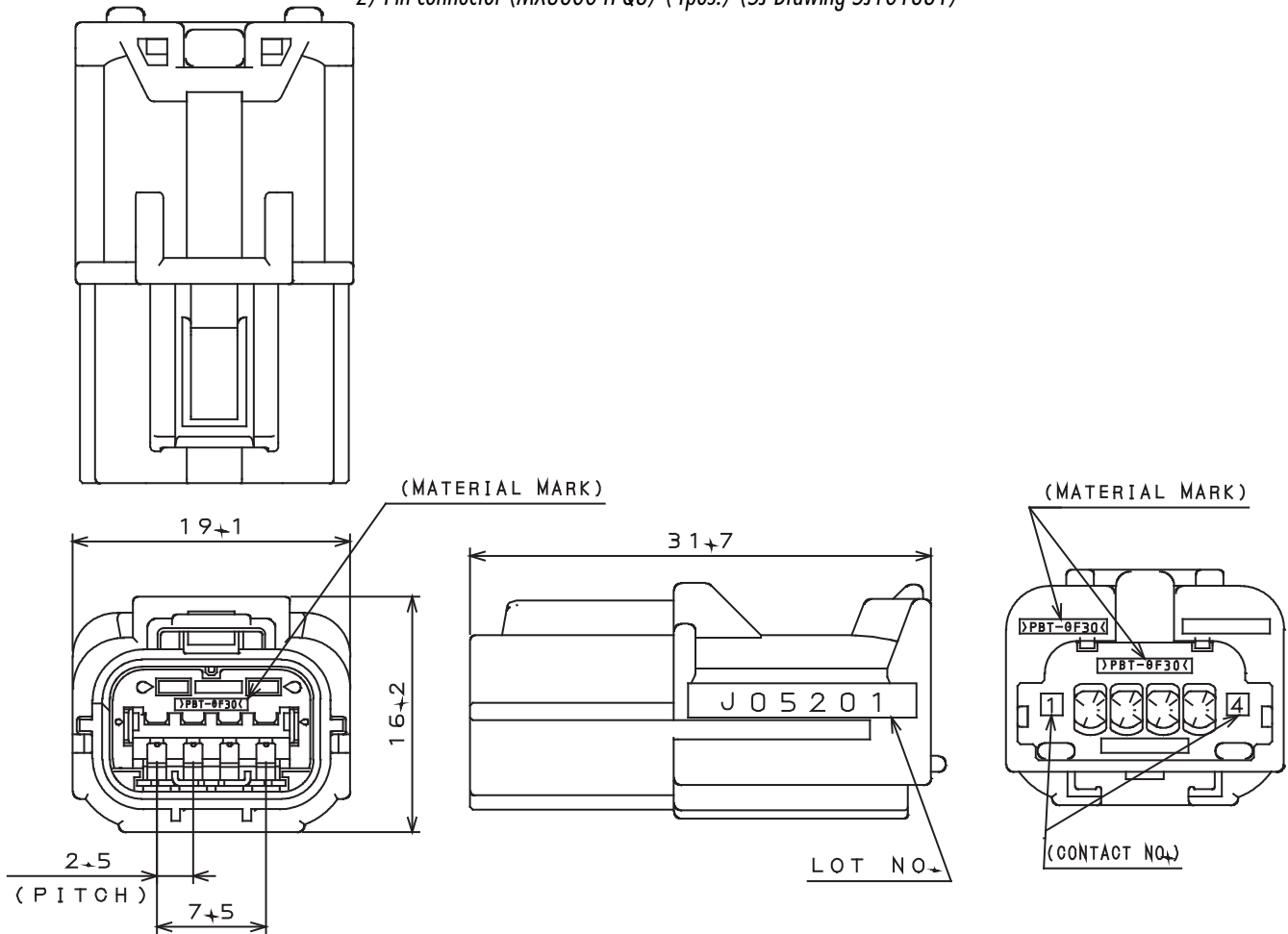
• Please consult JAE for verification of product availability.
Dimensions in mm.

MX36 Series

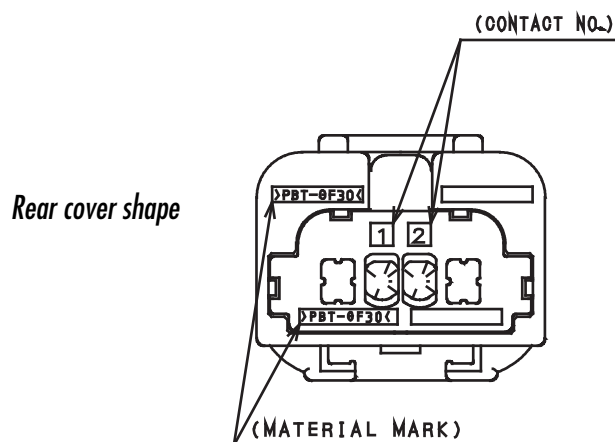
Waterproof Complete Mating Relay Connector for Airbags

2) Pin connector (MX36004PQ3) (4pos.) (SJ Drawing SJ101631)

SAFETY SYSTEMS



For 2pos. (MX36002PQ3) only the rear cover(shape, color) will be different (SJ Drawing SJ101630)



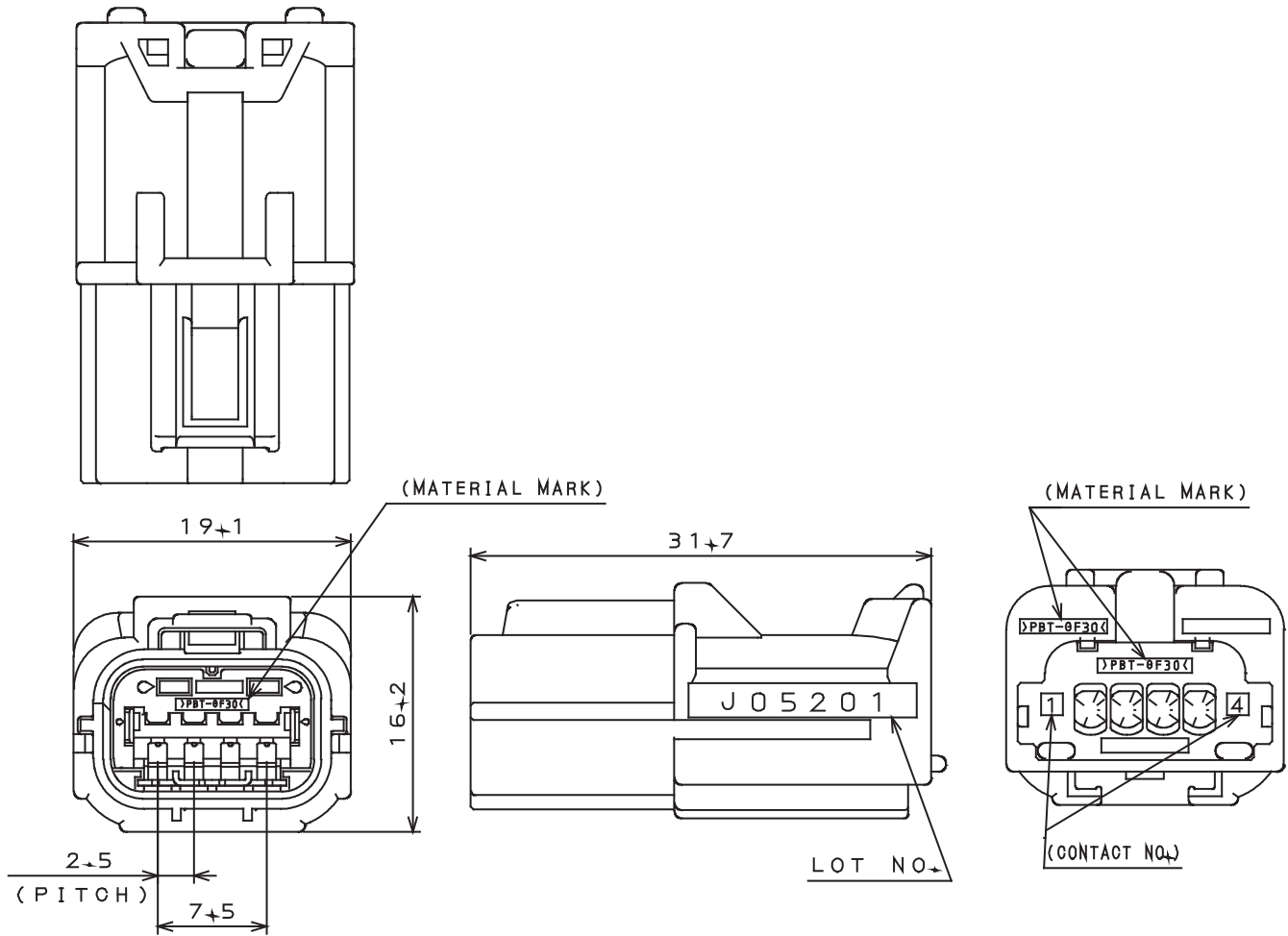
Others: 2pos. Available in different key (MX36002PQ4) (SJ Drawing SJ102863)

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

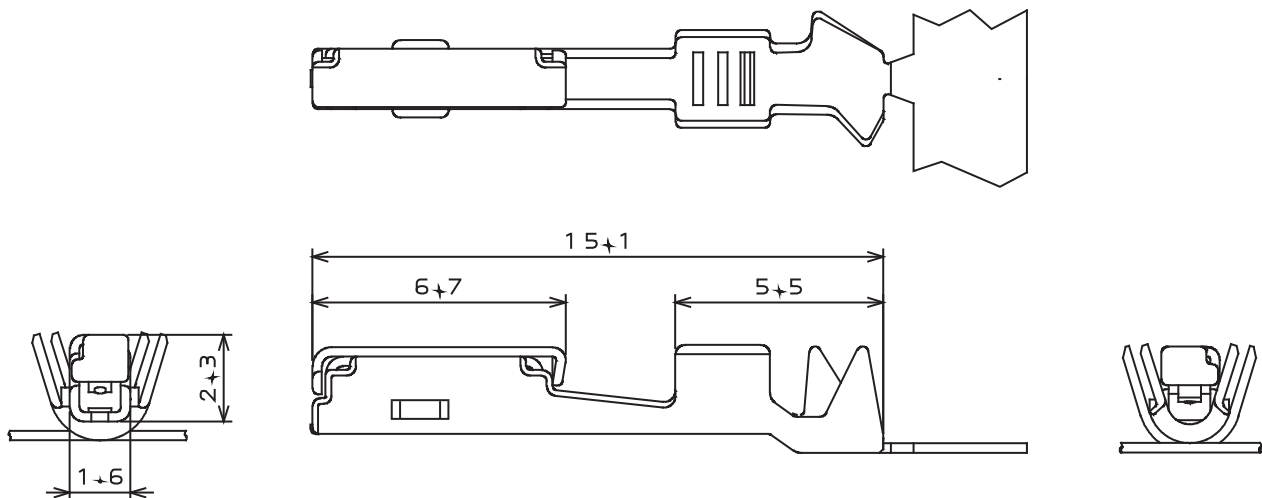
MX36 Series

Waterproof Complete Mating Relay Connector for Airbags

(3) Front cap (MX36004XF3) (SJ Drawing SJ102923) 2pos. and 4pos. in common



(4) Socket contact (M36S08K4Q3) (SJ Drawing SJ102689)



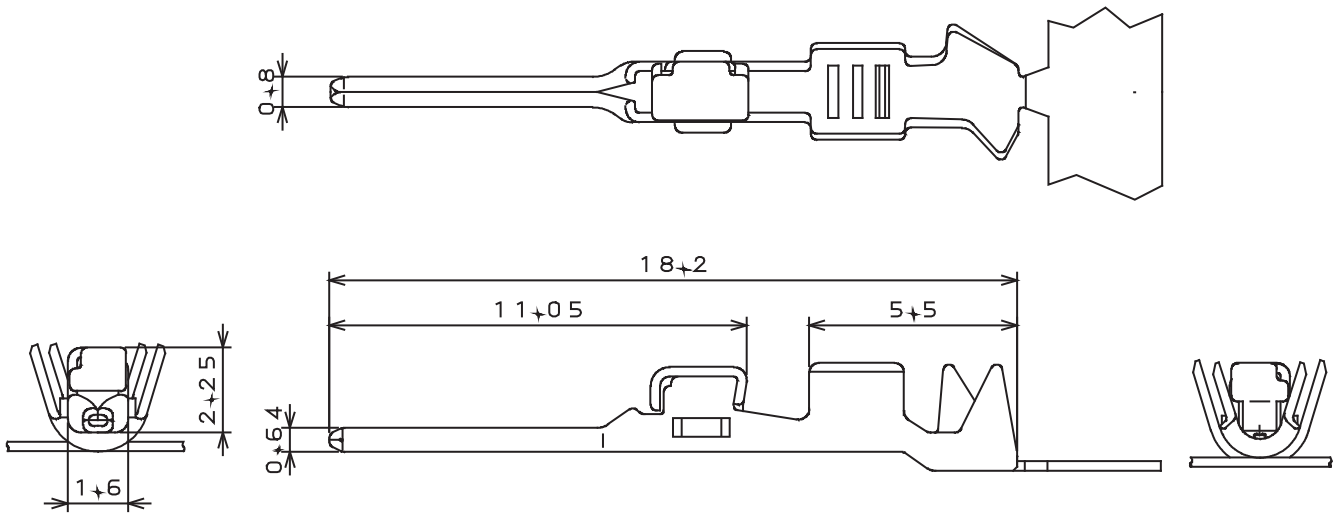
• Please consult JAE for verification of product availability.
Dimensions in mm.

MX36 Series

Waterproof Complete Mating Relay Connector for Airbags

5) Pin contact (M36P08K4Q3) (SJ drawing SJ102691)

SAFETY SYSTEMS



Crimping and Release tools

Contact part number	Retainer release jig	Contact release jig	Semi automatic applicator	Automatic applicator
M36P08K4Q3	JT-MX36P-1	ET-MX36-1	350-MX36-2	350-MX36-3B
M36S08K4Q3	JT-MX36S-1			

Others

Specification	JACS-10220
Instruction manual	JAHL-10220

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

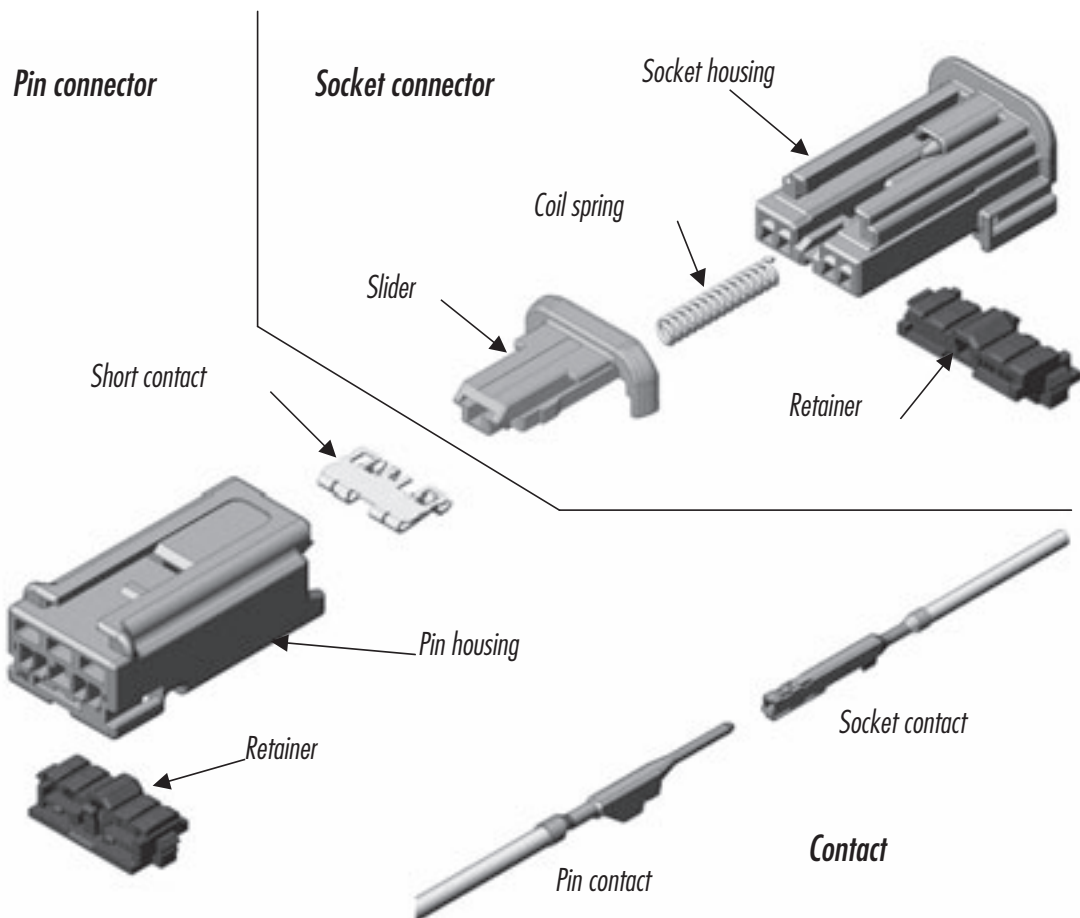
MX37 Series

Non-Waterproof Complete Mating Relay Connector for Airbags

SAFETY SYSTEMS

MATERIALS AND FINISHES

Products	Components	Materials	Finishes/Colours
Socket connector	Socket housing	_____	Yellow
	Retainer	30% GF PBT	Black
	Slider	30% GF PBT	Black
	Coil spring	Stainless steel	-
Pin connector	Pin housing	PBT	Yellow
	Retainer	30% GF PBT	Black
	Short contact	Copper alloy	Partially Au plating
Contact	Socket contact	Copper alloy	Partially Au plating
	Pin contact	Copper alloy	Partially Au plating



Crimping and Release tools

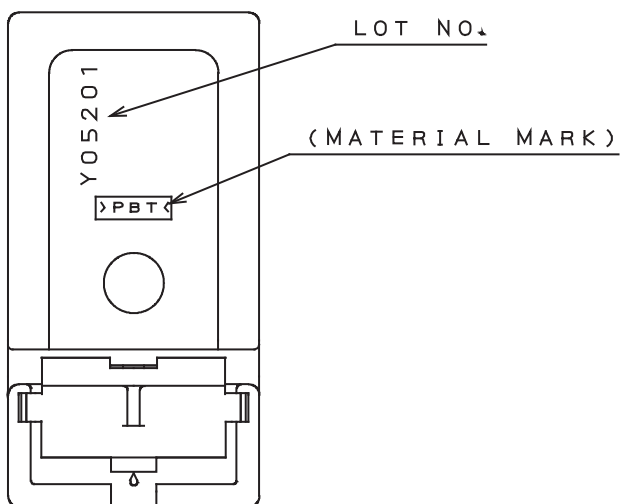
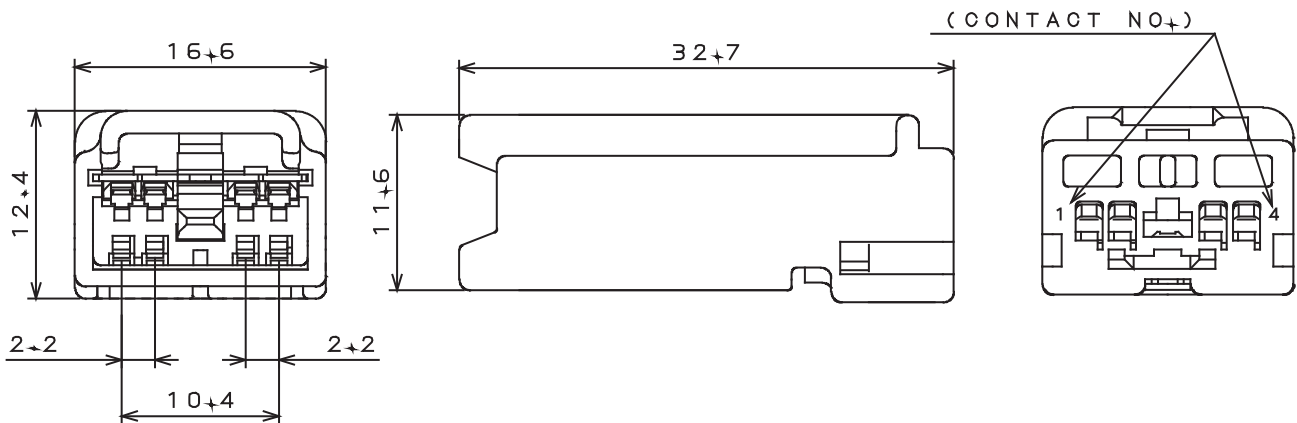
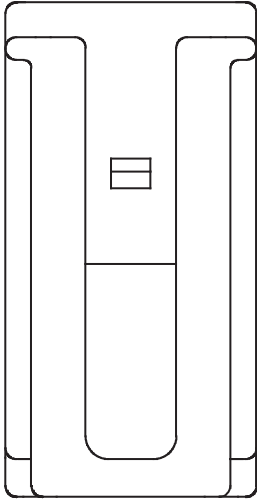
Contact part number	Contact release jig	Semi automatic applicator	Automatic applicator
M37P75C4P3 (pin)	ET-MX37-1B	350-MX37P-2	350-MX37P-3B
M37S07K4P3 (Socket)		350-MX37S-2	350-MX37S-3B

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

MX37 Series

Non-Waterproof Complete Mating Relay Connector for Airbags

1) Pin connector (MX37004PP3) (SJ Drawing SJ101584)

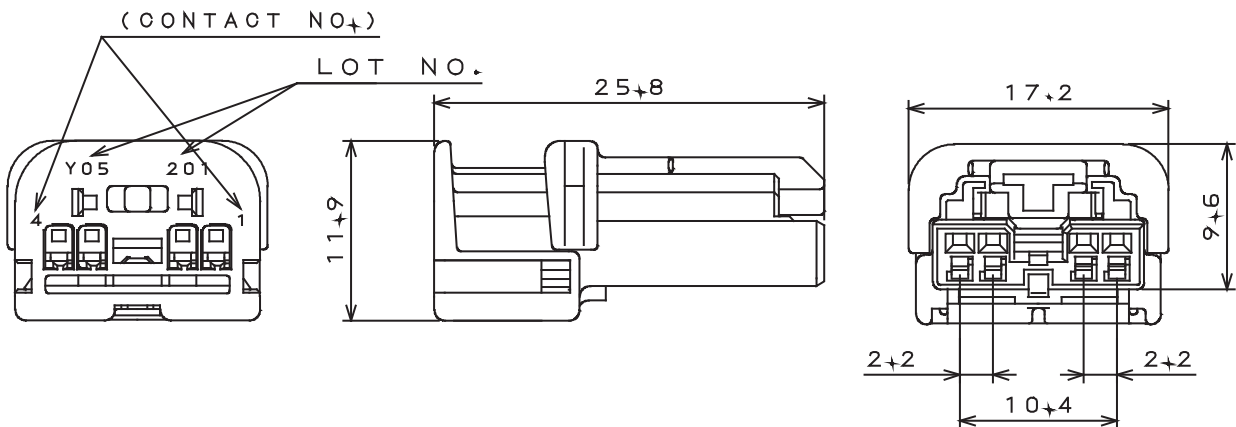
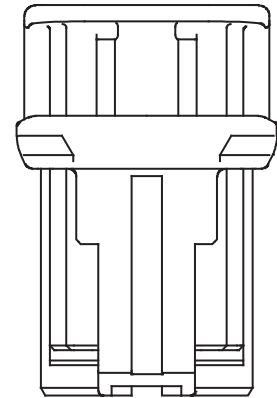


• Please consult JAE for verification of product availability.
Dimensions in mm.

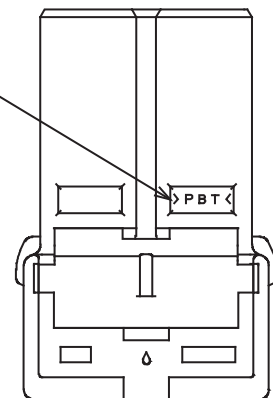
MX37 Series

Non-Waterproof Complete Mating Relay Connector for Airbags

2) Socket Connector (MX37004SP3) (SJ Drawing SJ101585)



(MATERIAL MARK)

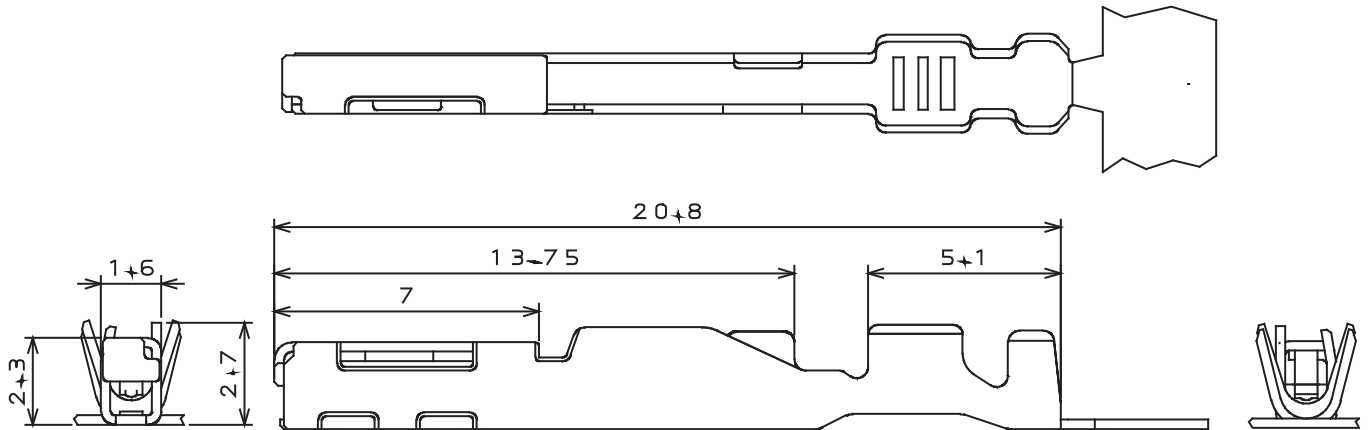


• Please consult JAE for verification of product availability.
 Dimensions and specifications subject to change without notice.

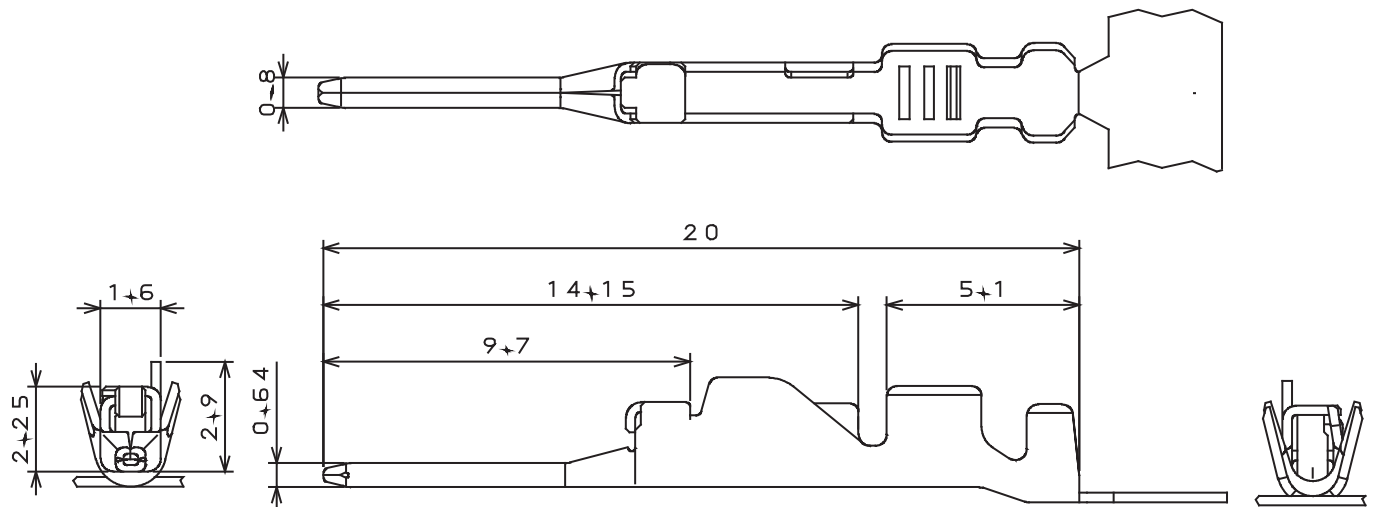
MX37 Series

Non-Waterproof Complete Mating Relay Connector for Airbags

3) Socket contact (M37S07K4P3) (SJ Drawing SJ101587)



4) Pin contact (M37P75C4P3) (SJ Drawing SJ101586)



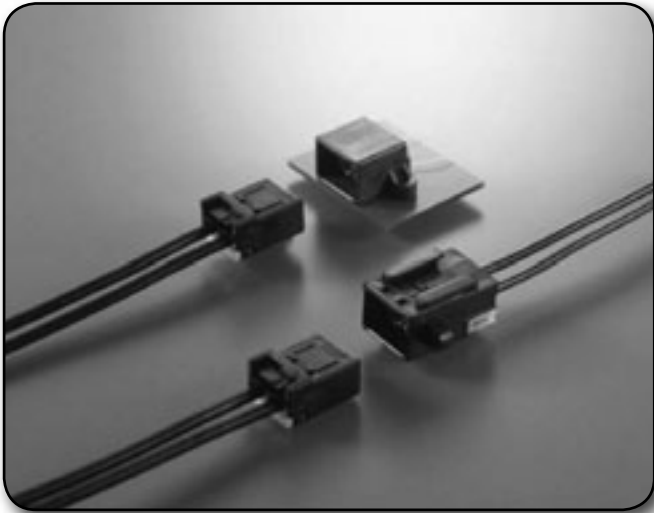
Others

Specifications	JACS-10241
Instruction manual	JAHL-10241

• Please consult JAE for verification of product availability.
Dimensions in mm.

MX25 Series

In-vehicle Coaxial Connectors



FEATURES

- For Board-to-Cable / Cable-to-Cable (Relay) application
- Applicable frequency: 5.8GHz max., VSWR: 1.5 max. (for Cable-to-Cable type)
- With flange for pin-connectors
- Mechanical lock system for reliable mating. Mechanical lock system has better performance for vibration and tensile strength. In case blindmate, Clear "click" sound ensures the mating condition.
- Double hook mechanism on the contacts to prevent them from moving out. Outer contacts for cable connection are held by two portion of housing lance and retainer, which enables reliable holding of the contacts.
- Boxed shaped contacts which enables highstrength against external pressure
- Protected lock lever
Lock lever of the socket contact is protected by being located under the projection of the housing.
- Pin connectors for cables which is easy to mount on chassis
Pin connector for cable has a holder for nylon clip and metal bracket which are used to be fixed on the chassis. It also has flanges for screw fixing on both side of the connector.
- Highly reliable contact
- Crimp contact

MX25 series was developed as coax connectors for automotive in response to the requirement of high frequency transmission for invehicle information system. It has board-to-cable and cable-to-cable type and cable-to-cable type can be utilize up to 6GHz. MX25 has reliable mechanical performance such as mechanical mating lock and double hook on the contacts as well as electrical performance of coaxial. Application: In-vehicle telephone, GPS system, Satellite radio

GENERAL SPECIFICATIONS

Contact Pitch	6.7mm
Number of Positions	2
Applicable Frequency Range	Board-to-Cable : DC to 3GHz Cable-to-Cable : DC to 6GHz
Withstanding Voltage	1000 VACr.m.s. (for one minute)
Insulation Resistance	100 megohm min..
Contact Resistnace	Inner contact : 5 milliohm max. (initial) Outer Contact : 30 milliohm max. (initial)
VSWR	Board-to-Cable : 1.4 max. (DC to 2.5 GHz) : 1.5 max. (2.5 to 3GHz) Cable-to-Cable : 1.3 max. (2.5 to 3GHz) : 1.5 max. (2.5 to 6GHz)
Insertion Loss	Board-to-Cable : 0.4 dB max. (DC to 2.5 GHz) : 0.5dB max. (2.5 to 3GHz) Cable-to-Cable : 0.3dB max. (2.5 to 3GHz) : 0.5dB max. (2.5 to 6GHz)
Operating Temperature	-40 to +85°C
Applicable Wire Size	Coaxial cable 1.5D equivalent

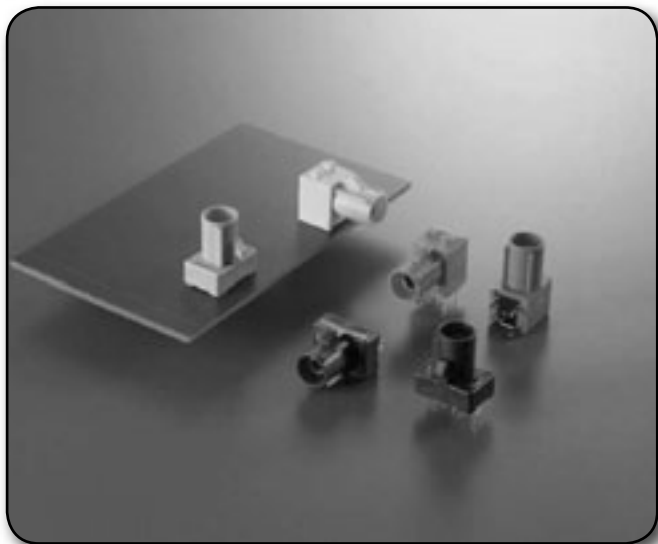
MATERIALS AND FINISHES

Components	Materials/Finishes
Housing	Pin Header: Glass Filled PBT (Black) Relay Pin/ Socket: PBT (Black)
Retainer	PBT (White)
Sleeve	Copper Alloy/ Nickel Plating
Outer Contact	Copper Alloy/ Tin Plating
Inner Contact	Pin Header: Copper Alloy/ Tin Plating Relay Pin/ Socket: High Conductive Copper Alloy/ Tin Plating
Inner Insulator	Pin Header: LCP (Black) Relay Pin: Glass fi lled PPS (Black) Socket: TPX (Clear)

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

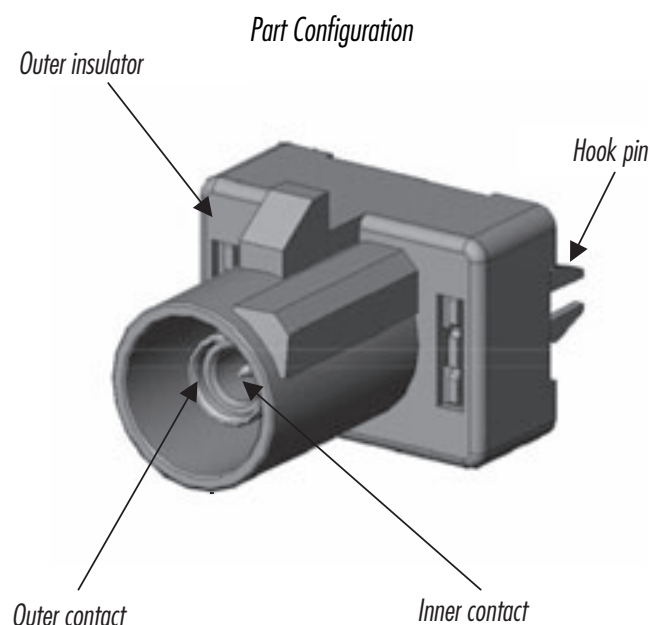
MX35 Series

In-vehicle Coaxial Connector



FEATURES

- In-vehicle coaxial connector conforming to FAKRA standard.
- 3 key types, E, F, and I, are available in the one-contact type.
- Secure locking at soldering and high tolerance for connector insertion and removal are provided by hook-pins installed on both sides of the connector.
- Corresponds to a frequency of 3Ghz or less.



MX35 connector is an in-vehicle coaxial connector conforming to FAKRA standard. It is used for various devices including radios, TVs, GPSs and mobile phones.

A straight pin header has been newly developed with hook pins for board-locking so that secure locking at soldering and high tolerance for connector insertion and removal are provided.

GENERAL SPECIFICATIONS

No. of contacts	1 pos. Pin header (Key types: E,F,I)
Dielectric withstanding voltage:	AC1000V per minute
Operating temperature	-30°C to +85°C
Insulation resistance:	100M ohm min.
Life time:	50 times

MATERIALS AND FINISHES

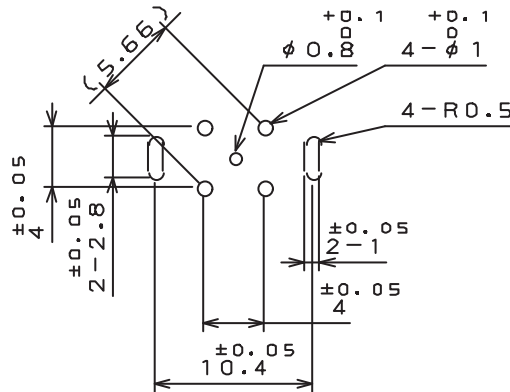
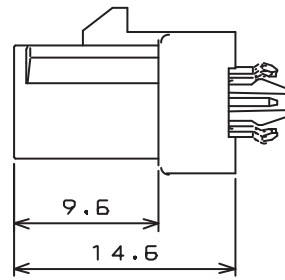
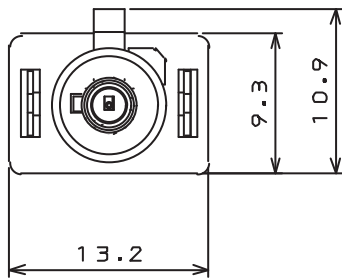
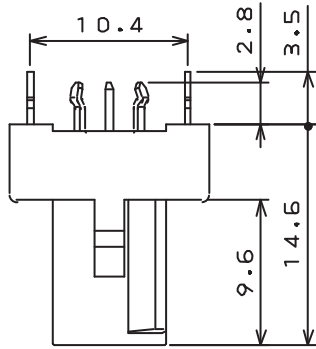
Components	Materials/Finishes
Outer insulator	Glass filled PBT
Inner insulator	Glass filled SPS
Outer contact	Copper Alloy/ Tin Plating
Inner contact	Copper Alloy/ Contact Portion: Au plating Soldering Portion: Tin plating
Hook pin	Copper Alloy/ Tin Plating

• Please consult JAE for verification of product availability.
Dimensions in mm.

MX35 Series

In-vehicle Coaxial Connector




1) MX35E01TP1 (Key Type: E)



MX35 Series

In-vehicle Coaxial Connector

2) Key type

Key type	Plug key feature	Color (resin)
E		Green
F		Brown
I		Beige

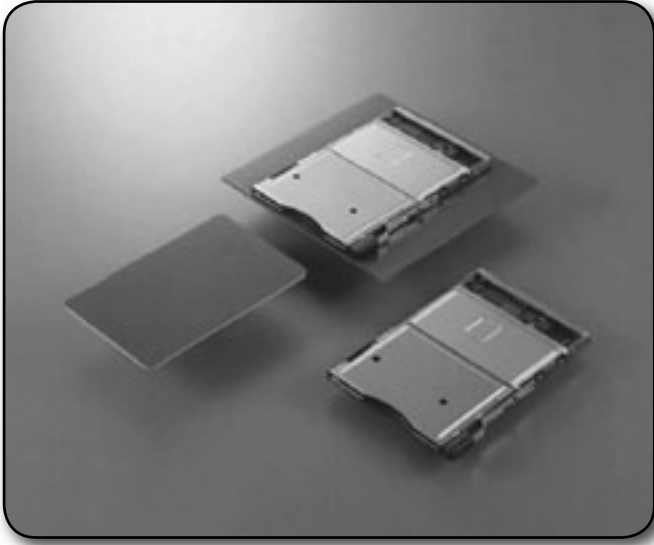
3) Technical Information

MX35E01TP1	SJ037066	1 pos. Pin header (Key: E)
MX35F01TP1	SJ037067	1 pos. Pin header (Key: F)
MX35I01TP1	SJ037068	1 pos. Pin header (Key: I)

• Please consult JAE for verification of product availability.
Dimensions in mm.

SF6 Series

Connector with Ejector for IC Card



FEATURES

- Super thin 4.8mm height
- Compliant with ISO 7816 Standard Smart Card (IC card)
- Employs ZIF landing structure and achieve an IC card insertion/removal endurance of more than 200,000 times.
- Equipped with a switch to detect IC card insertion.
- Equipped with an eject structure for one-touch IC card ejection.
- Feeling that lets you know IC card insertion is completed.
- Comes with mating card lock structure to prevent card removal due to vibration or shock when the IC card is inserted.
- Ground terminals are attached to nuts to anchor on the board as a measure against static electricity.
- Employs a structure to prevent unnecessary IC card protrusion at IC ejection and sets the protruding length to 20mm – 50mm.

SF6 Series is designed for ETC (Electronic Toll Collection) vehicle-mounted units. The product can withstand environmental conditions such as vibration and shock, and can also maintain stable contact performance under harsh environmental conditions. In addition, the connector has a robust structure to withstand repeated insertion and removal.

GENERAL SPECIFICATIONS

No. of contacts	8+2 (card detection switch)
Contact resistance	Signal 100 m ohm max. Switch 1 ohm max. (initial)
Dielectric withstanding voltage	Signal AC500Vr.m.s (per minute) Switch AC100Vr.m.s (per minute)
Operating temperature	-30°C to +85°C
Rated current	Signal 10uA to 1A Switch 0.1 to 10mA
Insulation resistance	Signal 1000 M ohm min. Switch 100 M ohm min.
Lifetime	200,000 times

MATERIALS AND FINISHES

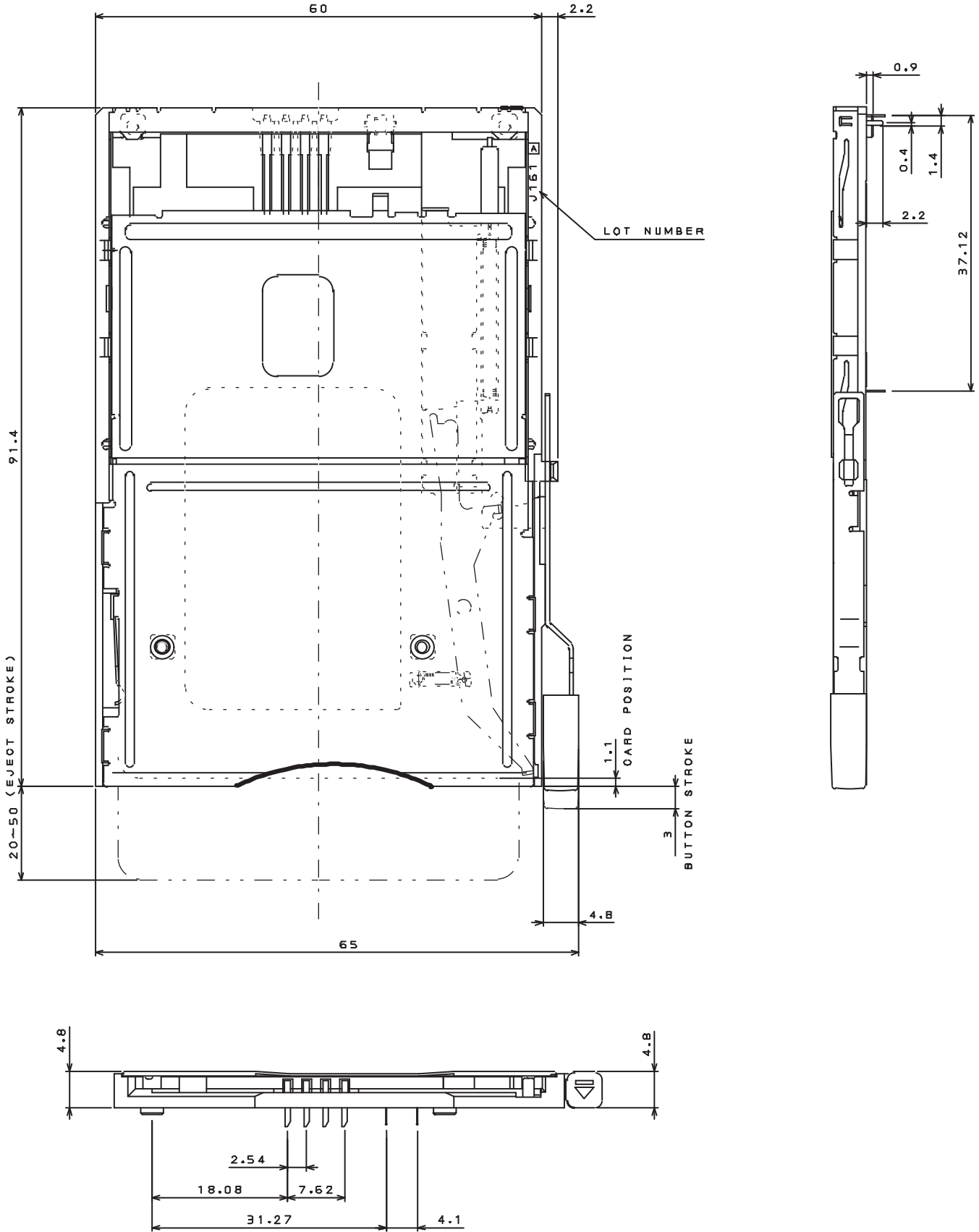
Components	Materials/Finishes
Contact	Copper alloy/Contacting portion: Au flash over PdNi over nickel Terminal portion: SnPb plating
Insulator	Glass filled LCP
Cover frame	Stainless steel
Slider	Stainless steel
Switch	Au plating on terminal portion
Button	Glass filled nylon
Eject bar	Stainless steel
Eject plate	Stainless steel
Lock plate	Stainless steel
Spring	Stainless steel
Nut	Steel / Nickel

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

SF6 Series

Connector with Ejector for IC Card

1) Connector Profile

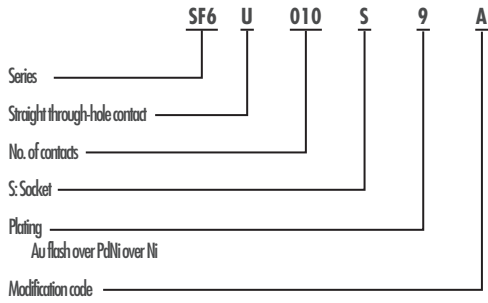


• Please consult JAE for verification of product availability.
Dimensions in mm.

SF6 Series

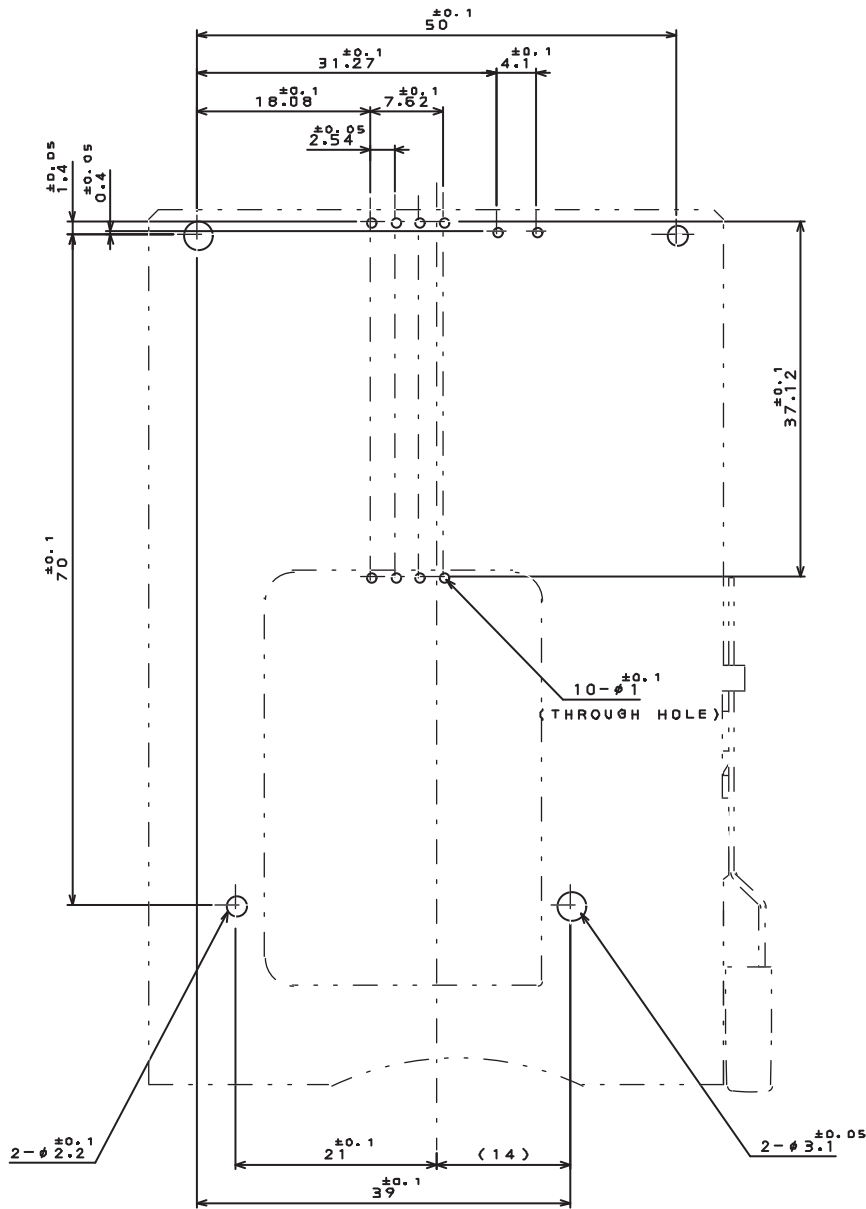
Connector with Ejector for IC Card

2) Ordering Information



Part Number	Drawing No.
SF6U010S9A	SJ036109
Specification	JACS-1616

3) P.C.B. Through-hole location (ref.)



• Please consult JAE for verification of product availability.
 Dimensions and specifications subject to change without notice.

Notes

• Please consult JAE for verification of product availability.
Dimensions in mm.

Notes

• Please consult JAE for verification of product availability.
Dimensions and specifications subject to change without notice.

Notes

• Please consult JAE for verification of product availability.
Dimensions in mm.



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