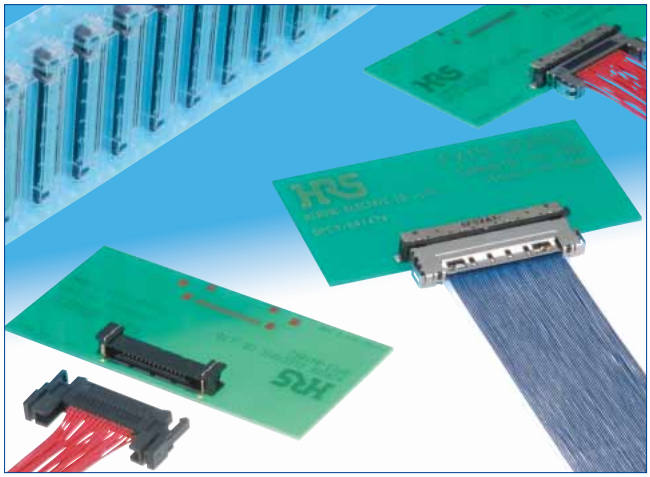
1mm Pitch Wire-to-Board Connectors supporting LVDS signal

FX15 Series



Space saving, Equal length transmission lines

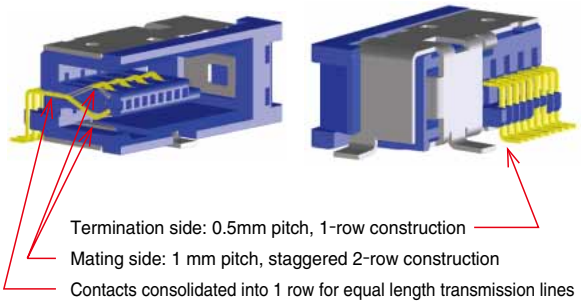


Fig.1

■Features

1. Space-saving

Reduction in space is achieved by designing the contacts in 2-row staggered 1mm pitch on the mating side and on a single row 0.5mm pitch on the termination side (Fig.1).

2. Equal length transmission lines

Contact configuration provides equal length transmission lines, which prevents LVDS signal loss within the connector.

3. Variations

Availability of shielded and non-shielded types allows for design flexibility and cost reduction.

4. Self alignment and self-guiding

Built-in guide posts allow secure self-alignment within ±1.5mm (Fig.2).

5. Secure and complete mating / unmating

Side latch locking provides complete and secure mating, as well as easy unmating (Fig.3).

6. Enhanced shielding performance with FX15S

Enlarged metal shields prevent intrusion and emission of electromagnetic interference, which enhances the integrity of the LVDS signal (Fig.4).

7. RoHS compliant

All materials and substances used to produce this product comply with RoHS standards.

Self-alignment of ±1.5mm

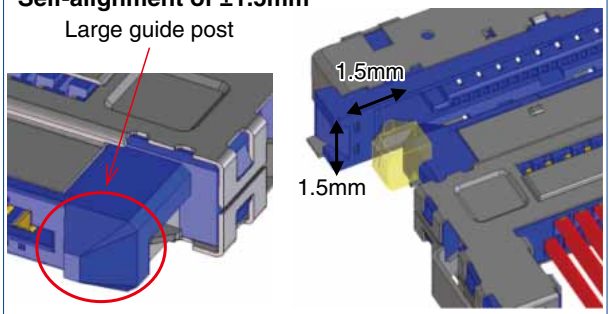
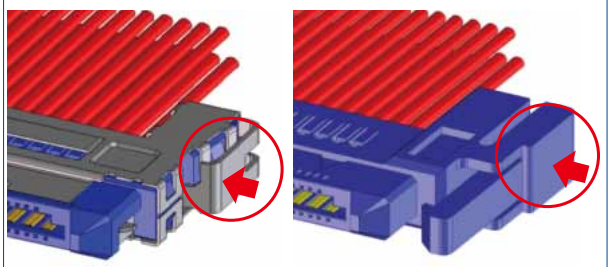


Fig.2

Side latch -locks



With metal shields (FX15 and FX15S Series)

Without metal shields (FX15M Series)

Fig.3

High Shielding Performance

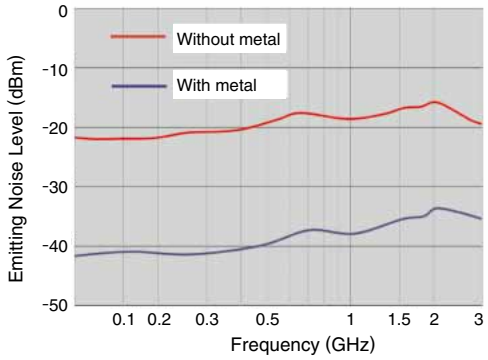


Fig.4

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

■Product Specifications

Ratings	Current rating Voltage rating	0.5A 100V AC	Operating temperature range Storage temperature range	-55℃ to +80℃ (Note 1) -10℃ to +60℃ (Note 2)

Item	Specification	Conditions
1. Contact resistance	60mΩ max. (Note 3)	1mA
2. Insulation resistance	500MΩ min.	100V DC
3. Withstanding voltage	No flashover or insulation breakdown.	300V AC/one minute
4. Insertion-Extraction force	2N min., 30N max.	With corresponding connector
5. Mating cycles	Contact resistance : 80mΩ max.(Note 3)	50 cycles
6. Vibration resistance	No electrical discontinuity of 1μs or more.	Frequency: 10 to 55 Hz, single amplitude of 0.75mm, 2 hours, 3 axis
7. Shock resistance	No electrical discontinuity of 1μs or more.	Acceleration of 490m/s², 11ms durations, sine half-wave waveform, 3 cycles, 3axis.
8. Humidity resistance	Contact resistance : 80mΩ max. No damage, cracks, or parts dislocation.(Note 3)	96 hours at 40℃, RH 90% to 95%
9. Temperature cycle	Contact resistance : 80mΩ max. (Note 3) Insulation resistance : 500MΩ min.	Temperature : -55℃ → +15℃ to +35℃ → +85℃ → +15℃ to +35℃ Time : 30 → 5 → 30 → 5 (Minutes) 5 cycles
10. Salt spray	Contact resistance : 80mΩ max. (Note 3) No corrosions	5% water solution for 48 hours.

Note 1 : Includes temperature rise caused by current flow.
Note 2 : The term “storage” refers to products stored for long period of time prior to mounting and use. Operating temperature and humidity range includes non-conducting condition of installed connectors in storage, shipment or during transportation.
Note 3 : Includes wire conductor resistance (12mm long).

■Materials / Finish

●Receptacle

Component	Material	Finish	Remarks
Insulator	Polyamide	Color : Black	UL94V-0
Contact	Phosphor bronze	Contact area : Gold plated Termination area : Tin plated	————
Metal shell (shielded version only)	FX15S : Nickel silver FX15SC : Stainless steel	FX15S : ———— FX15SC : Tin plated	————
Metal fittings (shielded version only)	Phosphor bronze	Selective gold flash plated	————

●Plug

Component	Material	Finish	Remarks
Insulator	Polyamide	Color : Black	UL94V-0
Contact	Phosphor bronze	Contact area : Gold plated Termination area : Tin plated	————
Metal shell (shielded version only)	Nickel silver	————	————
Metal latch locks (shielded version only)	Stainless steel	————	————
Metal shell, metal latch locks (on micro coax version only)	Stainless steel	Nickel plated	————

■Product Number Structure

●Receptacle

FX15 S - 31 S - 0.5 SH (**)
❶ ❷ ❸ ❹ ❺ ❻ ⓫

●Plug

FX15 S - 31 P - C
❶ ❷ ❸ ❹ ❼

●Crimp contact

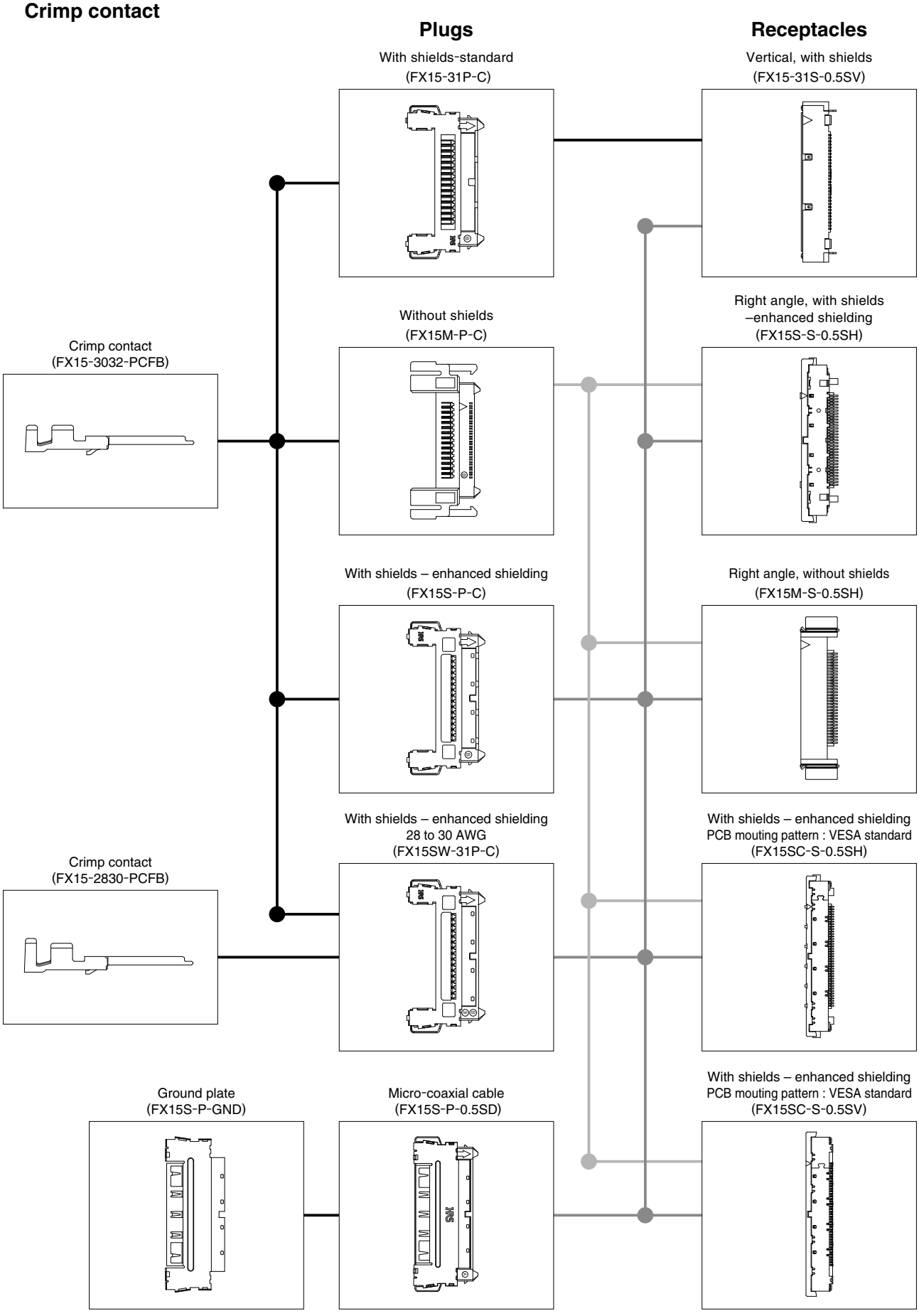
FX15 - 3032 PCF B
❶ ❽ ❾ ❿

❶Series Name		: FX15
❷Configuration	Blank 15S 15SC 15M	: With shields (or crimp contact) : With shields – enhanced shielding : With shields – enhanced shielding (PCB mounting pattern : VESA standard) : Without shields
❸Number of contacts		
❹Connector type	P S	: Male contact : Female contact
❺Contact pitch		: 0.5 mm
❻Housing configuration	SH SV	: Right angle : Straight
❼Termination	C 0.5SD GND	: Crimp : Micro-coaxial cable : Separate ground plate
❽Applicable conductor	2830 3032	: 28 to 30 AWG : 30 to 32 AWG
❾Packaging	PCF	: Male contact / reel
❿Plating (contact area)	B	: Gold plated
⓫Packaging	Blank (30)	: Embossed Packaging (1,000 pcs/reel) : Embossed Packaging (100 pcs/reel)

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

■FX15 Series – Functional Diagram

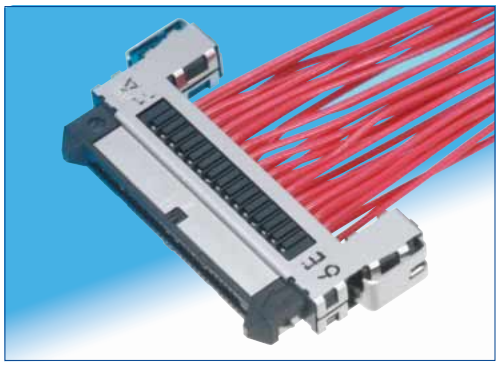
Crimp contact

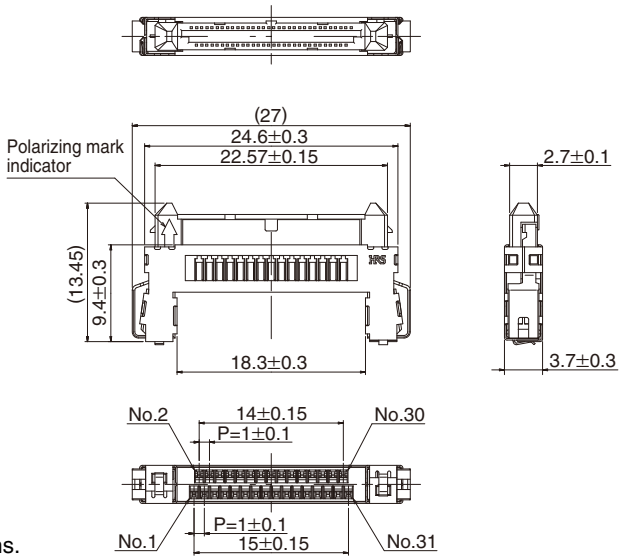


Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

■Plugs

●With shields (FX15-31P-C)

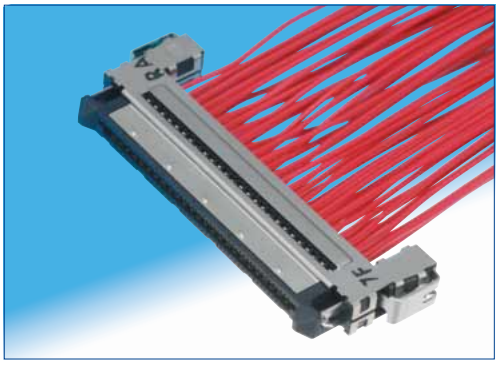


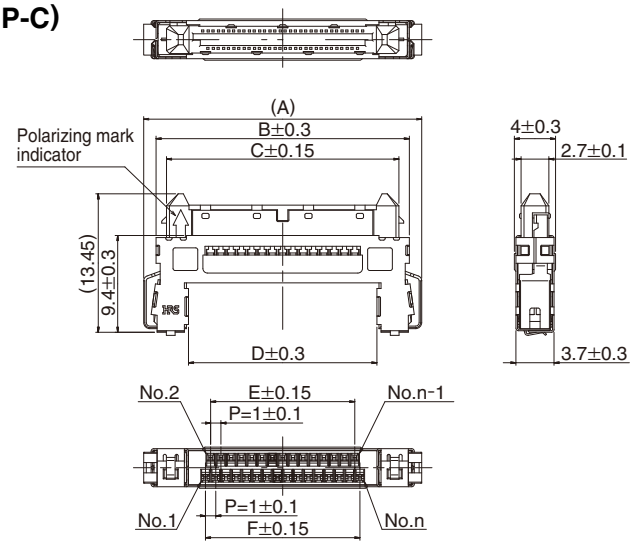


Part No.	HRS No.	No. of contacts	RoHS
FX15-31P-C	575-2101-2	31	Yes

Note 1 : Packaged in trays.
Note 2 : Dimensions in parenthesis ( ) are reference dimensions.

●With shields, enhanced shielding (FX15S-∗∗P-C)



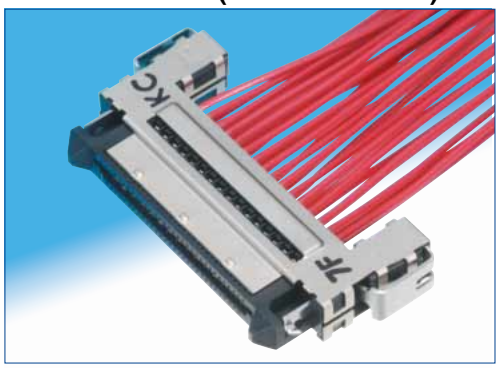


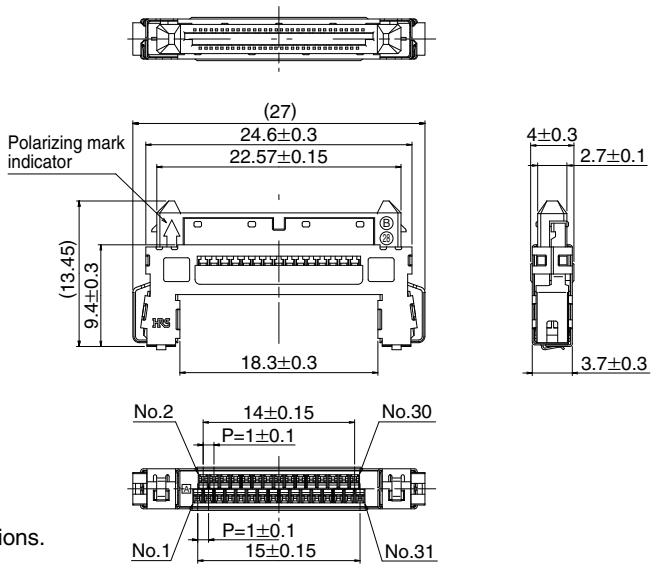
Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	RoHS
FX15S-31P-C	575-2106-6	31	27	24.6	22.6	18.3	14	15	Yes
FX15S-41P-C	575-2107-9	41	32	29.6	27.6	23.3	19	20	
FX15S-51P-C	575-2103-8	51	37	34.6	32.6	28.3	24	25	

Note 1 : Packaged in trays.
Note 2 : Dimensions in parenthesis ( ) are reference dimensions.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

●With shields – enhanced shielding 28 to 30 AWG (FX15SW-31P-C)



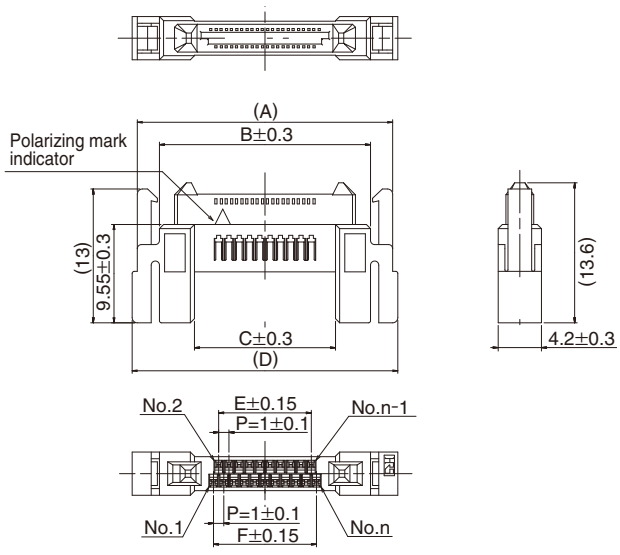


Part No.	HRS No.	No. of contacts	RoHS
FX15SW-31P-C	575-2113-1	31	Yes

Note 1 : Packaged in trays.
Note 2 : Dimensions in parenthesis ( ) are reference dimensions.

●Without shields (FX15M-∗∗P-C)





Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	RoHS
FX15M-21P-C	575-2109-4	21	24.8	20.5	13.7	25.8	9	10	Yes
FX15M-31P-C	575-2108-1	31	29.8	25.5	18.7	30.8	14	15	

Note 1 : Sold in 100 piece packages. Please order in full package quantities.
Note 2 : Dimensions in parenthesis ( ) are reference dimensions.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

◆Plug crimp contacts

Part No.	HRS No.	Packaging	Quantity	Finish	RoHS
FX15-2830PCFB	575-2002-0	Reel	20,000 pcs/reel	Gold plated	Yes
FX15-3032PCFB	575-2003-3				

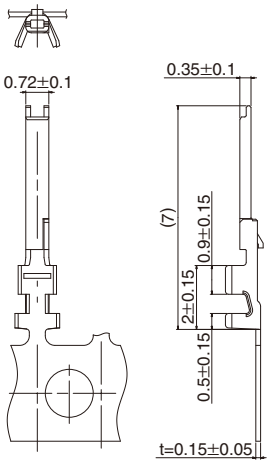
●Applicable cable (Tin plated, annealed copper wire)

FX15-2830PCFB

Applicable wire size (Stranded wire conductor)	Jacket diameter	UL No.
28 AWG (7/0.127mm)	ϕ0.56 to 0.72mm	1517
30 AWG (7/0.1mm)		1571

FX15-3032PCFB

Applicable wire size (Stranded wire conductor)	Jacket diameter	UL No.
30 AWG (7/0.1mm)	ϕ0.5 to 0.6mm	1516, 1571 (Note)
32 AWG (7/0.08mm)		1571



●Wire strip length: 1.1 to 1.8mm

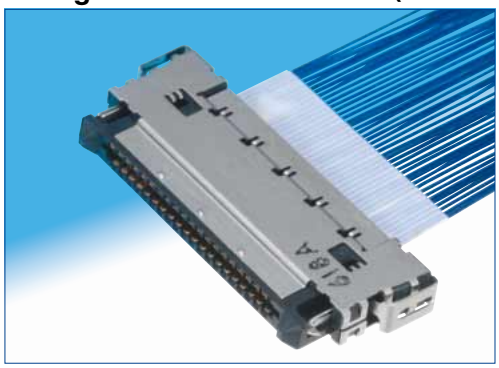
Note : When using wires other than those noted above, please contact Hirose for asistance.

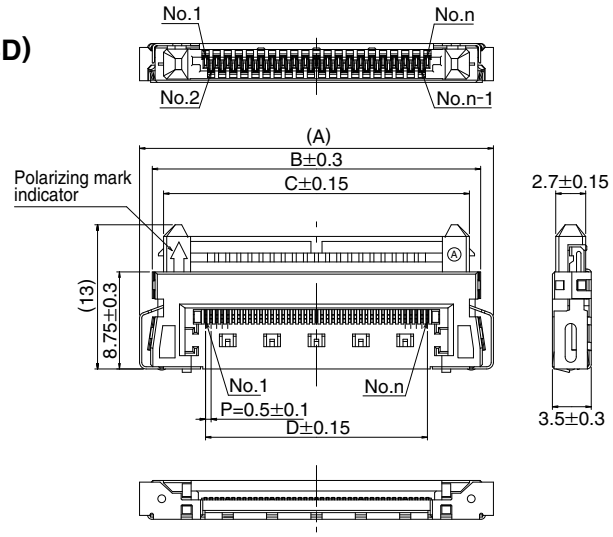
●Tools

Item	Part No.	HRS No.	Applicable crimp contact
Applicator	AP105-FX15-2830	901-4036-0	FX15-2830PCFB
	AP105-FX15-3032	901-4033-1	FX15-3032PCFB
Press unit	CM-105C	901-0001-0	————

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

●Plug – Micro-coaxial cable (FX15S-**P-0.5SD)

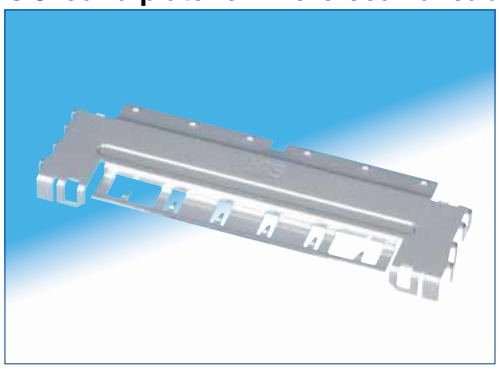


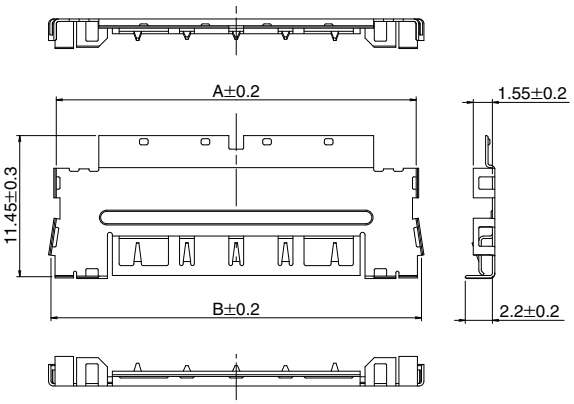


Part No.	HRS No.	No. of contacts	A	B	C	D	RoHS
FX15S-41P-0.5SD	575-2110-3	41	31.9	29.6	27.57	20	Yes
FX15S-51P-0.5SD	575-2118-5	51	36.9	34.6	32.57	25	

Note 1 : Packaged in trays.
Note 2 : Dimensions in parenthesis ( ) are reference dimensions.

●Ground plate for micro-coaxial cable type





Part No.	HRS No.	No. of contacts	A	B	RoHS
FX15S-41P-GND	575-2111-6	41	29.2	30.06	Yes
FX15S-51P-GND	575-2117-2	51	34.2	35.06	

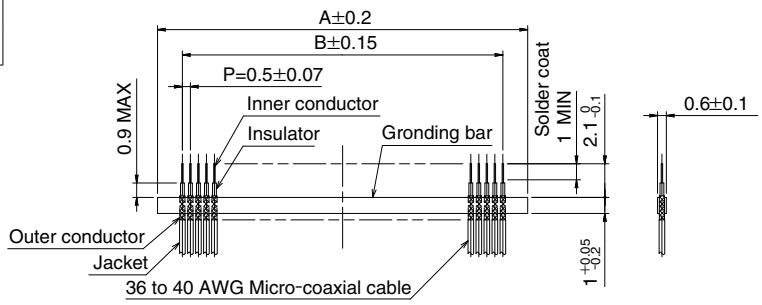
Note 1 : Packaged in trays.
Note 2 : Dimensions in parenthesis ( ) are reference dimensions.

●Applicable cable (Micro-coaxial cable)

Wire size (Standed wire inner conductor)	Jacket diameter
36 AWG (7/0.05mm)	0.3mm to 0.5mm
38 AWG (7/0.04mm)	
40 AWG (7/0.03mm)	

No. of contacts	A	B
41	23.1	20
51	28.1	25

●Cable preparation

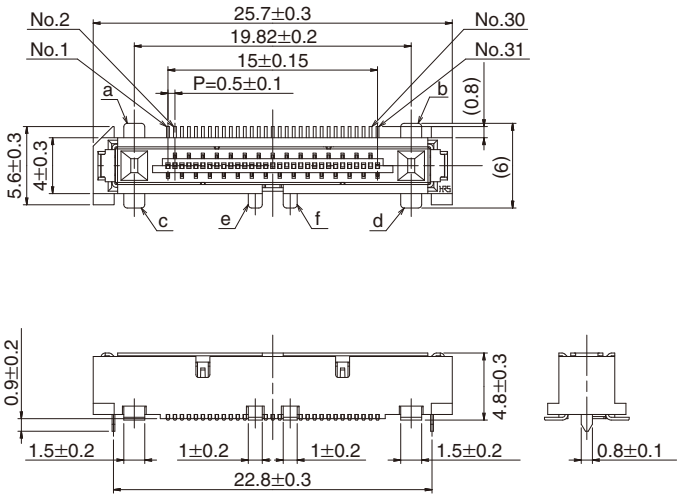


Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

■Receptacles

●Vertical, with shielding (FX15-31S-0.5SV)

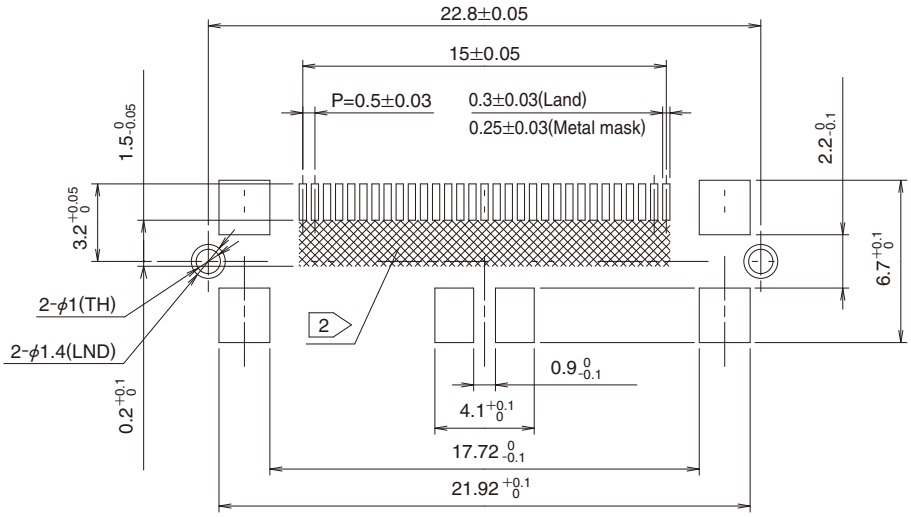




Part No.	HRS No.	No. of contacts	RoHS
FX15-31S-0.5SV(**)	575-2201-7 **	31	Yes

[Specification Number : **, (**)]
Blank : Embossed packaging (1,000 pcs/reel)
(30) : Embossed packaging (100 pcs/reel)

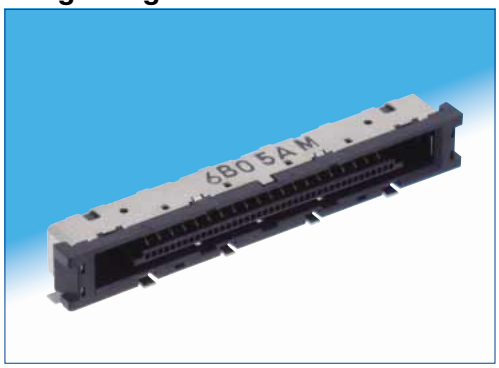
◆Recommended PCB mounting pattern and metal mask dimensions

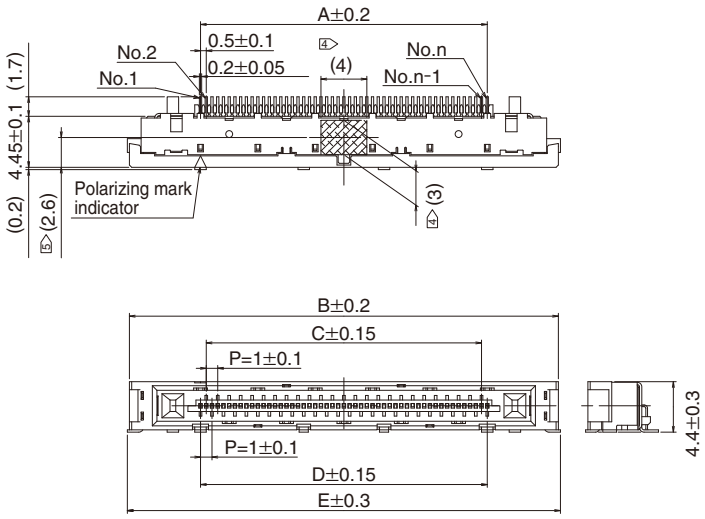


Note 1 : The co-planarity of the terminal leads is as follows:
・All signals and shield leads “c” and “d”: 0.1mm max.
・Shield leads “a”, “b”, “e” and “f”: 0.15mm max.
2 : Area indicated by the crosshatched lines must be free of conductive traces or the conductive traces must be covered by resist film.
3 : Packaged on tape-and-reel.
4 : Dimensions in parenthesis ( ) are reference dimensions.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

●Right angle with shields – enhanced shielding (FX15S-**S-0.5SH)

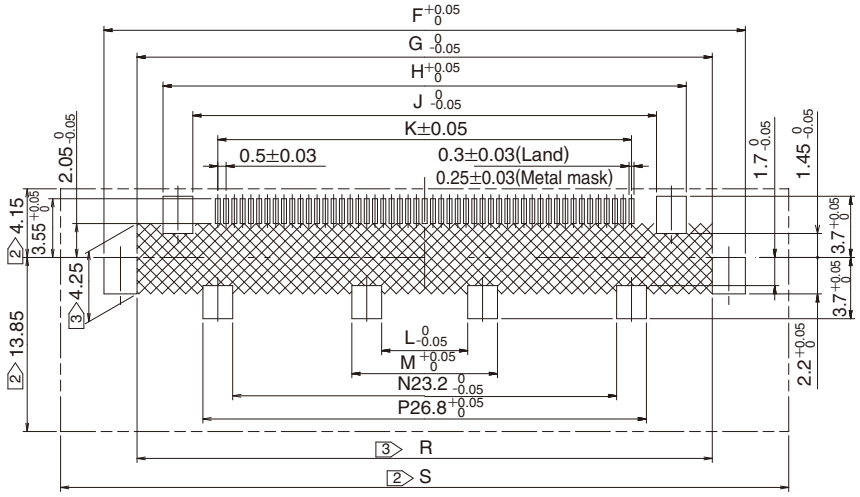




Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	G	H
FX15S-31S-0.5SH(**)	575-2306-5 **	31	15	27.4	14	15	27.8	28.8	24.8	21.6
FX15S-41S-0.5SH(**)	575-2307-8 **	41	20	32.4	19	20	32.8	33.8	29.8	26.6
FX15S-51S-0.5SH(**)	575-2303-7 **	51	25	37.4	24	25	37.8	38.8	34.8	31.6

J	K	L	M	N	P	R	S	RoHS
18	15	——	——	13.2	16.8	24.8	40	Yes
23	20	5.2	8.8	18.2	21.8	29.8	45	
28	25			23.2	26.8	34.8	50	

◆Recommended PCB mounting pattern and metal mask dimensions



Note 1 : The coplanarity of the terminal leads is 0.1mm max. for all signal leads and 0.15mm max. for the shield leads.

2 : Do not place any components in the area indicated. Placement of components in this area may affect mating and latch lock operation.

3 : Area indicated by the cross-hatched lines must be free of conductive traces or the conductive traces must be covered by resist film.

4 : The area marked ▨ indicates vacuum pick-and-place area for board placement with automatic equipment.

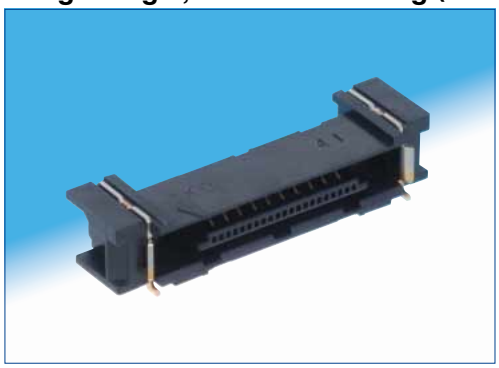
5 : Vacuum pick-up area

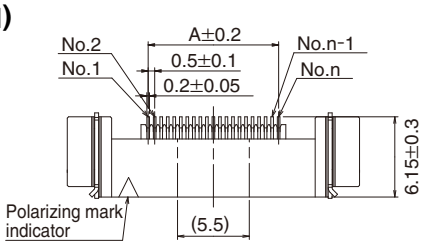
6 : Packaged on tape-and-reel.

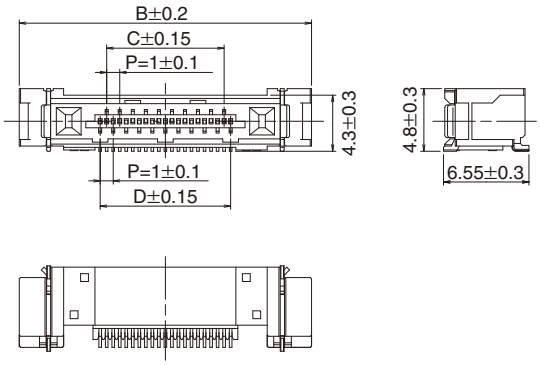
7 : Dimensions in parenthesis ( ) are reference dimensions.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

●Right angle, without shielding (FX15M-**S-0.5SH)



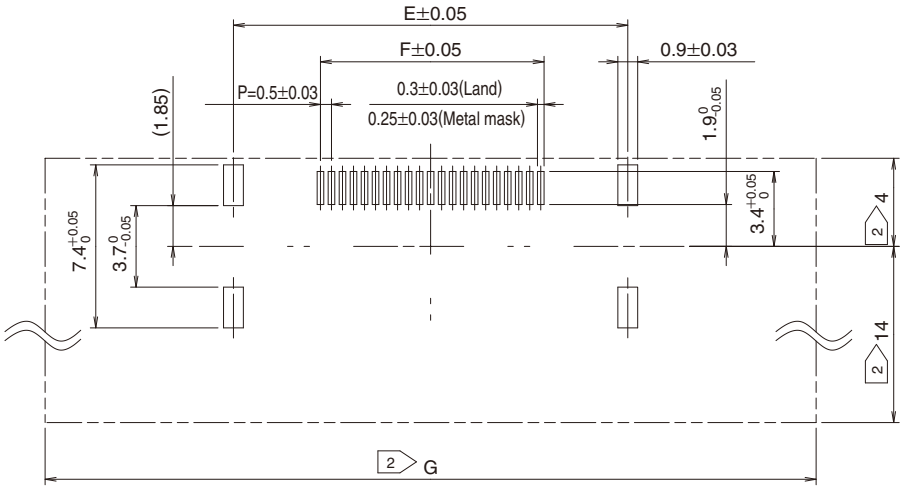




[Specification Number : **, (**)]
Blank : Embossed packaging (1,000 pcs/reel)
(30) : Embossed packaging (100 pcs/reel)

Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	G	RoHS
FX15M-21S-0.5SH(**)	575-2309-3 **	21	10	22.4	9	10	17.9	10	35	Yes
FX15M-31S-0.5SH(**)	575-2308-0 **	31	15	27.4	14	15	22.9	15	40	

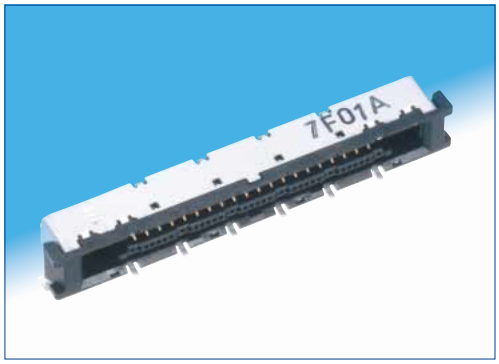
◆Recommended PCB mounting pattern and metal mask dimensions

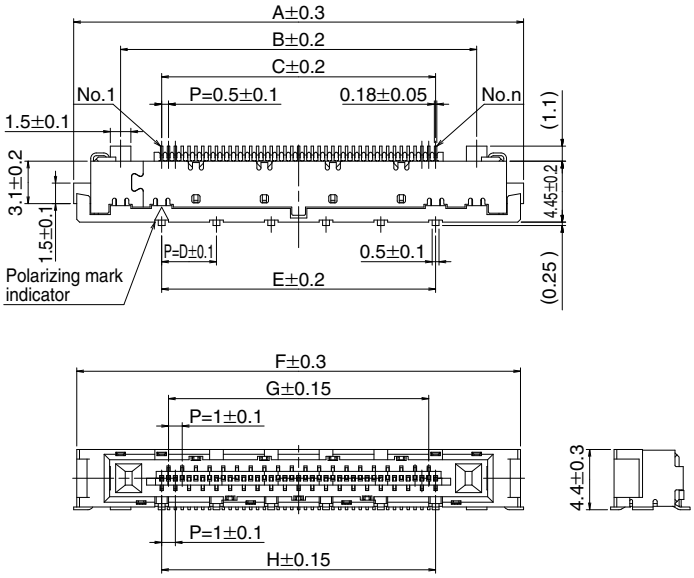


Note 1 : The co-planarity of all terminal leads is 0.1mm max.
2 : Do not place any components in the area indicated. Placement of components in this area may affect mating and latch lock operation.
3 : Packaged on tape-and-reel.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

●Right angle with shields – enhanced shielding (FX15SC-**S-0.5SH)
PCB mounting pattern : VESA standard

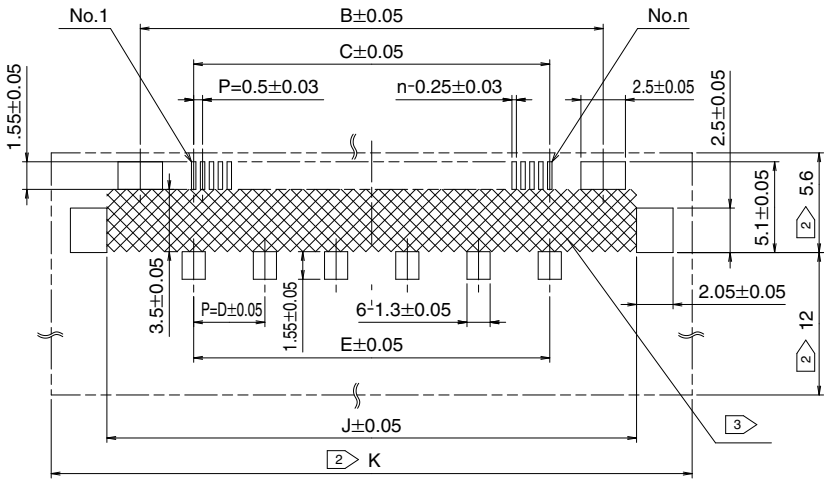




[Specification Number : **, (**)]
Blank : Embossed packaging (1,000 pcs/reel)
(30) : Embossed packaging (100 pcs/reel)

Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	G	H	J	K	RoHS
FX15SC-41S-0.5SH(**)	575-2310-2 **	41	32.85	26	20	4	20	32.4	19	20	29.75	45	Yes
FX15SC-51S-0.5SH(**)	575-2311-5 **	51	37.85	31	25	5	25	37.4	24	25	34.75	50	

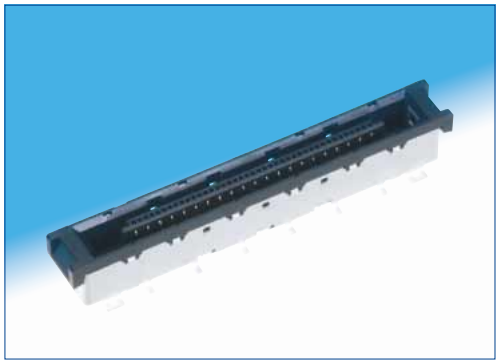
◆Recommended PCB mounting pattern and metal mask dimensions

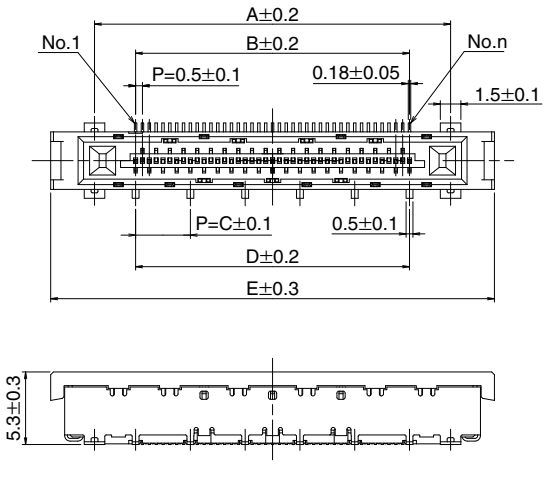


Note 1 : The coplanarity of the terminal leads is 0.1mm max.
2 : Do not place any components in the area indicated. Placement of components in this area may affect mating and latch lock operation.
3 : Area indicated by the cross-hatched lines must be free of conductive traces or the conductive traces must be covered by resist film.
4 : Packaged on tape-and-reel.
5 : Dimensions in parenthesis ( ) are reference dimensions.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

●Vertical with shields – enhanced shielding (FX15SC-**S-0.5SV)
PCB mounting pattern : VESA standard

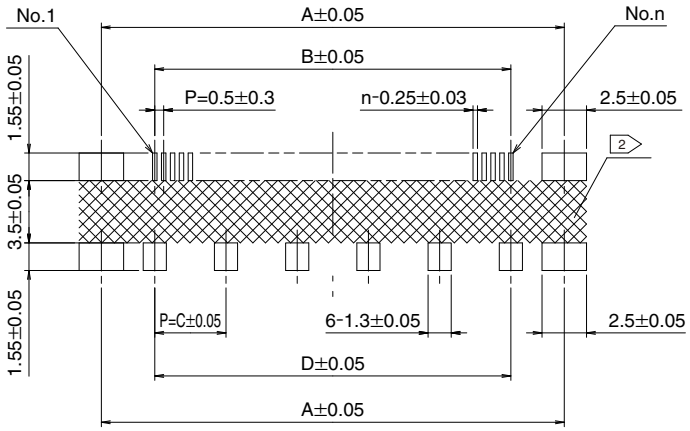




[Specification Number : **, (**)]
Blank : Embossed packaging (1,000 pcs/reel)
(30) : Embossed packaging (100 pcs/reel)

Part No.	HRS No.	No. of contacts	A	B	C	D	E	RoHS
FX15SC-41S-0.5SV(**)	575-2205-8 **	41	26	20	4	20	32.4	Yes
FX15SC-51S-0.5SV(**)	575-2204-5 **	51	31	25	5	25	37.4	

◆Recommended PCB layout and metal mask dimensions

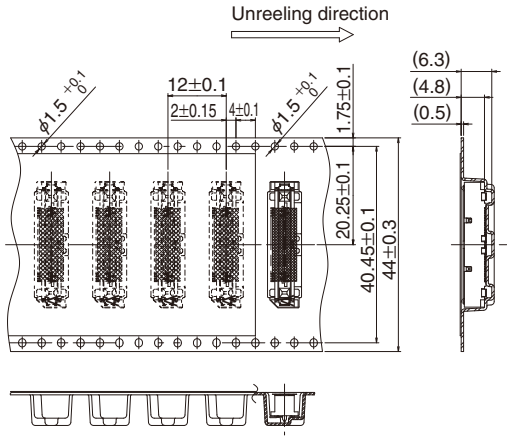


Note 1 : The coplanarity of the terminal leads is 0.1mm max.
2 : Area indicated by the cross-hatched lines must be free of conductive traces or the conductive traces must be covered by resist film.
3 : Packaged on tape-and-reel.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

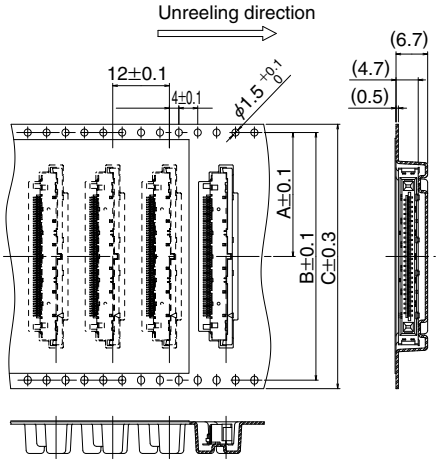
◆Packaging Specifications

●Vertical, with shields (FX15-31S-0.5SV)



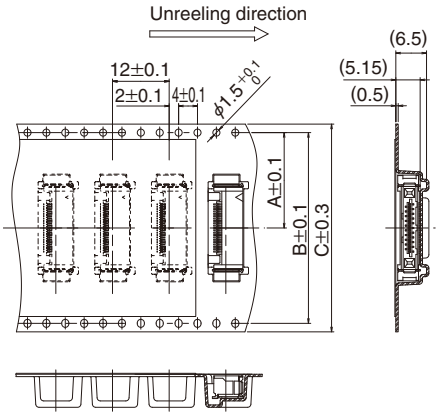
Part No.	HRS No.	No. of contacts	D
FX15-31S-0.5SV(**)	575-2201-7 **	31	44.5

●Right angle, with shields-enhanced shielding (FX15S-**S-0.5SH)

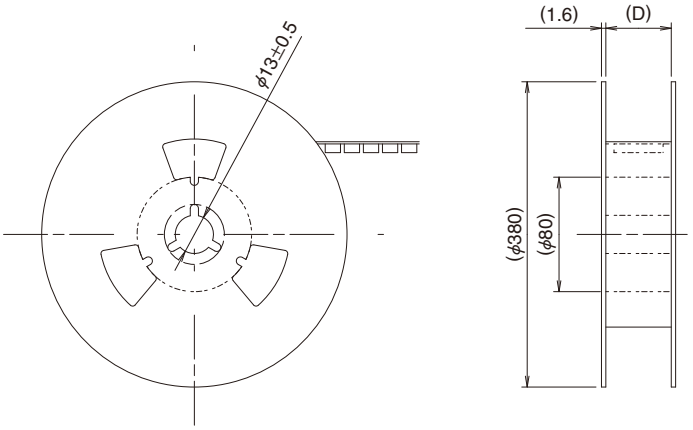


Part No.	HRS No.	No. of contacts	A	B	C	D
FX15S-31S-0.5SH(**)	575-2306-5 **	31	20.3	40.5	44	44.5
FX15S-41S-0.5SH(**)	575-2307-8 **	41	26.3	52.5	56	56.5
FX15S-51S-0.5SH(**)	575-2303-7 **	51				

●Right angle, without shields (FX15M-**S-0.5SH)



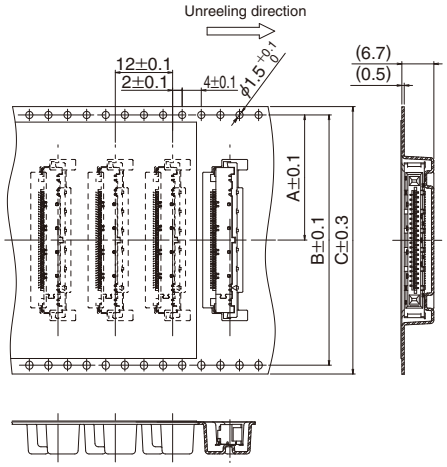
●Reel dimensions



Part No.	HRS No.	No. of contacts	A	B	C	D
FX15M-21S-0.5SH(**)	575-2309-3 **	21	20.2	40.4	44	44.5
FX15M-31S-0.5SH(**)	575-2308-0 **	31				

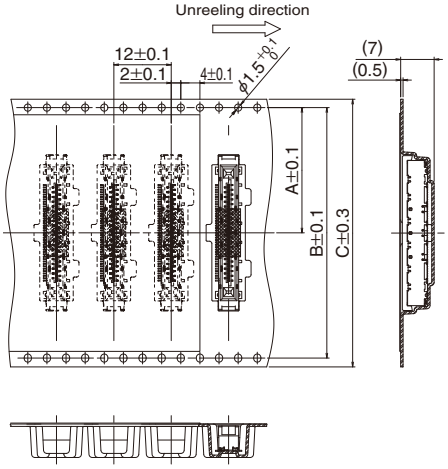
Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

●Right angle with shields – enhanced shielding (FX15SC-∗∗S-0.5SH)



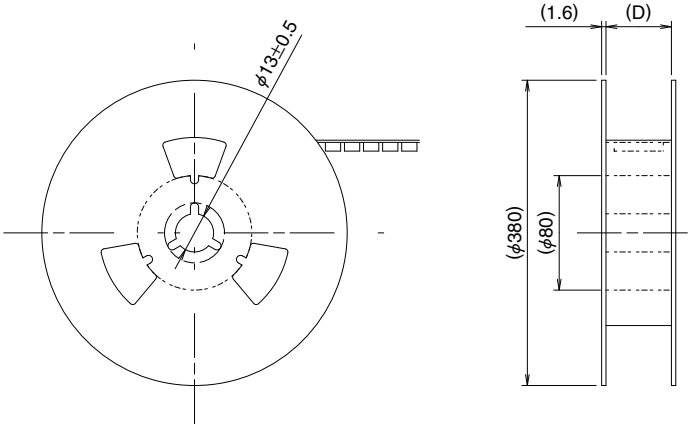
Part No.	HRS No.	No. of contacts	A	B	C	D	RoHS
FX15SC-41S-0.5SH(∗∗)	575-2310-2 ∗∗	41	26.2	52.4	56	56.5	Yes
FX15SC-51S-0.5SH(∗∗)	575-2311-5 ∗∗	51					

●Vertical with shields – enhanced shielding (FX15SC-∗∗S-0.5SV)



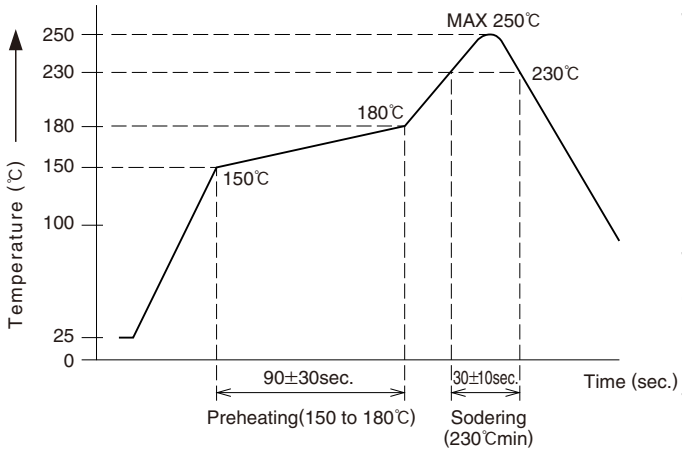
Part No.	HRS No.	No. of contacts	A	B	C	D	RoHS
FX15SC-41S-0.5SV(∗∗)	575-2205-8 ∗∗	41	26.2	52.4	56	56.5	Yes
FX15SC-51S-0.5SV(∗∗)	575-2204-5 ∗∗	51					

●Reel dimensions



Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

◆Recommended temperature profile



HRS test conditions

Test board Glass epoxy 40mm×30mm×1mm thick
Solder method : Reflow
Solder composition : Paste
96.5%Sn/3%Ag/0.5%Cu
Metal mask : 0.12mm thick
Reflow cycles : 2 cycles

The temperature profile is based on the above conditions.
In individual applications the actual temperature may vary, depending on solder paste type, volume/thickness and board size/thickness. Consult your solder paste and equipment manufacturer for specific recommendations.

Note : The temperature profile indicates the maximum temperature of the connector surfaces at the highest point from the PCB mounting surface.

◆Washing Conditions

Organic Solvent Washing

Solvent type	Room temperature washing	Heated washing
IPA (Isoporopyl alcohol)	Yes	Yes

Water Type Washing

When using water type cleaning agents (e.g., terpene, and alkali saponifiers), select the cleaning agent based on the documentation issued by the various manufacturers of cleaning agents which describes the effects on metals and resins. Be careful that parts are not left with moisture remaining on them.

Washing Precautions

Residual flux or cleaning agent on the contacts when washing with organic solvents or water type cleaners can give rise to the deterioration of electrical performance. In this regard it is important to check whether a thorough washing has been performed.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

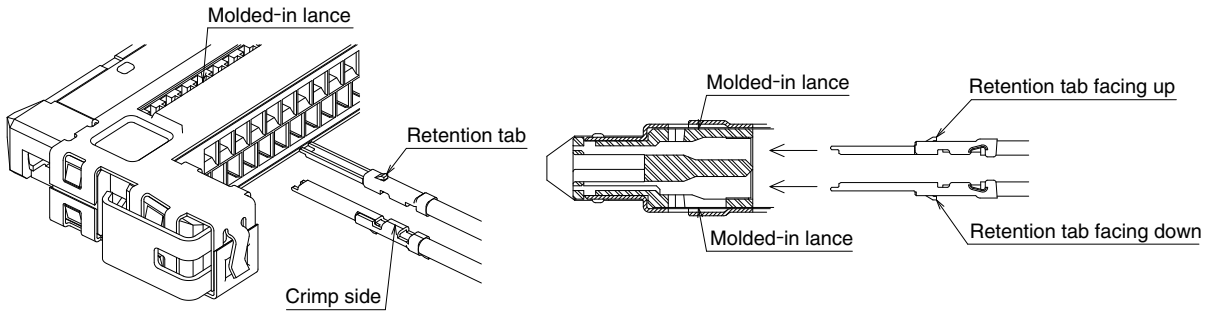
Precautions and recommendations

◆Wire termination

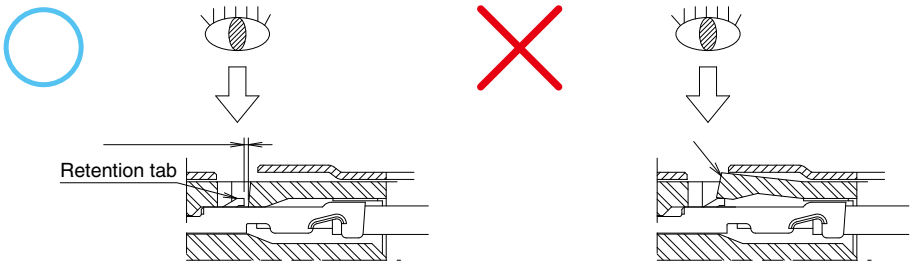
The following documents will be needed in order to perform the cable terminations.
①Basic cable termination and crimp requirements (general explanations).
②Contact crimp termination machine instruction manual (Explanation of the press)
③Applicator parts installation table (Applicator installation explanation)
④Crimp conditions table (Crimp height/Tensile strength standard values)
⑤Crimp quality fundamentals manual (Bell-mouth dimensions, bent up, bent down, rolling, etc.)
✻ Correct cable preparation and crimp termination is based on understanding and following the procedures in the above documents.

◆Insertion of the crimp contacts in the housing

Crimp contacts are inserted in the housing as illustrated below.
Exercising caution when inserting, align the retention tab of the contact with the corresponding molded-in lance in the housing's contact cavity and push the contacts in.
Make sure that the contact is fully inserted and the retention tab clears the molded-in lance.



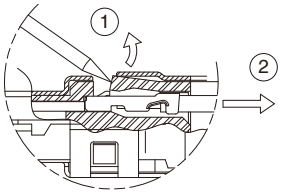
◆Verify that the retention tabs clear the molded-in lances as shown on the illustration below.



Light pull on the wire, with force NOT EXCEEDING 3N will also verify the correct contact insertion.

◆Removal of the contacts

Using sharp-pointed tool of appropriate size gently lift the molded-in tab and pull-out the terminated contacts.
Excersize caution as NOT to damage the molded-in lance.
Should the damage occur, the entire housing will need to be replaced.

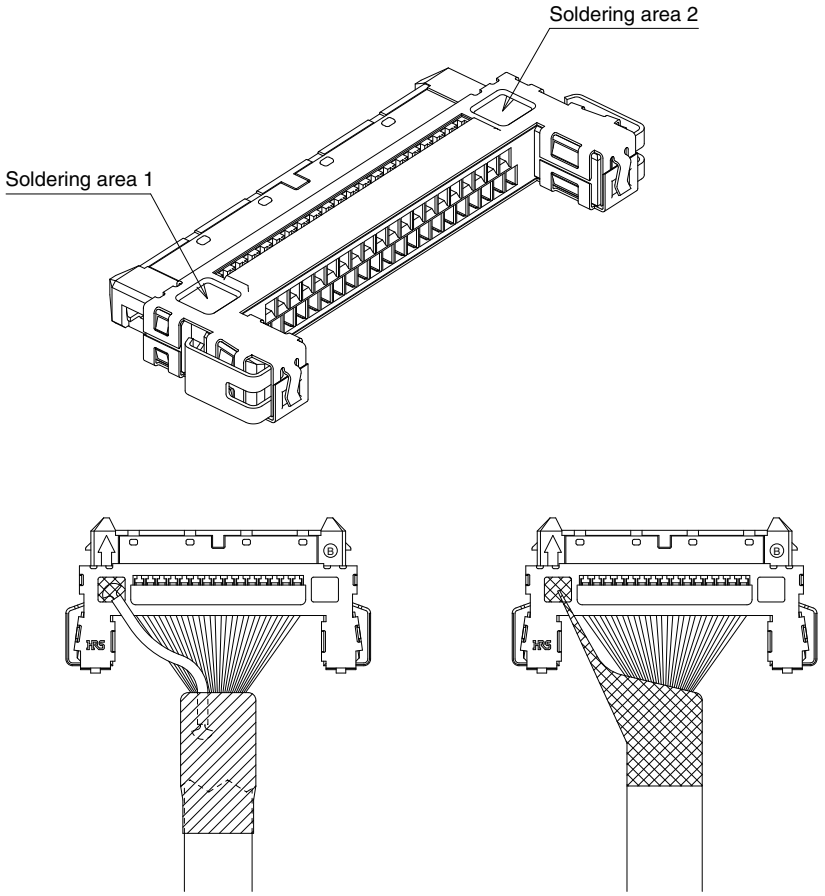


Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

Precautions and recommendations

[Soldering precautions related to FX15S-**P-C connectors]

◆Grounding Methods of the ground wire or shields for the cable assemblies
①Solder the ground wire or the shields ONLY in the areas specifically designated for this purpose, as shown on the illustrations below.
②Observe the soldering iron tip temperature and soldering time specified.
③Do not apply excessive force to the connector by pressing it with the tip of a soldering iron.
④Do not splatter the flux from the solder core.



(Ground harness examples)

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

Precautions and recommendations

◆Plug – micro-coaxial cable

Cautions for soldering

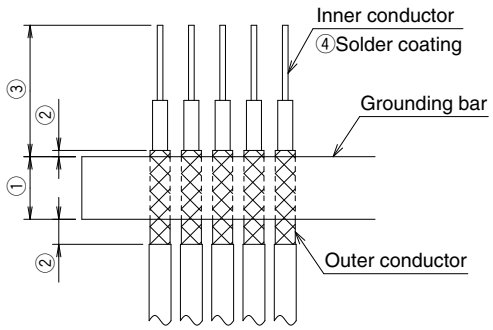
1. For the micro coaxial cable assembled to this connector, cable alignment process as shown in "Recommended cable" on the page 1 is required before assembly.

①Width of ground bar shall be 1.05mm Max. including misalignment of overlapping, flush by cutting, side drop or soldering. Using an inadequate cable will interfere the assembly to the connector. Forceful assembly and soldering could cause mis-soldering and damage the product.

②Minimize the length of outer conductor beyond the ground the bar.

③Length of cutting the extra cable should be 2.1mm Max. Any longer cable may cause contact with the connector during assembly and could damage the product. Recommended minimum length is 2.0mm, but this can be altered as long as good soldering ability is maintained.

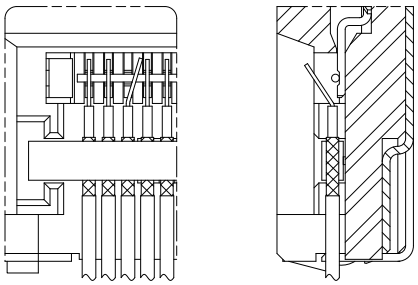
④Pre-solder and coat the inner conductor at the cable end.



2. Recommended solder for the assembly is flux cored solder with 0.2mm dia. (Lead-free: Sn-3Ag-0.5Cu), 21mm length.
If additional flux is used, make sure to prevent wicking onto the contact area.
Wicking onto the contact area will cause the contacts to fail.

3. Before soldering the cable and connector with a cable assembly machine, check the points to avoid below.

①Misalinment of cable end to the terminals in pitch direction
②Excessive floating of cable end



①Misalignment in pitch direction　②floating

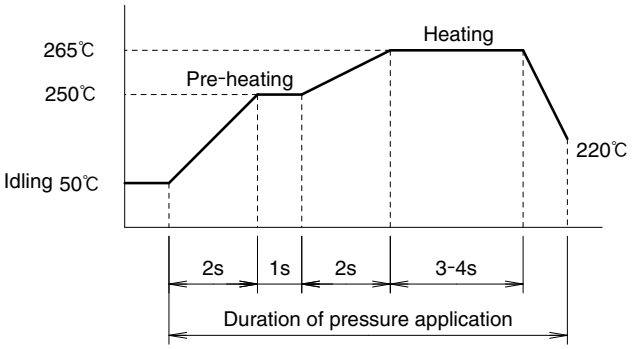
4. Follow the recommended temperature profile shown below for the soldering.

The optimum conditions for soldering can vary depending on cable type and length, and solder type. Be sure to check the recommended temperate profile and adjust the conditions accordingly.

Solder tip pressurization	13～17N

Heating

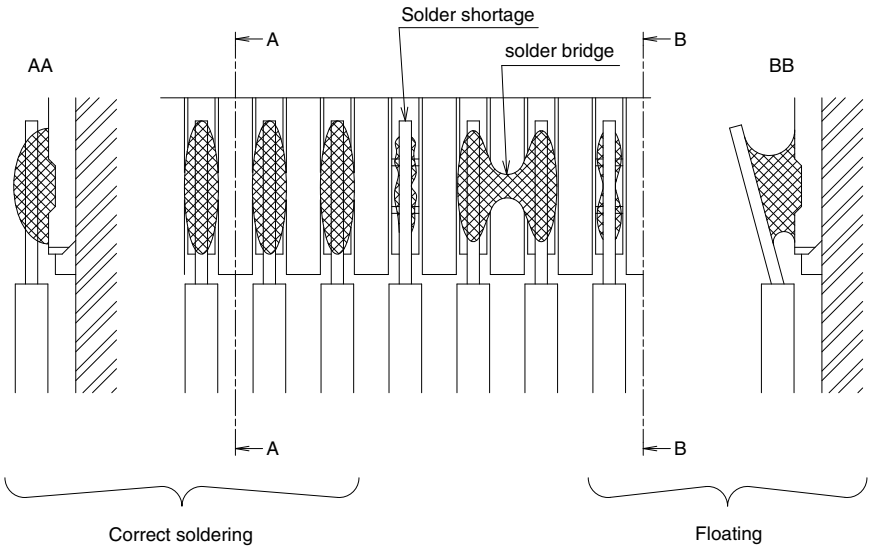
Temperature	265±5℃
Duration	3～4 sec



Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

Precautions and recommendations

5. After soldering, check that no defect is found at soldered area.
   Examples of correct soldered and defective soldered state are shown below.



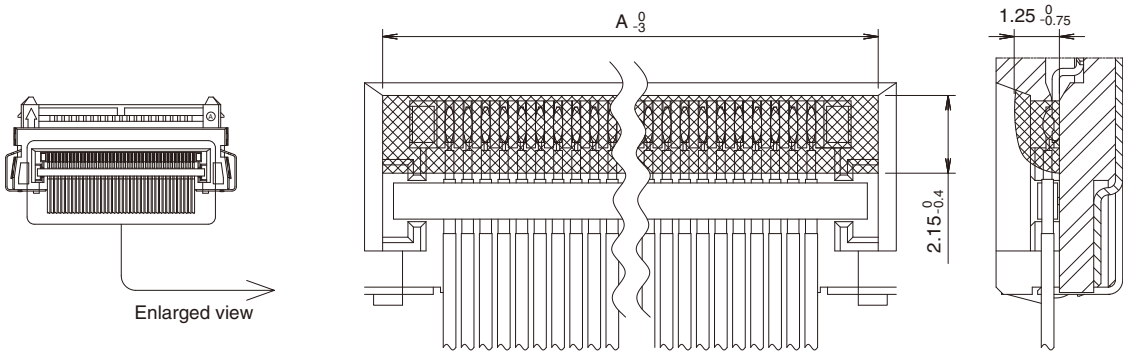
[Coutions for potting process]

1. Protect the soldered area by UV cured resin (referred as "potting" hereafter), in order to prevent cable breakage during cabling and other issues.

2. Apply 3033 manufactured by THREEBOND CO., LTD. or any equivalent product for potting.
   Follow the instruction of the potting manufacturer for UV curing exposure.

3. Refer to the following conditions the potting area.

Number of contacts	A
41	23.7
51	28.7



4. Use extreme care in handling the soldered and potted assembly. Too much stress applied to the cable could break it.

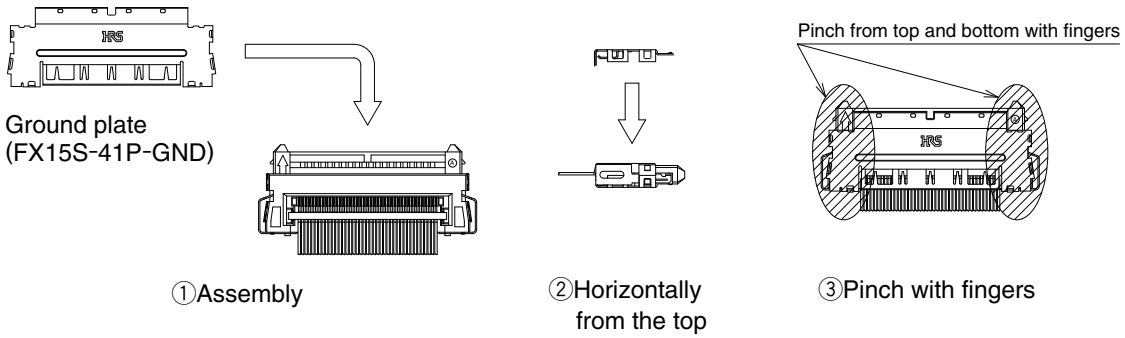
Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

Precautions and recommendations

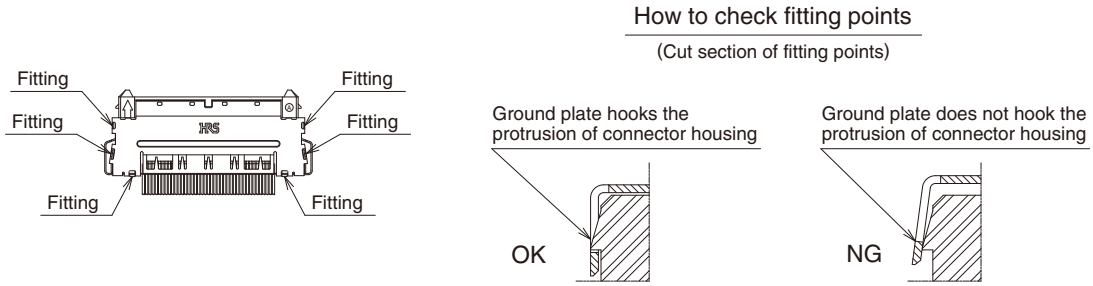
[Coutions for ground plate assembly]

1. Attach a ground plate separately provided as FX15S-41P-GND after the cable assembly process.

2. Place the ground plate onto the connector horizontally and pinch the two components from top and bottom with your fingers.

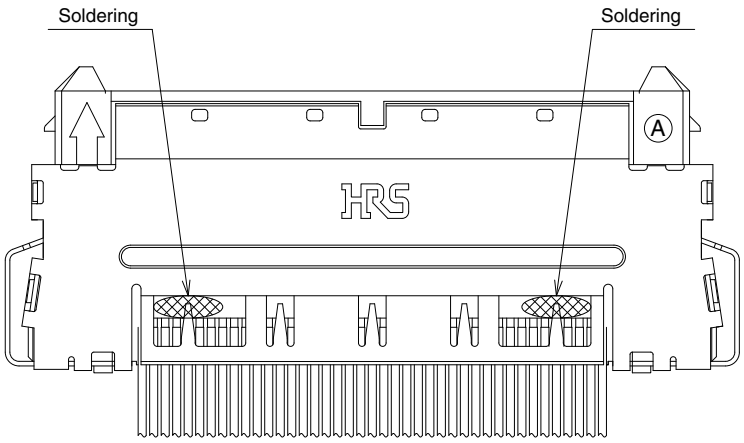


3. Check the six fitting points after assembly and make sure that they are all correctly fitted together.



[Soldering to ground plate]

1. Solder down the metal bar of the cable and ground plate after the assembly of the ground plate to enhance grounding capability and to protect against vertical cable puling forces.



Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

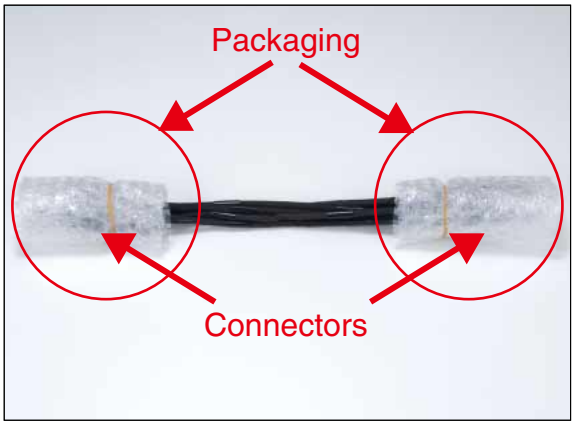
Precautions and recommendations

◆Packaging of the complete cable assemblies

Exercise caution as not to tangle, twist or deform the complete cable assemblies when packaging. Special care should be taken NOT to apply any excessive stress to the individual wires.

When removing the cable assemblies from the packaging do not pull on the wires. Make sure that the latch-locks are not interfering with packaging.

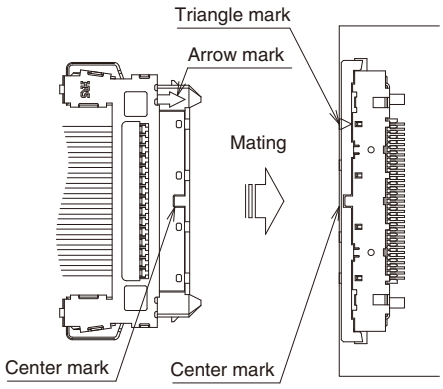


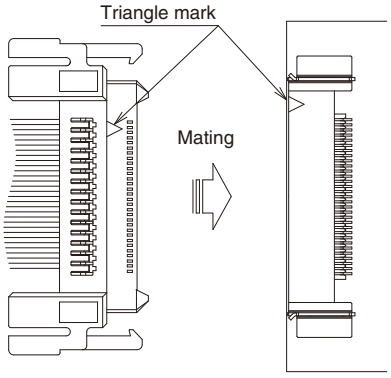


◆Mating of the connectors

These connectors have a built in polarizing feature and will NOT mate when reversed. Do NOT try and force tem together.

Align the connectors as shown on the illustration below and fully insert the plug into the receptacle. Confirm that both latch-locks are fully engaged.





Additionally, this connector is equipped with reverse-insertion preventing mechanism, but a forced mating with a minimum force of 25N could damage the connector.

Avoid any inappropriate mating, and perform the mating operation after checking the above-mentioned polarity indication.

◆Treatment after mating has been completed

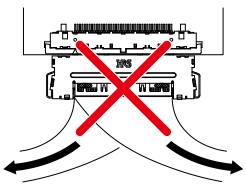
After mating, please take care to prevent any stress or load on the connector during the routing of cables.

If a load of a minimum of 5N is applied on the cable, the cable (crimp contact) could come off. Further, if the entire cable is pulled with a minimum force of 20N, the connector could be broken.

Please take extra care not to pull the cable and cause cable disconnection.

If you use a small gauge coaxial plug, a repeated rotation could also cause cable disconnection. Do not use the cable by rotating it repeatedly. The rotation times should be limited to a maximum of 10 even if rotation is required for routing.

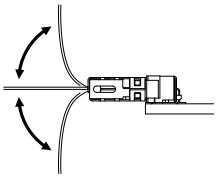
If your use requires folding back of the cable over the base of the connector, make sure to maintain a large turn-back radius away from the connector base.



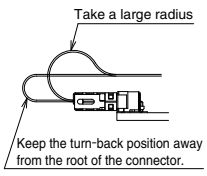
Pulling in the horizontal direction:
Not acceptable



Pulling in the vertical direction:
Not acceptable



Rotation in the vertical direction:
Up to a maximum of 10 times



When you use the cable by turning it back

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

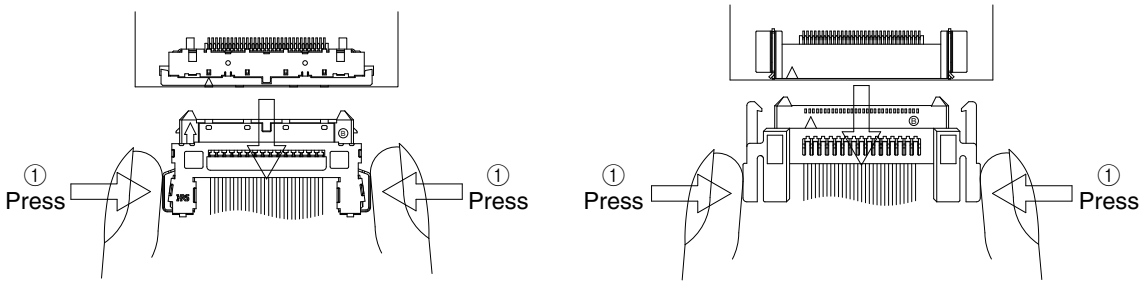
Precautions and recommendations

◆Handling of Connectors after Mating

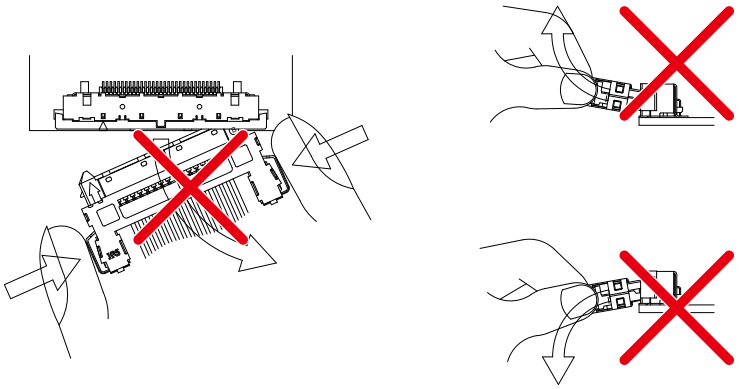
Do not to apply excessive force to the connectors when routing the cable after mating.
Pulling on the entire cable with a force of 20N or greater can damage the connector. Please take care not to pull the cable.

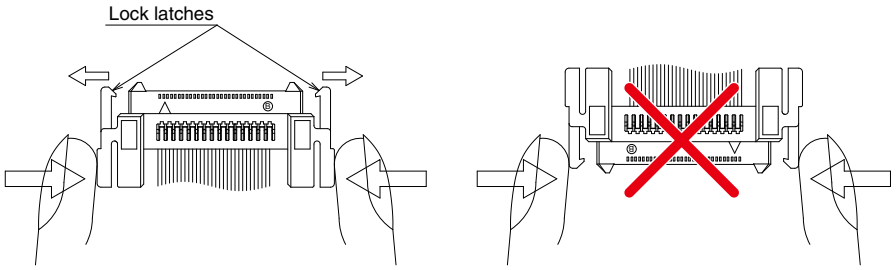
◆Un-mating of the connectors

Equally depress both sides of the latch-locks as shown on the illustration and pull the plug straight out. Do not pull on the cables!



②Pull straight back.

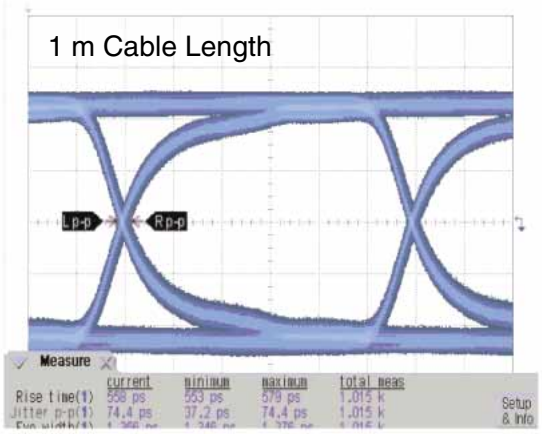


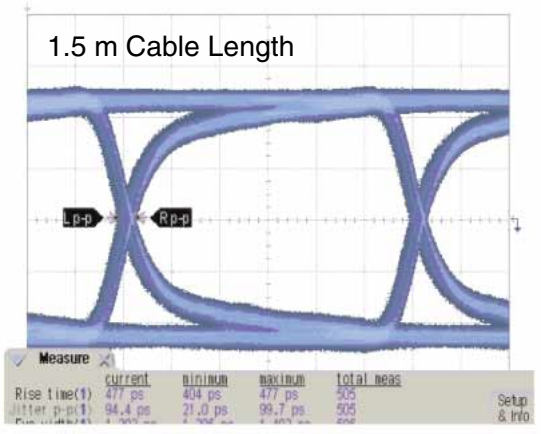


Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

◆Technical Information (FX15S Series)

●Eye Pattern Waveforms (700MHz)

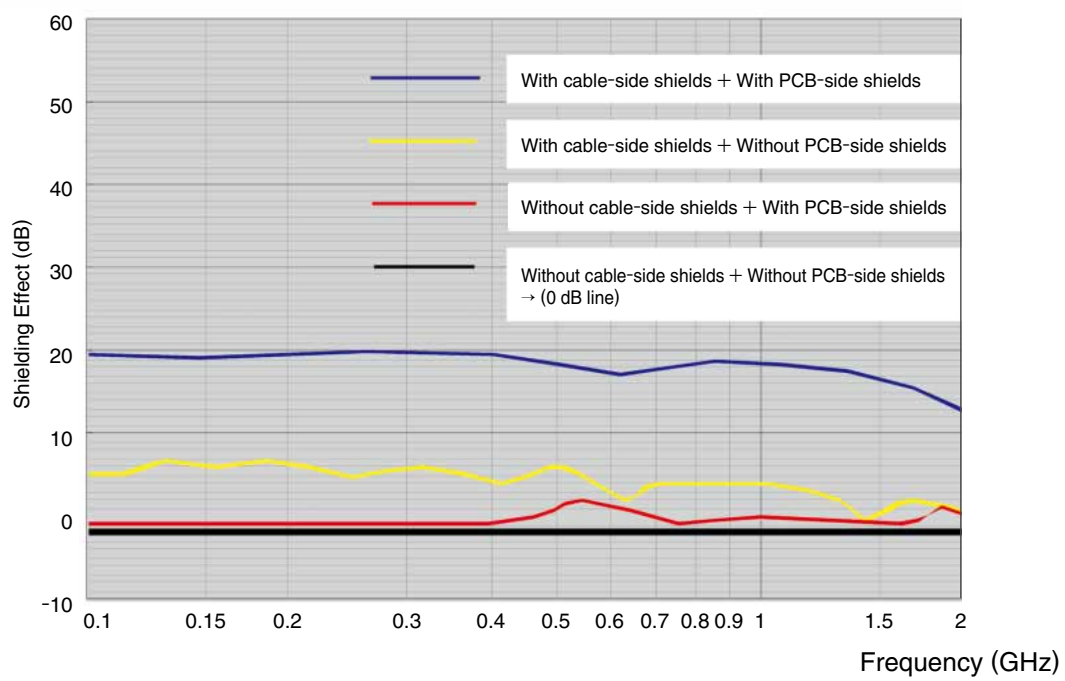




●Shielding Effectiveness (Shielding Characteristics Comparison Using a 2-chamber Shielded Room)

Measured shielding effectiveness for frequencies from 100MHz to 2GHz.

Shielded connectors show noise suppression of 10db to 20dB, when compared with connectors without the shields.



Notes :The measurement value of “Without plug-side shields + Without receptacle-side shields” are taken as the zero level of the graph vertical axis dB.
The respective results express the noise suppression effect (dB) as a relative comparison value to the “without shields” condition as the reference.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

Feb.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

USA:
HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS
2688 Westhills Court, Simi Valley, CA 93065-6235
Phone : +1-805-522-7958
Fax : +1-805-522-3217
http://www.hirose.com/us/

USA:
HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE
3255 Scott Boulevard, Building 7, Suite 101
Santa Clara, CA 95054
Phone : +1-408-253-9640
Fax : +1-408-253-9641
http://www.hirose.com/us/

USA:
HIROSE ELECTRIC (U.S.A.), INC. CHICAGO OFFICE
580 Waters Edge Lane, Suite 205 Lombard IL 60148
Phone : +1-630-282-6701
Mail : inquiries@hirose.com
http://www.hirose.com/us/

USA:
HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)
17197 N. Laurel Park Drive, Suite 253, Livonia, MI 48152
Phone : +1-734-542-9963
Fax : +1-734-542-9964
http://www.hirose.com/us/

THE NETHERLANDS:
HIROSE ELECTRIC EUROPE B.V.
Hogehillweg #8 1101 CC Amsterdam Z-O
Phone : +31-20-6557460
Fax : +31-20-6557469
http://www.hirose.com/eu/

GERMANY:
HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH
Herzog-Carl-Strasse 4 D-73760 Ostfildern (Scharnhauser Park)
Phone : +49-711-4560-02-1
Fax : +49-711-4560-02-299
http://www.hirose.com/eu/

GERMANY:
HIROSE ELECTRIC EUROPE B.V. NUERNBERG OFFICE
Muggenhofer Str. 136 90429 Nuernberg
Phone : +49-911 32 68 89 63
Fax : +49-911 32 68 89 69
http://www.hirose.com/eu/

GERMANY:
HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE
Bayernstr. 3, Haus C 30855 Langenhagen, Germany
Phone : +49-511 97 82 61 30
Fax : +49-511 97 82 61 35
http://www.hirose.com/eu/

FRANCE:
HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE
Regus La Garenne Colombes,Place de La Belgique, 71 Boulevard National La Garenne Colombes, 92250, France
Phone : +33 (0) 1 7082 3170
Fax : +33 (1) 7082 3101
http://www.hirose.com/eu/

UNITED KINGDOM:
HIROSE ELECTRIC EUROPE BV (UK BRANCH)
4 Newton Court, Kelvin Drive, Knowlhill, Milton Keynes, MK5 8NH
Phone : +44-1908 202050
Fax : +44-1908 202058
http://www.hirose.com/eu/

CHINA:
HIROSE ELECTRIC (SHANGHAI) CO., LTD.
1601, Henderson Metropolitan, NO.300, East Nanjing Road, Huangpu District, Shanghai, China 200001
Phone : +86-21-6391-3355
Fax : +86-21-6391-3335
http://www.hirose.com/cn/

CHINA:
HIROSE ELECTRIC (SHANGHAI) CO.,LTD. BEIJING BRANCH
A1001, Ocean International Center, Building 56# East 4th Ring Middle Road, ChaoYang District, Beijing, 100025
Phone : +86-10-5165-9332
Fax : +86-10-5908-1381
http://www.hirose.com/cn/

CHINA:
HIROSE ELECTRIC TECHNOLOGIES (SHENZHEN) CO., LTD.
Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre, 5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008
Phone : +86-755-8207-0851
Fax : +86-755-8207-0873
http://www.hirose.com/cn/

HONG KONG:
HIROSE ELECTRIC HONGKONG TRADING CO., LTD.
Room 1001, West Wing, Tsim Sha Tsui Centre, 66 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong
Phone : +852-2803-5338
Fax : +852-2591-6560
http://www.hirose.com/hk/

TAIWAN:
HIROSE ELECTRIC TAIWAN CO., LTD.
103 8F, No.87, Zhengzhou Rd., Taipei
Phone : +886-2-2555-7377
Fax : +886-2-2555-7350
http://www.hirose.com/tw/

KOREA:
HIROSE KOREA CO., LTD.
250, Huimanggongwon-ro, Siheung-si, Gyeonggi-do, Korea, 429-849
Phone : +82-31-496-7000,7124
Fax : +82-31-496-7100
http://www.hirose.co.kr/

SINGAPORE:
HIROSE ELECTRIC SINGAPORE PTE. LTD.
10 Anson Road #26-16, International Plaza 079903, Singapore
Phone : +65-6324-6113
Fax : +65-6324-6123
http://www.hirose.com/sg/

INDIA:
HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE
Office NO.519, Regus-Green Boulevard, Level5, Tower C, Sec62, Plot B-9A, Block B, Noida, 201301, Uttar Pradesh, India
Phone : +91-12-660-8018
Fax : +91-120-4804949
http://www.hirose.com/sg/

INDIA:
HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIAISON OFFICE
Unit No-403, 4th Floor, No-84, Barton Centre, Mahatma Gandhi (MG) Road, Bangalore 560 001, Karnataka, India
Phone : +91-80-4120 1907
Fax : +91-80-4120 9908
http://www.hirose.com/sg/

MALAYSIA:
HIROSE ELECTRIC SINGAPORE PTE. LTD.
1-10-07, Suntech @ Penang Cybercity (1164),Lintang Mayang Pasir 3,11950, Bayan Baru, Penang, Malaysia.
Phone : +604-619-2564
Fax : +604-619-2574
http://www.hirose.com/sg/

THAILAND:
HIROSE ELECTRIC SINGAPORE PTE. LTD.
BANGKOK OFFICE (REPRESENTATIVE OFFICE)
Unit 4703, 47th FL., 1 Empire Tower, South Sathorn Road, Yannawa, Sathorn, Bangkok 10120 Thailand
Phone : +66-2-686-1255
Fax : +66-2-686-3433
http://www.hirose.com/sg/

Creative Links to World Electronics ®

HRS

HIROSE ELECTRIC CO.,LTD.
2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN
TEL: +81-45-620-3526 Fax: +81-45-591-3726
http://www.hirose.com
http://www.hirose-connectors.com

The characteristics and the specifications contained herein are for reference purpose. Please refer to the latest customer drawings prior to use.
The contents of this catalog are current as of date of 10/2015. Contents are subject to change without notice for the purpose of improvements.