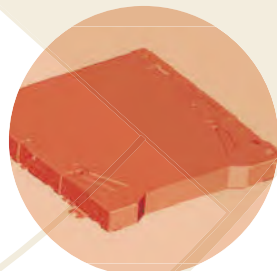


PRODUCTS GUIDE



Lineup

| Series | Pitch (mm) | Number of Pos. | Interface | | Inside Device | | Cable In-line | Top of Board | Optical Connector | Board Mounting Method | | | Cable Wire Connection Method | | | Compatible Specification / Remark | Page | |
|---|------------|----------------|-----------------|---------------|----------------|------------------------------------|---------------|--------------|-------------------|-----------------------|-----|-----------|------------------------------|-----|----------|-----------------------------------|--|----|
| | | | Cable-to-P.C.B. | Panel In-line | Board-to-board | Cable-to-P.C.B. | | | | Through Hole | SMT | Press Fit | Soldering | IDC | Crimping | | | |
|  | HDR | 0.8 | 14, 26, 50 | ● | ● | ● | - | ● | - | - | ● | ● | - | ● | ● | - | Camera Link Screw Lock / Spring Lock | 6 |
|  | HDRA | 0.8 | 36~200 | ● | - | - | - | - | - | - | ● | - | - | - | ● | - | VHDCI Screw Lock / Spring Lock | 6 |
|  | TAK | 2.0 | 4, 6, 8 | ● | - | - | - | ● | - | - | ● | - | - | - | - | ● | Positive Lock Mechanism | 7 |
|  | TAT | 2.0 | 4 | - | - | - | - | ● | - | - | - | - | - | - | - | ● | Positive Lock Mechanism Water Proof IPX9K | 7 |
|  | SD | - | - | - | - | - | - | - | ● | - | - | ● | - | - | - | - | Memory Card Sockets UHS-I/II SDIO | 8 |
|  | MOD | 1.02 | 4, 6, 8 | ● | - | - | - | - | - | - | ● | ● | - | - | - | - | Modular Jack connector Screw Lock | 9 |
|  | PCR | 1.27 | 20~96 | ● | ● | - | - | ● | - | - | ● | - | - | ● | ● | - | Screw Lock / Spring Lock | 10 |
|  | PCR | 1.27 | 20~128 | - | - | Horizontal Vertical Parallel | - | - | - | - | ● | - | - | - | - | - | - | - |
|  | PCS | 1.27 | 20~96 | ● | ● | - | - | - | - | - | ● | ● | - | ● | ● | - | SCSI-II,III Screw Lock / Spring Lock Daisy Chain | 10 |
|  | PCS | 1.27 | 34~150 | - | - | Horizontal Vertical Parallel | - | - | - | - | ● | - | - | - | - | - | - | - |
|  | RPS | 1.27 | 20~120 | - | - | - | ● | - | - | - | ● | - | - | - | ● | - | Latch Lock Mechanism Daisy Chain | 10 |



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 Company Profile 18



| Series | Pitch (mm) | Number of Pos. | Interface | | Inside Device | | Cable In-line | Top of Board | Optical Connector | Board Mounting Method | | | Cable Wire Connection Method | | | Compatible Specification / Remark | Page | |
|---|------------|----------------|-----------------|---------------|----------------|------------------------------------|---------------|--------------|-------------------|-----------------------|-----|-----------|------------------------------|-----|----------|-----------------------------------|--|----|
| | | | Cable-to-P.C.B. | Panel In-line | Board-to-board | Cable-to-P.C.B. | | | | Through Hole | SMT | Press Fit | Soldering | IDC | Crimping | | | |
|  | MR | 2.6 | 8~96 | ● | ● | Horizontal Vertical Parallel | - | ● | - | - | ● | - | - | ● | - | ● | Screw Lock / Spring Lock | 11 |
|  | LPC | 2.0 | 1~60 | - | - | Vertical Parallel | ● | - | ● | - | ● | ● | - | - | ● | ● | Pin Header Jumper Plugs | 12 |
|  | FFC | 2.54 | 1~144 | - | - | Vertical Parallel | - | - | ● | - | ● | - | - | - | - | - | Pin Header Jumper Plugs (DIC Series) | 12 |
|  | HKP | 2.54 | 2~70 | - | - | Vertical Parallel | ● | - | - | - | ● | - | - | - | - | ● | - | 12 |
|  | DIC | 2.54 | 1~24 | - | - | - | - | - | ● | - | ● | - | - | - | - | - | Pin Header Jumper Plugs | 12 |
|  | HCN | 2.54 | 4 | - | - | - | ● | - | - | - | ● | - | - | - | ● | - | CompoNet Positive Lock Mechanism | 13 |
|  | PCL | 8.8 | 2 | - | - | - | - | ● | - | - | - | - | - | - | - | ● | For Power | 13 |
|  | HSA | 1.27 | 22 | - | - | Vertical Horizontal | - | - | - | - | ● | ● | - | - | - | - | SATA | 13 |
|  | HSAS | 1.27 | 29 | - | - | Vertical | - | - | - | - | - | ● | ● | - | - | - | SAS | 13 |
|  | QZAC | 0.5 | 60 | - | - | Parallel | - | - | - | - | - | ● | - | - | - | - | Floating | 14 |
|  | QZAC-A | 0.8 | 20 | - | - | Parallel | - | - | - | - | - | ● | - | - | - | - | Floating | 14 |
|  | LVX | 0.4 | 30, 40 | - | - | - | ● | - | - | - | - | ● | - | ● | - | - | Micro Coaxial Cable | 14 |
|  | TAE | 2.0 | 2 | - | - | - | ● | - | - | - | - | ● | - | - | - | ● | - | 14 |
|  | AKX | 0.8 | 20 | - | - | - | - | - | ● | - | - | ● | - | - | - | - | SFP SFP+ | 14 |
|  | LGC | - | 1, 2, 4 | - | - | - | - | - | - | ● | - | - | - | - | - | - | SC Shape LC Shape Connector for Silica Fiber | 15 |
|  | LGP | - | 1, 2 | - | - | - | - | - | - | ● | - | - | - | - | - | - | SMI Shape F05 Shape F07 Shape Connector for POF | 15 |

Application

Factory Automation



Robot



Semiconductor Manufacturing Equipment

We have accumulated track records and have gained the trust of our customers for 50 years in the field of FA equipment where robustness and long term reliability are required. In recent years we are also proposing products that are adopted to miniaturization and high speed.



PCR Series



HDR Series



TAK Series



MR Series



Sockets for SD Memory Cards



HCN Series

Automotive



Dashboard Camera



Dashcam

In the 80 years of history, based on the technical capabilities we have cultivated in various markets, and developing products that are suitable for on-board equipment. We are contributing to informationization of cars with dashboard cameras and such.



TAK Series



TAT Series



TAE Series



QZAC-A Series

Consumer Product



Digital Still Camera
Digital Video Camera



Projector

We are developing products with added high-value, such as standard products and products filled with originality. Our products are adopted by light users to professionals.



Sockets for SD Memory Cards



LVX Series



HSA Series



QZAC Series



PCL Series

Information-processing Equipment



Server



Industrial PC

We provide products that suit the customer's usage from interface for connecting with the network, board connectors used for information devices and such.



HSA Series



PCR Series



AKX Series



HSAS Series



MOD Series

Communication Equipment



Router



Business Phone

Communication equipment which HTK excels at, are products that are excellent in long-term reliability and robustness, and developed as products according to the changing demands with the times.



TAK Series



MOD Series



AKX Series



LPC Series



LGP Series



LGC Series

Measuring Instrument



Measuring Instrument for Plant



Measuring Instrument for Measurement

Measurement instruments used at production sites are expected to be used for a long time. Our products are developed with excellent environment resistance and suitable for long-term use.



HDR Series



PCR Series



LGC Series

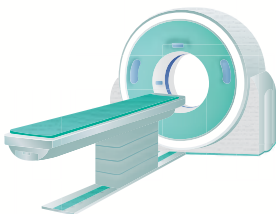


TAE Series



HKP Series

Medical Equipment



CT



Medical PC

We develop high quality, reliable and highly customized products with noise measures, high speed transmission that are required for medical equipment, and are accumulating track records as well.



HDR Series



PCR Series



TAK Series



Sockets for SD Memory Cards



MOD Series



LVX Series

Security Equipment



Security Camera



Disaster Prevention Radio

Many of our products are adopted for security equipment to protect security and safety. Our products are actively being used in a variety of security fields.



HDR Series



MR Series



Sockets for SD Memory Cards



LVX Series

0.8mm Pitch Interface connectors

▶HDR/HDRA Series

Multi-core / Small / Fast / Robust
Interface Connector

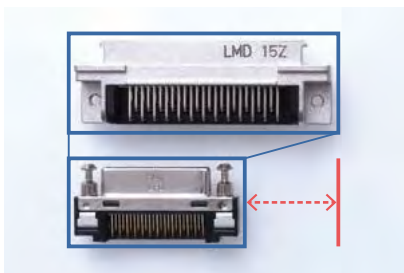


Outline

Smaller size which are suitable for work, robust lock mechanism, measures for EMI and high speed transmission with the metal shell are demanded by interface connectors. HDR/HDRA series is a product that sufficiently meets all these requirements.

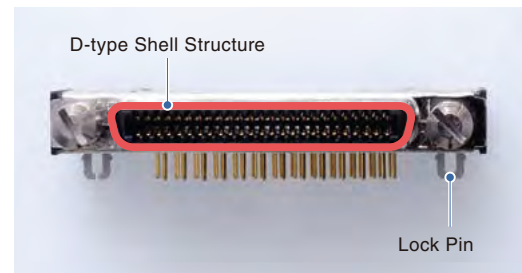
With 8 types of number of pos. variations, it is adoptable with the usage method by allowing selection between DIP/SMT, and spring lock/screw lock for cable assemblies.

● Small Size



When compared to our company's 1.27mm pitch connector, it realizes about 70% reduction in the mating area and about 50% reduction in the mounting area.

● Robust

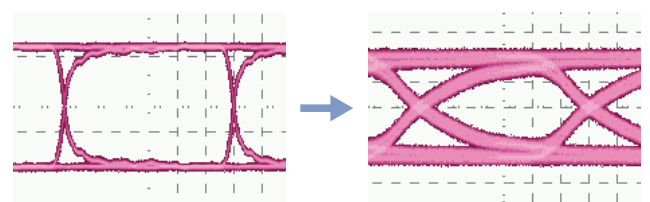


The D-type shell structure prevents mis-fitting and preventing twisted fitting. By mounting the lock pin on the DIP, it increases board retention strength.

■ HDR/ HDRA Series List

| Series Name | Male / Female | Type | Tail shaped | Mounting / Wiring method | Number of pos. |
|-------------|---------------|-------------|--------------|--------------------------|--------------------|
| HDR | Female: | For Board | Right-angle | Through Hole | 14,26,50 |
| | | | SMT | 14,26 | |
| | | Straight | Through Hole | 14,26 | |
| | | | SMT | 14,26 | |
| | For Cable | — | IDC | 14,26,50 | |
| | | Soldering | 14,26 | | |
| Male | For Board | Right-angle | Through Hole | 26 | |
| | | SMT | 14,26 | | |
| | For Cable | — | IDC | 14,26,50 | |
| Soldering | | 14,26,50 | | | |
| HDRA | Female: | For Board | Right-angle | Through Hole | 36,68,100, 136,200 |
| | | | SMT | 68 | |
| | | Straight | Through Hole | 68,100 | |
| | | | SMT | 68 | |
| | For Board | Right-angle | Through Hole | 68 | |
| | | — | IDC | 36,68,100 | |
| Male | For Cable | — | IDC | 36,68,100 | |

● High Speed Transmission



It is compatible with high speed serial transmission such as LVDS, HDMI 1.4, USB 3.0. We will make optimum suggestions according to the customer's requests.

* Please consult with us regarding transmission characteristics and board design as it depends on the customer's usage environment.

▶ HDR Series



Specification

| | |
|---------------------------------|--------------------------------|
| Current Rating | 0.5A/ Pin. |
| Insulation Resistance | 500MΩ at 250V D.C. |
| Dielectric Withstanding Voltage | 350V A.C.(r.m.s.) for a minute |
| Contact Resistance | 70mΩ MAX. |
| Operating Temperature | -55°C to +105°C |
| Plug and Play Number of Times | 5,000 times |

▶ HDRA Series



Specification

| | |
|---------------------------------|--------------------------------|
| Current Rating | 0.3A/ Pin. |
| Insulation Resistance | 100MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 250V A.C.(r.m.s.) for a minute |
| Contact Resistance | 100mΩ MAX. |
| Operating Temperature | -55°C to +105°C |
| Plug and Play Number of Times | 2,000 times |

Compact High-speed Transmission Connectors

▶ TAK/TAT Series

High speed transmission realized with full shielding
Compatible with waterproof applications



Outline

The TAK/TAT series was developed as a connector for on-board equipment. It is compatible with high speed transmission such as USB/LVD, and with the full shield structure using a metal shell, is a product that is conscious of EMI characteristics. By also developing waterproof In-line connector compatible with IPX9K for the TAT series, we have increased the variation possible, which is adopted for use in a wide range of equipment. Currently beside automobiles, it is also active in markets where high quality and performance are demanded, such as industrial equipment and medical equipment.

● Key Variations (Maximum 7 types)



When using multiple same model connectors with the same number of pos., the possibility of mis-fitting increases. TAK series has a maximum of 7 key variations, and the color is changed for each key shape, so the shape and visual confirmation prevents mis-fitting.

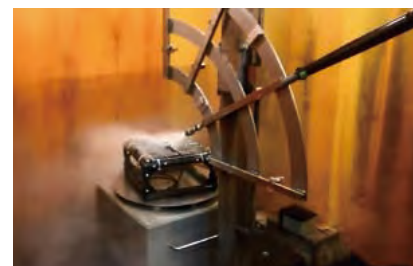
| Insulator Color | Black | Blue | Brown |
|-----------------|-------|--------|-------|
| Key Shape | | | |
| Green | Gray | Orange | Red |
| | | | |

● Full Shield Structure



The fitting portion is also surrounded with a metal shell, adopting a structure to reduce noise. By strengthening the EMI characteristics, it is designed for high speed transmission for USB / LVDS and such.

● Waterproof Performance



Waterproof test scenery

The TAT series retain the waterproof ability. Conducting waterproof tests, it has passed the industry's highest IPX9K rating.

▶ TAK Series



| Specification | |
|---------------------------------|---------------------------------|
| Current Rating | TAK-V: 2.5A/ Pin. TAK-A: 1A |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 500VA A.C.(r.m.s.) for a minute |
| Contact Resistance | 50mΩ MAX. |
| Operating Temperature | -40°C to +105°C |

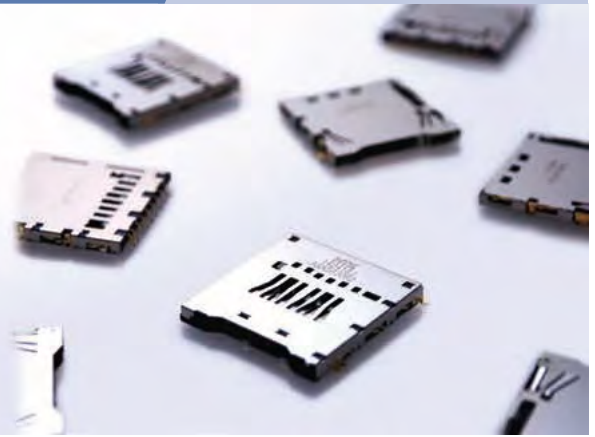
▶ TAT Series



| Specification | |
|---------------------------------|--------------------------------|
| Current Rating | 2.5A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | 50mΩ MAX. |
| Operating Temperature | -40°C to +105°C |

Sockets for SD Memory Cards

Realize Highspeed Performance !
Compatible UHS Interface Socket

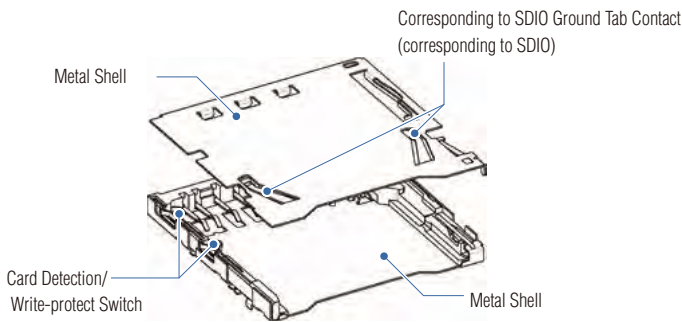


Outline

This is a SD memory card socket that is used for many markets and usage from consumer equipment to industrial equipment.

We also have UHS- I , UHS- II compatible types of two products which have an even higher transfer speed. Both have standard / reverse type and with a double-sided metal shell structure unique to our company, provide high robustness and reliability that is not available elsewhere.

Both-side Metal Shell Structure



By adopting a double-sided metal shell structure, it has also realized noise reduction, increased robustness, and increased heat dissipation. The noise generated by high-speed transmission has been reduced by 20% compared with conventional products. Heat dissipation due to high speed and high density is allowed to escape, and suppresses performance deterioration (internal card temperature, 8°C reduction compared to conventional products). Robustness that is 6 times higher than conventional products have been realized.

UHS interface

This is the type of bus interface of the SD standard that the SD Association is developing.

| | Normal speed High speed | UHS-I | UHS-II |
|-----------------------------------|----------------------------|---------|---------|
| Pin layout | | | |
| Applicable for UHS-I Usable card | ● | ● | — |
| Applicable for UHS-II Usable card | ● | ● | ● |
| Transfer speed | 12.5MB/s 25MB/s | 104MB/s | 312MB/s |

It is compatible with high speed in the order of normal speed < high speed < UHS- I < UHS- II .

Variations



UHS-I
Standard Mount



UHS-I
Reverse Mount



UHS-II
Standard Mount



UHS-II
Reverse Mount

Sockets for SD Memory Cards



Specification

| | |
|---------------------------------|--------------------------------|
| Current Rating | 0.5A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | 100mΩ MAX. |
| Operating Temperature | -25°C to +90°C |

Modular Jack Connectors

▶ MOD Series

Adopted for static electricity measures / through hole reflow
Modular Jack Connectors



Outline

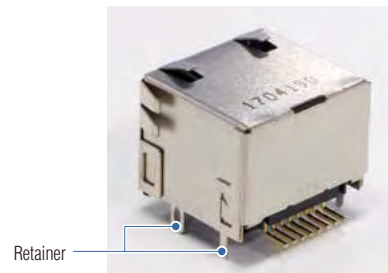
MOD series is the modular jack connector. We have a lineup of characteristic variation such as DIP/SMT, screw lock attached, static electricity measures type. The static electricity measures type is a product using a shielding plate and takes measures against electrostatic discharge. Holding metal fittings are compatible with through hole reflow, and can be mounted simultaneously with other SMT parts, and are useful for improving mounting efficiency.

● Static Electricity Measures



A shielding plate is interposed between the shield and the terminal to improve electrostatic resistance. We have realized the industry-leading electrostatic discharge protection of 10 kV to prevent failure and malfunction due to static electricity.

● Through Hole Reflow



The static electricity measures is compatible with through hole reflow. The retainer uses a DIP structure to strengthen peeling strength. Designed with consideration for heat conduction efficiency, it enables simultaneous mounting with SMT compatible parts, contributing to 1 reflow mounting and productivity improvement.

Variations



Static Electricity Measures Type (1 port)



Static Electricity Measures Type (2 ports)



Screw Lock Type



Shell Type

▶ MOD Series



Specification

| | |
|---------------------------------|---|
| Current Rating | 0.5 to 1.5A/ Pin. |
| Insulation Resistance | 100MΩ at 100V D.C. |
| Dielectric Withstanding Voltage | 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | Static Electricity Measures Type: 100mΩ or less With Shell Type: 20mΩ or less |
| Operating Temperature | -40°C to +70°C |

1.27mm Pitch Connectors

► PCR/ PCS/ RPS Series

The wide range of variation covers various requirements



Outline

The 1.27mm pitch connector is a connector which is active even today even though miniaturization has progressed from long-term achievements and reliability, especially in the industrial equipment market.

At HTK, a wide variety of variations are available for interface, board-to-board, cable-to-P.C.B. and 1.27 mm pitch connectors.

PCR/ PCS/ RPS Series List

| Series Name | Contact Shape | Male/ Female | Type | | | | | Tail Shaped | | Mounting / Wiring Method | | | Number of Pos. |
|-------------|---------------|--------------|-----------|------------|----------------|-----------------|-----------|-------------|-------------|--------------------------|------------|-------------------|------------------------------------|
| | | | Interface | | Board-to-board | Cable-to-P.C.B. | | Straight | Right-angle | Mounting Through Hole | Connection | | |
| | | | For Cable | For P.C.B. | | For P.C.B. | For Cable | | | | Soldering | IDC | |
| PCR | Bellows type | Male | — | ● | — | — | — | ● | ● | ● | — | — | 20,28,36,50,68,96 |
| | | | ● | — | — | — | — | — | — | ● | ● | 20,28,36,50,68,96 | |
| | | Female | — | — | ● | — | — | — | — | ● | — | — | 20,34,48,68,80,96,128 |
| | | | ● | — | — | — | — | — | — | — | ● | ● | 20,28,36,50,68,96 |
| PCS | Pin type | Male | — | ● | — | — | — | ● | ● | ● | — | — | 20,28,36,50,68,80,96 |
| | | | ● | — | — | — | — | — | — | — | ● | ● | 20,26,28,36,50,68,100 |
| | | | — | — | ● | — | — | — | — | — | ● | — | 34,48,68,96,128,150 |
| | | Female | — | ● | — | — | — | — | — | — | — | — | 26,50,68,100 |
| | | | ● | — | — | — | — | — | — | — | ● | ● | 20,28,36,50,68,80,96 |
| RPS | Pin type | Male | — | — | — | ● | — | ● | ● | ● | — | — | 20,26,34,40,50,52,60,68,80,100,120 |
| | | Female | — | — | — | — | — | — | — | — | — | ● | 20,26,34,40,50,52,60,68,80,100,120 |

► PCR Series Interface



| Specification | |
|---------------------------------|--------------------------------|
| Current Rating | 1A/ Pin. |
| Insulation Resistance | 1,000MΩ at 250V D.C. |
| Dielectric Withstanding Voltage | 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | 35mΩ MAX. |
| Operating Temperature | -40°C to +105°C |

► PCS Series Interface



| Specification | |
|---------------------------------|---|
| Current Rating | 1A/ Pin. |
| Insulation Resistance | 100MΩ / 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | PCS: 750V A.C.(r.m.s.) for a minute PCS-XE: 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | 35mΩ MAX. |
| Operating Temperature | -55°C to +105°C |

► PCR Series Board-to-board



| Specification | |
|---------------------------------|--------------------------------|
| Current Rating | 1A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 750V A.C.(r.m.s.) for a minute |
| Contact Resistance | 35mΩ MAX. |
| Operating Temperature | -40°C to +105°C |

► PCS Series Board-to-board



| Specification | |
|---------------------------------|--------------------------------|
| Current Rating | 1A/ Pin. |
| Insulation Resistance | 100MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 750V A.C.(r.m.s.) for a minute |
| Contact Resistance | 35mΩ MAX. |
| Operating Temperature | -55°C to +105°C |

► RPS Series Cable with Board



| Specification | |
|---------------------------------|--------------------------------|
| Current Rating | 1A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 750V A.C.(r.m.s.) for a minute |
| Contact Resistance | 30mΩ MAX. |
| Operating Temperature | -40°C to +85°C |



Multi-core Type Connectors

▶ MR Series

Long seller for over 50 years
Abundant achievements and high reliability



Outline

The MR series is a rectangular connector that has been available for a long time, more than 50 years since its release. It is adopted for use in many equipment, centered mainly on FA equipment, and is a product that is expanded to a number of variations.

We have connectors for board, cable, panel, cable In-line and there are 8 types of number of pos., from 8 to 96 for each.

Variations



For P.C.B., Right angle



For P.C.B., Straight



For Cable



For In-line

MR Series List

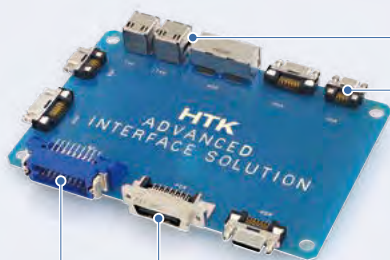
| Male/ Female | Type | Straight | Right-angle | Connection Method | Number of Pos. |
|-----------------|------------|----------|-------------|---------------------------------|---------------------|
| Male | For P.C.B. | ● | ● | — | 8,16,20,25,34,50,96 |
| | For Cable | — | — | Soldering / Wrapping / Crimping | 8,16,20,25,34,50,60 |
| Female | For P.C.B. | ● | ● | — | 8,16,20,25,34,50,96 |
| | For Cable | — | — | Soldering / Wrapping / Crimping | 8,16,20,25,34,50,60 |

▶ MR Series Interface

| Specification | |
|---------------------------------|----------------------------------|
| Current Rating | 3A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 1,000V A.C.(r.m.s.) for a minute |
| Contact Resistance | 30mΩ MAX. |
| Operating Temperature | -40°C to +55°C |

ADVANCED INTERFACE SOLUTIONS

At HTK, the abundant interface connectors we have developed are called "ADVANCED INTERFACE SOLUTION". We are making proposals for customer's problems and to resolve these problems by combining abundant variations and advanced features.



Modular jack connectors static electricity measure type MOD Series

- Electrostatic discharge protection 10kV
- Increased peeling strength with through hole reflow adopted for the retainer.



0.8mm Pitch I/O Connectors HDR Series

- Multi-core / small / robust
- Measures for EMI and high speed transmission with the metal shell



1.27mm Pitch Connectors PCR Series

- Wide range of variation
- Measures for EMI and robustness with the metal shell



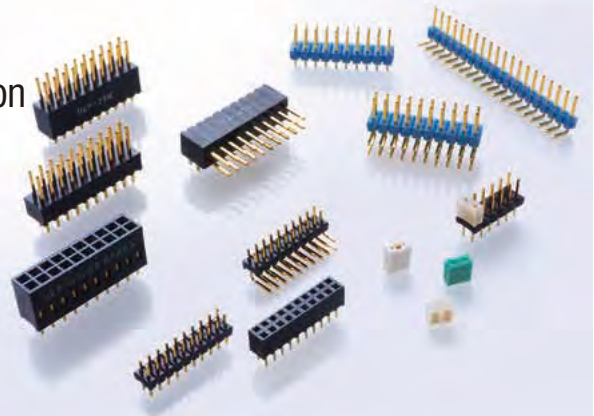
Multi-core Type Connectors MR Series

- Wide range of variation
- Long seller for over 50 years

Board Connectors Pin Headers for Internal Wiring

▶ LPC/FFC/HKP/DIC Series

Board connector that can be used in combination
 Pin headers, board-to-board,
 cable with board
 Can be used in numerous scenes



Outline

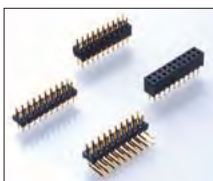
The pin header prepared by HTK for the internal wiring connector is 2mm pitch (LPC series), or 2.54mm pitch (FFC/HKP/DIC series). The LPC/HKP series can also be used as a board-to-board or connector for cable-to-P.C.B..

It is possible to customize the pin header depending on the customer's needs.

LPC/ FFC/ HKP/ DIC Series List

| Series Name | Pitch (mm) | Male/ Female | Tail Shaped | Number of Columns | Number of Pos. | Mounting / Wiring Method | Insulator Height(mm) | |
|-------------|------------|--------------|-------------|-------------------|----------------|--------------------------|-----------------------------------|--------------|
| LPC | 2.0 | Male | Straight | 1 | 1~30 | Through Hole | 1.4, 2.0 | |
| | | | | 2 | 4~60 | | 1.4, 2.0, 3.0, 4.0, 4.8, 6.0, 8.0 | |
| | | | Right-angle | 1 | 1~30 | | — | |
| | | | | 2 | 4~50 | | — | |
| | | Female | Straight | 2 | 6-50 | SMT | 2.0, 4.0, 6.5 | |
| | | | | 2 | 10-50 | | — | |
| | | | — | 1 | 2~25 | Through Hole | 5.0 | |
| | | | | 2 | 4~50 | | 5.0 | |
| | | | | Crimping | 1 | 2-20 | — | |
| | | | | | 2 | 4~44 | — | |
| IDC | 2 | 10~50 | — | | | | | |
| | — | 2 | — | Junction Plug | — | | | |
| FFC | 2.54 | Male | Straight | 1 | 1~52 | Through Hole | 2.54 | |
| | | | | 2 | 4~144 | | 2.54 | |
| | | | Right-angle | 1 | 1~52 | | — | |
| | | | | 2 | 2~144 | | — | |
| | | Female | Straight | | 1 | 2~62 | 8.5, 15 | |
| | | | Straight | | 1 | 2~50 | 7.4 | |
| HKP | 2.54 | Male | Straight | 2 | 4~70 | Through Hole | 4.5, 6.5, 7.4, 16.3 | |
| | | | | Right-angle | 1 | | 2~50 | — |
| | | | Crimping | | 2 | | 4~70 | — |
| | | | | Female | — | | 1 | 2~50 |
| | | Straight | | | 2 | 4~70 | Through Hole | 9.5 |
| | | DIC | 2.54 | Male | Straight | 1 | 1~24 | Through Hole |
| 2 | 2~20 | | | | | 1.8 | | |
| Female | — | | | — | 2 | Junction Plug | — | |

▶ LPC Series



| Specification | |
|---------------------------------|--------------------------------|
| Current Rating | 1A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | 30mΩ MAX. |
| Operating Temperature | -25°C to +85°C |

▶ HKP Series



| Specification | |
|---------------------------------|----------------------------------|
| Current Rating | 3A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 1,000V A.C.(r.m.s.) for a minute |
| Contact Resistance | 10mΩ MAX. |
| Operating Temperature | -40°C to +105°C |

▶ FFC Series



| Specification | |
|---------------------------------|----------------------------------|
| Current Rating | 3A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 1,000V A.C.(r.m.s.) for a minute |
| Contact Resistance | — |
| Operating Temperature | -40°C to +85°C |

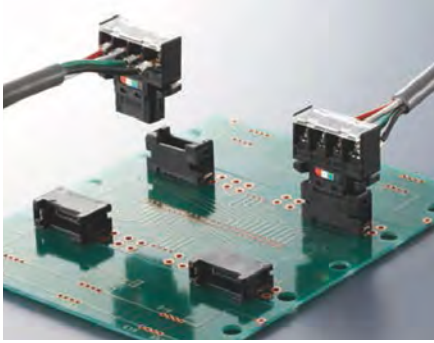
▶ DIC Series



| Specification | |
|---------------------------------|----------------------------------|
| Current Rating | 1A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 1,000V A.C.(r.m.s.) for a minute |
| Contact Resistance | 20mΩ MAX. |
| Operating Temperature | -25°C to +80°C |

CompoNet Compliant Connectors

► HCN Series



Outline

Is a connector compliant to CompoNet reduced wiring system.

On top of the pressure welding type where cable end processing is not required and the terminal block type where it is possible to pull out in 2 directions, there also is an adapter that makes bidirectional branching possible.

UL certified E70604 (UL1977)
E328667 (UL1059)

Specification

| | |
|----------------------------------|--|
| Current Rating | Power supply: 4A, Signal section: 0.3A |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage: | 1,000V A.C.(r.m.s.) for a minute |
| Contact Resistance | 40mΩ MAX. |
| Operating Temperature | -30°C to +55°C |

High Voltage Power Supply Connectors

► PCL Series



Outline

This is a power In-line connector with an incorrect insertion prevention key.

The withstanding voltage is 5 kV, 12kV, and 15kV, and because there is an incorrect insertion prevention, there are 3 types of 15kV product, and 2 types for the others and has increased workability and safety.

Specification

| | |
|----------------------------------|---------------------------------|
| Current Rating | 7A |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage: | 5kV D.C., 12kV D.C., 15kV D.C., |
| Contact Resistance | 20mΩ MAX. |
| Operating Temperature | -20°C to +150°C |

Serial ATA Compliant Connectors

► HSA Series



Outline

This connector conforms to Serial ATA standard for the interface mainly adopted in HDD and SSD. The transmission rate is compatible to 1.5Gbps to 3.0Gbps.

Specification

| | |
|----------------------------------|--------------------------------|
| Current Rating | 1.5A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage: | 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | 50mΩ MAX. |
| Operating Temperature | -20°C to +85°C |

Serial Attached SCSI Standard Compliant Connectors

► HSAS Series



Outline

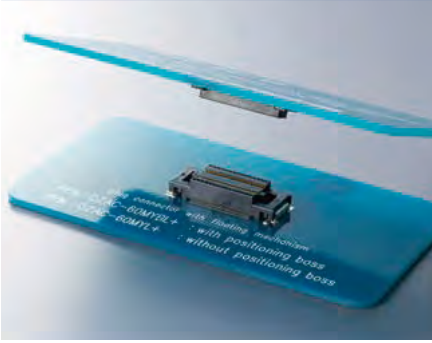
This connector conforms to Serial Attached SCSI standard for the interface mainly adopted in HDD for server machines. The transmission rate is compatible to 3.0Gbps.

Specification

| | |
|----------------------------------|--------------------------------|
| Current Rating | 0.5A/ Pin., 1.5A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage: | 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | 30mΩ MAX. |
| Operating Temperature | 0°C to +55°C |

Floating Connectors

► QZAC Series 0.5 mm Pitch 60 Pos.
0.8 mm Pitch 20 Pos.



Outline The QZAC series of floating connector is a connector that absorbs mounting misalignment that occurs in vertical and horizontal directions with the movement of contacts. By absorbing the misalignment, it decreases the stress to the contact mounting section and contributes to the increase in long term reliability.

► 0.5mm Pitch Type

| Specification | |
|---------------------------------|--------------------------------|
| Current Rating | 0.3A/ Pin. |
| Insulation Resistance | 1,000MΩ at 100V D.C. |
| Dielectric Withstanding Voltage | 200V A.C.(r.m.s.) for a minute |
| Contact Resistance | 160mΩ MAX. |
| Operating Temperature | -40°C to +85°C |
| Floating volume | XY direction ±0.5mm |

► 0.8mm Pitch Type

| Specification | |
|---------------------------------|--------------------------------|
| Current Rating | 0.5A/ Pin. |
| Insulation Resistance | 1,000MΩ at 250V D.C. |
| Dielectric Withstanding Voltage | 250V A.C.(r.m.s.) for a minute |
| Contact Resistance | 60mΩ MAX. |
| Operating Temperature | -40°C to +85°C |
| Floating Volume | XY direction ±0.8mm |

Micro Coaxial Cable Connectors

► LVX Series



Outline The micro coaxial cable has superior flexibility and twisting property and furthermore has excellent high speed transmission and noise measures. The LVX series is an micro coaxial cable connector that takes advantage of the micro coaxial cable features and contributes to saving space in equipment.

Specification

| | |
|---------------------------------|--------------------------------|
| Current Rating | 0.2A/ Pin. |
| Insulation Resistance | 100MΩ at 250V D.C. |
| Dielectric Withstanding Voltage | 250V A.C.(r.m.s.) for a minute |
| Contact Resistance | 100mΩ MAX. |
| Operating Temperature | -20°C to +70°C |

Small Internal Wiring Connectors

► TAE Series



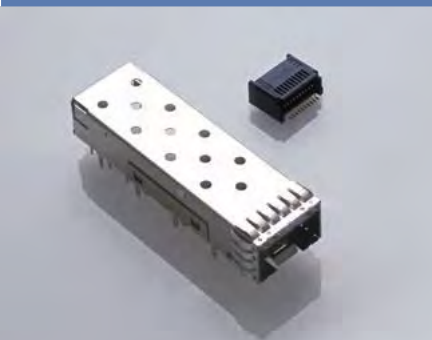
Outline Space saving of connectors, and higher definition of displays due to miniaturization of devices has advanced high speed image signals. The TAE series is a digital transmission connector that has been designed to satisfy the needs of this period.

Specification

| | |
|---------------------------------|--------------------------------|
| Current Rating | 1A/ Pin. |
| Insulation Resistance | 1,000MΩ at 500V D.C. |
| Dielectric Withstanding Voltage | 500V A.C.(r.m.s.) for a minute |
| Contact Resistance | 20mΩ MAX. |
| Operating Temperature | -30°C to +85°C |

SFP/SFP+Module Connectors / Cage

► AKX Series



Outline The AKX series is a connector and cage for SFP/SFP+ module. This is used for the connection with the optical transceiver to convert electrical signals to optical signals. It is mainly used for those that require high speed transmission such as servers and base stations.

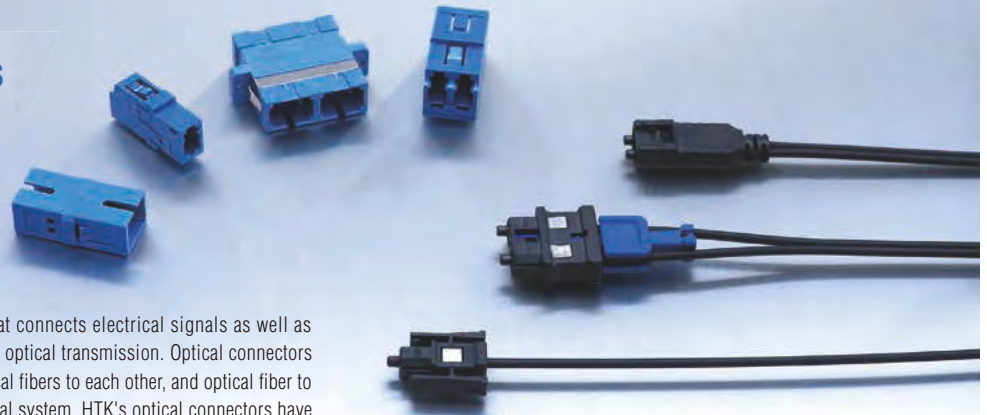
Specification

| | |
|---------------------------------|--|
| Current Rating | 0.5A/ Pin. |
| Insulation Resistance | 1,000MΩ at 250V D.C. |
| Dielectric Withstanding Voltage | 300V A.C.(r.m.s.) for a minute |
| Contact Resistance | AKX-(SFP): 50mΩ MAX. AKX-B(SFP+): 35mΩ MAX. |
| Operating Temperature | -40°C to +85°C |

Optical Connectors

Outline

At HTK we handle electrical connector that connects electrical signals as well as optical connectors that are compatible with optical transmission. Optical connectors are indispensable parts for connecting optical fibers to each other, and optical fiber to various equipment in constructing an optical system. HTK's optical connectors have developed variations of connectors that are compatible with SC type, LC type, and POF.



SC Optical Connectors

► LGC-300 Series



The LGC-300 series is a SC optical connector (IEC61754-4). It is used for long distance optical transmission line / FTTH / LAN and such.

We also have adapter with shutter and plug with shutter with consideration for safety.

The shutter adopts a metal one so it will definitely cut off high powered laser beam as well.

| Specification | |
|----------------|-----------------------------------|
| Insertion loss | SM: 0.5dB or less |
| | GI: 0.3dB or less |
| Return loss | SM (AdPC polishing): 40dB or more |
| | SM (PC polishing): 22dB or more |
| | GI (PC polishing): 22dB or more |

LC Optical Connectors

► LGC-700 Series



LGC-700 series is a LC optical connector (IEC61754-20).

The LC optical connector has the same lock structure as the modular jack connectors (RJ45) that is used for LAN and is possible to easily lock and unlock.

We also have adapter with shutter with single core and 2 core types with consideration for safety.

The shutter adopts a metal one so it will definitely cut off high powered laser beam as well.

| Specification | |
|-----------------|-------------------|
| Insertion Loss: | SM: 0.4dB or less |

Plastic Optical Fiber Connectors

► LGP Series



LGP series is a POF (Plastic Optical Fiber) connector.

We have prepared the following plugs for the LGP series.

LGP-Z0005 ... SMI type 2 core type. Compatible with high speed link / IEEE1394b, S200, S401.

LGP-Z0006 ... F05 type (IEC60874-17) single core type. Simplified lock and latch lock are prepared.

LGP-Z0007 ... F07 type (IEC61754-16) 2 core type. Simplified lock and lever lock are prepared.

Prepared with tension tag type for narrow pitch mounting.

| Specification | |
|-----------------|-----------------------------|
| Insertion Loss: | LGP-Z0005 type: 2dB or less |
| | LGP-Z0006 type: 3dB or less |
| | LGP-Z0007 type: 2dB or less |

Service & Solutions

Available
for
customization
(special order)

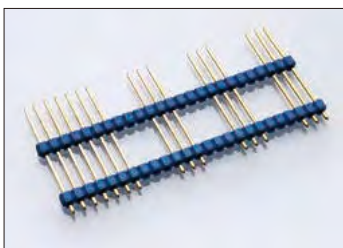
At HTK we not only handle products in the catalog but will accept orders for semi customized products based on existing products. Also newly designed fully customized products. We will make optimum suggestions according to the customer's needs. We can handle inquiries for prototypes as well as requests for 3D printing, machining, wire cutting and such. We also have evaluation test facilities, so please feel free to consult us anytime

- 1 Specification Discussion** Our sales staff will carefully go over each requirement that the customer has (usage, specifications, conditions of use etc.).
- 2 Design** After confirming the requirements submitted by the customer, our designer will base these requirements to design the product. Considering detailed specification towards development, we will make a proposal.
- 3 Prototype / Prototype Estimate** Once you, the customer acknowledges the content of the proposal, we will correspond with a prototype. We will materialize the image size and specification.
- 4 Evaluation / Verification** When we receive the approval from the customer for the final drawing, then we will evaluate and verify the product.
- 5 Estimate / Order** When the final specification is verified, we will show the final mass production estimate and will accept orders at our company after you give your approval.
- 6 Production / Delivery** After the order is received, we will start production. After conducting shipment testing for the first lot, we will package and ship to the customer.



■ Examples of Customized Pin Headers

We make optimum suggestions for customers on such requests as I want to make a reverse insertion prevention structure, I want to secure the current capacity per pin by increasing the distance between the terminals, I want to match it to the height of other parts, I want to change the pin length to the optimum length, etc.



* It is possible to customize products other than the pin header to the customer's needs.

● Compatible with Cable Harness

Our company does not just sell connectors but also handle cable harness products as well.

We provide customers with quality assurance as cable harness products and man-hour reduction with collective arrangement.

Procedures up to mass production will proceed in the same process as the custom procedures above.



Crimping



IDC



Soldering

1 REFLOW SOLUTION

It is possible to implement connectors with different mounting methods with 1 Reflow process, solving production problems such as reduction of process and high density. We not only have SMT compatible products, but also through hole reflow compatible products as well. We are not only selling connectors but provide an advanced proposal to solve problems for our customers.

HTK's reflow-corresponding connectors drastically reduce the number of processes and

realize high densification with the 1 Reflow process!



We have many applicable products in our lineup!

Product Compatible with 1 Reflow Process



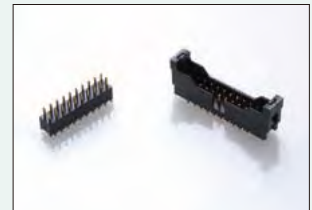
HDR Series
0.8mm Pitch I/O



MOD Series
Modular Jack Connectors



Sockets for SD Memory Cards



LPC Series
2mm Pitch Connectors

SMT

Called surface mount technology and is one of the methods used to mount electronic components on a printed circuit board. By mounting on the surface, mounting on both sides of the board becomes possible, and contributes to a higher density board and downsizing equipment.

To mount electronic components, a chip mounter is used. Basically after a cream solder printer is used to solder print to the top of the board, the chip mounter is mounted. Thereafter, heat is applied in a reflow furnace to melt the solder and fix the parts to the board.



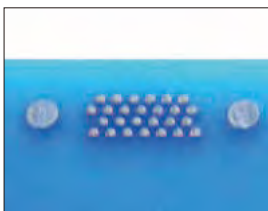
Through Hole Reflow

Unlike the conventional DIP mount method, the through hole reflow method uses a reflow furnace with a through-hole prepared in advance.

Like the SMT, the through-hole reflow method achieves the automatic mount and reflow-process mount without losing the soldering strength of the through-hole soldering.

HTK has been developing products which correspond to the through-hole 1 reflow method.

These products provide a one-time reflow process which allows simultaneous mounts of a SMT-corresponding product and a reflow-corresponding product.



Fill the solder paste in the through hole.



Mount the part and perform the reflow process.



Simultaneous soldering by reflow and by SMT are achieved



The soldering surface is also connected to the through hole by the surface tension.

Company Profile

- **Trade Name** HONDA TSUSHIN KOGYO CO., LTD.
- **Business** Design, Manufacture and sale of electronic components (Connectors)
- **Established** June 14, 1947
- **Head Office** Osaki MT Building, 5-9-11, Kitashinagawa, Shinagawa-ku, Tokyo 141-0001 JAPAN
- **Business Base** Tokyo Head Office (Shinagawa Ward, Tokyo)
Osaka Sales Office (Osaka City, Osaka Prefecture)
Nagoya Sales Office (Nagoya City, Aichi Prefecture)
- **Production Base** Azumino Factory (Azumino City, Nagano Prefecture)
Shenzhen Factory (Shenzhen City, China)
- **Overseas Related Companies** HTK EUROPE LTD. (ENGLAND)
HTK C&H (THAILAND) LTD. (THAILAND)
HTK C&H ASIA PACIFIC PTE .LTD. (SINGAPORE)
HTK C&H HONG KONG LTD. (HONG KONG)



Head Office

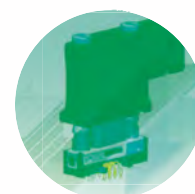


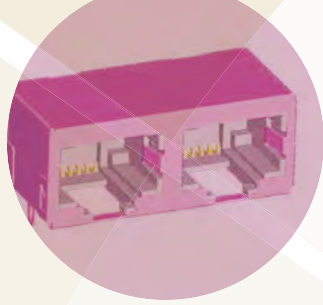
Azumino Factory

HTK, after being founded in 1932 as a precision screw machining company, had started plug and jack connectors for communication equipment. As a manufacturer specializing in interconnects/connectors, we have contributed to the development of ICT infrastructure in Japan. We are proud of our wide range of design skills cultivated over 80 years in our business, and develop products for our customers by combining our diverse knowledge and our practice of "working closely with our customers" to respond to various customer needs.

Product developed using technology and know-how of long-term reliability and robustness, that was cultivated from connectors for devices that continue to be used for a long time, such as communication equipment and machine tools, are not only used in communications and industrial fields but also in other fields such as consumer, automotive, medical and security.

We will continue to contribute to the development of society by creating products that are unique to "HTK" for new markets.





HTK

www.htk-jp.com/

