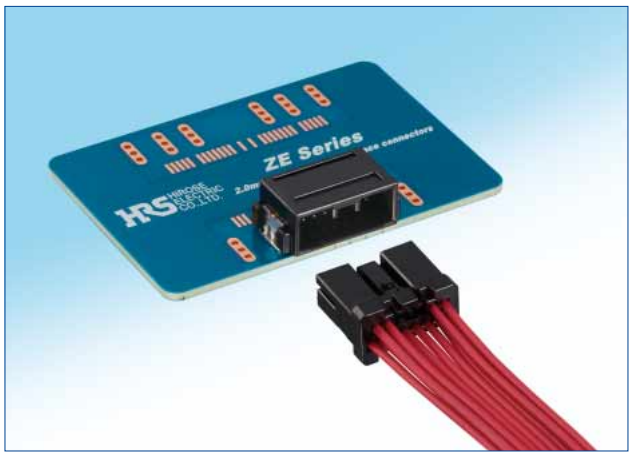
NEW

High Heat and Vibration Resistance, 0.5 Size, 2mm pitch Automotive Interface Connector

ZE05 Series



■Features

1. Space-saving (0.5 size terminal, 2mm pitch)
Space-saving design that contributes to size reduction of end product

2. High Heat Resistance : up to 125°C
Suitable for use in 125℃ environments.

3. High Vibration Resistance
Can be used in vehicle environments in which intense vibration is applied.

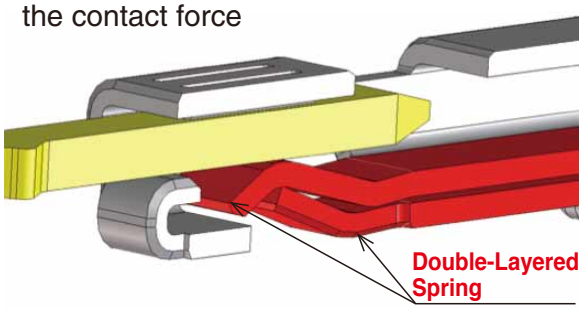
4. Rated Current : 5A (Mono-Pole Power Supply/ 2A (All-Pole Power Supply)
Suitable for use in 125℃ environments.

5. Retainer Guarantees 40N Tensile Strength
Durable against cable routing

●High Vibration Resistance Terminal Design

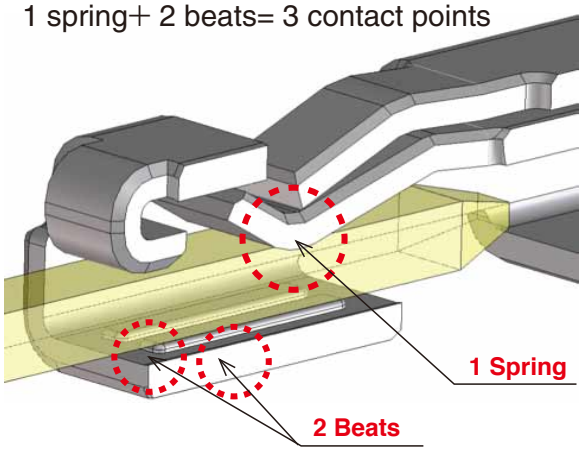
①Double-Layered Spring Design

Suppresses outer vibration by increasing the contact force



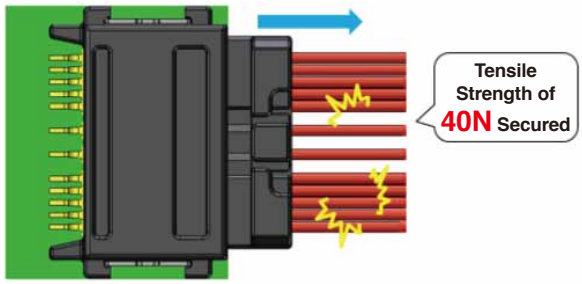
②3-point contact design

Suppresses outer vibration by increasing the contact force
1 spring+ 2 beats= 3 contact points



✻The terminal is flipped upside down so the beat is easier to see.

●High Tensile Strength due to Retainer



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■Product Specifications

Ratings	Rated Current : 2A (all-pole power supply) 5A (mono-pole power supply)	Operating Temperature : -40 to +125℃
		Storage Temperature Range : -10 to +60℃ (Note 1)
	Rated Voltage : 60V AC/DC	Storage Relative Humidity Range : 85% RH or less (No condensation) (Note 1)

Items	Specifications	Conditions
1. Contact Resistance	10mΩ Max.	Measured at 1A DC
2. Insulation Resistance	100MΩ Min.	Measured at 500V DC
3. Withstanding Voltage	There shall be no dielectric breakdown.	Voltage of 1000V AC for 1 min.
4. Mating Durability	Contact Resistance : 20mΩ Max.	30 Insertion/Extraction cycles
5. Vibration Resistance	No electrical discontinuity of 1μs or more. Contact Resistance : 20mΩ Max.	Frequency : 20 to 200Hz (Constant Acceleration of 88m/s²) 1 Cycle 3 min. (round trip), 3 hours in 3 directions
6. Lock Strength	100N Min.	Lock breaking strength measured when pulling in mating axis direction
7. 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%
8. Thermal Shock	Contact Resistance : 20mΩ Max.	Temperature : -40℃ → Room temperature → 125℃ → Room temperature Time: 30 → 5 → 30 → 5 minutes for 1000 cycles
9. Heat Resistance	Contact Resistance : 20mΩ Max.	Left at 140℃ for 120 hours
10. Cold Resistance	Contact Resistance : 20mΩ Max.	Left at -40℃ for 120 hours
11. 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 : This storage temperature and humidity is for long-term storage of unused products.

■Materials / Finish

Component	Part	Material	Finish	UL Standard
Receptacle	Housing	PA Resin	Black	UL94V-0
	Terminal	Brass	Tin Plating	—
	Solder Tabs	Brass	Tin Plating	—
Plug	Housing	PA Resin	Black	UL94V-0
	Retainer	PA Resin	Natural	UL94V-0
Crimp Terminal	Terminal	Copper Alloy	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

ZE05 ❶ H ❷ - 12 ❸ D ❹ P ❺ - 2 ❻ H ❼

●Plug

ZE05 ❶ - 12 ❸ D ❹ S ❺ - HU/R ❼

●Crimp Terminal

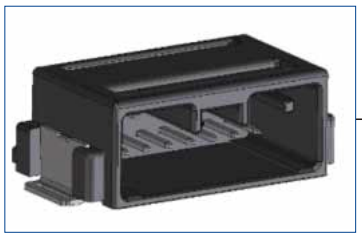
ZE05 ❶ - 2022 ❷ SCF ❸

❶	Series Name	: ZE05
❷	Solder Tabs	H : SMT N/A : DIP
❸	No. of Pos.	: 2、4、5、8、12、16、20、24
❹	Rows	D : 2 Rows N/A : 1 Row
❺	Connector Type	P : Receptacle S : Plug
❻	Pitch	2 : 2mm
❼	Part Type	H : Right Angle V : Straight HU/R : Housing/Retainer

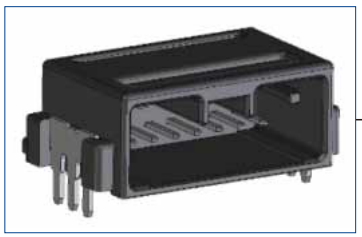
❶	Series Name	: ZE05
❷	Applicable Cable Size	2022 : 20, 22 AWG (0.3-0.5SQ)
❸	Form Type/ Packaging	SCF : Female terminal, Reel

■Combination Chart

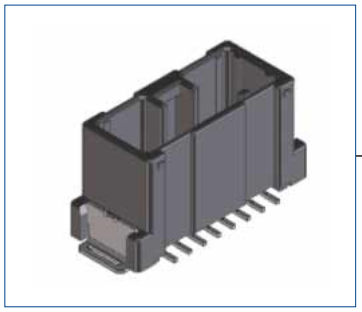
●Receptacle



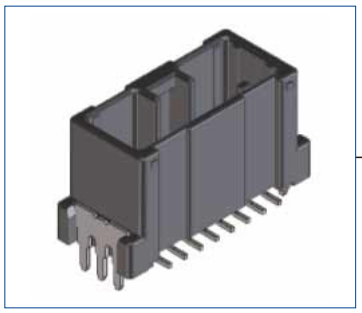
ZE05H-**P-2H



ZE05-**P-2H

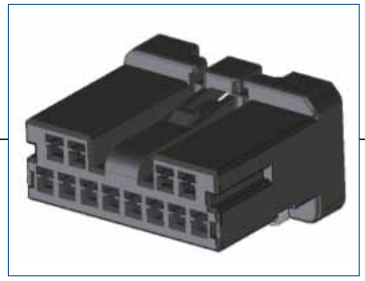


ZE05H-**P-2V



ZE05-**P-2V

●Plug



ZE05-**S-HU/R

●Crimp Contact

ZE05-2022SCF

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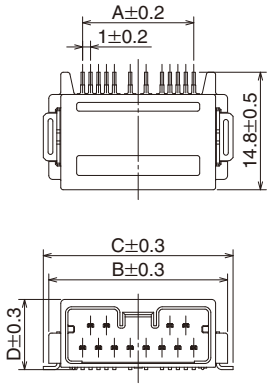
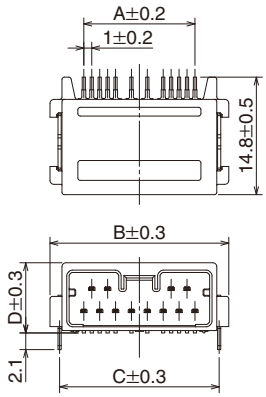
■Right Angle Receptacle, SMT Solder Tabs



Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D
ZE05H-2P-2H	752-2109-0	2	2	12.32	13.7	8.34
ZE05H-4P-2H	752-2110-0	4	6	16.32	17.7	
ZE05H-5P-2H	752-2120-0	5	8	18.32	19.7	
ZE05H-8DP-2H	752-2112-0	8	10	18.52	19.9	8.84
ZE05H-12DP-2H	752-2113-0	12	14	22.52	23.9	
ZE05H-16DP-2H	752-2114-0	16	20	28.52	29.9	
ZE05H-20DP-2H	752-2115-0	20	26	34.52	35.9	
ZE05H-24DP-2H	752-2116-0	24	30	38.52	39.9	

■Right Angle Receptacle, DIP Solder Tabs



Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D
ZE05-2P-2H	752-2100-0	2	2	12.32	9.9	8.34
ZE05-4P-2H	752-2101-0	4	6	16.32	13.9	
ZE05-5P-2H	752-2121-0	5	8	18.32	15.9	
ZE05-8DP-2H	752-2103-0	8	10	18.52	16.1	8.84
ZE05-12DP-2H	752-2104-0	12	14	22.52	20.1	
ZE05-16DP-2H	752-2105-0	16	20	28.52	26.1	
ZE05-20DP-2H	752-2106-0	20	26	34.52	32.1	
ZE05-24DP-2H	752-2107-0	24	30	38.52	36.1	

Note 1 : The sales unit is 1 reel (300pcs/ reel). Please order by number of reels.

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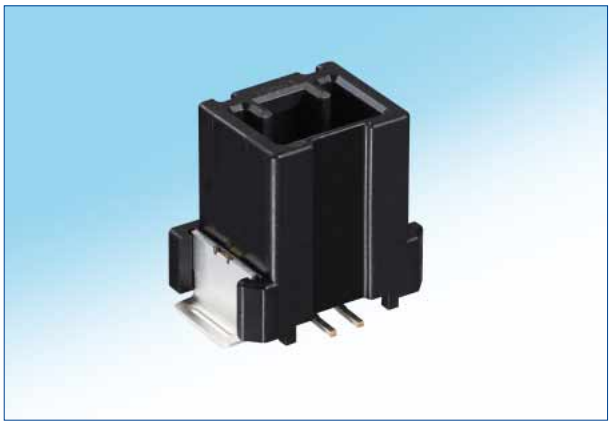
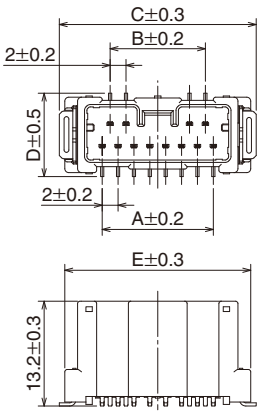
■Straight Receptacle, SMT Solder Tabs

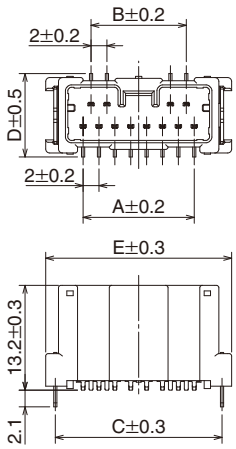




Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D	E
ZE05H-2P-2V	752-2309-0	2	2	-	14.6	10	13.22
ZE05H-4P-2V	752-2310-0	4	6	-	18.6		17.22
ZE05H-8DP-2V	752-2312-0	8	10	8	20.8	10.5	19.42
ZE05H-12DP-2V	752-2313-0	12	14	12	24.8		23.42
ZE05H-24DP-2V	752-2316-0	24	30	28	40.8		39.42

■Straight Receptacle, DIP Solder Tabs



Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D	E
ZE05-2P-2V	Under Development (Note 3)	2	2	-	10.8	10	13.22
ZE05-4P-2V	Under Development (Note 3)	4	6	-	14.8		17.22
ZE05-8DP-2V	Under Development (Note 3)	8	10	8	17	10.5	19.42
ZE05-12DP-2V	Under Development (Note 3)	12	14	12	21		23.42
ZE05-24DP-2V	Under Development (Note 3)	24	30	28	37		39.42

Note 1 : The sales unit is 1 reel (250pcs/ reel). Please order by number of reels.
Note 2 : Suction tape is attached as a standard.
Note 3 : Pin counts with the HRS No. left blank are currently under development. For details contact a Hirose sales representative.

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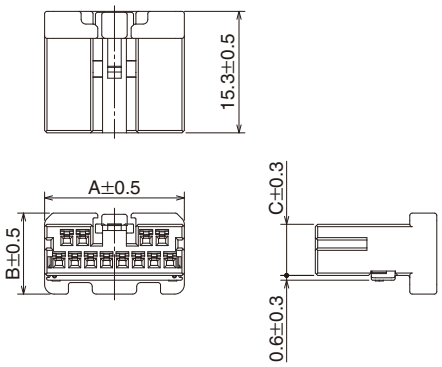
■Plug



Unit : mm

Part No.	HRS No.	No. of Pos.	No. of Packages	A	B	C
ZE05-2S-HU/R	752-2200-0	2	350	8.8	9.7	5.3
ZE05-4S-HU/R	752-2201-0	4	350	12.8		
ZE05-5S-HU/R	752-2211-0	5	350	14.8		
ZE05-8DS-HU/R	752-2203-0	8	385	13.6	10.2	6.44
ZE05-12DS-HU/R	752-2204-0	12	350	17.6		
ZE05-16DS-HU/R	752-2205-0	16	280	23.6		
ZE05-20DS-HU/R	752-2206-0	20	245	29.6		
ZE05-24DS-HU/R	752-2207-0	24	210	33.6		

Note 1 : The product is sold in sets so please order based on number of sets.

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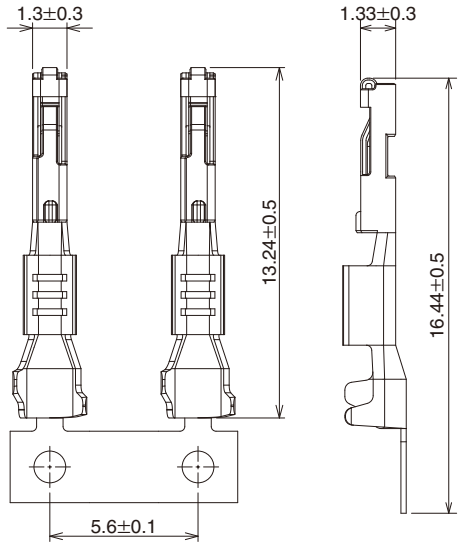
■Crimp Terminal for Plug



Part No.	HRS No.	Type	Quantity	Finish
ZE05-2022SCF	752-2001-0	Reel Terminal	10,000pcs/reel	Tin Plating

Note 1 : Please consult with a Hirose sales representative when considering cables other than the applicable cables.
Note 2 : Contact a Hirose sales representative regarding the usability of crimping tools made by other companies.

■Applicable Crimping Tool

Type	Part No.	HRS No.	Applicable Cable	Applicable Contact
Hirose Crimping Tool	CM-105C	901-0001-0	—	—
Applicator for Hirose Crimping Tool	AP105-ZE05-2022S	901-5239-0	—	ZE05-2022SCF
Japan Automatic Machine Applicator (Note 1)	CHX022700H	—	—	
Hand Tool (Note 2)	HT802/ZE05-2022S	780-0045-0	0.3sq, 0.5sq (Note 3)	ZE05-2022SCF (Note 4)
Retainer Release Tool (Note 5)	ZE05-2DC-HU/R/RE-MD	902-5144-0	—	—
	ZE05-12DC-HU/R/RE-MD	902-5143-0	—	—
Terminal Extraction Tool	ZE05/RE-MD	902-5145-0	—	ZE05-2022SCF

Note 1 : Contact Japan Automatic Machine (J.A.M) regarding crimping failure relating to applicable J.A.M. applicators or for other applicator inquiries via the J.A.M. website. (URL : http://www.jam-net.co.jp)
Note 2 : Hand tools are developed as a prototype tool during product development. Use an applicator for mass production.
Note 3 : Applicable cables are limited to those listed in the table.
Note 4 : Cut the reel terminal for use with the hand tool.
Applicable contacts are limited to those listed in the table.
Note 5 : Contact a Hirose representative about the retainer release tool for 20 and 24pos.
ZE05-2DC-HU/R/RE-MD ⋯Single row products only (2, 4, 5pos.)
ZE05-12DC-HU/R/RE-MD⋯2 row products only (8, 12, 16pos.)
Note 6 : Conduct crimping based on the "Crimping Standards" and "Crimping Conditions Table".
Note 7 : Problems with tools not specified by Hirose are outside the scope of warranty.

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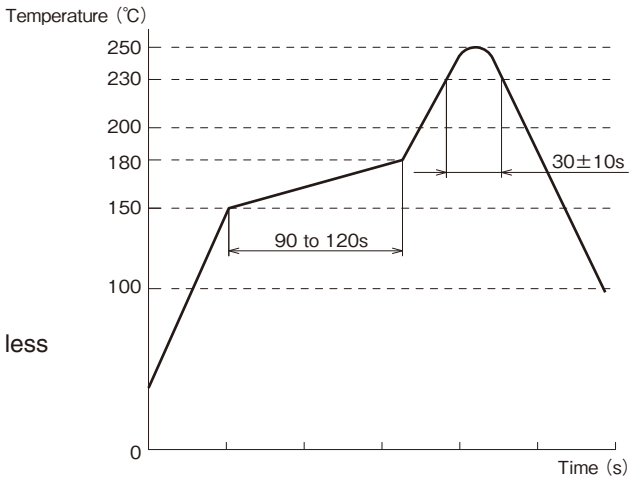
◆Usage Precautions

1. Excessive pull force during unmating may damage the connector. If it is difficult to remove, push in lightly once and then release the lock.
2. Always make sure to turn off the power before reseating the connector.
3. Do not have direct contact on the terminal when electricity is flowing since it is extremely dangerous.
4. Contact a Hirose representative for harness procedures or handling manuals.

・Recommended Temperature Profile (Right Graph)
Reflow Heating Method Used
: Far infrared, air atmosphere or nitrogen
Reflow Cycles : 2 times
Peak Temperature : 250℃
230℃ Min. : 20 to 40s
Preheat Temperature : 150 to 180℃
90 to 120s
・Hand Solder/ Solder Iron Temperature
: 280 to 300℃ for 2 seconds or less
・Terminal co-planarity is 0.1mm Max.
・Recommended board thickness : T=1.6mm
・Recommended solder thickness : 0.15mm



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HRS

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