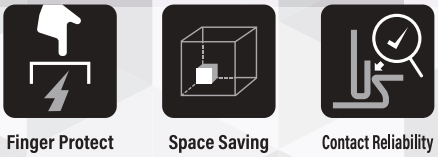
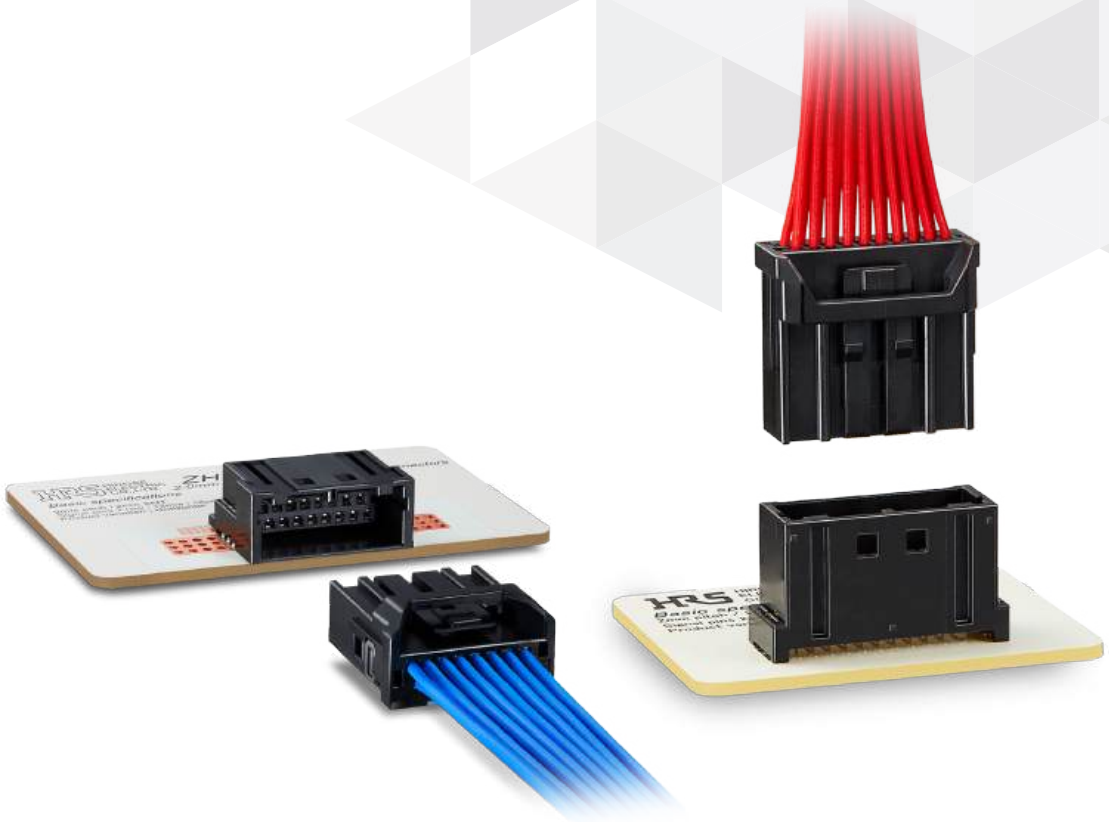
PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

ZH05 Series

0.5mm Size, 2mm Pitch, Wire-to-Board Connector with Short-Circuit/Electric Shock Prevention Design





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Product Page
https://www.hirose.com/en/product/series/ZH05

Special Features Page
https://www.hirose.com/en/product/pr/ZH05/

Apr. 2026

Features

1. Compact and narrow width

0.5mm contact tab size, 2mm pitch. Contributes to end product size reduction.

2. Short-circuit/electric shock prevention design

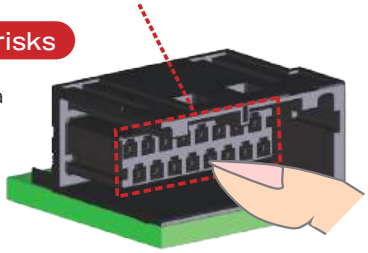
Female contacts are used on the board side receptacle, and live parts are completely covered with resin, enhancing assembly safety.

Receptacle/Cross-Section

The female contacts are enclosed in highly insulating resin.

Eliminates two risks

- Board damage due to a short circuit between adjacent contacts
- Operator electric shock from touching the contacts



3. High Temperature Resistance up to 125℃

- Up to 125℃
- Suitable for automotive and other high temperature applications

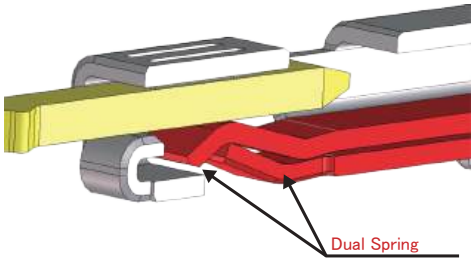
Note: Includes the temperature rise due to current flow.

4. High Vibration Resistance

- Female contact with original 3-point contact design
- Dual spring for stability
- Maintains contact under intense vibration, enhancing reliability

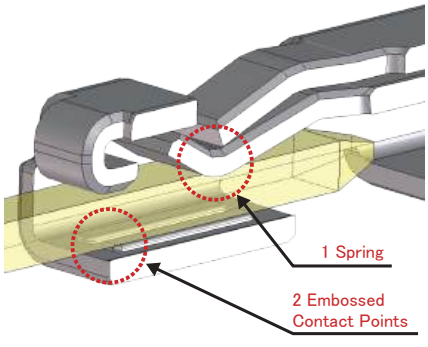
①Dual Spring Design

Increases contact force and prevents vibration from outside.



②3-point Contact Design

Enhanced contact reliability for use under severe vibration.
1 Spring+2 Embossed Contact Points=3 Contact Points



* The contact is flipped upside down so the embossed contact points are easier to see.

High Vibration Resistance Contact Design

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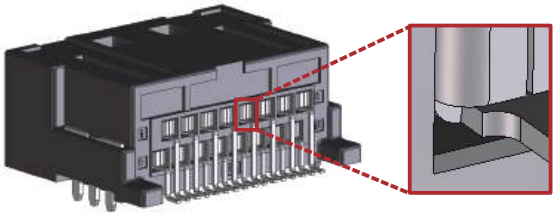
5. Suitable for Potting

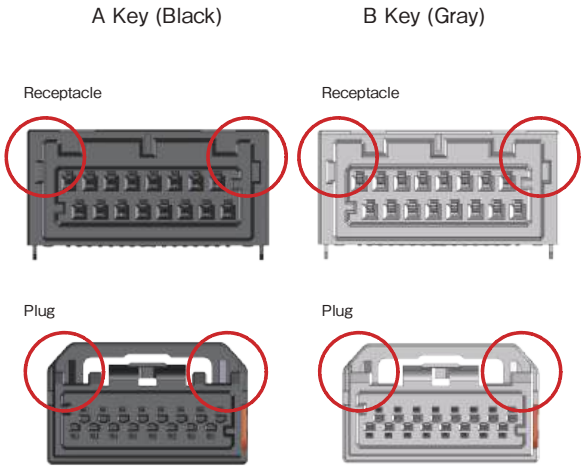
The receptacle minimizes clearance of the press-fit contact area and prevents potting from flowing to the contact point.



Potting Resin Inflow Prevention Design

6. Two types of mating keys: A and B

Prevents misfitting when using multiple devices.



7. Compatible with 22 to 26 AWG (0.13 to 0.35sq)

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Product Specifications

Rated Current	2A (All pins power supply)	Operating Temperature (Note 1)	-40 to + 125℃
Rated Voltage	60V AC/DC	Storage Temperature Range (Note 2)	-10 to + 60℃
		Storage Humidity Range (Note 2)(Note 3)	Relative humidity 85% Max.

Items	Specifications	Conditions
Contact Resistance	10mΩ Max.	Measured at 1A DC
Insulation Resistance	100MΩ Min.	Measured at 500V DC
Withstanding Voltage	There shall be no dielectric breakdown.	1000V AC for 1 min.
Mating Durability	Contact Resistance: 20mΩ Max.	30 Insertion/Extraction cycles
Vibration Resistance	No electrical discontinuity of 1 μs or more. Contact Resistance: 20mΩ Max.	Frequency: 20 to 200Hz (Constant Acceleration of 44m/s^2) 1 Cycle 3 min. (round trip), 3 hours in 3 directions
Lock Strength	100N Min.	Lock breaking strength measured when pulling in mating axis direction
Humidity Resistance	Contact Resistance: 20mΩ Max. Insulation Resistance: 100MΩ Min.	Left for 96 hours at a temperature of 60℃ and a relative humidity humidity 90 to 95%
Thermal Shock	Contact Resistance: 20mΩ Max.	Temperature: -4℃ → Room temperature → +125℃ → Room temperature Time: 30 → 5 → 30 → 5 minutes for 1000 cycles
Heat Resistance	Contact Resistance: 20mΩ Max.	Left at 140℃ for 120 hours
Cold Resistance	Contact Resistance: 20mΩ Max.	Left at -40℃ for 120 hours
Sulfuric Acid Gas Resistance	Contact Resistance: 20mΩ Max.	Left in sulfuric acid gas at room temperature with a concentration of 25ppm and 75% or more RH for 96 hours while unmated

Note 1: Includes temperature rise caused by current flow.
Note 2: Storage refers to long-term storage of unused items before they are mounted on the PCB.
Operating temperature and humidity range apply when the product is not powered after PCB mounting and when temporarily stored during transportation.
Note 3: Use without condensation.

Materials / Finish

Component	Part	Material	Color / Finish
Receptacle	Housing	PA	Black, Gray
	Female Contact	Copper Alloy	Tin Plating
	Retention Tabs	Brass	Tin Plating
Plug	Housing	PA	Black, Gray
	Retainer	PBT	Dark Gray
Male Crimp Contact		Brass	Tin Plating

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Product Number Structure

Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

●Receptacle/Plug/Retainer

ZH05 - 16 DS - 2 H (A)
❶ ❷ ❸ ❹ ❺ ❻

●Male Crimp Contact

ZH05 - 2224 PCF
❶ ❼ ❽

❶ Series Name	ZH05	❺ Product Type	H: Horizontal Mounting Type V: Vertical Mouning Type HU: Socket Housing R: Retainer
❷ No. of Pos.	12, 16, 20, 24, 28, 32pos.		
❸ Connector Type	DS: Receptacle (Female Contact) DP: Plug	❻ Mating Key	(A): A Key (B): B Key
❹ Pitch	2mm	❼ Applicable Cable	2224: 22 to 24 AWG 26: 26 AWG
		❽ Type /Packaging Type	Plug Contact / Reel

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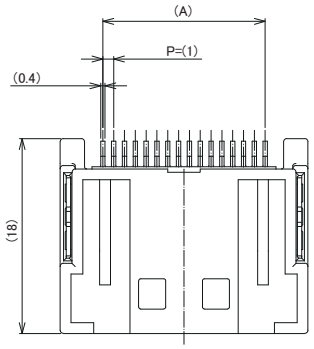
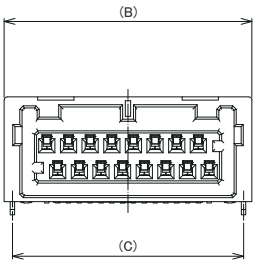
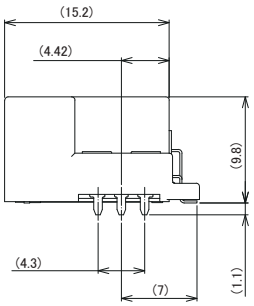
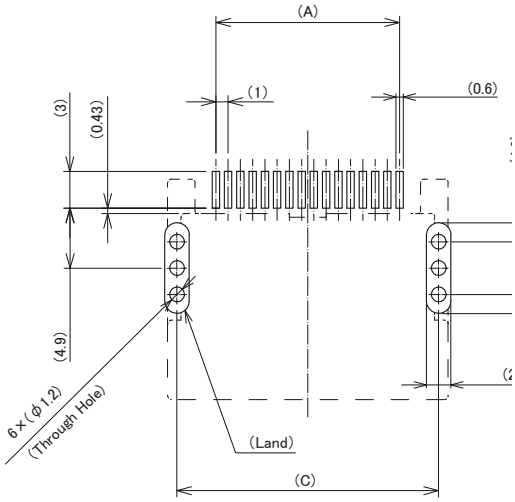
Right Angle Receptacle







● Recommended PCB Layout
(Board thickness: t=1.6mm, Metal mask thickness: t=0.1mm)



Unit : mm

Part No.	HRS No.	Color	Mating Key	No. of Pos.	A	B	C	Purchase Unit
ZH05-12DS-2H(A)	CL0756-2100-0-80	Black	A Key	12	11.0	18.9	17.36	250pcs per reel
ZH05-12DS-2H(B)	CL0756-2103-0-80	Gray	B Key					
ZH05-16DS-2H(A)	CL0756-2101-0-80	Black	A Key	16	15.0	22.9	21.36	
ZH05-16DS-2H(B)	CL0756-2104-0-80	Gray	B Key					
ZH05-20DS-2H(A)	CL0756-2102-0-80	Black	A Key	20	19.0	26.9	25.36	
ZH05-20DS-2H(B)	CL0756-2105-0-80	Gray	B Key					
ZH05-24DS-2H(A)	CL0756-2108-0-00	Black	A Key	24	23.0	30.9	29.36	
ZH05-24DS-2H(B)	CL0756-2109-0-00	Gray	B Key					
ZH05-28DS-2H(A)	CL0756-2128-0-00	Black	A Key	28	27.0	34.9	33.36	
ZH05-28DS-2H(B)	CL0756-2129-0-00	Gray	B Key					
ZH05-32DS-2H(A)	CL0756-2110-0-00	Black	A Key	32	31.0	38.9	37.36	
ZH05-32DS-2H(B)	CL0756-2111-0-00	Gray	B Key					

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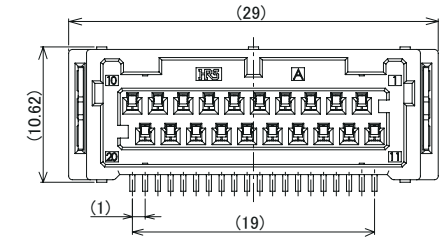
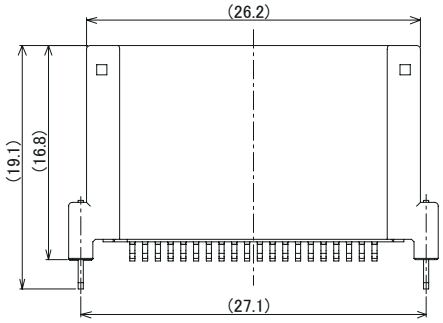
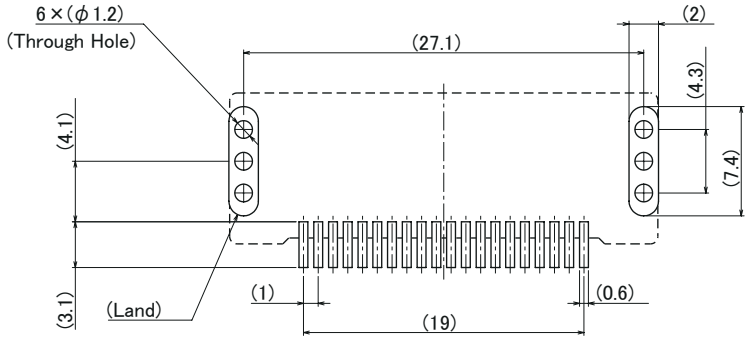
Straight Receptacle





● Recommended PCB Layout
(Board thickness: t=1.6mm, Metal mask thickness: t=0.15mm)



Part No.	HRS No.	Color	Mating Key	No. of Pos.	Purchase Unit
ZH05-20DS-2V(A)	CL0756-2116-0-00	Black	A Key	20	150pcs per reel
ZH05-20DS-2V(B)	CL0756-2117-0-00	Gray	B Key		

Note: Suction tape is attached as a standard.

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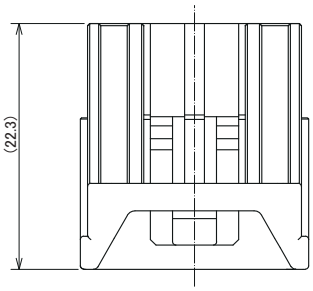
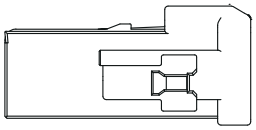
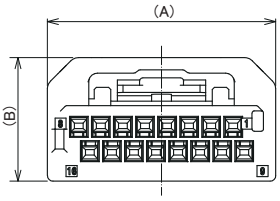
Plug







Unit : mm

Part No.	HRS No.	Color	Mating Key	No. of Pos.	A	B	Purchase Unit
ZH05-12DP-HU(A)	CL0756-2200-0-00	Black	A Key	12	16.7	11.5	1,000pcs per box
ZH05-12DP-HU(B)	CL0756-2206-0-00	Gray	B Key				
ZH05-16DP-HU(A)	CL0756-2201-0-00	Black	A Key	16	20.7	11.2	500pcs per box
ZH05-16DP-HU(B)	CL0756-2207-0-00	Gray	B Key				
ZH05-20DP-HU(A)	CL0756-2204-0-00	Black	A Key	20	24.7	11.5	
ZH05-20DP-HU(B)	CL0756-2208-0-00	Gray	B Key				
ZH05-24DP-HU(A)	CL0756-2212-0-00	Black	A Key	24	28.7		1,500pcs per box
ZH05-24DP-HU(B)	CL0756-2217-0-00	Gray	B Key				
ZH05-28DP-HU(A)	CL0756-2239-0-00	Black	A Key	28	32.7		500pcs per box
ZH05-28DP-HU(B)	CL0756-2240-0-00	Gray	B Key				
ZH05-32DP-HU(A)	CL0756-2218-0-00	Black	A Key	32	36.7		
ZH05-32DP-HU(B)	CL0756-2219-0-00	Gray	B Key				

Note: Use with the retainer (ZH05-#DP-R), sold separately.

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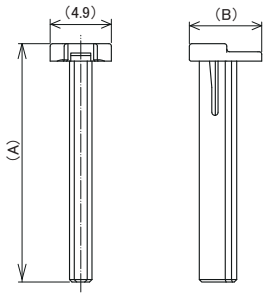
Retainer

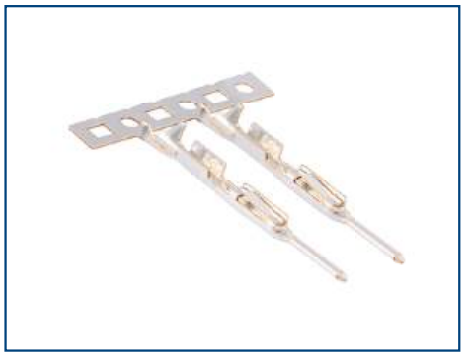


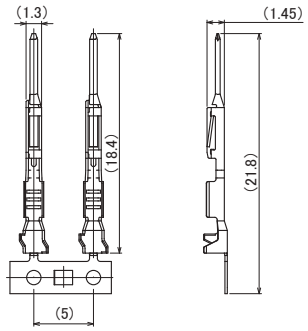
Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	Purchase Unit
ZH05-12DP-R(51)	CL0756-2202-0-51	12	15.1	5.8	10,000pcs per box
ZH05-16DP-R	CL0756-2215-0-00	16	19.1		
ZH05-20DP-R	CL0756-2216-0-00	20	23.1		
ZH05-24DP-R(51)	CL0756-2213-0-51	24	27.1	5.45	12,000pcs per box
ZH05-28DP-R(51)	CL0756-2241-0-51	28	31.1	4.95	
ZH05-32DP-R(51)	CL0756-2220-0-51	32	35.1	4.45	

Note: Attach to the plug (ZH05-#DP-HU(#)), sold separately.

Male Crimp Contact





Part No.	HRS No.	Applicable Cable	Packaging Specification	Purchase Unit
ZH05-2224PCF	CL0756-2001-0-00	22 to 24 AWG (0.22 to 0.35sq), Coated Outer Diameter ϕ 1.4mm (FLRY)	15,000pcs per reel 5 reels per box (Total of 75,000pcs per box)	75,000pcs per box
ZH05-26PCF	CL0756-2004-0-00	26 AWG (0.13sq)	15,000pcs per reel 1 reel per box (Total of 15,000pcs per box)	15,000pcs per box

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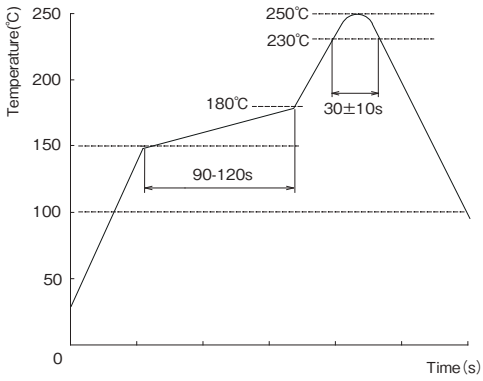
Applicable Tools

Type	Part No.	HRS No.	Compatible Crimp Contact
Crimping Tool	CM-105C	CL0901-0001-0-00	-
Applicator	AP105-ZH05-2224P	CL0901-5253-0-00	ZH05-2224PCF
	AP105-ZH05-26P	CL0901-5269-0-00	ZH05-26PCF
Manual Crimping Tool	HT802/ZH05-2224P	CL0550-0315-0-00	ZH05-2224PCF
Retainer Release Tool	ZH05/R/RE-MD	CL0902-5162-0-00	-
Contact Extraction Tool	ZH05/RE-MD	CL0902-5161-0-00	-

Note 1: Hand tools are developed as a prototype tool during product development.
Use an applicator for mass production.
Note 2: Crimping should be carried out based on the "Crimping Quality Standards" and "Crimping Conditions Table."
Note 3: Problems caused by tools other than those specified are not covered by the warranty.

Usage Precautions

Recommended Temperature Profile	 【Conditions】 1. Reflow Heating Method Used : Far infrared, air atmosphere or nitrogen 2. Peak Temperature 250℃ Peak 3. Heated part 230℃ Min. 20-40 sec. 4. Preheat Temperature 150 to 180℃ 90-120 sec. 5. Cycles 2 times Max.
Recommended Manual Soldering Conditions	Soldering iron temperature: 280 to 300℃ , Soldering time: within 2 seconds
Precautions	1. Forcing the connector out might cause damage. If challenging to remove, gently press down once and then release the lock. 2. Always disconnect the power before reseating the connector. 3. Avoid touching the contact area when the power is active, as it's hazardous. 4. For harnessing guidelines, please consult a Hirose representative.

While Taking into Consideration

Specifications mentioned in this catalog are reference values.
When considering to order or use this product, please review the Drawing and Product Specifications sheets.
Use an appropriate cable when using the connector in combination with cables.
If considering usage of a non-specified cable, please contact your sales representative.
If assembly process is done by jigs & tools which are not identified by Hirose, the warranty of the product may be affected.
If considering usage for below mentioned applications, please contact your sales representative.
In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/defense etc. Hirose must review before assurance of reliability can be given.

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https://www.hirose.com

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