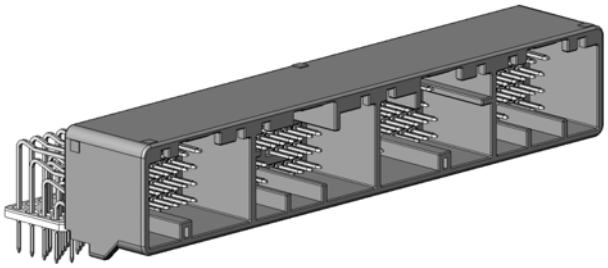
NEW

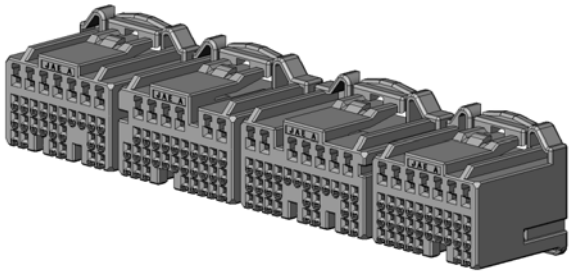
Board to Cable Connection
High Density Connector for Automotive

MX31 Series

CONNECTOR
MB-0140-2
June 2006

RoHS Compliant





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 fretting corrosion by slight conflicts.
- ■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 Deg. C to +85 Deg. C
- ■Rated current: 2.2A for signal, 5.7A for power
- ■Insulation resistance: 100M ohm max.
- ■Mating cycle: 50cycles
- ■Applicable wire: Please refer to next page.
- ■Applicable board thickness: t1.6mm

Materials and Finishes

■ Socket connector

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

■ Pin connector

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

■ Socket contact

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

Applicable Wire

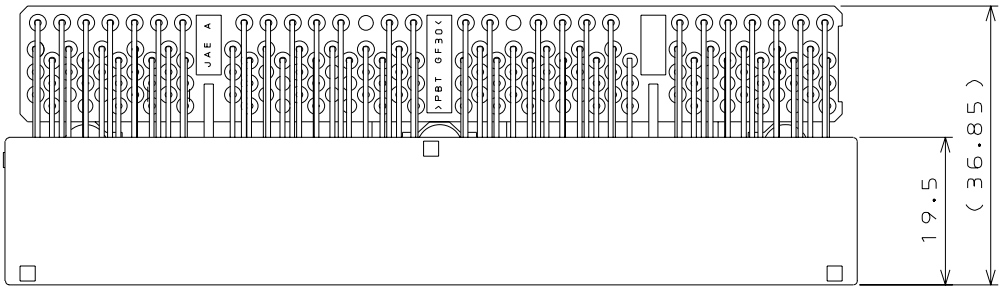
Applicable wire (Unit:mm^2) / Part Number	AVSS／CAVS／CAVUS			CPEX/ CHFUS	CHFUS			
	0.3 to 0.5	0.3 to 0.85	0.85 to 1.25	0.22	0.35 to 0.5	0.35 to 0.75	0.75 to 1	1 to 1.5
M31S07K4FA (Sn plating for signal)	*				*			
M31S07K4QA (Au plating for signal)	*				*			
M31S07K4FB (Sn plating for signal)				*				
M31S05K2FA (Sn plating for power)			*(1.25 only)					*
M31S05K3FA (Sn plating for power)			*				*	
M31S05K4FA (Sn plating for power)		*				*		
M31S05K4QA (Au plating for power)		*				*		

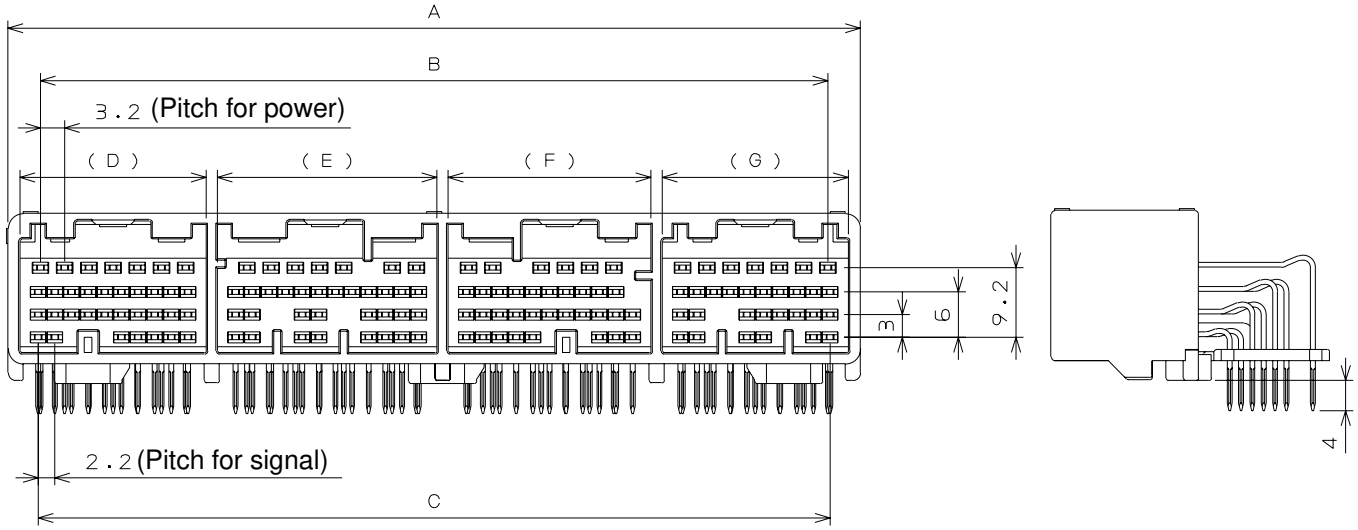
Crimping Tool

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.

■Male Connector

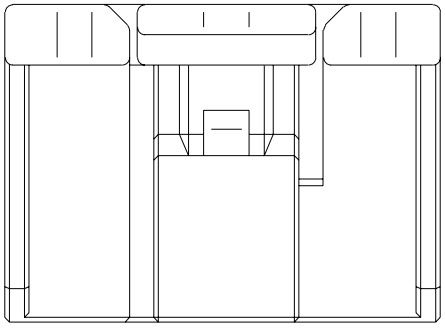


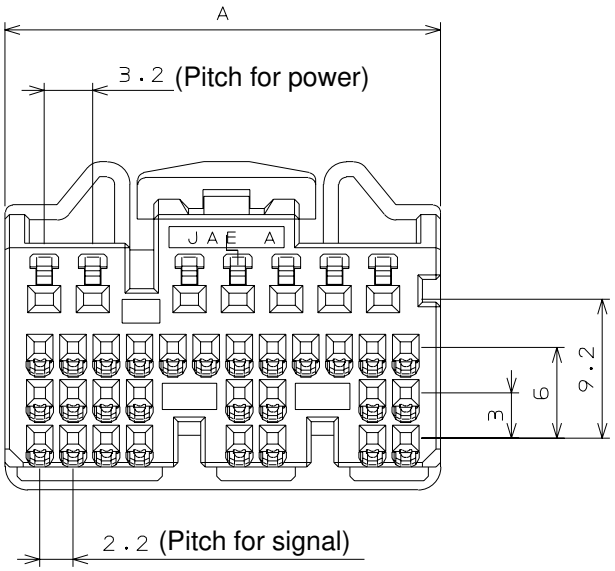


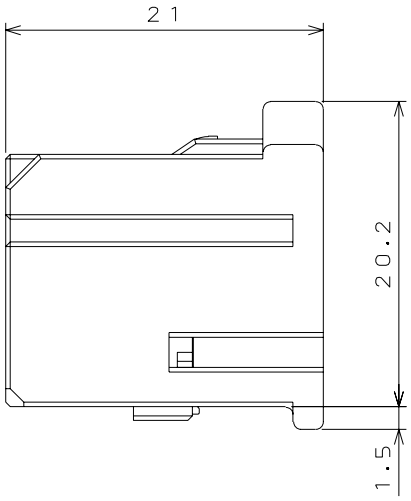
Key Position	No. of contacts	Part Number	Dimensions						
			A	B	C	(D)	(E)	(F)	(G)
Standard	70	MX31070NFC	60.5	48.5	52.5	-	29.0	26.8	-
	98	MX31135NFA	112.7	104.1	104.7	24.6	29.0	26.8	24.6
	104	MX31104NFA	86.6	75.8	78.6	24.6	29.0	26.8	-
	135	MX31135NQA	112.7	104.1	104.7	24.6	29.0	26.8	24.6
Sub (Compatible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

■Female Connector



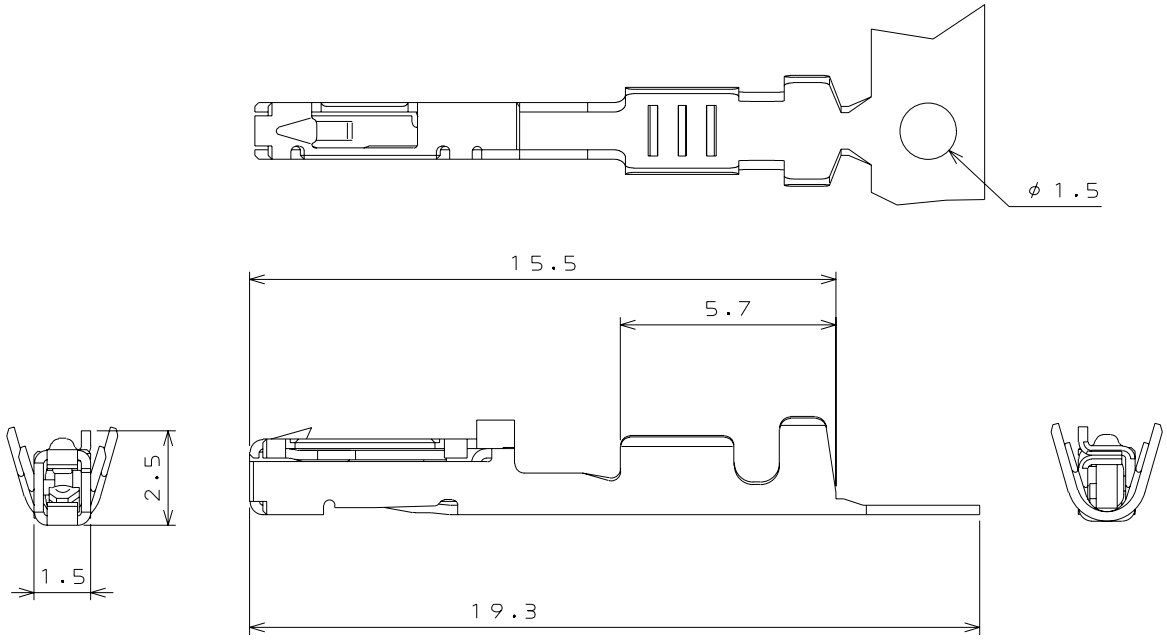




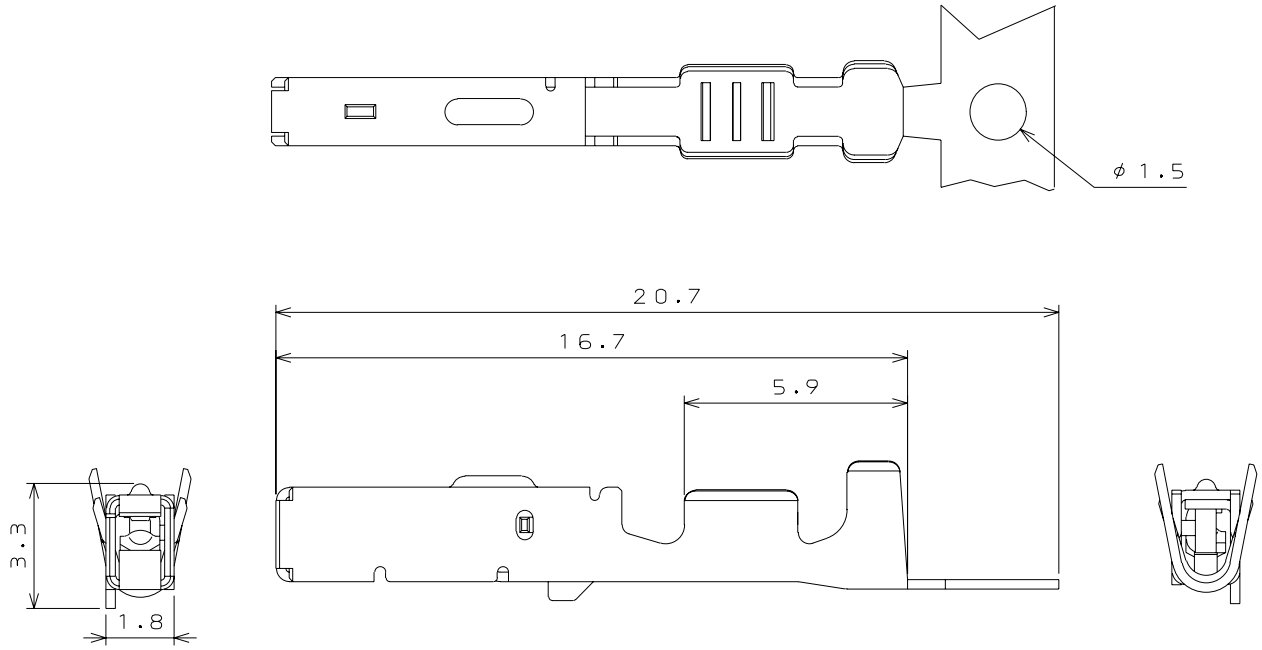
Key postion	No. of contacts	Part Number	Dimensions
			A
Normal	31	MX31031SGA	24.4
	34	MX31034SGA	24.4
	35	MX31035SGA	28.8
	35	MX31035SGB	26.6
Sub (Compatible to mis-mating)	31	MX31031SGB	24.4
	34	MX31034SGB	24.4
	35	MX31035SGC	28.8
	35	MX31035SGD	26.6

■Socket Contact

1. M31S07K4FA, 4QA, 4FB



2. M31S05K2FA, 3FA, 4FA, 4QA



Product Drawing

No. of Contacts	Socket P/ N	SJ Drawing
31	MX31031SGA	SJ037337
34	MX31034SGA	SJ037335
35	MX31035SGA	SJ037331
35	MX31035SGB	SJ037332
31	MX31031SGB	SJ037338
34	MX31034SGB	SJ037336
35	MX31035SGC	SJ037333
35	MX31035SGD	SJ037334

Key position	No. of Contacts	Pin header P/N	SJ Drawing
Standard	70	MX31070NFC	SJ100553
	98	MX31135NFA	SJ100814
	104	MX31104NFA	SJ038843
	135	MX31135NQA	SJ037329
Sub (Compatible to mis-mating)	70	MX31070NFD	SJ101333
	135	MX31135NQB	SJ037330

Socket contact P/ N	SJ Drawing
M31S07K4FA (Sn plating terminal for signal)	SJ037461
M31S07K4QA (Au plating terminal for signal)	SJ037462
M31S07K4FB (Sn plating terminal for signal)	SJ038294
M31S05K2FA (Sn plating terminal for power)	SJ038295
M31S05K3FA (Sn plating terminal for power)	SJ037463
M31S05K4FA (Sn plating terminal for power)	SJ037464
M31S05K4QA (Au plating terminal for power)	SJ037465

Specification

JACS-1726

Handling Instructions

JAHL-1726

Notice: Products shown in this leaflet are made for the applications listed below. However, if the above-mentioned products are to be used in aerospace devices, marine cable-connection devices, atomic power control systems, medical equipment for life-support systems, or any other specific application requiring extremely high reliability, please contact JAE for further information.
Recommended applications: computers, office machines, measuring devices, telecommunication devices (terminals, mobile devices), AV devices, household applications, FA devices, etc.

Japan Aviation Electronics Industry, Limited

Product Marketing Division
Aobadai Building, 3-1-19, Aobadai, Meguro-ku, Tokyo 153-8539
Phone: +81-3-3780-2787 FAX: +81-3-3780-2946