

# PRODUCT GUIDE

Vol.11

IRISO CONNECTOR

*~ connect the future ~*

IRISO's products  
connect to the future.



## Connect to the future.

Connect technology.

Connect trust.

Connect excitement.

Connecting information, connecting people.

The act of connecting creates new value.

As a leading company in connector development,  
we at IRISO connect everything from various digital devices  
to the latest applications with our technical capabilities and  
reliability.

Connect to a better future

We are IRISO.





By bringing together passion and wisdom, and  
by connecting one person at a time,  
we will innovate and create  
a new IRISO for the 21st century.

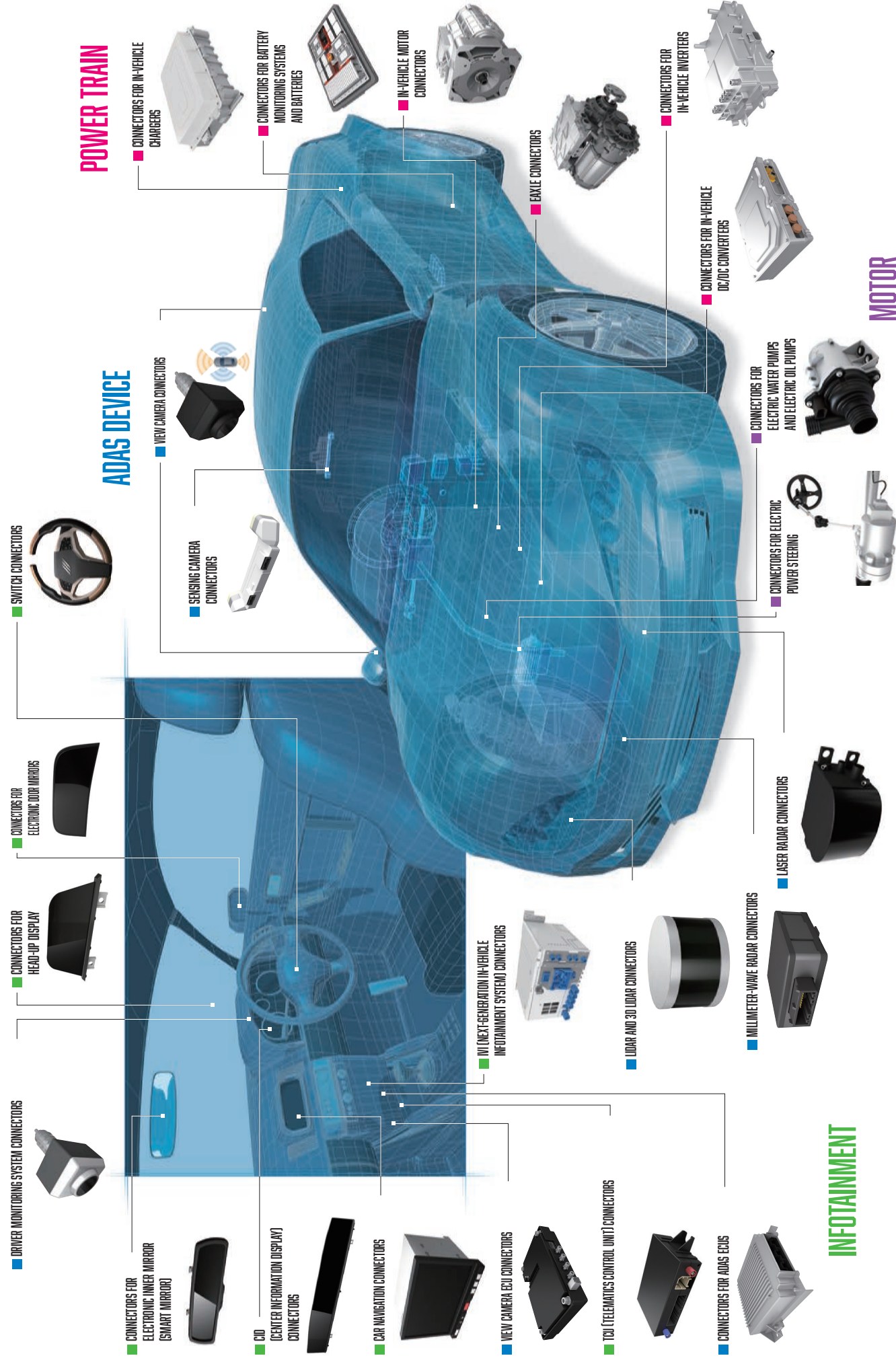
## Table of Contents

Introduction		
Applications	In-Vehicle Applications	02
	ADAS (sensing device) Connectors	04
	Powertrain Connectors	06
	Infotainment (Cockpit) Connectors	08
	Connectors for Household Appliances	10
	Connectors for Commercial Appliances	12
	Connectors for Industrial Equipment	14
Board to Board Connectors		16
	Z-Move™	17
	0.4mm Pitch Floating Connectors	20
	0.5mm Pitch Floating Connectors	22
	0.635mm Pitch Floating Connectors	27
	0.8mm Pitch Floating Connectors	30
	1.0mm Pitch Floating Connectors	33
	High Current Floating Connectors	38
Device Socket		40
Wire Harness Connectors		46
FPC/FFC Connectors		48
Compression Terminal		55
Card Edge Connectors		60
I/O Connectors		61
ESD Protector Chip		63
Solutions	Connectors for robotic assembly	64
	Resonance and Vibration Analysis Solutions	66
Worldwide / Locations		68

### \*Important\*

- The information in this catalog is subject to change without notice. Please contact our sales department for details.
- The information in this catalog reflects typical products. Please contact us if you are looking for a certain series, number of pins, variation, plating, etc.

## IN-VEHICLE APPLICATIONS



# ADAS (sensing device) Connectors

## Millimeter-Wave Radar Connectors



### Available Connectors

■ 0.4mm Pitch Floating Connectors ... P20	■ ESD Protector Chip ... P63
■ 0.5mm Pitch Floating Connectors ... P22	
■ 0.635mm Pitch Floating Connectors ... P27	
■ 0.8mm Pitch Floating Connectors ... P30	
■ 1.0mm Pitch Floating Connectors ... P33	
■ FPC/FFC Connectors ... P48	
■ Compression Terminal ... P55	

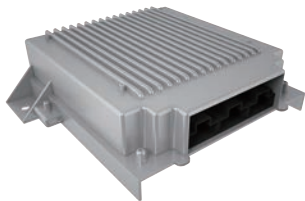
## Sensing Camera Connectors



### Available Connectors

■ 0.4mm Pitch Floating Connectors ... P20
■ Connectors ... P48
■ FPC/FFC Connectors ... P55
■ Compression Terminal ... P63
ESD Protector Chip

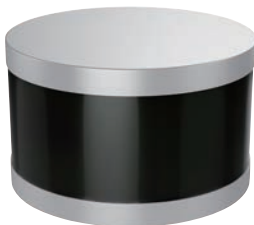
## Connectors for ADAS ECUs



### Available Connectors

■ 0.5mm Pitch Floating Connectors ... P22	■ Card Edge Connectors ... P60
■ 0.635mm Pitch Floating Connectors ... P27	■ I/O Connectors ... P61
■ 0.8mm Pitch Floating Connectors ... P30	■ ESD Protector Chip ... P63
■ High Current Floating Connectors ... P38	
■ Wire Harness Connectors ... P46	
■ FPC/FFC Connectors ... P48	
■ Compression Terminal ... P55	

## LiDAR and 3D LiDAR Connectors



### Available Connectors

■ 0.4mm Pitch Floating Connectors ... P20
■ 0.5mm Pitch Floating Connectors ... P22
■ 0.635mm Pitch Floating Connectors ... P27
■ 0.8mm Pitch Floating Connectors ... P30
■ FPC/FFC Connectors ... P48
■ Compression Terminal ... P55
■ ESD Protector Chip ... P63

## Laser Radar Connectors



### Available Connectors

- 0.4mm Pitch Floating Connectors... P20
- 0.5mm Pitch Floating Connectors... P22
- 0.635mm Pitch Floating Connectors... P27
- 0.8mm Pitch Floating Connectors... P30
- 1.0mm Pitch Floating Connectors... P33
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- ESD Protector Chip ... P63

## View Camera Connectors



### Available Connectors

- 0.4mm Pitch Floating Connectors ... P20
- Connectors ... P48
- FPC/FFC Connectors ... P55
- Compression Terminal ... P63
- ESD Protector Chip

## View Camera ECU Connectors



### Available Connectors

- High Current Floating Connectors... P38
- Wire Harness Connectors ... P46
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- Card Edge Connectors ... P60
- I/O Connectors ... P61
- ESD Protector Chip ... P63

## Driver Monitoring System Connectors



### Available Connectors

- 0.4mm Pitch Floating Connectors... P20
- 0.5mm Pitch Floating Connectors... P22
- 0.635mm Pitch Floating Connectors... P27
- 0.8mm Pitch Floating Connectors... P30
- 1.0mm Pitch Floating Connectors... P33
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- ESD Protector Chip ... P63

# Powertrain Connectors

## Connectors for battery monitoring systems and batteries



Available Connectors			
■ Z-Move™	... P17	■ FPC/FFC Connectors	... P48
■ 0.5mm Pitch Floating Connectors...	P22	■ ESD Protector Chip	... P63
■ 0.635mm Pitch Floating Connectors...	P27		
■ 0.8mm Pitch Floating Connectors...	P30		
■ 1.0mm Pitch Floating Connectors...	P33		
■ High Current Floating Connectors...	P38		
■ Wire Harness Connectors	... P46		

## Connectors for In-Vehicle Chargers



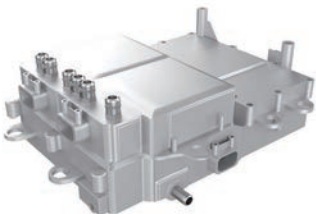
Available Connectors			
■ Z-Move™	... P17	■ Wire Harness Connectors	... P46
■ 0.5mm Pitch Floating Connectors...	P22	■ FPC/FFC Connectors	... P48
■ 0.635mm Pitch Floating Connectors...	P27	■ ESD Protector Chip	... P63
■ 0.8mm Pitch Floating Connectors...	P30		
■ 1.0mm Pitch Floating Connectors...	P33		
■ High Current Floating Connectors...	P38		
■ Device Socket	... P40		

## Connectors for In-Vehicle DC / DC Converters



Available Connectors			
■ Z-Move™	... P17		
■ High Current Floating	... P38		
■ Connectors	... P40		
■ Device Socket	... P46		
■ Wire Harness Connectors	... P48		
■ FPC/FFC Connectors	... P63		
ESD Protector Chip			

## Connectors for In-Vehicle Inverters



Available Connectors			
■ Z-Move™	... P17		
■ High Current Floating	... P38		
■ Connectors	... P40		
■ Device Socket	... P46		
■ Wire Harness Connectors	... P48		
■ FPC/FFC Connectors	... P63		
ESD Protector Chip			



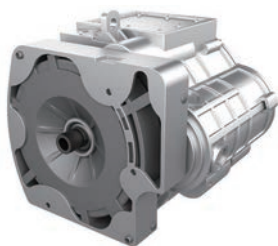
## Connectors for electric power steering



### Available Connectors

- Z-Move™ ... P17
  - High Current Floating ... P38
  - Connectors ... P40
  - Device Socket ... P63
- ESD Protector Chip

## In-Vehicle Motor Connectors



### Available Connectors

- Z-Move™ ... P17
  - High Current Floating ... P38
  - Connectors ... P40
  - Device Socket ... P46
  - Wire Harness Connectors ... P63
- ESD Protector Chip

## Connectors for electric water pumps and electric oil pumps



### Available Connectors

- Z-Move™ ... P17
  - High Current Floating ... P38
  - Connectors ... P40
  - Device Socket ... P63
- ESD Protector Chip

## eAxle Connectors



### Available Connectors

- Z-Move™ ... P17
  - High Current Floating ... P38
  - Connectors ... P40
  - Device Socket ... P46
  - Wire Harness Connectors ... P63
- ESD Protector Chip



# Infotainment (Cockpit) Connectors

## Connectors for Head-Up Display



### Available Connectors

- |  |                      |         |
|--|----------------------|---------|
| ■ 0.5mm Pitch Floating Connectors... P22   | ■ I/O Connectors     | ... P61 |
| ■ 0.635mm Pitch Floating Connectors... P27 | ■ ESD Protector Chip | ... P63 |
| ■ 0.8mm Pitch Floating Connectors... P30   |                      |         |
| ■ 1.0mm Pitch Floating Connectors... P33   |                      |         |
| ■ Device Socket                            | ... P40              |         |
| ■ FPC/FFC Connectors                       | ... P48              |         |
| ■ Compression Terminal                     | ... P55              |         |

## IVI (next-generation in-vehicle infotainment system) Connectors



### Available Connectors

- |  |                        |         |
|--|------------------------|---------|
| ■ 0.5mm Pitch Floating Connectors... P22   | ■ Card Edge Connectors | ... P60 |
| ■ 0.635mm Pitch Floating Connectors... P27 | ■ I/O Connectors       | ... P61 |
| ■ 0.8mm Pitch Floating Connectors... P30   | ■ ESD Protector Chip   | ... P63 |
| ■ 1.0mm Pitch Floating Connectors... P33   |                        |         |
| ■ High Current Floating Connectors... P38  |                        |         |
| ■ FPC/FFC Connectors                       | ... P48                |         |
| ■ Compression Terminal                     | ... P55                |         |

## TCU (Telematics Control Unit) Connectors



### Available Connectors

- |  |                        |         |
|--|------------------------|---------|
| ■ 0.5mm Pitch Floating Connectors... P22   | ■ Compression Terminal | ... P55 |
| ■ 0.635mm Pitch Floating Connectors... P27 | ■ Card Edge Connectors | ... P60 |
| ■ 0.8mm Pitch Floating Connectors... P30   | ■ I/O Connectors       | ... P61 |
| ■ 1.0mm Pitch Floating Connectors... P33   | ■ ESD Protector Chip   | ... P63 |
| ■ Device Socket                            | ... P40                |         |
| ■ Wire Harness Connectors                  | ... P46                |         |
| ■ FPC/FFC Connectors                       | ... P48                |         |

## CID (Center Information Display) Connectors



### Available Connectors

- |  |                        |         |
|--|------------------------|---------|
| ■ 0.5mm Pitch Floating Connectors... P22   | ■ Card Edge Connectors | ... P60 |
| ■ 0.635mm Pitch Floating Connectors... P27 | ■ I/O Connectors       | ... P61 |
| ■ 0.8mm Pitch Floating Connectors... P30   | ■ ESD Protector Chip   | ... P63 |
| ■ 1.0mm Pitch Floating Connectors... P33   |                        |         |
| ■ Device Socket                            | ... P40                |         |
| ■ FPC/FFC Connectors                       | ... P48                |         |
| ■ Compression Terminal                     | ... P55                |         |

## Switch Connectors



### Available Connectors

- 1.0mm Pitch Floating Connectors... P33
- Device Socket... P40
- FPC/FFC Connectors... P63
- ESD Protector Chip

## Connectors for electronic inner mirror (smart mirror )



### Available Connectors

- 0.4mm Pitch Floating Connectors... P20
- 0.5mm Pitch Floating Connectors... P22
- 0.635mm Pitch Floating Connectors... P27
- 0.8mm Pitch Floating Connectors... P30
- 1.0mm Pitch Floating Connectors... P33
- FPC/FFC Connectors... P48
- Compression Terminal... P55
- I/O Connectors... P61
- ESD Protector Chip... P63

## Connectors for electronic door mirrors



### Available Connectors

- FPC/FFC Connectors... P48
- ESD Protector Chip... P63

## Car Navigation Connectors



### Available Connectors

- 0.5mm Pitch Floating Connectors... P22
- 0.635mm Pitch Floating Connectors... P27
- 0.8mm Pitch Floating Connectors... P30
- 1.0mm Pitch Floating Connectors... P33
- High Current Floating Connectors... P38
- Device Socket... P40
- Wire Harness Connectors... P46
- FPC/FFC Connectors... P48
- Compression Terminal... P55
- Card Edge Connectors... P60
- I/O Connectors... P61
- ESD Protector Chip... P63

# Connectors for Household Appliances

## Smartphone and Mobile Phone Connectors



### Available Connectors

- 0.4mm Pitch Floating Connectors ... P20
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- ESD Protector Chip ... P63

## Console Gaming Connectors



### Available Connectors

- 0.5mm Pitch Floating Connectors ... P22
- 0.635mm Pitch Floating Connectors ... P27
- 0.8mm Pitch Floating Connectors ... P30
- 1.0mm Pitch Floating Connectors ... P33
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- ESD Protector Chip ... P63

## Digital Camera Connectors



### Available Connectors

- 0.4mm Pitch Floating Connectors ... P20
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- ESD Protector Chip ... P63

## Home Appliance Connectors



### Available Connectors

- 0.5mm Pitch Floating Connectors ... P22
- 0.635mm Pitch Floating Connectors ... P27
- 0.8mm Pitch Floating Connectors ... P30
- 1.0mm Pitch Floating Connectors ... P33
- Device Socket ... P40
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- I/O Connectors ... P61
- ESD Protector Chip ... P63

## Audiovisual Connectors



### Available Connectors

■ 0.5mm Pitch Floating Connectors... P22	■ I/O Connectors ... P61
■ 0.635mm Pitch Floating Connectors... P27	■ ESD Protector Chip ... P63
■ 0.8mm Pitch Floating Connectors... P30	
■ 1.0mm Pitch Floating Connectors... P33	
■ Device Socket ... P40	
■ FPC/FFC Connectors ... P48	
■ Compression Terminal ... P55	

## Headphone Connectors



### Available Connectors

■ 0.4mm Pitch Floating ... P20
■ Connectors P48
■ FPC/FFC Connectors P55
■ Compression Terminal P63
ESD Protector Chip

## Notebook PC Connectors



### Available Connectors

■ 0.4mm Pitch Floating ... P20
■ Connectors ... P48
■ FPC/FFC Connectors ... P55
■ Compression Terminal ... P60
■ Card Edge Connectors ... P63
ESD Protector Chip

## Communication Robot Connectors



### Available Connectors

■ Z-Move™ ... P17	■ Device Socket ... P40
■ 0.4mm Pitch Floating Connectors... P20	■ FPC/FFC Connectors ... P48
■ 0.5mm Pitch Floating Connectors... P22	■ Compression Terminal ... P55
■ 0.635mm Pitch Floating Connectors... P27	■ Card Edge Connectors ... P60
■ 0.8mm Pitch Floating Connectors... P30	■ I/O Connectors ... P61
■ 1.0mm Pitch Floating Connectors... P33	■ ESD Protector Chip ... P63
■ High Current Floating Connectors... P38	

# Connectors for Commercial Appliances

## Connectors for All-In-One and Multifunction Printers



### Available Connectors

■ 0.5mm Pitch Floating Connectors... P22	■ Compression Terminal ... P55
■ 0.635mm Pitch Floating Connectors... P27	■ I/O Connectors ... P61
■ 0.8mm Pitch Floating Connectors... P30	■ ESD Protector Chip ... P63
■ 1.0mm Pitch Floating Connectors... P33	
■ High Current Floating Connectors... P38	
■ Device Socket ... P40	
■ FPC/FFC Connectors ... P48	

## Surveillance Camera Connectors



### Available Connectors

■ Z-Move™ ... P17	■ FPC/FFC Connectors ... P48
■ 0.4mm Pitch Floating Connectors... P20	■ Compression Terminal ... P55
■ 0.5mm Pitch Floating Connectors... P22	■ I/O Connectors ... P61
■ 0.635mm Pitch Floating Connectors... P27	■ ESD Protector Chip ... P63
■ 0.8mm Pitch Floating Connectors... P30	
■ 1.0mm Pitch Floating Connectors... P33	
■ Device Socket ... P40	

## Pachinko Connectors



### Available Connectors

■ Z-Move™ ... P17	■ Compression Terminal ... P55
■ 0.5mm Pitch Floating Connectors... P22	■ Card Edge Connectors ... P60
■ 0.635mm Pitch Floating Connectors... P27	■ I/O Connectors ... P61
■ 0.8mm Pitch Floating Connectors... P30	■ ESD Protector Chip ... P63
■ 1.0mm Pitch Floating Connectors... P33	
■ Device Socket ... P40	
■ FPC/FFC Connectors ... P48	

## POS System Connectors



### Available Connectors

■ 0.5mm Pitch Floating Connectors... P22	■ I/O Connectors ... P61
■ 0.635mm Pitch Floating Connectors... P27	■ ESD Protector Chip ... P63
■ 0.8mm Pitch Floating Connectors... P30	
■ 1.0mm Pitch Floating Connectors... P33	
■ Device Socket ... P40	
■ FPC/FFC Connectors ... P48	
■ Compression Terminal ... P55	

## Barcode Reader Connectors



### Available Connectors

■ 0.5mm Pitch Floating Connectors...	P22	■ I/O Connectors	... P61
■ 0.635mm Pitch Floating Connectors...	P27	■ ESD Protector Chip	... P63
■ 0.8mm Pitch Floating Connectors...	P30		
■ 1.0mm Pitch Floating Connectors...	P33		
■ Device Socket	... P40		
■ FPC/FFC Connectors	... P48		
■ Compression Terminal	... P55		

## Commercial Drone Connectors



### Available Connectors

■ Z-Move™	... P17	■ Compression Terminal	... P55
■ 0.5mm Pitch Floating Connectors...	P22	■ I/O Connectors	... P61
■ 0.635mm Pitch Floating Connectors...	P27	■ ESD Protector Chip	... P63
■ 0.8mm Pitch Floating Connectors...	P30		
■ 1.0mm Pitch Floating Connectors...	P33		
■ Device Socket	... P40		
■ FPC/FFC Connectors	... P48		

## ATM Connectors



### Available Connectors

■ Z-Move™	... P17	■ FPC/FFC Connectors	... P48
■ 0.5mm Pitch Floating Connectors...	P22	■ Compression Terminal	... P55
■ 0.635mm Pitch Floating Connectors...	P27	■ I/O Connectors	... P61
■ 0.8mm Pitch Floating Connectors...	P30	■ ESD Protector Chip	... P63
■ 1.0mm Pitch Floating Connectors...	P33		
■ High Current Floating Connectors...	P38		
■ Device Socket	... P40		

## Module Connectors



### Available Connectors

■ Device Socket	... P40
■ FPC/FFC Connectors	... P48
■ Compression Terminal	... P55
■ ESD Protector Chip	... P63

# Connectors for Industrial Equipment

## Connectors for mobile phone base station infrastructure equipment



### Available Connectors

- 0.4mm Pitch Floating ... P20
- Connectors ... P38
- High Current Floating ... P55
- Connectors ... P63
- Compression Terminal
- ESD Protector Chip

## Industrial Inverter Connectors



### Available Connectors

- 0.5mm Pitch Floating Connectors... P22
- 0.635mm Pitch Floating Connectors... P27
- 0.8mm Pitch Floating Connectors... P30
- 1.0mm Pitch Floating Connectors... P33
- High Current Floating Connectors... P38
- Device Socket ... P40
- Wire Harness Connectors ... P46
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- ESD Protector Chip ... P63

## Smart Grid ( meter ) Connectors



### Available Connectors

- 0.5mm Pitch Floating Connectors... P22
- 0.635mm Pitch Floating Connectors... P27
- 0.8mm Pitch Floating Connectors... P30
- 1.0mm Pitch Floating Connectors... P33
- High Current Floating Connectors... P38
- Device Socket ... P40
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- I/O Connectors ... P61
- ESD Protector Chip ... P63

## Connectors for servo amplifiers and motors



### Available Connectors

- Z-Move™ ... P17
- 0.5mm Pitch Floating Connectors... P22
- 0.635mm Pitch Floating Connectors... P27
- 0.8mm Pitch Floating Connectors... P30
- 1.0mm Pitch Floating Connectors... P33
- High Current Floating Connectors... P38
- Device Socket ... P40
- FPC/FFC Connectors ... P48
- Compression Terminal ... P55
- ESD Protector Chip ... P63



## Connectors for flowmeter, solenoid valve, pressure gauge



### Available Connectors

■ Z-Move™	... P17	■ Device Socket	... P40
■ 0.4mm Pitch Floating Connectors	... P20	■ FPC/FFC Connectors	... P48
■ 0.5mm Pitch Floating Connectors	... P22	■ Compression Terminal	... P55
■ 0.635mm Pitch Floating Connectors	... P27	■ ESD Protector Chip	... P63
■ 0.8mm Pitch Floating Connectors	... P30		
■ 1.0mm Pitch Floating Connectors	... P33		
■ High Current Floating Connectors	... P38		

## Connectors for Measuring and Inspection Equipment



### Available Connectors

■ 0.4mm Pitch Floating Connectors	... P20	■ FPC/FFC Connectors	... P48
■ 0.5mm Pitch Floating Connectors	... P22	■ Compression Terminal	... P55
■ 0.635mm Pitch Floating Connectors	... P27	■ Card Edge Connectors	... P60
■ 0.8mm Pitch Floating Connectors	... P30	■ I/O Connectors	... P61
■ 1.0mm Pitch Floating Connectors	... P33	■ ESD Protector Chip	... P63
■ High Current Floating Connectors	... P38		
■ Device Socket	... P40		

## Medical Device Connectors



### Available Connectors

■ 0.4mm Pitch Floating Connectors	... P20	■ FPC/FFC Connectors	... P48
■ 0.5mm Pitch Floating Connectors	... P22	■ Compression Terminal	... P55
■ 0.635mm Pitch Floating Connectors	... P27	■ Card Edge Connectors	... P60
■ 0.8mm Pitch Floating Connectors	... P30	■ I/O Connectors	... P61
■ 1.0mm Pitch Floating Connectors	... P33	■ ESD Protector Chip	... P63
■ High Current Floating Connectors	... P38		
■ Device Socket	... P40		

## Industrial Robot Connectors



### Available Connectors

■ Z-Move™	... P17	■ FPC/FFC Connectors	... P48
■ 0.5mm Pitch Floating Connectors	... P22	■ Compression Terminal	... P55
■ 0.635mm Pitch Floating Connectors	... P27	■ Card Edge Connectors	... P60
■ 0.8mm Pitch Floating Connectors	... P30	■ I/O Connectors	... P61
■ 1.0mm Pitch Floating Connectors	... P33	■ ESD Protector Chip	... P63
■ High Current Floating Connectors	... P38		
■ Device Socket	... P40		

What is a floating connector?

Board-to-board connectors have two types of mechanisms: rigid and floating. The rigid type connector is a proven connection method used for board-to-board connections of general board-to-board connectors. As the name "rigid" implies, the mechanism has no range of motion. Floating type connectors have a spring that absorbs misalignment and errors without moving the contacts when mating connectors.

Why are floating connectors used?

Three reasons to use floating type connectors

1 Reduces stress on solder joint due to misalignment

Rigid type connectors will not engage and mate if there is a misalignment or error during mounting on the board. In addition, forcibly correcting the misalignment and attempting to mate under these conditions may put stress on the solder joint and lead to problems such as solder cracks. Floating type connectors have a spring structure that allows the mating part to move, so that any misalignment or error is absorbed within the connector and the connector can be mated in a correct position. This structure reduces stress on the solder joint and minimizes solder cracking. It also prevents cracks and other defects in the circuit board.

2 Absorbs misalignment errors and can be used in multiple connectors

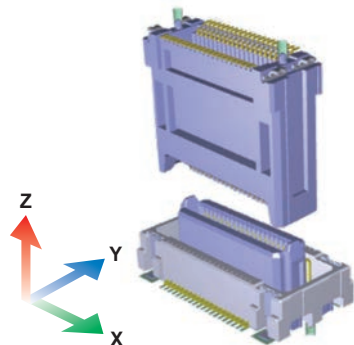
As described above, floating connectors can absorb misalignment, allowing multiple connectors to be used on the same board. Conventional rigid type connectors could not absorb connector misalignment, making it difficult to use multiple connectors, but the floating connector structure overcomes this problem. This allows greater flexibility in layout and circuit design for applications.

3 Automatic assembly available

In the past, mating using assembly robots could cause problems such as stress on the connector itself due to an oblique mating or solder cracks. The use of floating connectors during robot assembly absorbs errors and mating misalignments that cannot be corrected by the robot and relieves stress concentrated on the connectors and solder joints. A guiding structure is designed in the frontage of housing, which eliminates stress at the time of mating.

IRISO Floating Connectors

The strength of IRISO's floating connectors lies in its industry-leading product lineup, which boasts unrivaled variation of 0.4mm to 2.0mm pitch and 3mm to 30mm mating height, with parallel and vertical mating types depending on the combination of socket and plug. With cumulative sales exceeding 3 billion units, IRISO Electronics' floating connectors continue to evolve based on customer feedback, and we will continue our research and development of this connection method for a variety of devices.



# Z-Move™ .....Board to Board Connectors

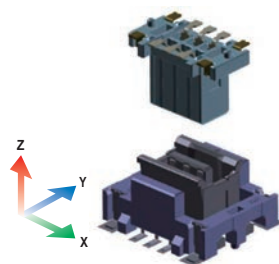


Internal contact board-to-board (BtoB) Z-movable floating type connector for use in extreme vibration environments. IRISO's proprietary floating technology "Z-Move™" is used (registered trademark). Z-axis is movable with fixed contact points. This connector has excellent resistance to vibration and shocks. Relieves stress on solder joints due to vibration (resonance) and shocks. It greatly improves ease of handling and reliability.

\*PXX Please refer to the Socket 18021 series with Z-Move™ function.

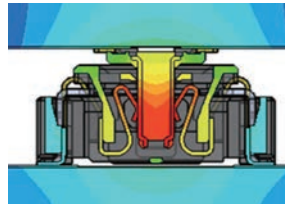
## Feature 1 Z-Move™ Vibration

IRISO's proprietary "Z-Move™" technology absorbs board resonance and provides high contact reliability because the contacts follow resonance in the Z direction. This prevents loss of contact reliability due to fine sliding wear. IRISO also offers a proprietary vibration simulation service that reflects the previous evaluation results. By working with the customer from the initial stages of design, we are able to suggest more effective uses.



## Feature 2 High Temperature

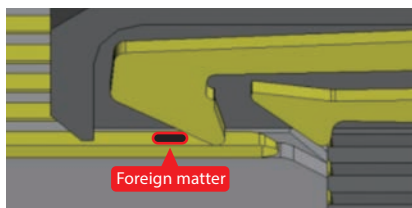
The rising amount of heat generated around engines in in-vehicle equipment and the increasing sophistication of devices have increased the need for connectors to have high heat resistance. These highly heat-resistant products created with our material and design technologies can be used with confidence even in harsh, high-temperature environments.



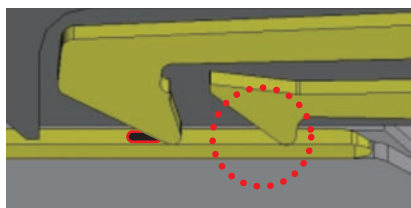
## Feature 3 Two-Point Contact

The two-point contact offered by IRISO provides a secure connection even in environments that are prone to dust and dirt by reliably removing foreign matter at the front contact. It can be used with confidence for devices that require high connection reliability.

Before mating



After mating



10120 Series

2.0mm pitch, Z-moveable (Z-Move™) floating type parallel connection (ST/ST) BtoB® connector. Seamless board-to-board distance support; 5 types of sockets and 2 types of plugs available. Available in 1mm increments from 11mm to 20mm depending on the combination. Number of pins: 6, 10, 20, 30 pins available. Compatible with in-vehicle environments. 125°C rated, suitable for board connections around powertrain.

■ Combination and board-to-board distance, selectable number of pins  
The board-to-board distances for each socket and plug combination are as follows.

Board-to-board distance matrix	10120B	
10120S	11mm	12mm
	13mm	14mm
	15mm	16mm
	17mm	18mm
	19mm	20mm

10127 Series

"2.0mm pitch, Z-moveable (Z-Move™) floating type parallel connection (ST/ST) BtoB® connector. Low profile design for 8mm board-to-board distance; used for shorter board-to-board distance than the standard type (10120 series). Number of pins: 8-pin products are in production (6- and 10-pin products are under development). 125°C rated for in-vehicle environments.

Board-to-board distance matrix	10127B
10127S	8mm

\*We can simulate the fixing method that best fits your equipment using IRISO's proprietary analysis system.

10128 Series

Z-moveable (Z-Move™) floating type parallel connection (ST/ST) BtoB® connectors with an extremely small 0.8 mm pitch. 0.8mm pitch reduces mounting density; occupies about 50% of board space compared to the 2.0mm pitch standard type (10120 series). Number of pins: Narrow pitch multi-pin (30 and 50-pin products in mass production). Heat resistant, rated 125°C for in-vehicle environments.

■ Combination and board-to-board distance, selectable number of pins  
The board-to-board distances for each socket and plug combination are as follows.

Board-to-board distance matrix	10128B	
10128S	17mm	18mm
	19mm	20mm
	21mm	22mm
	23mm	24mm
	25mm	26mm

10133 Series

Z-moveable (Z-Move™) floating type parallel connection (ST/ST) BtoB® connectors with an extremely small 0.5 mm pitch. 0.5mm pitch reduces mounting density; mating with the existing 9984 series is now possible with a lineup of 12mm to 20mm. Number of pins: Narrow pitch multi-pin (40-pin product in mass production). Highly heat resistant, rated 125°C for in-vehicle environments.

■ Combination and board-to-board distance, selectable number of pins  
The board-to-board distances for each socket and plug combination are as follows.

Board-to-board distance matrix	10133B
9984S	12mm
	14mm
	16mm
	18mm
	20mm

\*This product is available in a variety of combinations. See the website (Floating Connector Selection Guide) for more information.

# Board to Board Connectors

## 10120B - 10120S

Z-Move™

2-point  
contact

High Temp

2.0 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST
Pins	6 ~ 30
X/Y-Axis Floating Range (mm)	0.635
Rated voltage (V (AC/DC))	125
Rated current (A)	1.0
Transmission characteristics (Gbps)	—
Operating temperature range (°C (-40 to unspecified))	125

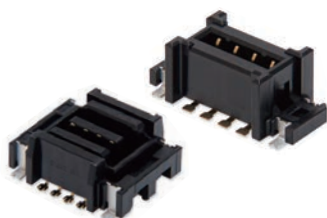
## 10127B - 10127S

Z-Move™

2-point  
contact

High Temp

2.0 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST
Pins	6/8/10
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	0.3
Transmission characteristics (Gbps)	—
Operating temperature range (°C (-40 to unspecified))	125

## 10128B - 10128S

Z-Move™

2-point  
contact

High Temp

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Pins	30/50
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.3
Transmission characteristics (Gbps)	—
Operating temperature range (°C (-40 to unspecified))	125

## 10133B - 9984S

Z-Move™

2-point  
contact

High speed

High Temp

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Pins	40
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	—
Operating temperature range (°C (-40 to unspecified))	125

# 0.4mm Pitch Floating Connectors

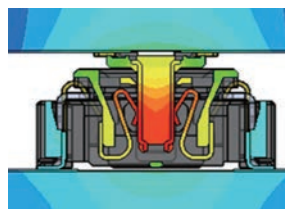
..Board to Board Connectors



0.4mm pitch, floating type parallel connection (ST/ST) BtoB<sup>®</sup> connectors for high-speed transmission of digital signals. Floating structure allows 0.4mm of movement in X-Y direction. Effective mating length of 0.3mm in Z direction. Supports high-speed transmission despite its low profile and compact design. Supports high-speed transmission at MAX 10Gbps (typical reference value based on in-house definition). Impedance matching: Differential 100 ohm. Absorbs optical axis misalignment during module board integration of in-vehicle cameras, greatly improving reliability.

## Feature 1 High Temperature

The rising amount of heat generated around engines in in-vehicle equipment and the increasing sophistication of devices have increased the need for connectors to have high heat resistance. These highly heat-resistant products created with our material and design technologies can be used with confidence even in harsh, high-temperature environments.



## Feature 2 High Speed

IRISO's high-speed transmission products are optimally designed through an organic combination of numerous practical evaluations and simulations. Based on the common plug, the lineup includes products that combine floating technology and high-speed transmission through the integration of high reliability and ease of handling and transmission speeds of up to 10 Gbps.



10126S : Floating Type

11007S : Non Floating Type

10126B : Common Plug

8.0Gbps

10Gbps+

## Feature 3 Smallest class

Miniaturization is an inevitable issue for connecting components. However, as devices continue to get smaller, they are becoming more sophisticated and the amount of information they contain continues to increase. IRISO's 0.4 mm PitchBtoB<sup>®</sup> lineup also includes the 10136 series, which is smaller in size according to the application.



# Board to Board Connectors

## 10126B - 10126S

Floating

High speed

High Temp

0.4 Pitch



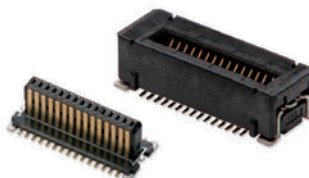
Pitch (mm)	0.4
Mating direction (ST/RA)	ST
Pins	20~60
X/Y-Axis Floating Range (mm)	0.4
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	MAX8
Operating temperature range (°C(-40 to unspecified))	125

## 10126B - 11007S

High speed

High Temp

0.4 Pitch



Pitch (mm)	0.4
Mating direction (ST/RA)	ST
Pins	20~60
X/Y-Axis Floating Range (mm)	0
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	MAX10
Operating temperature range (°C(-40 to unspecified))	125

## 10136B - 10136S

Floating

High speed

High Temp

0.4 Pitch



Pitch (mm)	0.4
Mating direction (ST/RA)	ST
Pins	20~
X/Y-Axis Floating Range (mm)	0.4
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	MAX8
Operating temperature range (°C(-40 to unspecified))	105

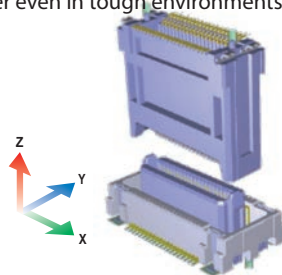




0.5mm pitch, floating type BtoB<sup>®</sup> connector for high-speed transmission of digital signals. Floating structure allows 0.5mm movement in X-Y direction and 0.5mm effective mating length. The lineup also supports board-to-board distances of 20mm to 30mm, with sockets with a large range of motion over the pitch and vertically movable sockets for right-angle connections. Supports high-speed transmission of 1.0Gbps plus (typical reference value based on in-house definition) (impedance matching: differential 100 ohm) and employs two-point contact for reliable removal of foreign matter even in tough environments.

### Feature 1 Floating

Floating type BtoB<sup>®</sup> connectors move in the X/Y direction to absorb misalignment between boards, facilitating alignment adjustment when making multiple connections and relieving stress concentrated in the solder joint. It also contributes significantly to improving mating performance in conjunction with proper guiding.



### Feature 2 High Speed

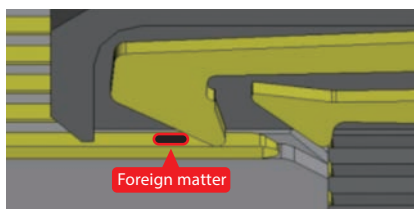
The increasing sophistication of recent devices and the growing volume of information are spurring demand for high-speed transmission in connecting components. The increase in the high-frequency component of the signal also brings about a situation in which one must pay attention to minute details that were not a problem in the past. IRISO's high-speed transmission products are optimally designed through an organic combination of numerous practical evaluations and simulations. Another key feature is the combination of high reliability and ease of handling through the integration of floating technology and high-speed transmission.



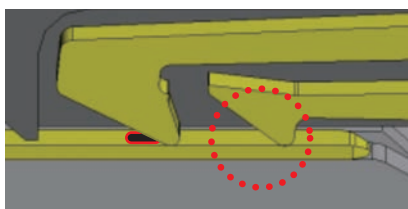
### Feature 3 Two-Point Contact

The two-point contact offered by IRISO provides a secure connection even in environments that are prone to dust and dirt by reliably removing foreign matter at the front contact, and can be used with confidence for devices that require high connection reliability. It provides a reliable connection even in harsh environments and can be used with confidence for devices that require high connection reliability.

Before mating



After mating



## 9984/9985 series (basic type)

The series is based on vertical connection with two-point contact and includes an option for vertical connection with mating compatibility such as high-speed transmission (bellows single point of contact), as well as options such as low insertion/extraction force single point contact (for vertical connection) to support a wide range of basic board-to-board connections.

Board-to-board distance matrix	9984B	
9984S	8mm	9mm
	10mm	11mm
	12mm	13mm
	14mm	15mm

### ■ Main Features of Basic Products

0.5mm motion range each in board plane direction and X-Y axis / movable on plug side

- Absorbs misalignment during assembly and reduces stress on the mounting area.
- Ideal for automatic assembly (connector for robotic assembly)
- Effective mating length range of 1mm (±0.5) to support intermediate distances

High connection reliability is achieved with two-point contact that are resistant to foreign matter (with some optional exceptions)

- Front-end contacts reliably remove foreign matter
- Redundant connections ensured

Wide range of pin counts (selectable number of pins depends on connection type)

- Variation from 40 to 160 pins in 20-pin increments

Options for high-speed transmission are also available

- Bellows single-point contact option available for high-speed transmission (multi-pin only)
- Supports high-speed transmission up to 5.9Gbps by combination (differential 100 ohm)

Right-angle socket 9985S series for vertical connections

- Two-point contact for high reliability and one-point contact for low insertion/extraction force

## 10106/10141 series (Large range of motion)

This is a highly reliable board-to-board connector with two-point contact that can accommodate board-to-board distances of 20mm to 30mm and has a large range of motion

Board-to-board distance matrix	10106S	10141S
Floating Range	X-Y 0.8mm	X-Y 1.2mm
10106B	20mm	
	25mm	
	30mm	

In addition to the features of the basic product, a large range of motion over the pitch absorbs misalignment and improves ease of assembly.

- Large 0.8mm (10106S) range of motion in board plane direction and X-Y axis respectively / movable on socket side
  - 120-pin / 140-pin product with large range of motion (1.2mm), the 10141S, is also available
  - Three board-to-board distances (20/25/30 mm) are available by plug selection.
  - Lineup from 40 to 140 pins in 20-pin increments
  - Nickel barrier design is used for terminal plating on all products in the series
- (The number of selectable pins varies depending on the connection type)

## 10112 series (High-speed right angle)

This is a board-to-board connector specially designed for vertical connections, consisting of a vertical movable socket connector and a right-angle plug connector. The 0.5mm narrow pitch achieves high mounting density and supports high-speed transmission.

In addition to the features of the basic product, optimized shape by special design for vertical connection

- Available in 10/30/40/50/60-pin types
- 0.6 x 0.5 mm range of motion in X (pinout direction) - Y (depth direction) axes, respectively, in the plane of the board on the socket side / movable on the socket side
- 100 ohm differential transmission supported (Please consult us for other requirements)
- Supports up to 7.8Gbps when upper terminal is used
- Supports up to 6.8Gbps when the lower terminal is used

# Board to Board Connectors

## 9985S

Floating

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Pins	40~140
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9984S

Floating

2-point contact

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Pins	40~140
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9984B

Floating

2-point contact

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Pins	40~160
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 10121S

Floating

High speed

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Pins	100/120/160
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	MAX5.9
Operating temperature range (°C(-40 to unspecified))	105

# Board to Board Connectors

## 10112S

Floating

High speed

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Pins	10~60
X/Y-Axis Floating Range (mm)	MAX 0.6
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	MAX7.8
Operating temperature range (°C(-40 to unspecified))	105

## 10112B

Floating

High speed

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Pins	10~60
X/Y-Axis Floating Range (mm)	MAX 0.6
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	MAX7.8
Operating temperature range (°C(-40 to unspecified))	105

## 10106S

Floating

2-point  
contact

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Pins	40~140
X/Y-Axis Floating Range (mm)	MAX 1.2
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 10141S

Floating

2-point  
contact

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Pins	120/140
X/Y-Axis Floating Range (mm)	1.2
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

# Board to Board Connectors

10106B

Floating

2-point  
contact

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Pins	40~140
X/Y-Axis Floating Range (mm)	MAX 1.2
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

# 0.635mm Pitch Floating Connectors

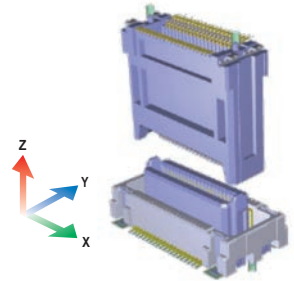
Board to Board Connectors



The product pitch is half of inch pitch to accommodate various board-to-board distances and to enable use in a wide range of devices, contributing to miniaturization. The two-point contact connection ensures reliable contact in equipment where contact reliability is important. Right angles are also available to expand design flexibility.

## Feature 1 Floating

Floating type BtoB<sup>®</sup> connectors move in the X/Y direction to absorb misalignment between boards, facilitating alignment adjustment when making multiple connections and relieving stress concentrated in the solder joint. It also contributes significantly to improving mating performance in conjunction with proper guiding.



## Feature 2 High Speed

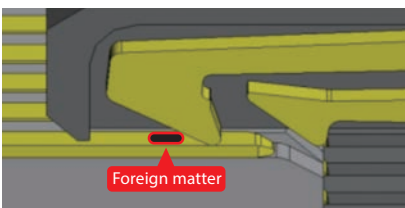
The increasing sophistication of recent devices and the growing volume of information are spurring demand for high-speed transmission in connecting components. The increase in the high-frequency component of the signal also brings about a situation in which one must pay attention to minute details that were not a problem in the past. IRISO's high-speed transmission products are optimally designed through an organic combination of numerous practical evaluations and simulations. Another key feature is the combination of high reliability and ease of handling through the integration of floating technology and high-speed transmission.



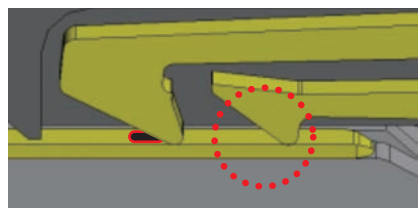
## Feature 3 Two-Point Contact

The two-point contact offered by IRISO provides a secure connection even in environments that are prone to dust and dirt by reliably removing foreign matter at the front contact, and can be used with confidence for devices that require high connection reliability.

Before mating



After mating



■ Key Features of the Group's Products

- 0.5mm motion range each in board plane direction and X-Y axis / movable on plug side
- Absorbs misalignment during assembly and reduces stress on the mounting area •Ideal for automatic assembly (connector for robotic assembly)
- High connection reliability is achieved with two-point contact that are resistant to foreign matter
- Front-end contacts reliably remove foreign matter •Redundant connections ensured
- Supports high-speed transmission
- Combinations suitable for high-speed transmission within similar board-to-board distances are available
- Supports high-speed transmission up to 5.7Gbps by combination (differential 100 ohm)
- Wide range of board-to-board distances, pin count variations, and a variety of optional specifications
- Supports from 20 to 120 pins
- Seamless support for board-to-board distances from 6.5mm to 30.55mm with more than 30 variations
- Mounting height of each connector can be selected even for the same distance between boards (limited to certain combinations)
- Contributes to the use of common board layouts for multiple products due to board-mount compatibility
- (Some types may vary)

Board-to-board distance matrix	10109S				
10109B	6.50mm	8.50mm	9.50mm	14.50mm	16.55mm
	8.50mm	10.00mm	11.00mm	16.00mm	18.05mm
	10.50mm	12.00mm	13.00mm	18.00mm	20.05mm
	12.50mm	14.00mm	15.00mm	20.00mm	22.05mm
	13.00mm	14.50mm	15.50mm	20.50mm	22.55mm
	16.50mm	18.00mm	19.00mm	24.00mm	26.05mm
	18.50mm	20.00mm	21.00mm	26.00mm	28.05mm
	21.00mm	22.50mm	23.50mm	28.50mm	30.55mm

\*This product is available in a variety of combinations. See the website (Floating Connector Selection Guide) for more information.



# Board to Board Connectors

## 10109S

Floating

2-point  
contact

High speed

0.635 Pitch



Pitch (mm)	0.635
Mating direction (ST/RA)	ST
Pins	20~120
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	MAX 5.7
Operating temperature range (°C(-40 to unspecified))	105

## 10109B

Floating

2-point  
contact

High speed

0.635 Pitch



Pitch (mm)	0.635
Mating direction (ST/RA)	ST
Pins	20~120
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	MAX 5.7
Operating temperature range (°C(-40 to unspecified))	105

## 10110B

Floating

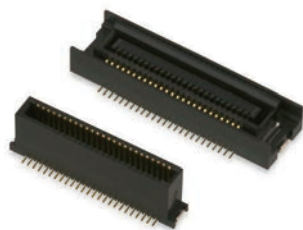
2-point  
contact

High speed

0.635 Pitch



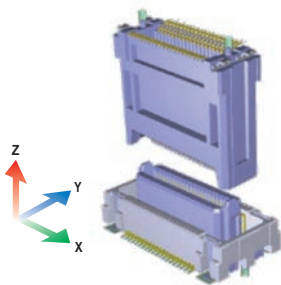
Pitch (mm)	0.635
Mating direction (ST/RA)	RA
Pins	30~120
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	MAX6
Operating temperature range (°C(-40 to unspecified))	105



Floating connectors supporting wide board-to-board distance connections with easy-to-use 0.8 mm pitch size. 0.5mm motion range on X-Y axis respectively / movable on socket side. High-speed transmission from 900M up to 5.0Gbps (differential 100C) is supported by combination. 9828B right-angle plugs are available, and vertical connection is also supported by combination with 9828s socket connectors.

**Feature 1** Floating

Floating type BtoB<sup>®</sup> connectors move in the X/Y direction to absorb misalignment between boards, facilitating alignment adjustment when making multiple connections and relieving stress concentrated in the solder joint. It also contributes significantly to improving mating performance in conjunction with proper guiding.



**Feature 2** High Speed

The increasing sophistication of recent devices and the growing volume of information are spurring demand for high-speed transmission in connecting components. The increase in the high-frequency component of the signal also brings about a situation in which one must pay attention to minute details that were not a problem in the past. IRISO's high-speed transmission products are optimally designed through an organic combination of numerous practical evaluations and simulations. Another key feature is the combination of high reliability and ease of handling through the integration of floating technology and high-speed transmission.



**Feature 3** Lineup

A wide lineup of combinations is offered through mating interchangeability within the series (the number of pin supported will vary depending on the combination)

- Supports connections from 30 to 100 pins in 10-pin increments
- Covers a wide range of board-to-board distances from 6.0mm to 24.7mm

Board-to-board distance matrix	9828B			10102B		9860B			
	9827S	9828S	10102S	9827S	9828S	10102S	9827S	9828S	10102S
6.00mm	8.00mm	9.00mm	8.95mm	12.70mm	14.25mm	15.75mm	17.00mm	20.95mm	
9.75mm	11.75mm	12.75mm	12.70mm	16.45mm	18.00mm	19.50mm	20.75mm	24.70mm	
9.75mm	11.75mm	12.75mm	12.70mm	16.45mm	18.00mm	19.50mm	20.75mm	24.70mm	

\*This product is available in a variety of combinations. See the website (Floating Connector Selection Guide) for more information.

# Board to Board Connectors

## 9828B

Floating

High speed

0.8 Pitch



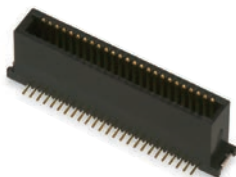
Pitch (mm)	0.8
Mating direction (ST/RA)	RA
Pins	30~90
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	MAX5.4
Operating temperature range (°C(-40 to unspecified))	105

## 9827B

Floating

High speed

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Pins	30~100
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	MAX5
Operating temperature range (°C(-40 to unspecified))	105

## 10102B

Floating

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Pins	30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9860B

Floating

High speed

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Pins	30~100
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	MAX1.7
Operating temperature range (°C(-40 to unspecified))	105

# Board to Board Connectors

## 9827S

Floating

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Pins	30~80
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9828S

Floating

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Pins	30~100
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 10102S

Floating

0.8 Pitch



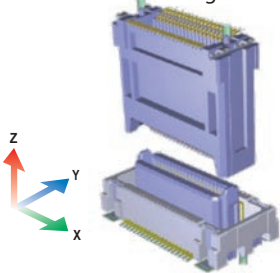
Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Pins	30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105



1.0mm pitch movable BtoB<sup>®</sup> connectors with mating compatibility among the series, which enables a diverse lineup. 0.5mm motion range each in board plane direction and X-Y axis / movable on plug side. The design that achieves mating compatibility with six different series allows for a variety of options within each series, such as the number of pins, fixing bosses, board mounting method, plating type. Right-angle plug 9850B series for vertical connection is also available. There is a wide selection of board-to-board distances when vertical in combination alignment.

**Feature 1** Floating

Floating type BtoB<sup>®</sup> connectors move in the X/Y direction to absorb misalignment between boards, facilitating alignment adjustment when making multiple connections and relieving stress concentrated in the solder joint. It also contributes significantly to improving mating performance in conjunction with proper guiding.



**Feature 2** Lineup

Wide range of board-to-board distance variations (number of pins supported varies depending on the combination)

- Supports board-to-board distances from 5.5mm to 19.65mm
- 13 variations from 6 to 30 pins in 2-pin increments

Board-to-board distance matrix	9851B	9853B	9855B	9854B	9856B
9851S	5.50mm	—	10.50mm	—	12.00mm
9855S	6.00mm	—	11.00mm	—	12.50mm
9850S	6.65mm	8.00mm	11.65mm	12.50mm	13.15mm
9852S	8.15mm	9.50mm	13.15mm	14.00mm	14.65mm
9854S	9.65mm	11.00mm	14.65mm	15.50mm	16.15mm
9856S	13.15mm	14.50mm	18.15mm	19.00mm	19.65mm

# Board to Board Connectors

## 9853S

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	RA
Pins	6 ~ 28
X/Y-Axis Floating Range (mm)	0.5/0.8
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9850B

Floating

1.0 Pitch

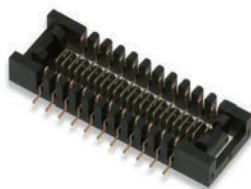


Pitch (mm)	1.0
Mating direction (ST/RA)	RA
Pins	6 ~ 30
X/Y-Axis Floating Range (mm)	0.5/0.8
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9851B

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6 ~ 30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9853B

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6 ~ 30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

# Board to Board Connectors

## 9854B

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6~30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9855B

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6~30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9856B

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6~30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9850S

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6~30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105



# Board to Board Connectors

## 9851S

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6 ~30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9852S

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6 ~30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9854S

Floating

1.0 Pitch

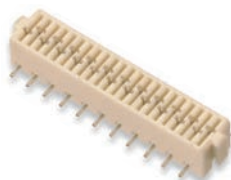


Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6 ~30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9855S

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	6 ~28
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

# Board to Board Connectors

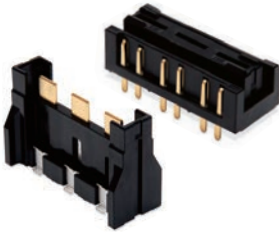
9856S

Floating

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Pins	8~30
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

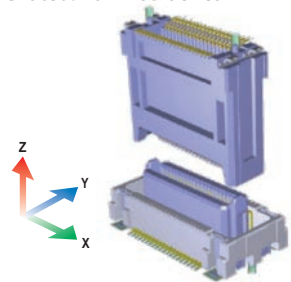


Lineup of compact, high-current-capable, board-to-board connectors with floating functionality for power connection in limited space. The multi-contact structure provides reliable low contact resistance while maintaining motion characteristics. High temperature rating for maximum current carrying capability. (125°C)

300V (pollution degree 2)/15 A/125°C rated: 9880SB series  
600V (pollution degree 2)/15A/125°C rated: 10122SB Series

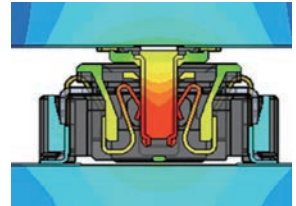
### Feature 1 Floating

Floating type BtoB® connectors move in the X/Y direction to absorb misalignment between boards, facilitating alignment adjustment when making multiple connections and relieving stress concentrated in the solder joint. It also contributes significantly to improving mating performance in conjunction with proper guiding.



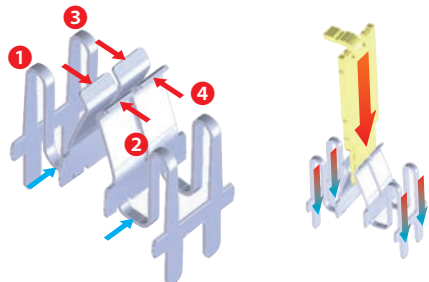
### Feature 2 High Temperature

The rising amount of heat generated around engines in in-vehicle equipment and the increasing sophistication of devices have increased the need for connectors to have high heat resistance. These highly heat-resistant products created with our material and design technologies can be used with confidence even in harsh, high-temperature environments.



### Feature 3 High Power

IRISO's high-current connectors have an independent four-point contact structure that provides high contact reliability and low contact resistance, minimizes heat retention in the connector mating area, and achieves a high upper operating temperature range. IRISO's proprietary floating mechanism adds high current capability to misalignment correction and contributes to improve ease of handling of high current connections at multiple locations.



# Board to Board Connectors

## 9880S

Floating

2-point  
contact

High Temp

High Voltage

9.2 Pitch



Pitch (mm)	9.2
Mating direction (ST/RA)	ST
Pins	2
X/Y-Axis Floating Range (mm)	1.0
Rated voltage (V (AC/DC))	300
Rated current (A)	15
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	125

## 9880B

Floating

2-point  
contact

High Temp

High Voltage

9.2 Pitch



Pitch (mm)	9.2
Mating direction (ST/RA)	ST
Pins	2
X/Y-Axis Floating Range (mm)	1.0
Rated voltage (V (AC/DC))	300
Rated current (A)	15
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	125

## 10122S

Floating

2-point  
contact

High Temp

High Voltage

11.0 Pitch



Pitch (mm)	11.0
Mating direction (ST/RA)	ST
Pins	3
X/Y-Axis Floating Range (mm)	1.0
Rated voltage (V (AC/DC))	600
Rated current (A)	15
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	125

## 10122B

Floating

2-point  
contact

High Temp

High Voltage

11.0 Pitch



Pitch (mm)	11.0
Mating direction (ST/RA)	ST
Pins	3
X/Y-Axis Floating Range (mm)	1.0
Rated voltage (V (AC/DC))	600
Rated current (A)	15
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	125

# Device Socket

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Socket connector intended for connection to device. Two types are available, one for LCDs and the other for power modules. Direct connection to the device reduces the soldering process and improves productivity.

## ■ Socket for connecting LCD

Two types of connection directions, Top entry and Bottom entry, are available to accommodate various types of LCDs.

SMT supports automatic mounting and reduces the soldering process of tabs. Supports 0.5mm tab size width x 0.3mm thickness to be connected with 5P to 30P expansion.

## ■ Socket for connecting power module (Z-Move™ Socket)

IRISO's proprietary floating technology "Z-Move™" (trademark registered) is used to connect to the power modules required for the electrification of automobiles. Z-axis is movable with fixed contact points. This connector has excellent resistance to vibration and shocks. Relieves stress on solder joints due to vibration (resonance) and shocks. It greatly improves ease of handling and reliability.

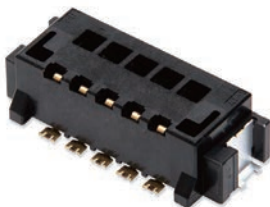
\*PXX Please refer to the BtoB\* connector for board-to-board connection with Z-Move™ function.

18021S

Z-Move™

High Temp

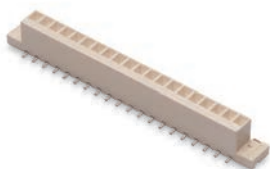
2.54 Pitch



Pitch (mm)	2.54
Mating direction (ST/RA)	ST
Pins	3~10
X/Y-Axis Floating Range (mm)	0.5
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	125

## 9242S

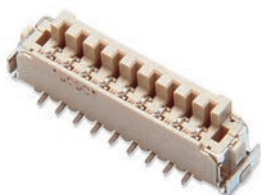
2.00 Pitch



Pitch (mm)	2.00
Mating direction (ST/RA)	ST
Pins	5 ~ 28
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9240S

2.00 Pitch



Pitch (mm)	2.00
Mating direction (ST/RA)	ST
Pins	6 ~ 22
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9257S

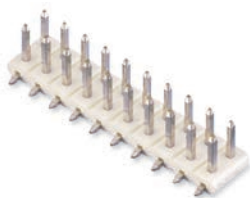
2.00 Pitch



Pitch (mm)	2.00
Mating direction (ST/RA)	ST
Pins	6 ~ 30
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

9261B

2.54 Pitch



Pitch (mm)	2.54
Mating direction (ST/RA)	ST
Pins	4~14
Rated voltage (V (AC/DC))	250
Rated current (A)	3
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

9203B

2.54 Pitch



Pitch (mm)	2.54
Mating direction (ST/RA)	RA
Pins	2~10
Rated voltage (V (AC/DC))	250
Rated current (A)	3
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105



## 9110B

2.00 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST
Pins	2~20
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9110S

2.00 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST/RA
Pins	2~20
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9111B

2.00 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST
Pins	6~30
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9111S

2.00 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST/RA
Pins	6~30
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9115B

2.00 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST
Pins	3~20
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9115S

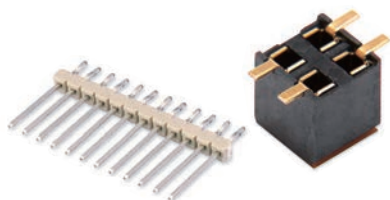
2.00 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST/RA
Pins	3~20
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9210B-9706S

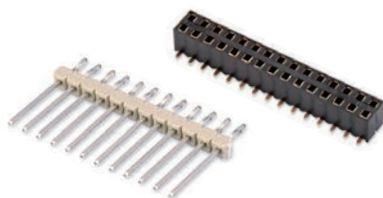
2.00 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST
Pins	4~30
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9210B-9162S

2.00 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	ST
Pins	10~34
Rated voltage (V (AC/DC))	125
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

# Wire Harness Connectors



2.0mm pitch connector for unsealed in-vehicle equipment interface. 050 terminals (ultra-compact crimp terminals with box structure) are used to achieve miniaturization, low profile, and high density. Designed for high operating temperatures up to +125°C and SMT specifications for automatic mounting. Single-row/two-row types are available.

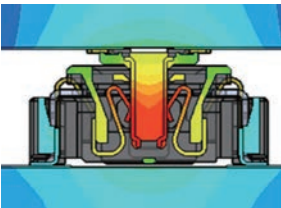
## Feature 1 Space saving

0.5mm terminal has been adopted instead of the conventional 0.64mm terminal. Compared to our 9491 series that uses 0.64mm terminals (2.2mm pitch), this series is 59% smaller in terms of board area and 60% smaller in terms of board-side connector height.



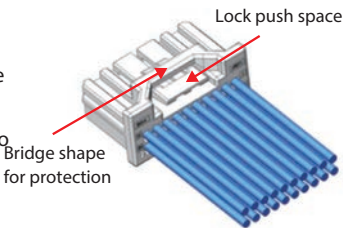
## Feature 2 High Temperature

The rising amount of heat generated around engines in in-vehicle equipment and the increasing sophistication of devices have increased the need for connectors to have high heat resistance. These highly heat-resistant products created with our material and design technologies can be used with confidence even in harsh, high-temperature environments.

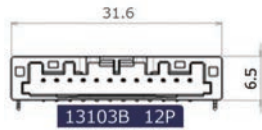


## Feature 3 Usability improvement

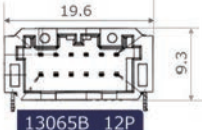
The space is provided to make it easier to hold the connector during connector insertion and extraction operation. A bridge surrounds the top of the locking lever to prevent deformation that occurs when the cable harness is bundled. In addition, three types of keying are used to prevent incorrect mating.



### Single-row type



### Two-row type



### Comparison of board-side connector size (in mm)

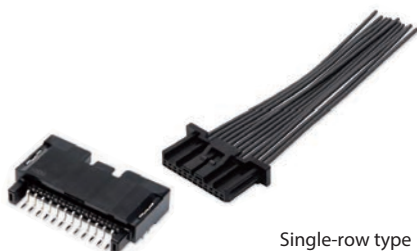
Series	Height	Number of pins and width dimensions										
		2P	4P	8P	10P	12P	16P	20P	24P	28P	32P	40P
13103B	6.5	11.6	15.6	23.6	27.6	31.6	39.6	47.6	—	—	—	—
13065B	9.3	—	—	15.6	—	19.6	23.6	27.4	31.6	35.6	39.6	47.6

# Wire Harness Connectors

## 13103B - 13103S

High Temp

2.0 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	RA
Product height (mm)	6.50
Pins	2~20
Rated voltage (V (AC/DC))	50
Rated current (A)	3
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	125

## 13065B - 13065S

High Temp

2.0 Pitch



Pitch (mm)	2.0
Mating direction (ST/RA)	RA
Product height (mm)	9.30
Pins	8~40
Rated voltage (V (AC/DC))	50
Rated current (A)	3
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	125

# FPC/FFC Connectors



IRISO's FPC/FFC connectors are a combination of the ZIF type that can lock FPC/FFC with little force when inserting a card and our proprietary locking method I-Lock™ to prevent a card from falling out. The click sensation upon card insertion improves ease of handling and work quality. A wide range of variations are available, such as the Auto I-Lock™ structure, which combines automatic assembly and high-speed transmission. It can be used in a wide range of applications from automotive electronics to mobile devices and mobile phones. Some of our products also feature a highly reliable two-point contact structure and are designed with an emphasis on high heat resistance, making them suitable for use in harsh high-temperature environments.

■ Horizontal type (Right-angle type)

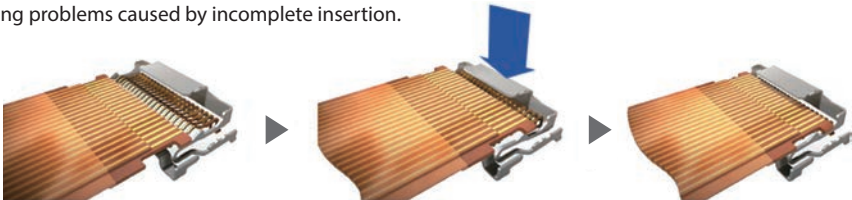
Pitch	0.30mm			0.50mm						1.00mm			
Locking structure	FLIP	FLIP	FLIP/I-Lock		ZIF	ZIF	ZIF/I-Lock	ZIF/I-Lock	Auto I-Lock	ZIF	ZIF	ZIF/I-Lock	ZIF/I-Lock
Point of contact	Bottom	Bottom	Bottom	Bottom	Top	Bottom	Top	Bottom	Bottom	Top	Bottom	Top	Bottom
Product height													
0.90	9671S												
1.80					9631S	9632S	9685S	9686S					
2.00		9637S											
2.50			12001S	12003S						9616S	9617S		
2.55												9663S	9664S
3.40									11501S				

■ Vertical type (Straight type)

Pitch	0.50mm			1.00mm	
Locking structure	ZIF	ZIF/I-Lock	Auto I-Lock	ZIF	ZIF/I-Lock
Product height					
4.80				9619S	
5.50	9639S	9687S			9665S
6.50			11600S		

## New FPC/FFC connector Auto I-Lock™ derived from Non-ZIF connector

This is a completely new concept, further developed from I-Lock™, the optional mechanism of the aforementioned ZIF connector, and achieved in combination with a Non-ZIF structure. While retaining the ease of handling that has been an advantage of non-ZIF connectors, these connectors have card retention and perfect insertion perception, making them highly compatible with manual operations as well as with various types of automation, and dramatically reducing problems caused by incomplete insertion.



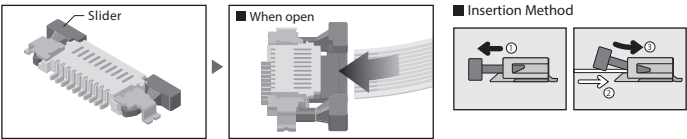
# FPC/FFC Connectors

## ZIF Connectors

ZIF stands for Zero Insertion Force and refers to a connector for which no force is applied when the FPC/FFC is mated to the connector. On the other hand, the terminals must have contact pressure where the connector mates with the card, and the card must be retained. The ZIF connector has a locking mechanism for this purpose. There are three main types of locking mechanisms, referred to as slider type, front flip type, and back flip type.

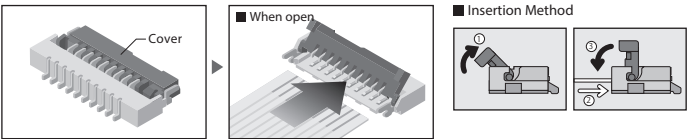
### Slider type

After the card is inserted into the connector, the slider is pushed in to hold the card with its terminal and lock the card while maintaining contact pressure and card retention. It is the earliest used of the three locking methods. It has a high card retention capacity.



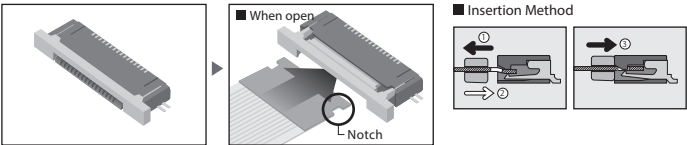
### Front Flip Type

This type has improved ease of handling over the slider type. The cover can be closed to hold down the card.



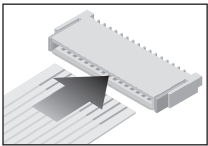
### Optional locking I-Lock™ mechanism for ZIF connectors

The figure shows an example of a combined use with the slider type, in which a notch is cut in the plastic part of the card and the holding terminal on the spring is made to go over the notch to provide a temporary holding function.



## Non-ZIF Connectors

It is a non-ZIF connector, i.e., it is a connector that requires force (insertion force) when mating the card to the connector. They include what is called LIF (Low Insertion Force), which mainly have relatively low insertion force.



Type			Ease of handling		Card insertion force	Card retention capacity	Size and cost
ZIF	Slider	Slider	×	2 action	○	◎	△
	Front-Flip	Front-Flip	△	2 action	○	△	○
Non-ZIF		Non-Zif	○	1 action	×	×	◎
Auto I-Lock™		Auto I-Lock™	◎	1 action	△	○	△

# FPC/FFC Connectors

## 9671S

0.3 Pitch



Pitch (mm)	0.3
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	FF
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	0.90
Pins	11~51
Rated voltage (V (AC/DC))	50
Rated current (A)	0.2
Transmission characteristics (Gbps)	—
Operating temperature range (*Cl-40 to unspecified)	85

## 12003S

2-point  
contact

High speed

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	FF
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	2.50
Pins	10~68
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	1
Operating temperature range (*Cl-40 to unspecified)	105

## 12001S

2-point  
contact

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	FF
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	2.50
Pins	6~70
Rated voltage (V (AC/DC))	50
Rated current (A)	0.4
Transmission characteristics (Gbps)	1
Operating temperature range (*Cl-40 to unspecified)	105

## 11600S

High speed

Auto I-Lock™

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Lock method (FF/Auto/SLD/NZIF)	Auto
Point of contact (Top/Bottom/One side contact)	One side contact
Product height (mm)	6.50
Pins	8~60
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	25
Operating temperature range (*Cl-40 to unspecified)	105

# FPC/FFC Connectors

## 11503S

High speed

Auto I-Lock™

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	Auto
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	3.40
Pins	20~60
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	25
Operating temperature range (°C(-40 to unspecified))	105

## 11501S

High speed

Auto I-Lock™

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	Auto
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	3.40
Pins	8 ~ 6 0
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	25
Operating temperature range (°C(-40 to unspecified))	105

## 9687S

I-Lock™

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	One side contact
Product height (mm)	5.50
Pins	4~60
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9686S

I-Lock™

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	1.80
Pins	4~50
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105



# FPC/FFC Connectors

## 9685S

High speed

I-Lock™

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	Top
Product height (mm)	1.80
Pins	4~50
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	1.7
Operating temperature range (°C(-40 to unspecified))	105

## 9639S

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	ST
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	One side contact
Product height (mm)	5.50
Pins	6~60
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9637S

High speed

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	FF
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	2.00
Pins	6~60
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	1.7
Operating temperature range (°C(-40 to unspecified))	105

## 9632S

High speed

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	1.80
Pins	4~50
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	1.7
Operating temperature range (°C(-40 to unspecified))	105

## 9631S

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	1.80
Pins	4~50
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9665S

High Temp

I-Lock™

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	One side contact
Product height (mm)	5.50
Pins	4~40
Rated voltage (V (AC/DC))	125
Rated current (A)	1.0
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	125

## 9664S

I-Lock™

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	2.50
Pins	4~40
Rated voltage (V (AC/DC))	125
Rated current (A)	1.0
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 9663S

I-Lock™

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	Top
Product height (mm)	2.50
Pins	4~30
Rated voltage (V (AC/DC))	125
Rated current (A)	1.0
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

# FPC/FFC Connectors

## 9619S

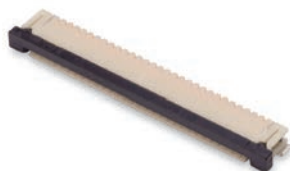
1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	ST
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	One side contact
Product height (mm)	5.00
Pins	4~4 0
Rated voltage (V (AC/DC))	125
Rated current (A)	1.0
Transmission characteristics (Gbps)	—
Operating temperature range (*Cl-40 to unspecified)	105

## 9617S

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	Bottom
Product height (mm)	2.50
Pins	4~4 0
Rated voltage (V (AC/DC))	125
Rated current (A)	1.0
Transmission characteristics (Gbps)	—
Operating temperature range (*Cl-40 to unspecified)	105

## 9616S

1.0 Pitch



Pitch (mm)	1.0
Mating direction (ST/RA)	RA
Lock method (FF/Auto/SLD/NZIF)	SLD
Point of contact (Top/Bottom/One side contact)	Top
Product height (mm)	2.50
Pins	4~4 0
Rated voltage (V (AC/DC))	125
Rated current (A)	1.0
Transmission characteristics (Gbps)	—
Operating temperature range (*Cl-40 to unspecified)	105

## 9604S

1.25 Pitch



Pitch (mm)	1.25
Mating direction (ST/RA)	ST/RA
Lock method (FF/Auto/SLD/NZIF)	NZIF
Point of contact (Top/Bottom/One side contact)	Top(RA)
Product height (mm)	7.20
Pins	4~4 0
Rated voltage (V (AC/DC))	125
Rated current (A)	1.0
Transmission characteristics (Gbps)	—
Operating temperature range (*Cl-40 to unspecified)	105

# Compression Terminal



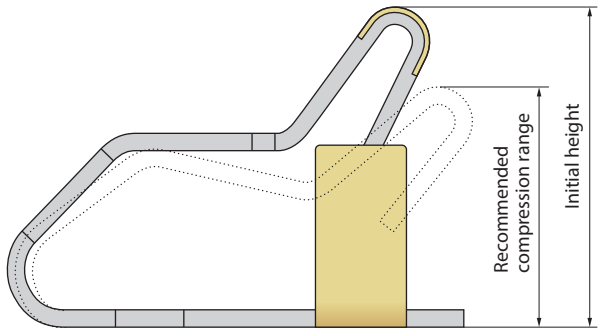
The compression terminal is IRISO's direct touch connection terminal that advocates wireless connections. One-piece structure. The terminal's spring-pressured adsorption concept ensures high reliability in insertion/extraction endurance test. More than 40 types from 0.6mm to 7.0mm with a wide range of height variations. Ideal for internal connection of mobile phones and mobile devices.

## Product Lineup

IRISO Series No.	Contact Height (mm)
4103T	0.6~1.1
4067T	0.7~0.9
4056T	0.8~1.0
4104T	0.9~1.1
16109T	0.85~1.4
4039T	1.1~1.6
4102T	1.25~1.6
4099T	1.6~2.1
4066T	1.95~2.25
4101T	2.1~2.5
4076T	2.45~2.85
4055T	2.85~3.45
4080T	4.5~6.5
16105T	6.0~7.0
16106T	5.0~6.0

## Compression range

The recommended compression range is the range where contact is stable. Recommended products should be selected according to the board-to-board height where they will be mounted. We have a variety of compression ranges from 0.6mm to 7.0mm.



# Compression Terminal

## 4103T



Product height (mm)	1.4
Compression range (mm)	0.6 - 1.1
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 4067T



Product height (mm)	3.05
Compression range (mm)	0.7 - 0.9
Rated voltage (V (AC/DC))	—
Rated current (A)	—
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 4056T



Product height (mm)	1.25
Compression range (mm)	0.8 - 1.0
Rated voltage (V (AC/DC))	—
Rated current (A)	—
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 4104T



Product height (mm)	1.4
Compression range (mm)	0.9 - 1.1
Rated voltage (V (AC/DC))	50
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	85

# Compression Terminal

## 16109T



Product height (mm)	7.8
Compression range (mm)	0.85 - 1.4
Rated voltage (V (AC/DC))	50
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	85

## 4039T



Product height (mm)	1.9
Compression range (mm)	1.1
Rated voltage (V (AC/DC))	—
Rated current (A)	—
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 4102T



Product height (mm)	2
Compression range (mm)	1.25 - 1.6
Rated voltage (V (AC/DC))	50
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	85

## 4099T



Product height (mm)	2.5
Compression range (mm)	1.6 - 2.1
Rated voltage (V (AC/DC))	125
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

# Compression Terminal

## 4066T



Product height (mm)	1.15
Compression range (mm)	1.95 - 2.25
Rated voltage (V (AC/DC))	—
Rated current (A)	—
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 4101T



Product height (mm)	2.85
Compression range (mm)	2.1 - 2.5
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	85

## 4076T



Product height (mm)	3.3
Compression range (mm)	2.45 - 2.85
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 4055T



Product height (mm)	4.25
Compression range (mm)	2.85
Rated voltage (V (AC/DC))	—
Rated current (A)	—
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

# Compression Terminal

## 4080T



Product height (mm)	7.2
Compression range (mm)	4.5 - 6.5
Rated voltage (V (AC/DC))	125
Rated current (A)	3
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	105

## 16105T



Product height (mm)	7.8
Compression range (mm)	6.0 - 7.0
Rated voltage (V (AC/DC))	50
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	85

## 16106T



Product height (mm)	6.8
Compression range (mm)	5.0 - 6.0
Rated voltage (V (AC/DC))	50
Rated current (A)	1
Transmission characteristics (Gbps)	—
Operating temperature range (°C(-40 to unspecified))	85



# Card Edge Connectors




The card edge connector is a type of socket connector which is used by inserting a module card into a card slot. The card edge connector is ideal for connection to the motherboard of personal computers and various expansion cards.

18010S

High speed

0.5 Pitch



Pitch (mm)	0.5
Mating direction (ST/RA)	RA
Lock method	—
Product height (mm)	7.75
Pins	230
Rated voltage (V (AC/DC))	50
Rated current (A)	0.5
Transmission characteristics (Gbps)	8.0/Qseven
Operating temperature range (°C(MAX))	105


# I/O Connectors



I/O (input/output) connectors, also called interface (I/F) connectors, connect information and signals between devices. They can be installed in a variety of devices, from in-vehicle devices such as car navigation systems and car audio systems to PC peripherals, and can supply power to devices and input/output audio and video signal data.

9491B

2.2 Pitch




Pitch (mm)	2.2
Mating direction (ST/RA)	ST/RA
Lock method	—
Array	1 row/2 rows
Product height (mm)	23.40
Pins	4-40
Rated voltage (V (AC/DC))	250
Rated current (A)	3
Transmission characteristics (Gbps)	—
Operating temperature range (°C(MAX))	105

6661S

High speed

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	RA
Lock method	—
Array	1 row
Product height (mm)	13.00
Pins	4/5
Rated voltage (V (AC/DC))	250
Rated current (A)	1
Transmission characteristics (Gbps)	0.48(USB2.0)
Operating temperature range (°C(MAX))	85

6661S (with Outer housing)

High speed

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	RA
Lock method	—
Array	1 row
Product height (mm)	13.00
Pins	4/5
Rated voltage (V (AC/DC))	250
Rated current (A)	1
Transmission characteristics (Gbps)	0.48(USB2.0)
Operating temperature range (°C(MAX))	85

## 6662S

High speed

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Lock method	—
Array	1 row
Product height (mm)	20.10
Pins	4/5
Rated voltage (V (AC/DC))	250
Rated current (A)	1
Transmission characteristics (Gbps)	0.48(USB2.0)
Operating temperature range (°C(MAX))	85

## 6662S (with Outer housing)

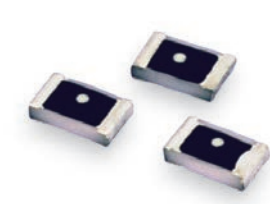
High speed

0.8 Pitch



Pitch (mm)	0.8
Mating direction (ST/RA)	ST
Lock method	—
Array	1 row
Product height (mm)	20.10
Pins	4/5
Rated voltage (V (AC/DC))	250
Rated current (A)	1
Transmission characteristics (Gbps)	0.48(USB2.0)
Operating temperature range (°C(MAX))	85

# ESD Protector Chip



ESD protector chip developed with IRISO's proprietary technology. Low capacitance makes it ideal for electrostatic protection of high-frequency digital equipment. Simply install between the signal line and the GND line to instantly avoid ESD energy entering the circuit. Also, we have commercialized various ESD film-equipped connectors with electrostatic films based on this technology.

6803



Product height (mm)	0.4
Rated voltage (V (AC/DC))	11AC/15DC
Operating temperature range (°C(-40 to unspecified))	105
Note	1.0mm x 0.5mm size Electro-Static Discharge (ESD) countermeasure components

6802



Product height (mm)	0.55
Rated voltage (V (AC/DC))	14AC/20DC
Operating temperature range (°C(-40 to unspecified))	105
Note	1.6mm x 0.8mm size Electro-Static Discharge (ESD) countermeasure components

6801



Product height (mm)	0.55
Rated voltage (V (AC/DC))	17AC/25DC
Operating temperature range (°C(-40 to unspecified))	105
Note	2.0mm x 1.25mm size Electro-Static Discharge (ESD) countermeasure components

## What is a connector for robotic assembly?.....

Currently, demand for industrial robots is growing rapidly. Robotic production contributes to stabilizing assembly quality and production takt time, as well as limiting increases in labor wages. However, in-process defects such as foreign matter adhesion, mounting and mating misalignment, and incomplete mating can still occur. Therefore, IRISO has launched a new concept, Connectors for Robotic Assembly, based on technology it has developed, with the aim of widely promoting connectors that are suitable for robot production. Connectors for Robotic Assembly are composed of three technologies developed by IRISO Electronics to meet a wide range of customers' robot production needs.

## Three technologies make up the Connector for Robotic Assembly

### 1 Floating Connector

IRISO Electronics is proud to offer the industry's largest variety of floating connectors with movable connection surfaces when mated. These floating connectors absorb the misalignment of boards and reduce the stress on soldered parts. The floating connectors prevent solder cracks. Furthermore, it is possible to mount multiple connectors on the same board and fit them together. A wide range of variations are available to meet customers'



### What is a floating connector?

"Floating connector" is a generic term for connectors with a floating structure that can be moved between rows and in the pitch direction (X-Y axis) by installing a movable spring on the terminal. Most common board-to-board connectors are rigid types that do not have a movable spring and cannot be mated if the connector is misaligned with the board. Floating connectors, however, can be mated normally because they are equipped with a floating mechanism that absorbs errors even if their positions are misaligned. A movable connector absorbs board misalignment and reduces stress on the solder joint. Prevents poor contact due to solder cracks or other defects.

### ► Advantages of using floating connectors

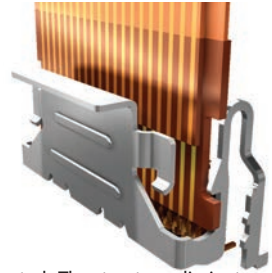
Floating connectors can be used to solve a variety of problems.

- Absorbs misalignment after mating and reduces stress on solder joint to minimize cracking.
- Multiple connectors can be used on the same board.
- Increases the flexibility in board layout and circuit design.
- Absorbs misalignment during mating by robotic assembly and contributes to automation.

# Connectors for robotic assembly

## 2 Auto I-lock™

Until now, robotic assembly with FPC/FFC cards was considered impossible, but IRISO Electronics' FPC/FFC connector Auto I-Lock™ automatically locks when an FPC/FFC card is inserted, ensuring secure mating. Robotic assembly is possible even when using FPC/FFC cards.



### What is Auto I-lock™?

Auto I-Lock™ is a connector that automatically locks when an FPC/FFC card is inserted. The structure eliminates the slider and cover opening/closing motion and locks as soon as the FPC/FFC card is inserted, preventing skewed insertion and incomplete mating and improving work efficiency. Secure mating enables robotic assembly even when using FPC/FFC cards.

#### ► Advantages of using Auto I-Lock™

Auto I-Lock™ can be used to solve a variety of problems.

- Prevents incomplete mating, reduces inspection processes, and improves productivity.
- Proprietary terminal structure enables high-speed transmission of digital signals.
- GND terminal is provided for noise suppression when shielded FFC is used.
- Automatic locking enables robotic assembly. Contributes to automation.

## 3 Two-point contact connector

The two-point contact connector concept of IRISO Electronics is to have two-point contact on the same line. The ability to remove suspended solids and scattered flux foreign matter, assures consistent contact with reliable wiping. Adoption of two-point contact connectors improved contact reliability, which in turn improves yield and contributes to total cost reduction.



### What is a two-point contact structure?

The "two-point contact structure" concept is to have two-point contact on the same line. It removes suspended solids, scattered flux, and other foreign matter, and assures stable contact through reliable wiping. Even if one terminal contact runs onto an adhered object, the other terminal contact of the two-point contact connector will ensure continuity and prevent poor contact. Adoption of two-point contact connectors improved contact reliability, which in turn improves yield and contributes to total cost reduction.

#### ► Advantages of using two-point contact connectors

Two-point contact connectors can be used to solve a variety of problems.

- Two-point contact structure (two-point contact on the same line) prevents poor contact.
- Removes foreign matter during mating even in environments prone to contamination.
- Improved yield rate, contributing to total cost reduction.
- Absorbs misalignment during mating by robotic assembly and contributes to automation.

# Resonance and Vibration Analysis Solutions

## Simulation

### What is Z-Move™ ? .....

In addition to a floating structure that allows X- and Y-axis movement, IRISO Electronics' Z-Move™ connector has a structure that allows Z-axis movement while the contact point remains fixed, enabling absorption of minute board amplitudes caused by resonance in the high vibration frequency range. Prevents loss of contact reliability due to fine sliding wear. Meets critical safety component standards for in-vehicle mounting and greatly improves ease of handling and reliability.

#### ► Advantages of using Z-Move™

Z-Move™ can be used to solve a variety of problems.

- Movement in the Z-axis direction allows connectors to be used for equipment affected by vibrations.
- Prevents poor contact due to vibrations/load after the set is completed.
- Our proprietary vibration simulation service allows us to make proposals from the early design stage.
- Designed for high heat resistance, enabling use in harsh, high-temperature environments.
- Absorbs misalignment during mating by robotic assembly and contributes to automation.

### What is resonant vibration ?

Same movement (in-phase)

No problem



Only one side moves (with phase difference)

Caution is required



Both sides move differently (in opposite phase)

Caution is required  
Likely in need of improvement



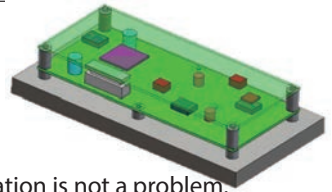
# Resonance and Vibration Analysis Solutions

## What is resonance?

Natural vibrations are caused by an external stimulus. Some are mechanical and some are electrical. "Objects" have natural frequencies based on their mass, size, etc., and are prone to resonance, especially when external stimuli match these natural frequencies. On the other hand, at the frequency where the inductance and capacitance exactly cancel each other, the element impedance becomes minimal and resonance occurs. Reflections at multiple points along the transmission path cause resonance at the frequency of the phase at which the reflected waves strengthen each other, which is applied by antennas. In cases where it is not the intended, it can also be a source (or receiver) of noise. IRISO offers the Z-Move™ series of anti-vibration connectors. We also provide vibration analysis and other support services upon customer request.

## Assistance with design optimization for vibration

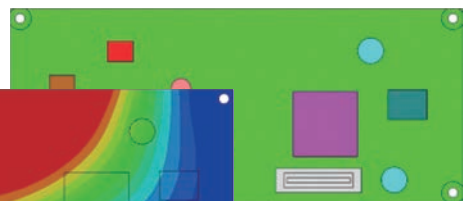
- 1** The customer provides us with 3D data, vibration conditions, physical properties, and fixed conditions.



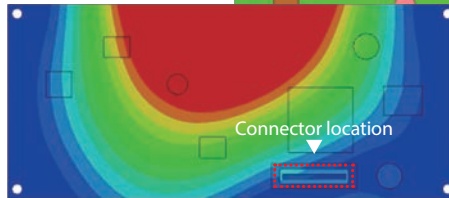
- 2** Vibration analysis is performed to confirm that gap variation is not a problem.

If consideration is needed, analysis of proposal for additional fixing or relocation of connectors is performed.

■ Proposal for relocation of connectors, additional screw fixing, etc.

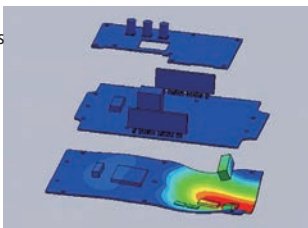


■ Z-direction displacement diagram

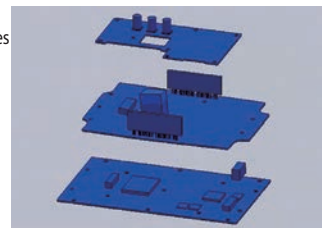


- 3** Prevent design rework due to resonance by helping customers complete their set design!

■ Before vibration countermeasures

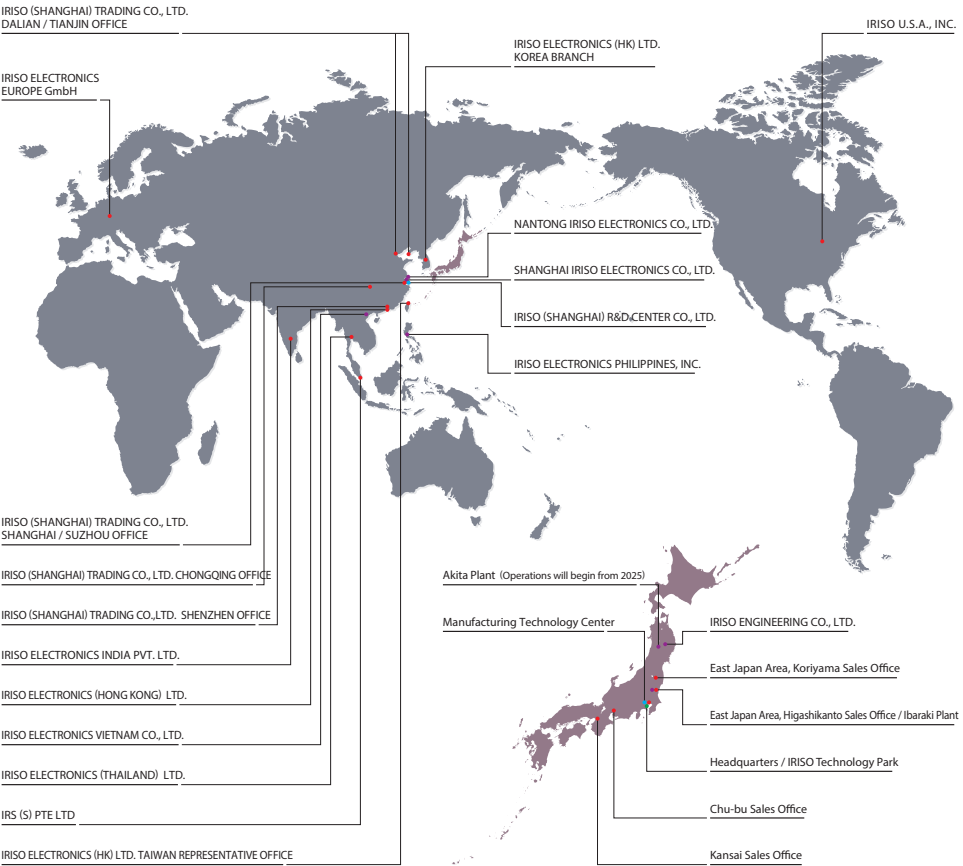


■ After vibration countermeasures





# Worldwide



- Headquarters
- Manufacturing Technology Center
- Sales Office
- Product Plant



Headquarters / IRISO Technology Park



Manufacturing Technology Center



Ibaraki Plant



SHANGHAI IRISO ELECTRONICS CO., LTD.



NANTONG IRISO ELECTRONICS CO., LTD.



IRISO ELECTRONICS PHILIPPINES, INC.



IRISO ELECTRONICS VIETNAM CO., LTD.

# List of Locations

## ■ Headquarters (IRISO Technology Park)

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## Domestic Sales Office

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### ■ East Japan Area, Higashikanto Sales Office

714-1 Kami-Iwase, Hitachi-Omiya, Ibaraki 319-2142, Japan  
TEL : 0295-53-1108

### ■ Kansai Sales Office

Otemae Tanaka Building 8F, 2-2-18 Tanimachi, Chuo-ku, Osaka, 540-0012, Japan  
TEL : 06-6949-1123

### ■ Chubu Sales Office

701 Nagoya Mitsui Building New Wing, 1-24-10, Meieki Minami, Nakamura-ku, Nagoya, Aichi, 450-0003, Japan  
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### ■ IRS (S) PTE LTD

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### ■ CHONGQING OFFICE

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### ■ SHENZHEN OFFICE

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### ■ IRISO ELECTRONICS (HONG KONG) LIMITED

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### ■ TAIWAN REPRESENTATIVE OFFICE

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## USA

### ■ IRISO U.S.A., INC.

34405 West Twelve Mile Road, Suite 237 Farmington Hills, MI 48331, U.S.A.  
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## EU

### ■ IRISO ELECTRONICS EUROPE GmbH

Zettachring 10, Stuttgart-Fasanenhof, 70567, Germany  
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## Development and production sites in Japan

### ■ Head office (IRISO Technology Park)

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### ■ Manufacturing Technology Center

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### ■ Ibaraki Plant

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### ■ IRISO ENGINEERING CO., LTD.

5-123, Ohata, Hanamaki, Iwate 025-0303, Japan  
TEL : 0198-27-3901

## Development and production sites outside Japan

### ■ Shanghai R&D Center

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### ■ IRISO ELECTRONICS PHILIPPINES, INC.

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### ■ IRISO ELECTRONICS VIETNAM CO.,LTD.

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### ■ Shanghai Plant

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### ■ Nantong Plant

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Contact Us

