PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

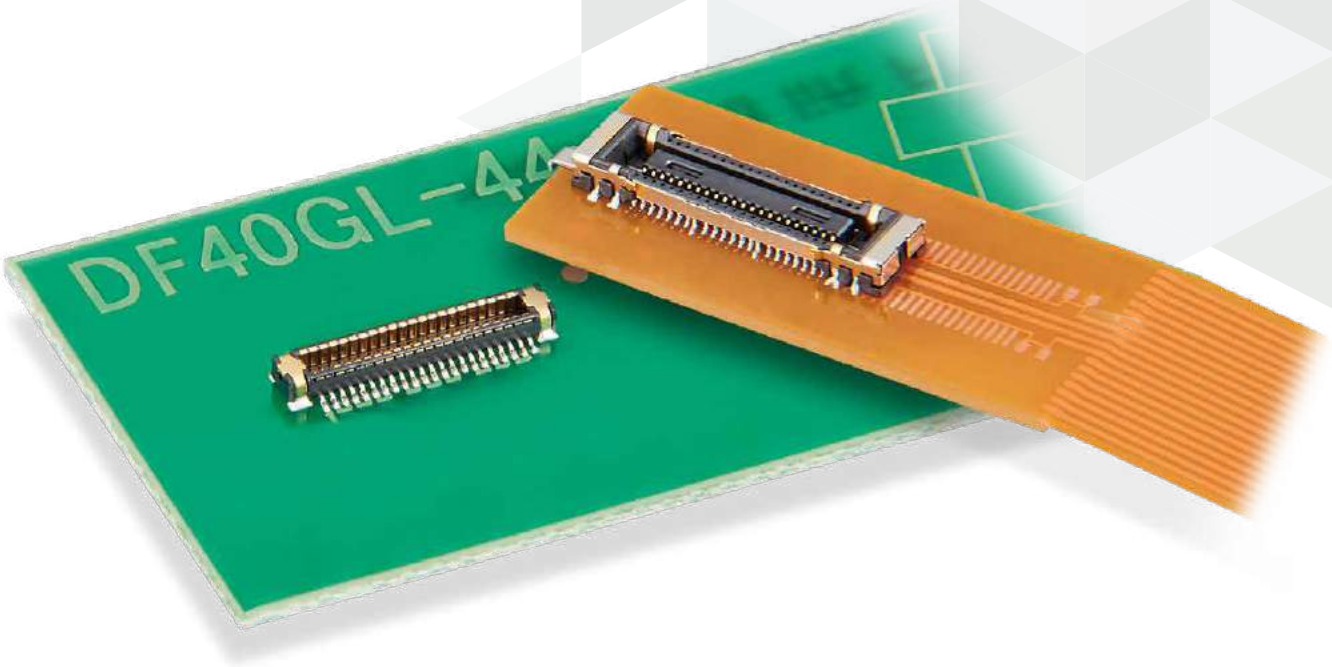
DF40GL Series

0.4mm Pitch /1.5mm Height, Positive Lock, Shielded Board-to-Board / Board-to-FPC Connector

Positive-Lock

Robust

USB4

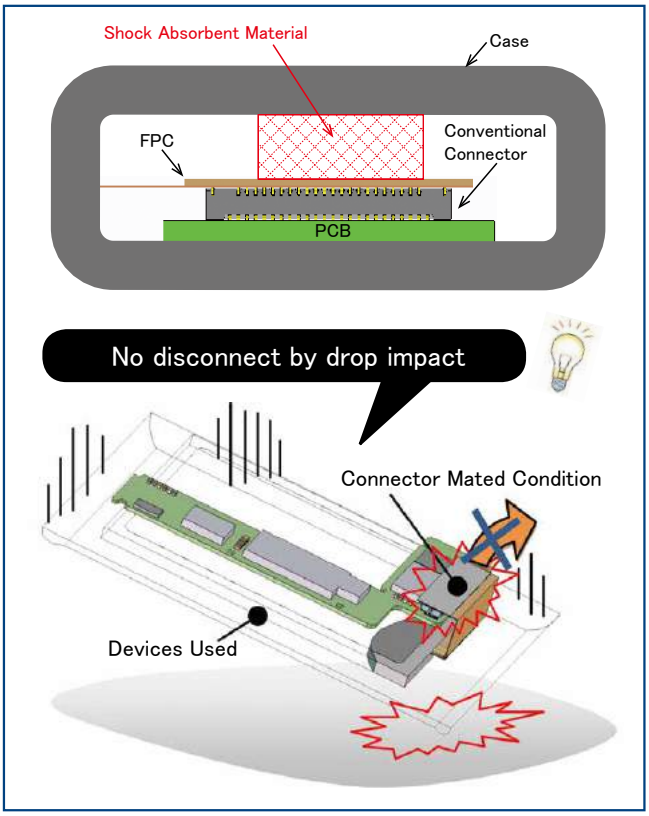


Features

1. Positive Lock

Positive lock with blade lock design.
Prevents coming off from mating condition due to impact.

Advantages of positive lock design :
Conventional connectors needed shock absorbent material to prevent coming off due to impact.
DF40GL Series eliminates the need for the shock absorbent material with a positive lock design.



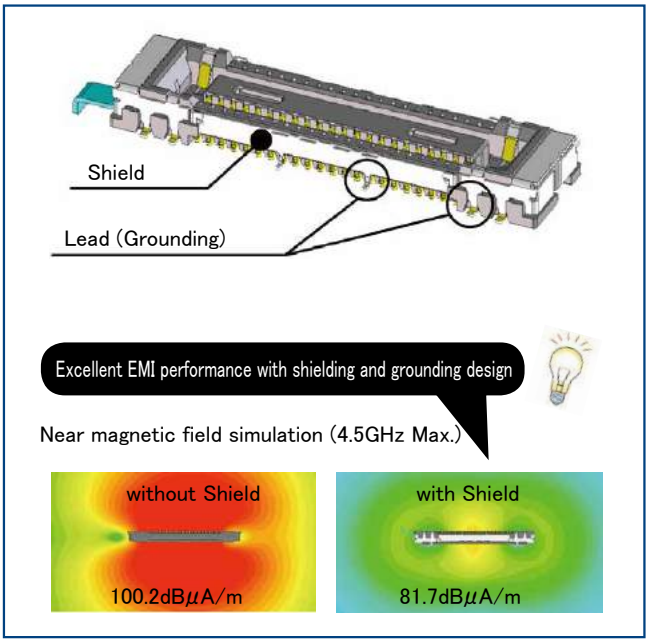
2. Supports High Speed Transmission

Meets USB Type C and PCIe Gen4 standards.

3. Shield and Grounding Design

Shielding and grounding to suppress EMI.

*DF40GL Series has shield and lead ground producing excellent EMI performance.



Advantages of shielding and grounding design

Application

It can be used in equipment that requires high mating reliability and shock resistance, such as automotive, medical equipment, portable equipment, etc.

Product Specifications

Rated Current	Signal Contact	Operating Temperature (Note 1)	-55 to +85℃
	0.35A	Storage Temperature (Note 2)	-10 to +60℃
Rated Voltage	30V AC/DC	Operating Humidity Range	20 to 80%
		Storage Humidity Range (Note 2)	40 to 70%

Item	Standards	Condition
Insulation Resistance	50MΩ Min.	Measure at 100V DC
Withstanding Voltage	No flashover or dielectric breakdown	100V AC for 1 min.
Contact Resistance	90mΩ Max.	Measured at 20mV AC, 1kHz, 1mA
Vibration Resistance	No electrical discontinuity of 1μs or more	frequency 10 to 55Hz, half amplitude of 0.75mm, 2 hours in each of 3 directions
Humidity Resistance	Contact Resistance: 90mΩ Max. Insulation Resistance: 25MΩ Min.	Temperature 40±2℃, Humidity 90 to 95%, Left for 96 hours
Temperature Cycle	Contact Resistance: 90mΩ Max. Insulation Resistance: 50MΩ Min.	(-55℃ : 30 min. → +5 to +35℃ : 10 min. → +85℃ : 30 min. → +5 to +35℃ : 10 min.) 5 cycles
Mating Durability	Contact Resistance: 90mΩ Max.	30 times
Lock Strength	30N Min.	Apply pullout force vertically.
Solder Heat Resistance	No dissolution or resin melting that will affect performance	Reflow : At the recommended temperature profile Hand solder: Soldering iron temperature 350℃ within 3 seconds

Note 1 : Includes temperature rise caused by current flow.
Note 2 : Storage refers to the long-term storage condition for unused products before the board mounting.
Operating temperature and humidity range apply when the product is not powered after PCB mounting and when temporarily stored during transportation.

Materials / Finish

Item	Component	Material	Finish	Remarks
Receptacle/Plug	Insulator	LCP	Black	UL94V-0
Receptacle/Plug	Contact	Phosphorous Bronze	Gold Plating	-
Receptacle	Shield	Phosphorous Bronze	Gold Plating	-
Receptacle	Lock Lever	Stainless Steel	-	-
Plug	Retention Tab Lock	Stainless Steel	Gold Plating	-

Product Number Structure

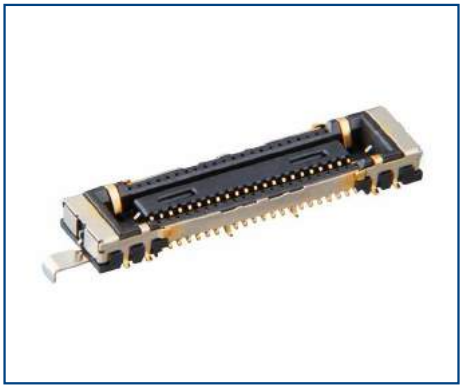
Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

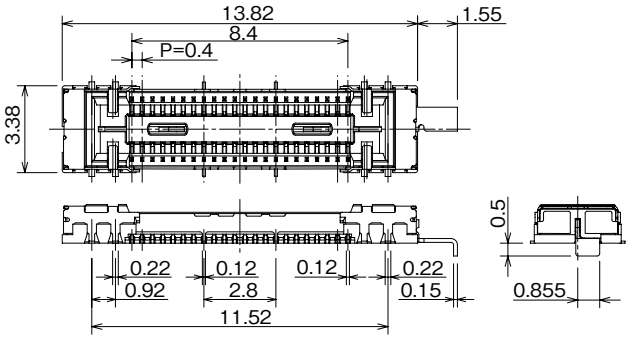
■ Receptacle/Plug

DF40 GL - # DS - 0.4 V (##)
❶ ❷ ❸ ❹ ❺ ❻ ❼

❶ Series Name	DF40	❻ Contact Type	Straight SMT
❷ Shape Symbol	GL: Positive Lock Specifications with Shield	❼ Specifications of Gold Plating and Packaging	(51): Gold Plating Thicknes : 0.05 μ m Embossed Tape Packing (Receptacle: 4,000 pcs/reel) (Plug: 5,000 pcs/reel) (58): Gold Plating Thicknes : 0.05 μ m Embossed Tape Packing (Receptacle, Plug: 1,000 pcs/reel)
❸ No. of Pos.			
❹ Connector Type	DS: Double Row Receptacles DP: Double Row Plug		
❺ Contact Pitch	0.4mm		

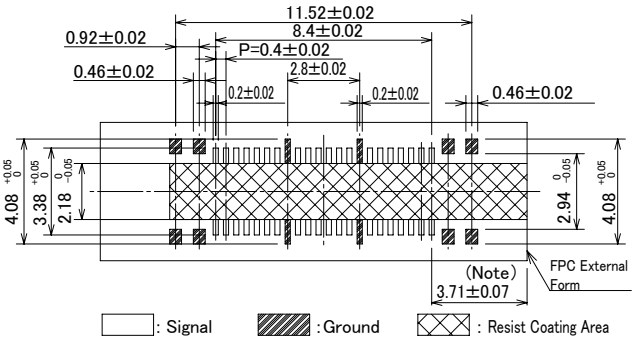
Receptacle





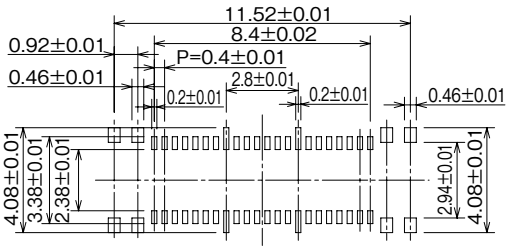
Part No.	HRS No.	No. of Pos.	Purchase Unit (##):(51)	Purchase Unit (##):(58)
DF40GL-44DS-0.4V(##)	CL0684-4411-0-##	44	4,000pcs per reel	1,000pcs per reel

■ Recommended PCB Mounting Pattern

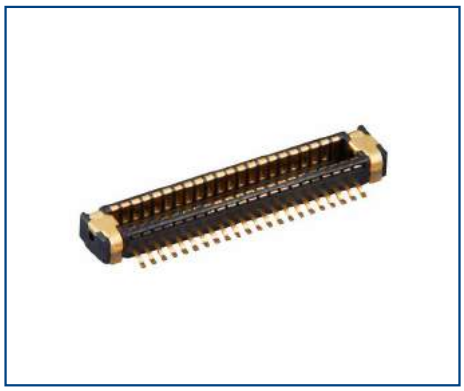


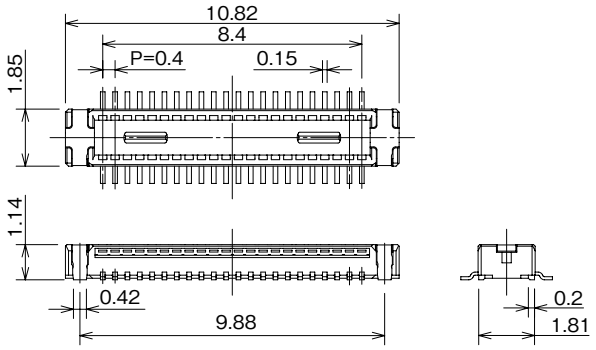
Note : To insure proper lock lever operation, the FPC needs to be within the dimensions specified.

■ Recommended Metal Mask Dimensions (Metal Mask Thickness 120μm)



Plug

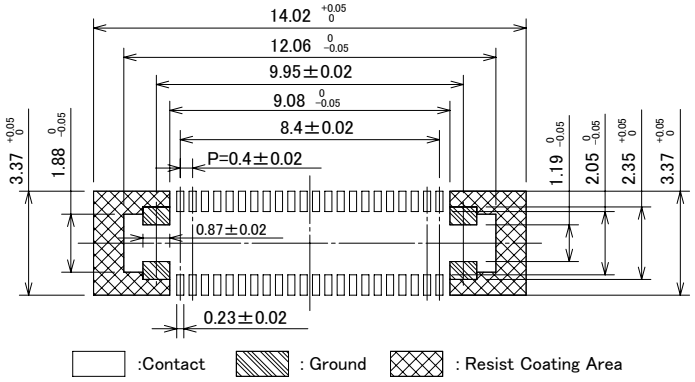




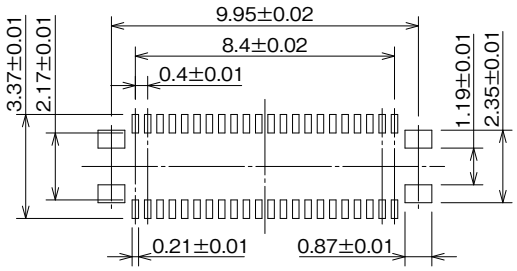
Part No.	HRS No.	No. of Pos.	Purchase Unit (##):(51)	Purchase Unit (##):(58)
DF40GL-44DP-0.4V(##)	CL0684-4412-0-##	44	5,000pcs per reel	1,000pcs per reel

Note : This connector has no polarity.

■ Recommended PCB Mounting Pattern



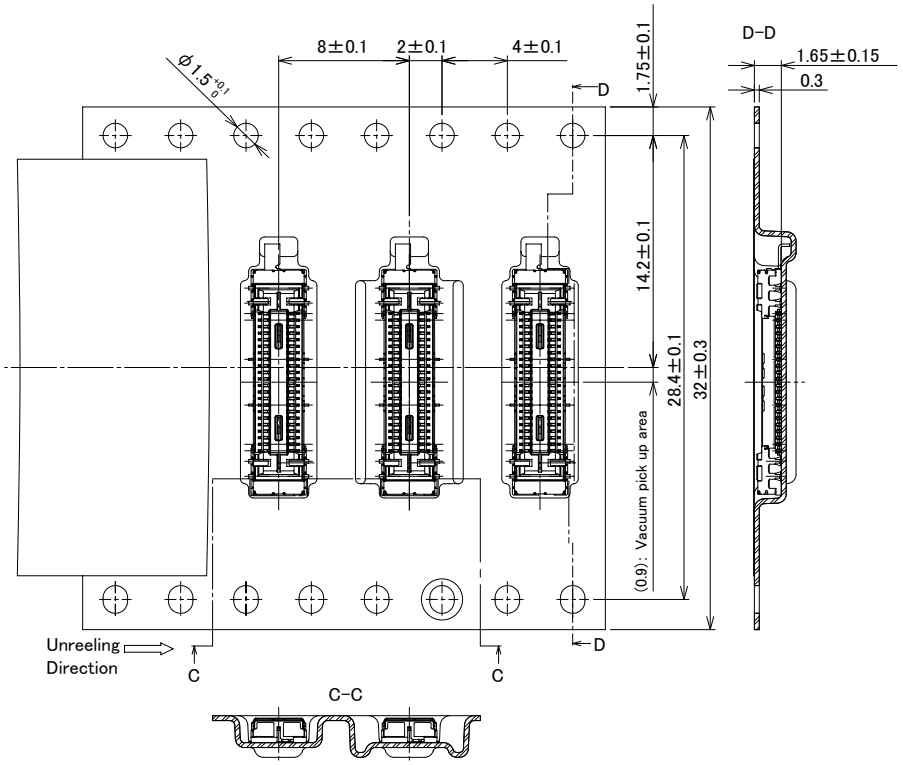
■ Recommended Metal Mask Dimensions (Metal Mask Thickness 120μm)



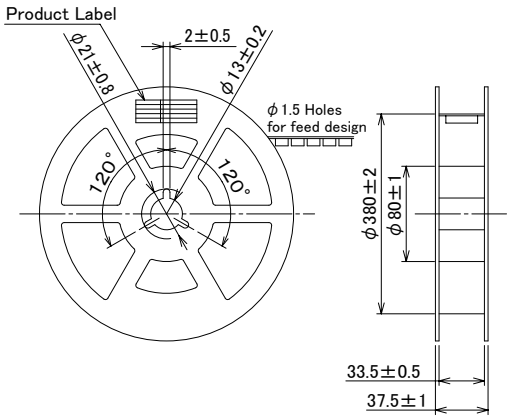
Packaging Specifications Diagram (JIS C 0806 Compliant)

Receptacle

● Embossed Carrier Tape Dimensions



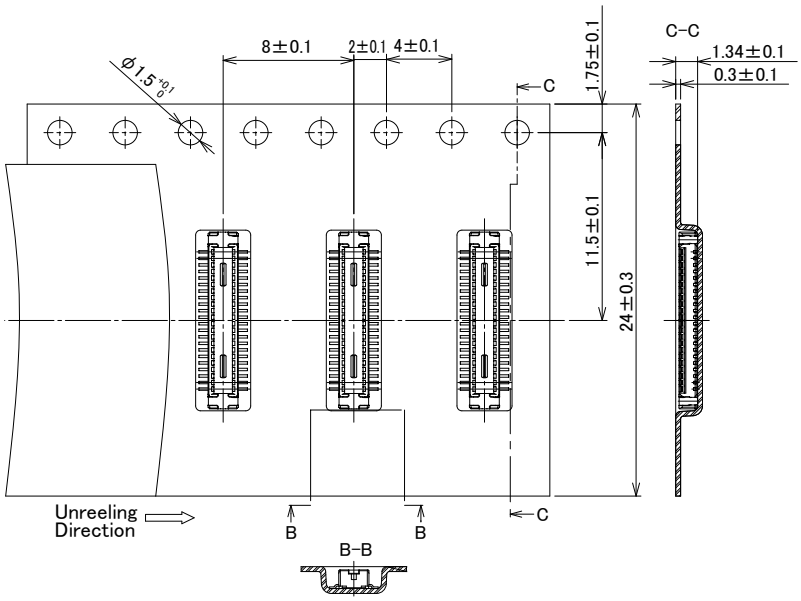
● Reel Dimensions



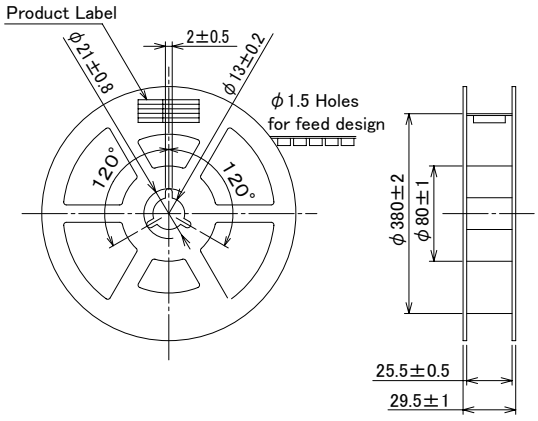
Part No.	HRS No.	No. of Pos.	Purchase Unit (##):(51)	Purchase Unit (##):(58)
DF40GL-44DS-0.4V(##)	CL0684-4411-0-##	44	4,000pcs per reel	1,000pcs per reel

Plug

● Embossed Carrier Tape Dimensions

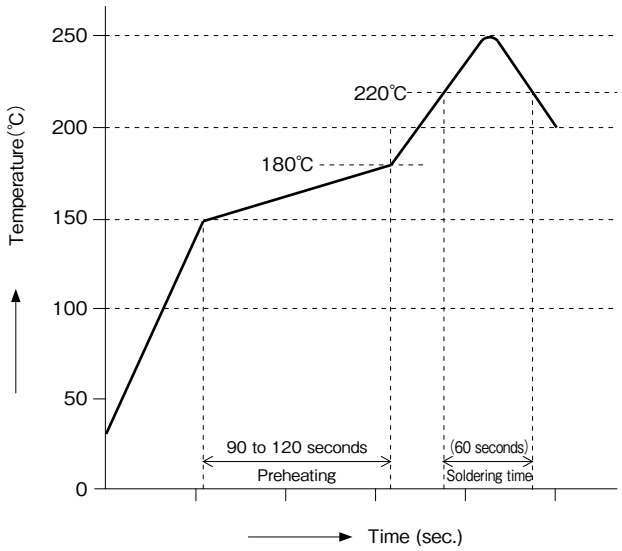


● Reel Dimensions



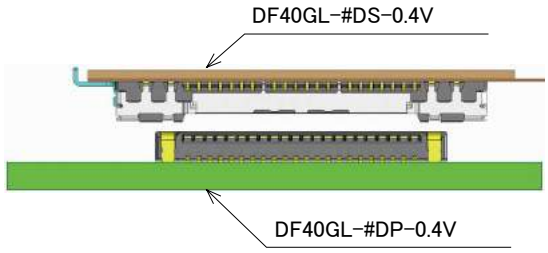
Part No.	HRS No.	No. of Pos.	Purchase Unit (##):(51)	Purchase Unit (##):(58)
DF40GL-44DP-0.4V(##)	CL0684-4412-0-##	44	5,000pcs per reel	1,000pcs per reel

Precautions

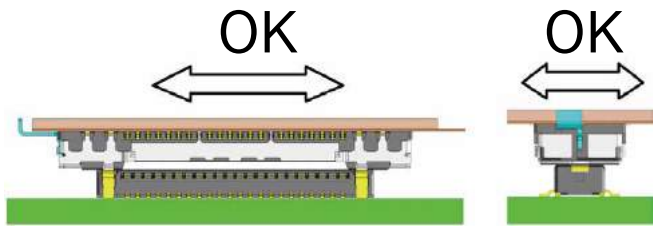
Recommended Temperature Profile (Lead-Free Mounting)	 【Conditions】 1. Peak Temperature : 250℃ Max. 2. Heating : 220℃ Min., within 60sec. 3. Preheating : 150 to 180℃ , 90 to 120sec. 4. Number of Reflow Cycles : 2 cycles Max. * Temperature refers to the surface temperature of the board near the connector lead.
Recommended Manual Soldering Conditions	Soldering iron temperature : 340 ± 10℃ , Soldering Time : Within 3 sec.
Recommended Metal Mask Thickness and Open Area to PCB Pattern (Area Ratio)	Thickness : 0.12mm, Aperture Ratio : DS(Contact Part) 80%, DP(Shield Part) 100% DP(Contact Part) 80%, (Retention Tab) 100%
Board Warpage	Max. of 0.02mm at the center in reference to both ends of the connector.
Cleaning	Cleaning is not recommended. If you clean this product, please evaluate its performance before using it. (Cleaning may impair the mating/unmating properties and lower resistance to environmental factors.)
Precautions	■ Be careful when mating/unmating the connector when it is not mounted on the PCB as it may cause damage/deformation to contacts. ■ Avoid supporting the PCB only with the connectors. Support it by other means such as bolts, screws, posts, etc. ■ Excessive wrenching during unmating/mating may result in damage. ■ In the case of hand soldering, please do not apply any flux which could cause flux wicking. ■ This product may have slight color differences due to production lot variability, but this does not affect the performance. ■ Please refer to the following page for handling precautions when inserting and removing.

Handling Precautions for Connector Insertion

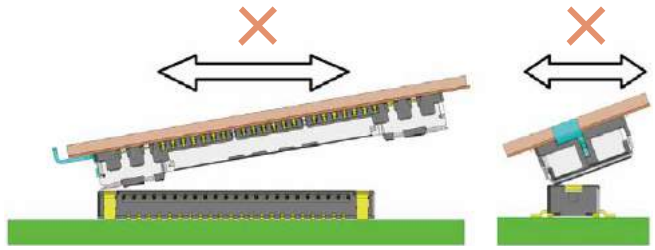
[Connector Mating]



1) When aligning, look for the guide port by moving the connector in X and Y directions parallel to the mating connector.

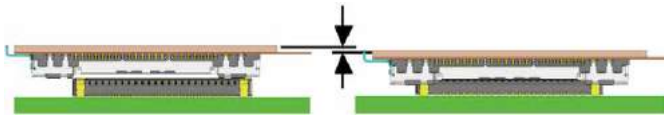


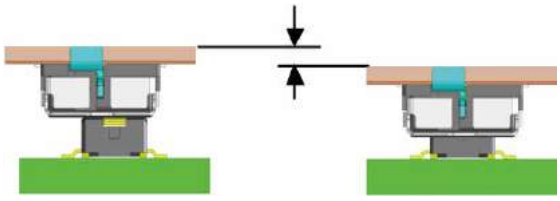
2) If pressure is applied in the Z direction when the connectors are not parallel, the connector may get damaged or shaved.



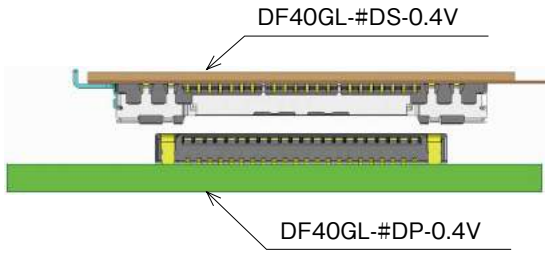
3) When the connector is correctly aligned, it is guided and lowers into place, which can be felt by the operator. Afterwards the connectors are aligned and cannot be moved in the X and Y axis, completing the mating operation.

Before Alignment　　After Alignment

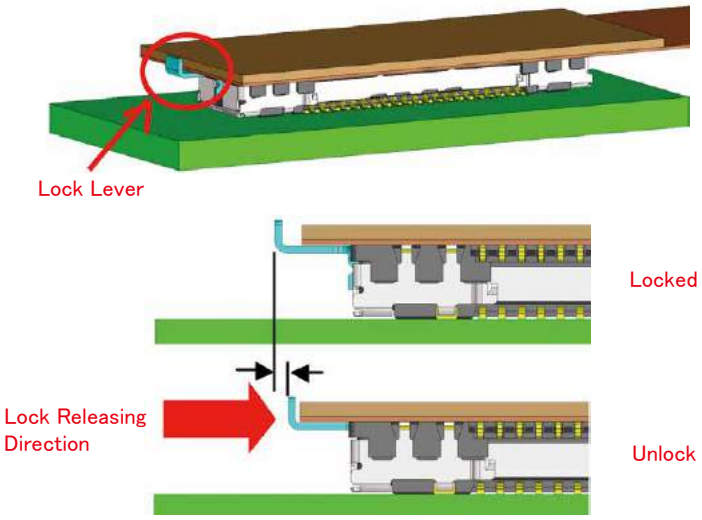




Handling Precautions for Connector Removal

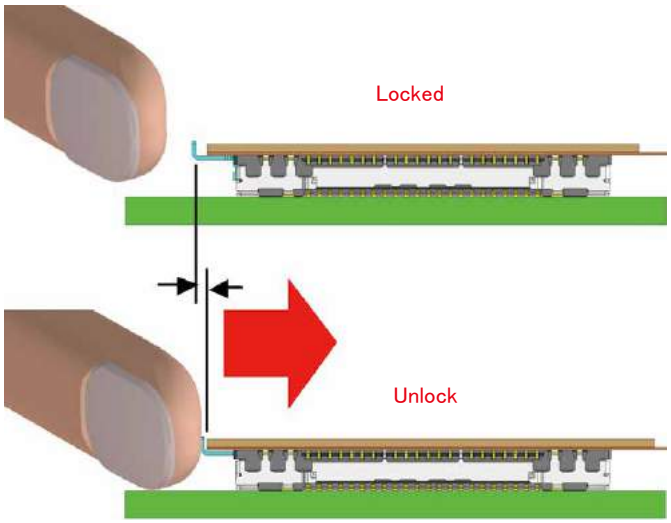


1) To unmate, release the lock by pressing down on the lock lever in the unlock direction. Unmate the connector with the lock released.



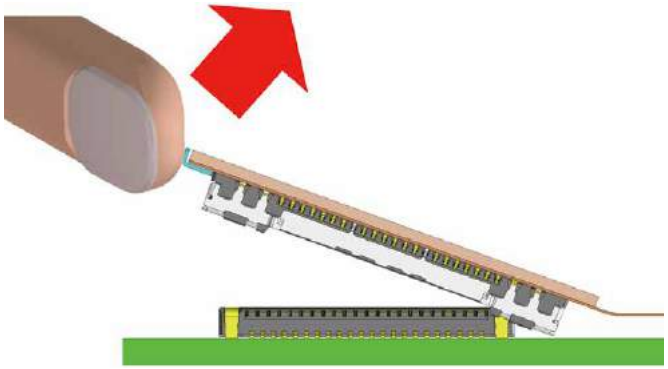
2) Push the lock lever to release the lock.
When pressing the edge of the FPC with a finger, the lock lever is also pressed at the same time to release the lock.

Step 1

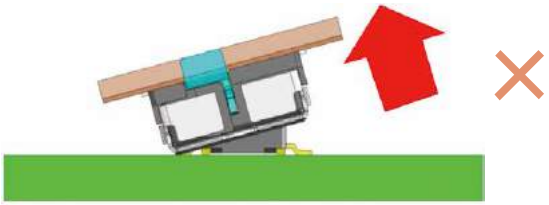


3) Lift the FPC upwards while pressing on the lock lever.

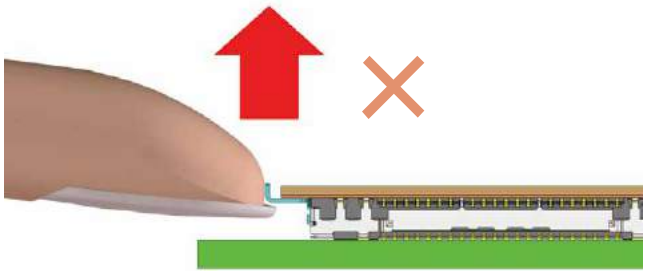
Step 2



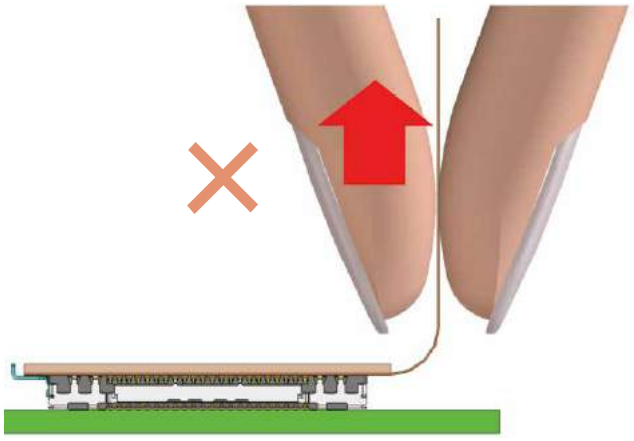
4) Caution: If unmated forcefully, the connector may be damaged.



5) Attempting to unmate the connector without releasing the lock could cause damage.

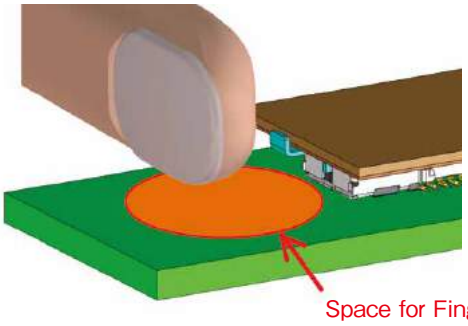


6) Pulling the FPC without releasing the lock could cause damage.

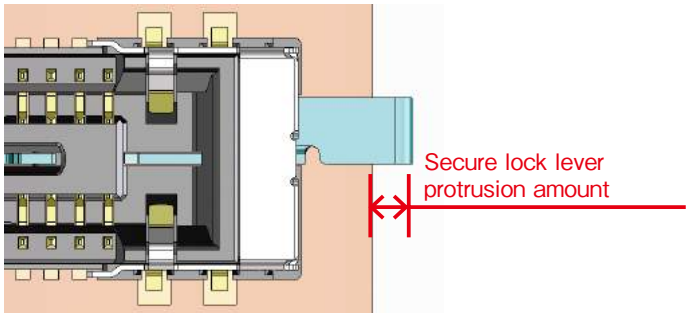


PCB Layout

1) Enough space for a finger to fit is required to operate the lock lever.
Consider the PCB layout when placing parts around the connector.



2) The lock lever must protrude beyond the FPC to allow the lock lever to operate properly.
When designing FPC, please refer to the note of Recommended PCB Mounting Pattern of Receptacle.



PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

ER8 Series

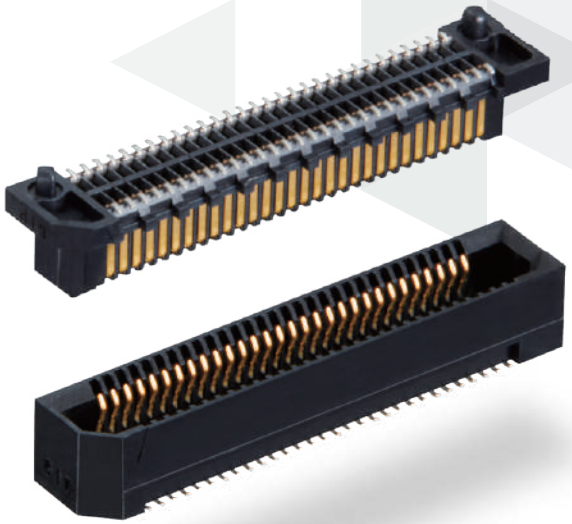
PCIe Gen.4 High Speed Transmission (16+Gbps), 0.8mm Pitch, Board-to-Board Connectors

FunctionMAX™

High Speed — High Speed

Wide Variation

P= 0.8 mm — P= 0.8mm



Features

1. Pitch : 0.8mm

2. Variations :
Right Angle / Parallel /
Coplanar

3. Stacking Height :
7/9/10/12mm

4. Number of Positions :
10/20/30/40/50/60
70/80/100/120/140pos.

5. Large Guide for Easy Mating

Self-alignment Range:±1.6mm

6. Unique Contact Design for Smooth Mating

7. Samtec "Edge Rate®" Licensed Second Source

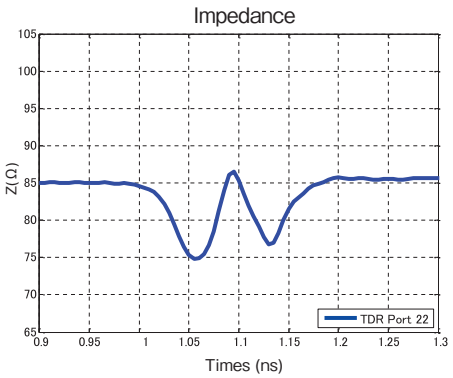
High Speed Transmission Characteristics

● Differential Insertion Loss

Supports PCIe Gen.4 with sufficient margin.

● Differential Impedance

85Ω (Tr=35ps, 20%-80%)



Product Specification

Rated Current (Note 1)	0.5A (Signal)	Operating Temperature (Note 2)	-55 to +125℃
Rated Voltage	100V AC	Storage Temperature (Note 3)	-10 to +60℃

Item	Specifications	Conditions
Contact Resistance	50mΩ Max.	100mA
Insulation Resistance	1000MΩ Min.	100V DC
Withstanding Voltage	No flashover or insulation breakdown	300V AC for 1 min.
Mating Durability	Contact resistance change : 15mΩ Max. No flash over or insulation breakdown. No damage, cracks or part dislocation.	100 times
Vibration Resistance	No electrical discontinuity of 1 μs Min.	Frequency : 20 to 500Hz, Power spectral density : $0.02G^2/Hz$ 3 times in each of the 3 directions
Shock Resistance	No electrical discontinuity of 1 μs Min.	$980m/s^2$, Duration of pulse 6ms, 90 minutes each of 3-axis direction
Temperature Cycles	Contact resistance change : 15mΩ Max. Insulation resistance : 1000MΩ Min. No flashover or insulation breakdown No damage, cracks or part dislocation.	25℃ , 90-95% RH : 120 min. ↑ ↓ 120 min. 65℃ , 90-95% RH : 120 min. 12 times

Note 1 : Current rating per 1 contact is used.
Note 2 : Includes temperature rise due to current flow.
Note 3 : The term "storage" refers to products stored for long period of time prior to mounting and use.
Note 4 : Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

Materials / Finish

● Straight Receptacle / Header

Component	Material	Color / Finish	Remarks
Insulation	LCP	Black	UL94V-0
Signal Contact	Copper Alloy	Contact Area : Gold Plating Mounting Area : Tin Plating	–

● Right Angle Receptacle / Header

Component	Material	Color / Finish	Remarks
Insulation	LCP	Black	UL94V-0
Signal Contact	Copper Alloy	Contact Area : Gold Plating Mounting Area : Tin Plating	–
Retention Peg	Copper Alloy	Mounting Area : Tin Plating	–
Retention Pin	Copper Alloy	Mounting Area : Tin Plating	–

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.

■ Straight Header
■ Straight Receptacle

ER8 # - ### # - 0.8 SV - #H (##)
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

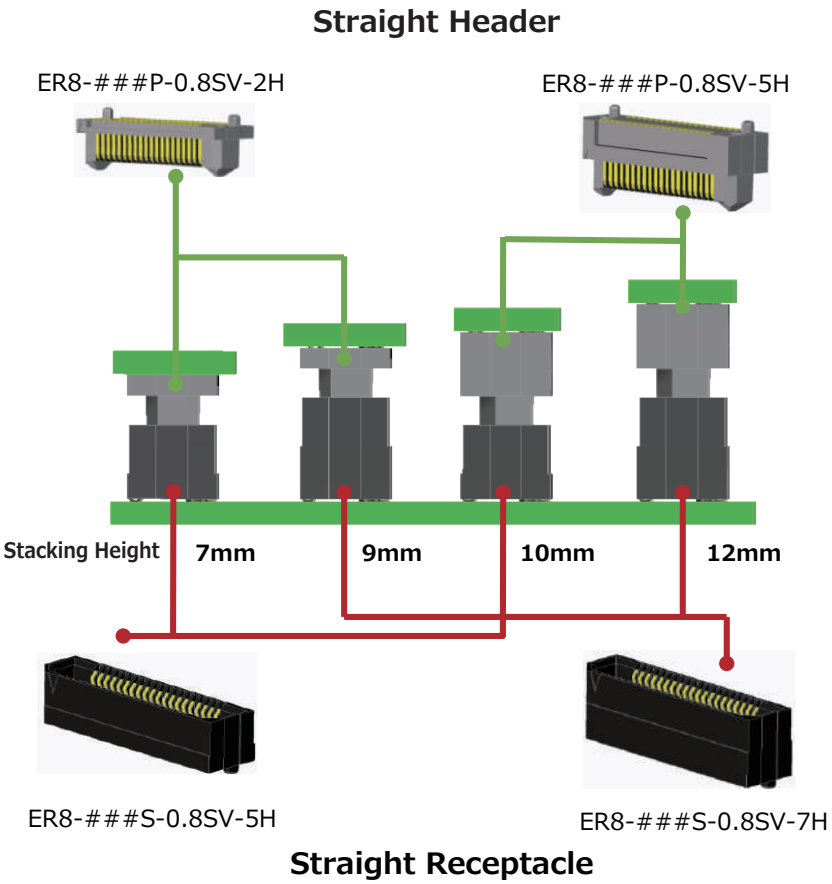
■ Right Angle Header
■ Right Angle Receptacle

ER8 # - ### # - 0.8 SH (##)
❶ ❷ ❸ ❹ ❺ ❻ ❽

❶ Series Name	ER8	❺ Contact Pitch	0.8mm
❷ Specification	Blank : Standard Product L : With Latch (140pos. only)	❻ Contact Type	SV : Straight Type SH : Right Angle Type
❸ No. of Pos.	10-140	❼ Height	2, 5 : Header 5, 7 : Receptacle
❹ Connector Type	S : Receptacle P : Header	❽ Plating Specification	Blank : Contact Area Gold (0.76μm) +Ni (2.54μm) (10) : Contact Area Gold (0.25μm) +Ni (1.25μm)

Function Chart

● Parallel Connection (10 to 120pos.)

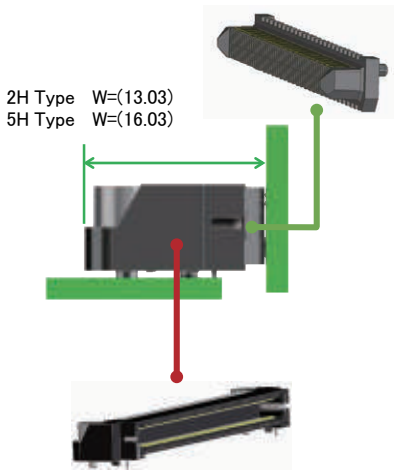


● Right Angle Connection

(120pos. only)

Straight Header

ER8-120P-0.8SV-2H
ER8-120P-0.8SV-5H

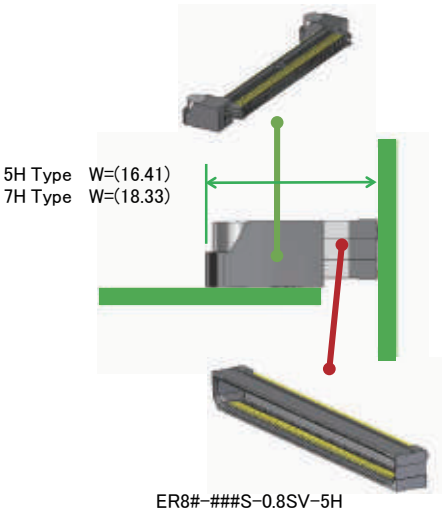


ER8-120S-0.8SH
Right Angle Recectaple

(120, 140pos.)

Right Angle Header

ER8#-###P-0.8SH

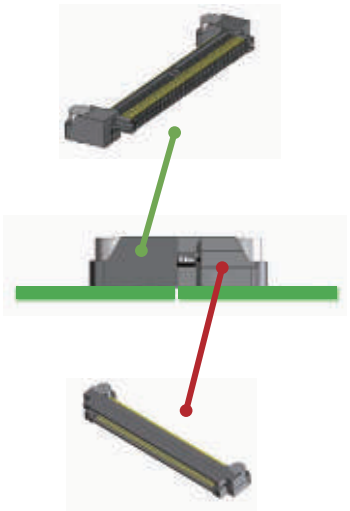


ER8#-###S-0.8SV-5H
ER8-120S-0.8SV-77H
Straight Receptacle

● Coplanar Connection (120pos. only)

Right Angle Header

ER8-120P-0.8SH



ER8-120S-0.8SH
Right Angle Recectaple

● Stacking Height Variation

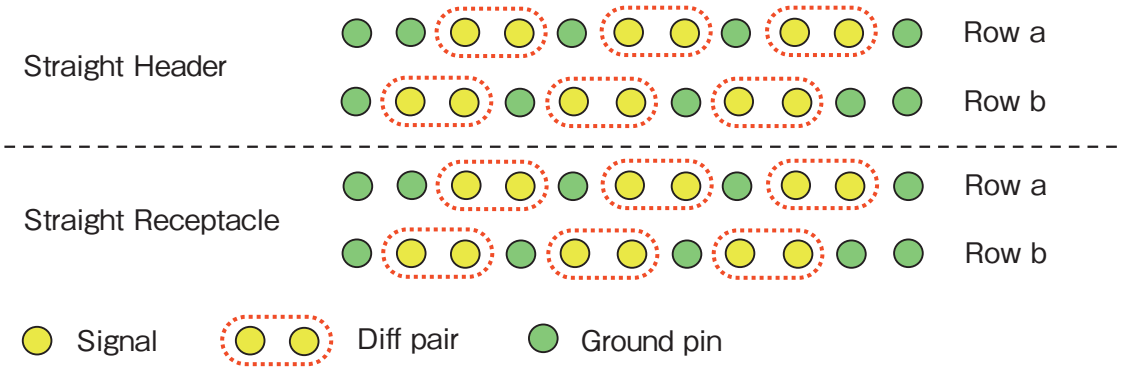
No. of Pos. / Stacking Height	10	20	30	40	50	60	70	80	100	120
7mm	○	○	○	○	○	○	○	○	○	○
9mm	○	○	○	○	○	○	○	○	○	○
10mm	○	○	○	○	○	○	○	○	○	○
12mm	○	○	○	○	○	○	○	○	○	○

○ =Available

Signal Integrity

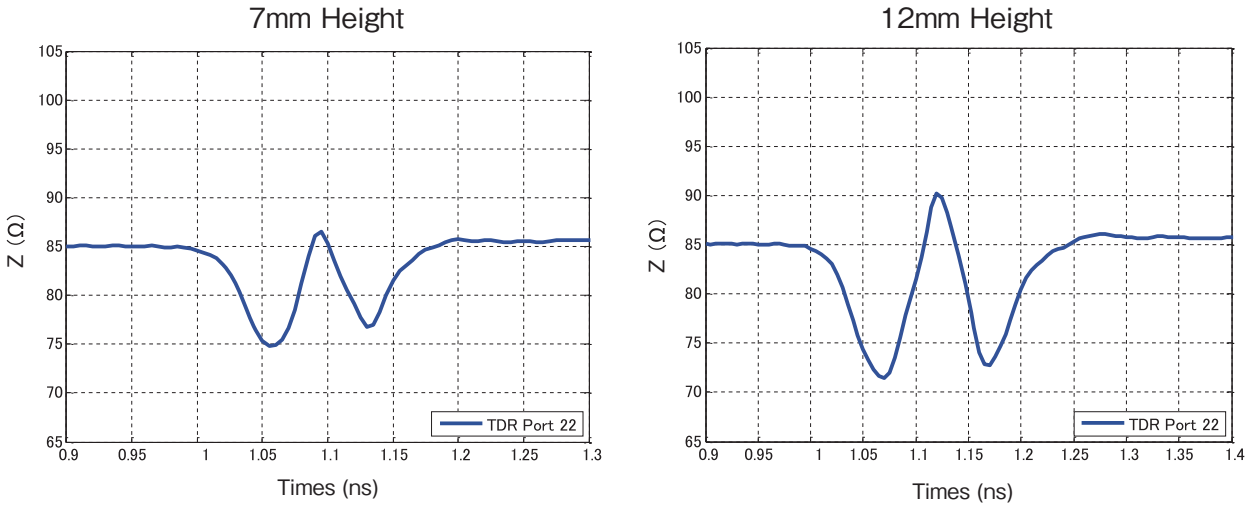
● Pin Assignment

To match 85Ω differential impedance and to reduce crosstalk, a staggered GSSG pin assignment is recommended for ER8.
*Analysis results only.

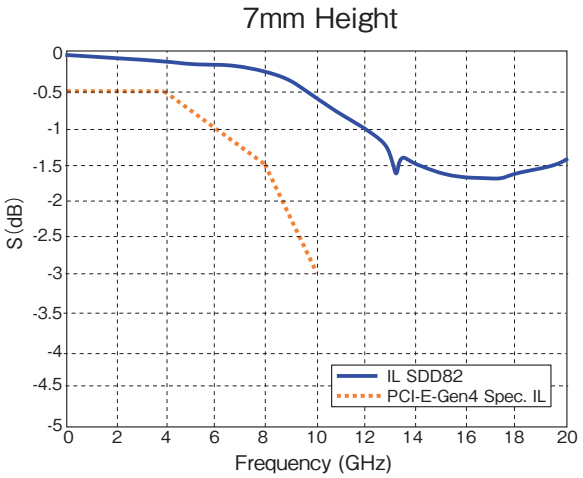


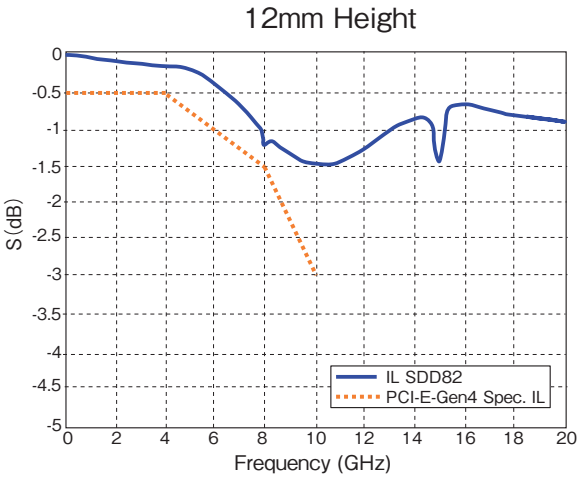
● Impedance

The differential impedance is 85Ω at 35ps rise time (20% to 80%)

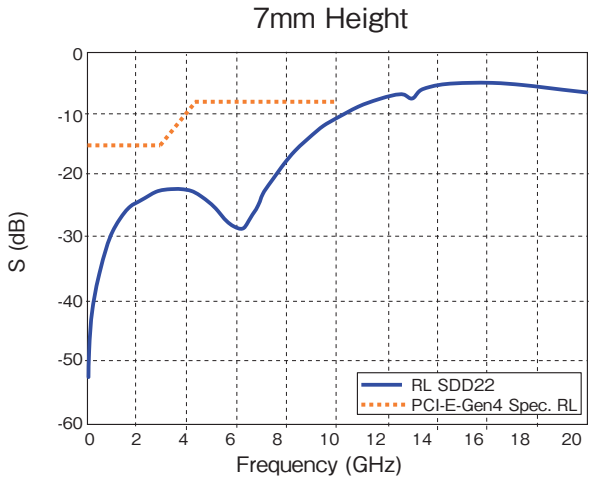


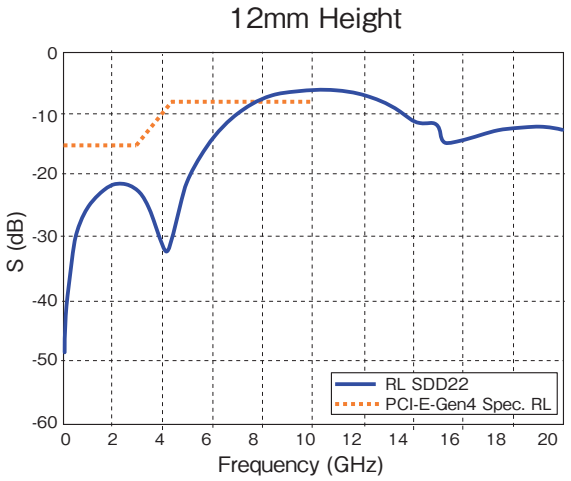
Insertion Loss





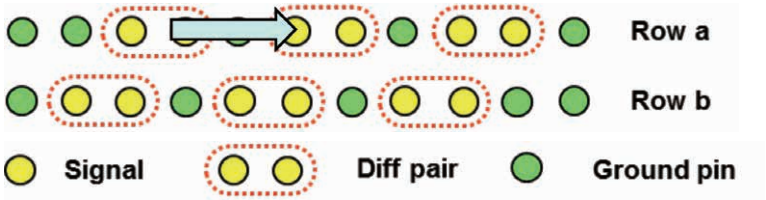
Return Loss



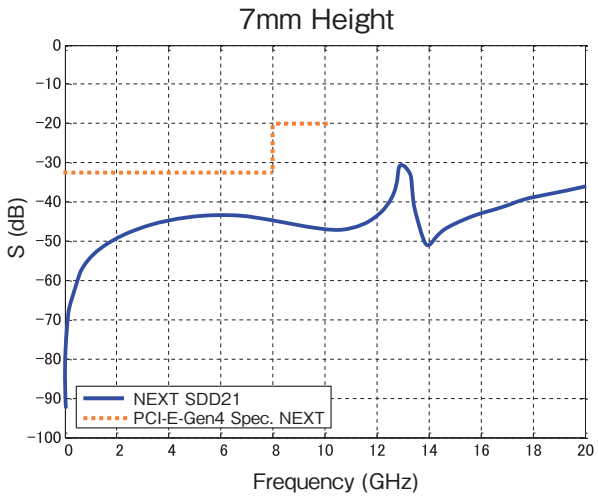


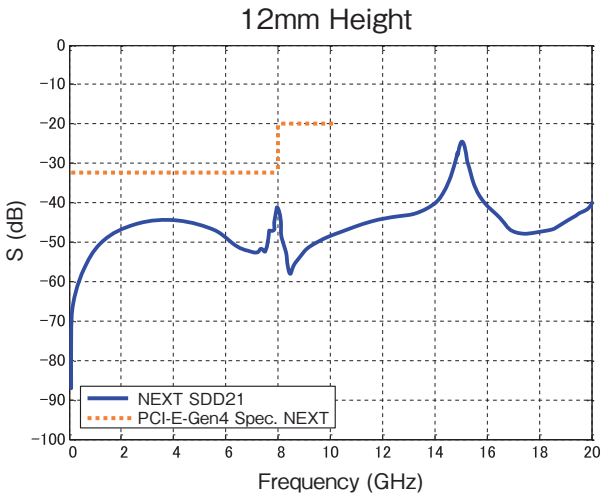
Crosstalk

The below diagram shows the NEXT and FEXT in the same row with the highest influence.

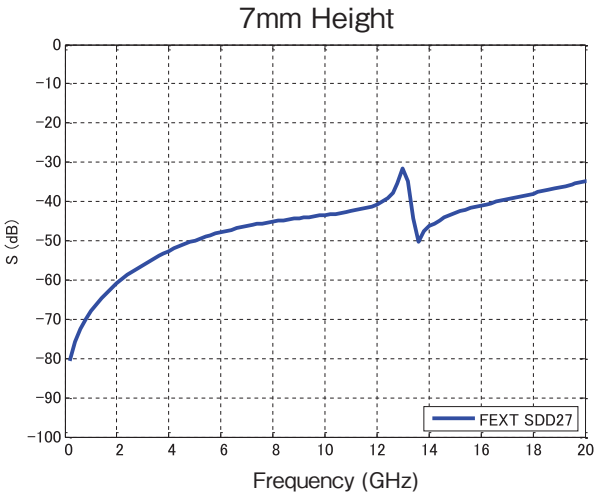


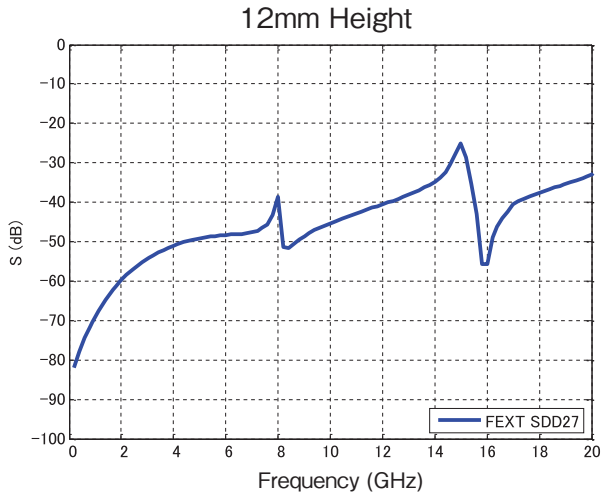
● Near-end Crosstalk (NEXT)



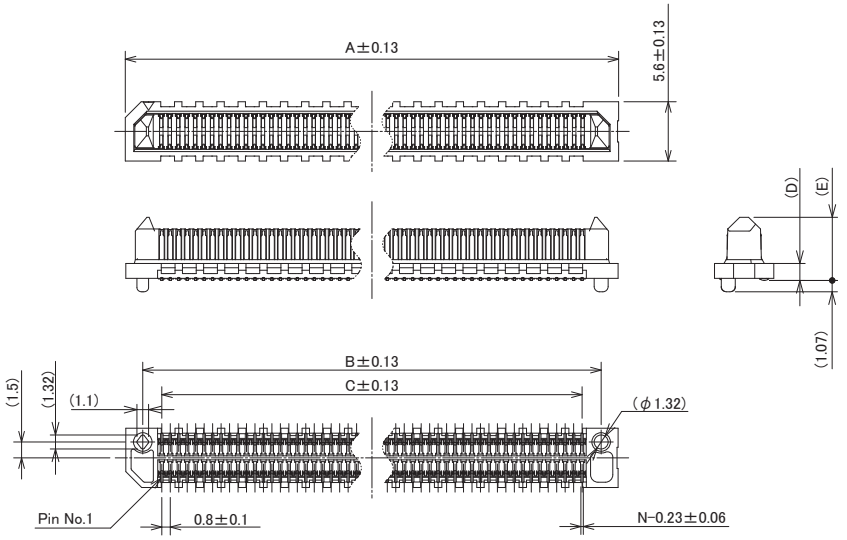


● Far-end Crosstalk (FEXT)





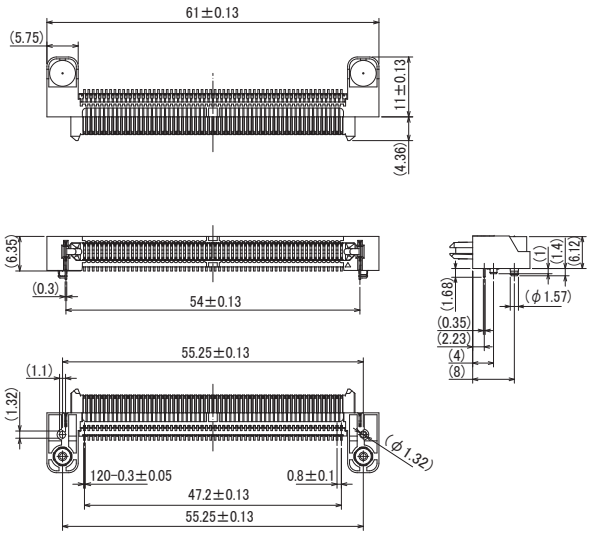
Straight Header



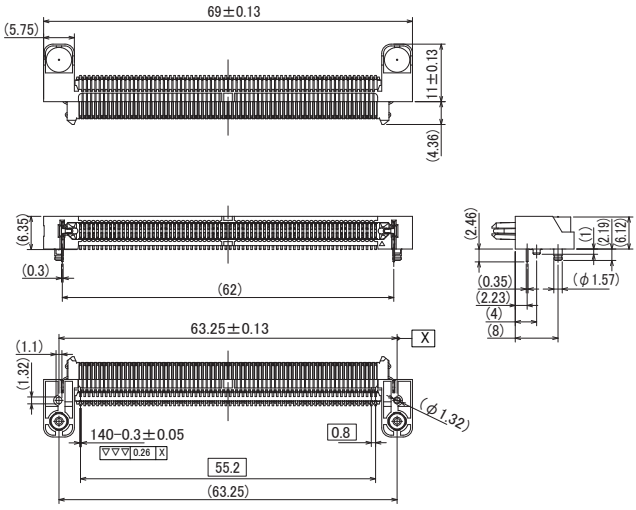
Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D	E	Purchase Unit
ER8-10P-0.8SV-2H(##)	CL0625-0008-8-##	10	10	6.8	3.2	1.605	5.965	450pcs per reel
ER8-20P-0.8SV-2H(##)	CL0625-0011-0-##	20	14	10.8	7.2	1.605	5.965	475pcs per reel
ER8-30P-0.8SV-2H(##)	CL0625-0012-0-##	30	18	14.8	11.2	1.605	5.965	
ER8-40P-0.8SV-2H(##)	CL0625-0013-0-##	40	22	18.8	15.2	1.605	5.965	350pcs per reel
ER8-50P-0.8SV-2H(##)	CL0625-0009-0-##	50	26	22.8	19.2	1.605	5.965	
ER8-60P-0.8SV-2H(##)	CL0625-0017-0-##	60	30	26.8	23.2	1.605	5.965	
ER8-70P-0.8SV-2H(##)	CL0625-0021-0-##	70	34	30.8	27.2	1.605	5.965	
ER8-80P-0.8SV-2H(##)	CL0625-0022-0-##	80	38	34.8	31.2	1.605	5.965	
ER8-100P-0.8SV-2H(##)	CL0625-0023-0-##	100	46	42.8	39.2	1.605	5.965	
ER8-120P-0.8SV-2H(##)	CL0625-0003-4-##	120	54	50.8	47.2	1.605	5.965	375pcs per reel
ER8-10P-0.8SV-5H(##)	CL0625-0024-0-##	10	10	6.8	3.2	4.605	8.905	325pcs per reel
ER8-20P-0.8SV-5H(##)	CL0625-0025-0-##	20	14	10.8	7.2	4.605	8.905	
ER8-30P-0.8SV-5H(##)	CL0625-0026-0-##	30	18	14.8	11.2	4.605	8.905	
ER8-40P-0.8SV-5H(##)	CL0625-0020-0-##	40	22	18.8	15.2	4.605	8.905	250pcs per reel
ER8-50P-0.8SV-5H(##)	CL0625-0027-0-##	50	26	22.8	19.2	4.605	8.905	
ER8-60P-0.8SV-5H(##)	CL0625-0019-0-##	60	30	26.8	23.2	4.605	8.905	
ER8-70P-0.8SV-5H(##)	CL0625-0028-0-##	70	34	30.8	27.2	4.605	8.905	
ER8-80P-0.8SV-5H(##)	CL0625-0029-0-##	80	38	34.8	31.2	4.605	8.905	
ER8-100P-0.8SV-5H(##)	CL0625-0030-0-##	100	46	42.8	39.2	4.605	8.905	
ER8-120P-0.8SV-5H(##)	CL0625-0031-0-##	120	54	50.8	47.2	4.605	8.905	

Right Angle Header



ER8-120P-0.8SH(##)

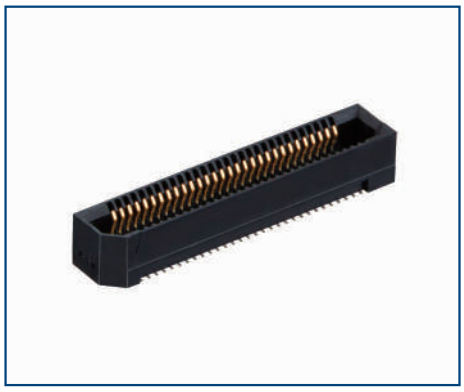


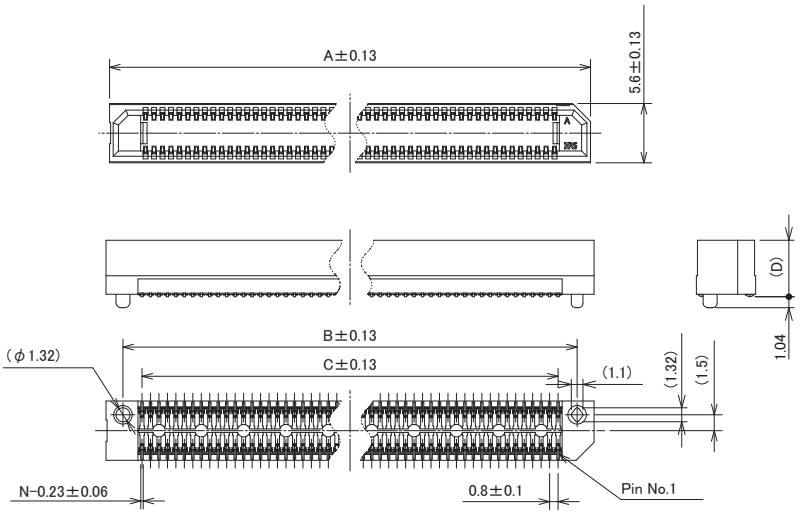
ER8L-140P-0.8SH(##)

Unit : mm

Part No.	HRS No.	No. of Pos.	Purchase Unit
ER8-120P-0.8SH(##)	CL0625-0047-0-##	120	200pcs per reel
ER8L-140P-0.8SH(##)	CL0625-1002-0-##	140	

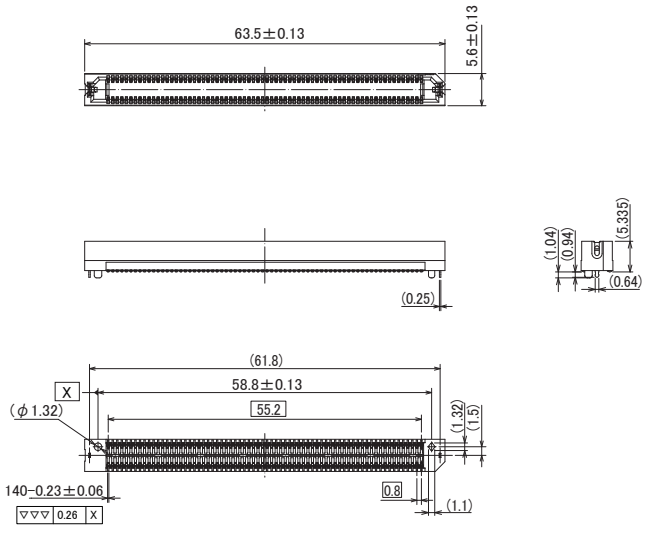
Straight Receptacle





Unit : mm

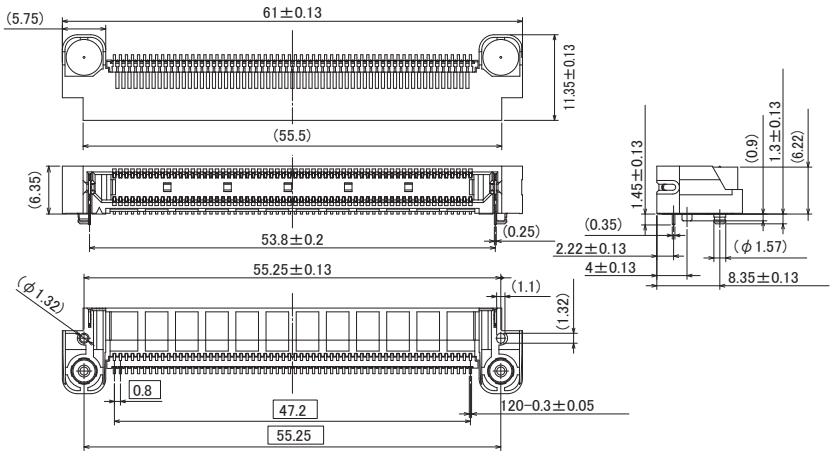
Part No.	HRS No.	No. of Pos.	A	B	C	D	Purchase Unit
ER8-10S-0.8SV-5H(##)	CL0625-0007-5-##	10	10	6.8	3.2	5.335	475pcs per reel
ER8-20S-0.8SV-5H(##)	CL0625-0014-0-##	20	14	10.8	7.2	5.335	500pcs per reel
ER8-30S-0.8SV-5H(##)	CL0625-0015-0-##	30	18	14.8	11.2	5.335	475pcs per reel
ER8-40S-0.8SV-5H(##)	CL0625-0016-0-##	40	22	18.8	15.2	5.335	375pcs per reel
ER8-50S-0.8SV-5H(##)	CL0625-0010-0-##	50	26	22.8	19.2	5.335	
ER8-60S-0.8SV-5H(##)	CL0625-0018-0-##	60	30	26.8	23.2	5.335	
ER8-70S-0.8SV-5H(##)	CL0625-0032-0-##	70	34	30.8	27.2	5.335	
ER8-80S-0.8SV-5H(##)	CL0625-0033-0-##	80	38	34.8	31.2	5.335	
ER8-100S-0.8SV-5H(##)	CL0625-0034-0-##	100	46	42.8	39.2	5.335	
ER8-120S-0.8SV-5H(##)	CL0625-0035-0-##	120	54	50.8	47.2	5.335	
ER8-10S-0.8SV-7H(##)	CL0625-0036-0-##	10	10	6.8	3.2	7.25	400pcs per reel
ER8-20S-0.8SV-7H(##)	CL0625-0037-0-##	20	14	10.8	7.2	7.25	375pcs per reel
ER8-30S-0.8SV-7H(##)	CL0625-0038-0-##	30	18	14.8	11.2	7.25	400pcs per reel
ER8-40S-0.8SV-7H(##)	CL0625-0039-0-##	40	22	18.8	15.2	7.25	300pcs per reel
ER8-50S-0.8SV-7H(##)	CL0625-0040-0-##	50	26	22.8	19.2	7.25	
ER8-60S-0.8SV-7H(##)	CL0625-0041-0-##	60	30	26.8	23.2	7.25	
ER8-70S-0.8SV-7H(##)	CL0625-0042-0-##	70	34	30.8	27.2	7.25	
ER8-80S-0.8SV-7H(##)	CL0625-0043-0-##	80	38	34.8	31.2	7.25	
ER8-100S-0.8SV-7H(##)	CL0625-0044-0-##	100	46	42.8	39.2	7.25	
ER8-120S-0.8SV-7H(##)	CL0625-0045-0-##	120	54	50.8	47.2	7.25	



Unit : mm

Part No.	HRS No.	No. of Pos.	Purchase Unit
ER8L-140S-0.8SV-5H(##)	CL0625-0046-0-##	140	375pcs per reel

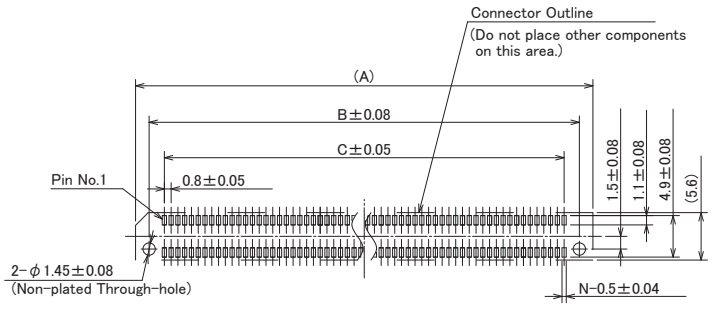
Right Angle Receptacle



Part No.	HRS No.	No. of Pos.	Purchase Unit
ER8-120S-0.8SH(##)	CL0625-1001-4-##	120	200pcs per reel

Recommended PCB Mouting Pattern (Metal Mask Thickness : t=0.15mm)

● Straight Header

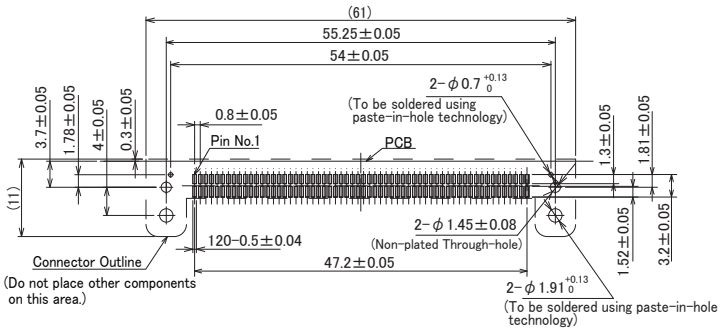


Unit : mm

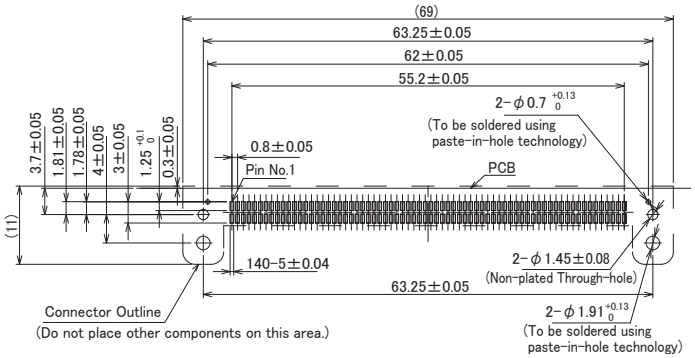
No. of Pos.	A	B	C
10	10	6.8	3.2
20	14	10.8	7.2
30	18	14.8	11.2
40	22	18.8	15.2
50	26	22.8	19.2
60	30	26.8	23.2
70	34	30.8	27.2
80	38	34.8	31.2
100	46	42.8	39.2
120	54	50.8	47.2

● Right Angle Header

120pos.

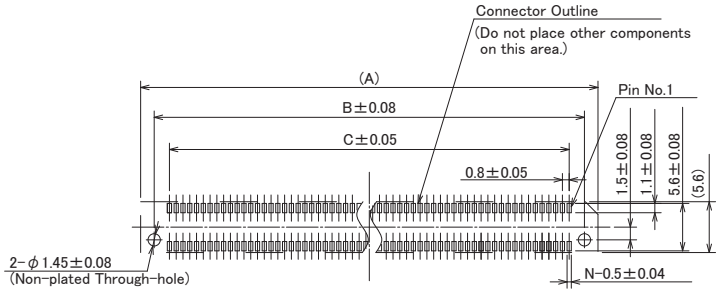


140pos.

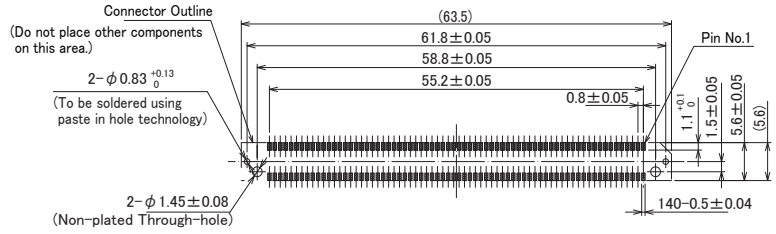


● Straight Receptacle

10-120pos.



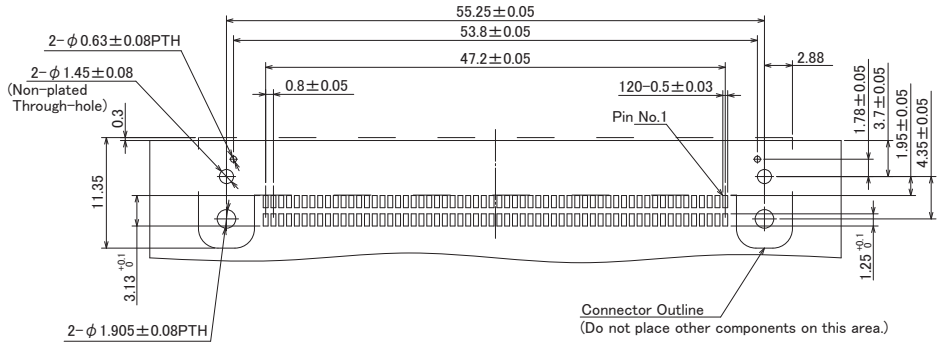
140pos.



Unit : mm

No. of Pos.	A	B	C
10	10	6.8	3.2
20	14	10.8	7.2
30	18	14.8	11.2
40	22	18.8	15.2
50	26	22.8	19.2
60	30	26.8	23.2
70	34	30.8	27.2
80	38	34.8	31.2
100	46	42.8	39.2
120	54	50.8	47.2
140	63.5	58.8	55.2

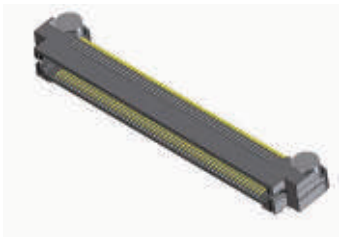
● Right Angle Receptacle



Connection Variations

Right Angle Receptacle

ER8-120S-0.8SH(##)
120pos. only



Right Angle Header

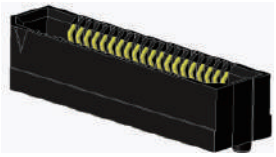
ER8#-###P-0.8SH(##)
120, 140pos.

Coplanar Connection

Right Angle Connection

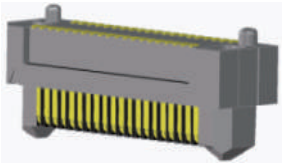
Straight Receptacle

ER8#-###S-0.8SV-#H(##)
10 to 140pos.



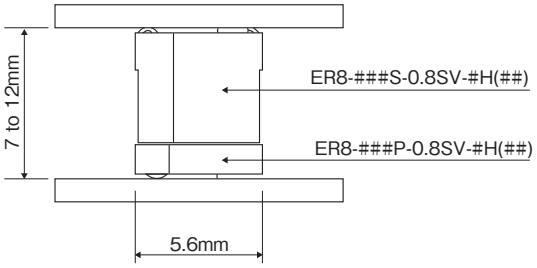
Straight Header

ER8-###P-0.8SV-#H(##)
10 to 120pos.

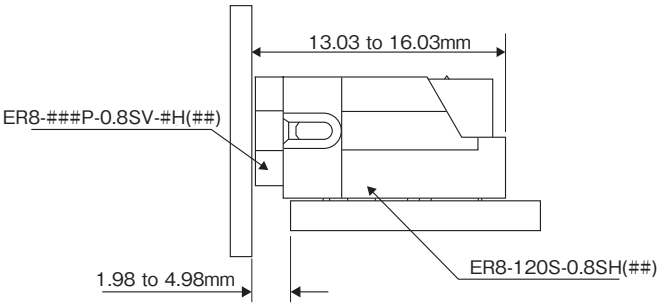


Parallel Connection

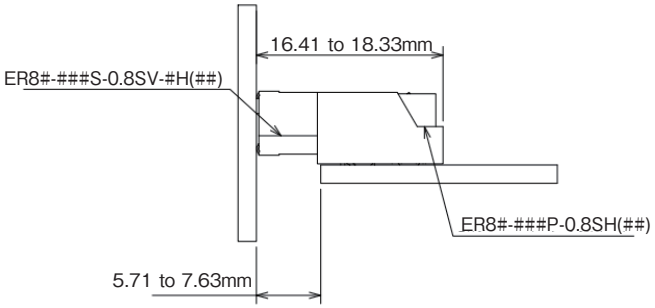
Parallel Connection Type



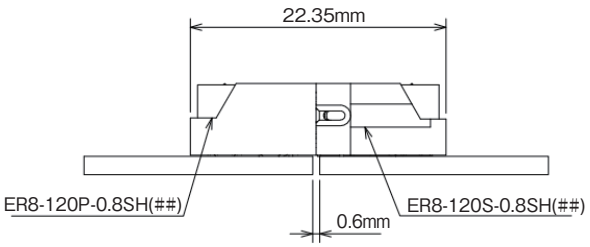
Right Angle Connection Type
(Straight Header + Right Angle Receptacle)



Right Angle Connection Type
(Right Angle Header + Straight Receptacle)



Coplanar Connection Type



Edge Rate (Samtec) Part No. Compatibility List

● Straight Header

Part No.	HRS No.	Samtec Part No.
ER8-10P-0.8SV-2H	CL0625-0008-8-00	ERM8-005-02.0-S-DV-K-TR
ER8-20P-0.8SV-2H	CL0625-0011-0-00	ERM8-010-02.0-S-DV-K-TR
ER8-30P-0.8SV-2H	CL0625-0012-0-00	–
ER8-40P-0.8SV-2H	CL0625-0013-0-00	ERM8-020-02.0-S-DV-K-TR
ER8-50P-0.8SV-2H	CL0625-0009-0-00	ERM8-025-02.0-S-DV-K-TR
ER8-60P-0.8SV-2H	CL0625-0017-0-00	ERM8-030-02.0-S-DV-K-TR
ER8-70P-0.8SV-2H	CL0625-0021-0-00	ERM8-035-02.0-S-DV-K-TR
ER8-80P-0.8SV-2H	CL0625-0022-0-00	ERM8-040-02.0-S-DV-K-TR
ER8-100P-0.8SV-2H	CL0625-0023-0-00	ERM8-050-02.0-S-DV-K-TR
ER8-120P-0.8SV-2H	CL0625-0003-4-00	ERM8-060-02.0-S-DV-K-TR
ER8-10P-0.8SV-5H	CL0625-0024-0-00	ERM8-005-05.0-S-DV-K-TR
ER8-20P-0.8SV-5H	CL0625-0025-0-00	ERM8-010-05.0-S-DV-K-TR
ER8-30P-0.8SV-5H	CL0625-0026-0-00	–
ER8-40P-0.8SV-5H	CL0625-0020-0-00	ERM8-020-05.0-S-DV-K-TR
ER8-50P-0.8SV-5H	CL0625-0027-0-00	ERM8-025-05.0-S-DV-K-TR
ER8-60P-0.8SV-5H	CL0625-0019-0-00	ERM8-030-05.0-S-DV-K-TR
ER8-70P-0.8SV-5H	CL0625-0028-0-00	ERM8-035-05.0-S-DV-K-TR
ER8-80P-0.8SV-5H	CL0625-0029-0-00	ERM8-040-05.0-S-DV-K-TR
ER8-100P-0.8SV-5H	CL0625-0030-0-00	ERM8-050-05.0-S-DV-K-TR
ER8-120P-0.8SV-5H	CL0625-0031-0-00	ERM8-060-05.0-S-DV-K-TR

● Right Angle Header

Part No.	HRS No.	Samtec Part No.
ER8-120P-0.8SH	CL0625-0047-0-00	ERM8-060-01-S-D-RA-K-TR
ER8L-140P-0.8SH	CL0625-1002-0-00	ERM8-070-01-S-D-RA-L-K-TR

● Straight Receptacle

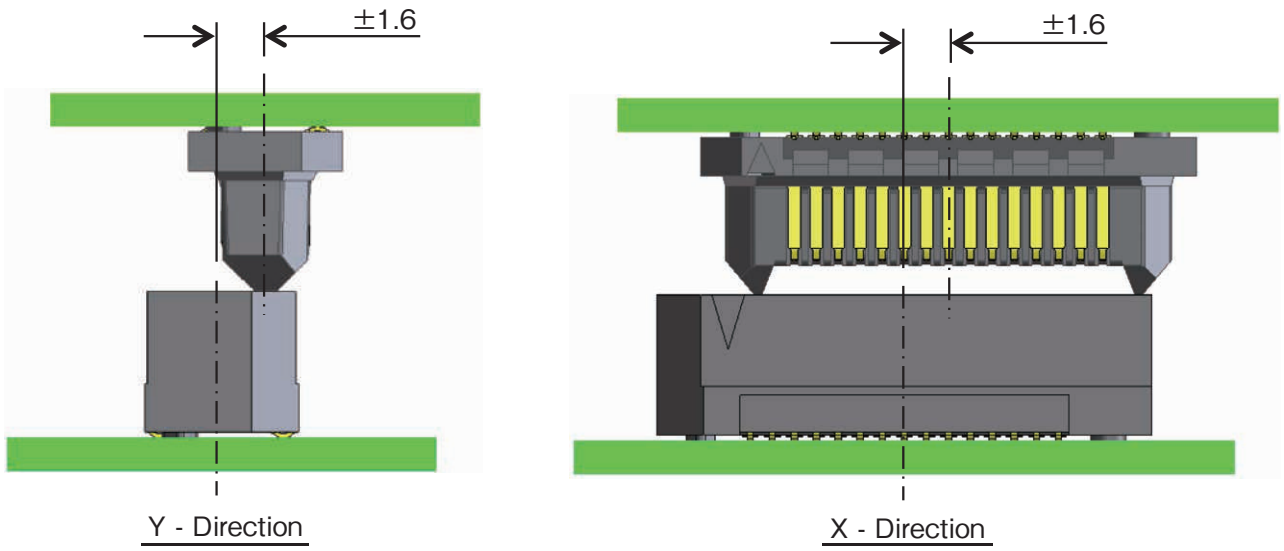
Part No.	HRS No.	Samtec Part No.
ER8-10S-0.8SV-5H	CL0625-0007-5-00	ERF8-005-05.0-S-DV-K-TR
ER8-20S-0.8SV-5H	CL0625-0014-0-00	ERF8-010-05.0-S-DV-K-TR
ER8-30S-0.8SV-5H	CL0625-0015-0-00	–
ER8-40S-0.8SV-5H	CL0625-0016-0-00	ERF8-020-05.0-S-DV-K-TR
ER8-50S-0.8SV-5H	CL0625-0010-0-00	ERF8-025-05.0-S-DV-K-TR
ER8-60S-0.8SV-5H	CL0625-0018-0-00	ERF8-030-05.0-S-DV-K-TR
ER8-70S-0.8SV-5H	CL0625-0032-0-00	ERF8-035-05.0-S-DV-K-TR
ER8-80S-0.8SV-5H	CL0625-0033-0-00	ERF8-040-05.0-S-DV-K-TR
ER8-100S-0.8SV-5H	CL0625-0034-0-00	ERF8-050-05.0-S-DV-K-TR
ER8-120S-0.8SV-5H	CL0625-0035-0-00	ERF8-060-05.0-S-DV-K-TR
ER8L-140S-0.8SV-5H	CL0625-0046-0-00	ERF8-070-05.0-S-DV-L-K-TR
ER8-10S-0.8SV-7H	CL0625-0036-0-00	ERF8-005-07.0-S-DV-K-TR
ER8-20S-0.8SV-7H	CL0625-0037-0-00	ERF8-010-07.0-S-DV-K-TR
ER8-30S-0.8SV-7H	CL0625-0038-0-00	–
ER8-40S-0.8SV-7H	CL0625-0039-0-00	ERF8-020-07.0-S-DV-K-TR
ER8-50S-0.8SV-7H	CL0625-0040-0-00	ERF8-025-07.0-S-DV-K-TR
ER8-60S-0.8SV-7H	CL0625-0041-0-00	ERF8-030-07.0-S-DV-K-TR
ER8-70S-0.8SV-7H	CL0625-0042-0-00	ERF8-035-07.0-S-DV-K-TR
ER8-80S-0.8SV-7H	CL0625-0043-0-00	ERF8-040-07.0-S-DV-K-TR
ER8-100S-0.8SV-7H	CL0625-0044-0-00	ERF8-050-07.0-S-DV-K-TR
ER8-120S-0.8SV-7H	CL0625-0045-0-00	ERF8-060-07.0-S-DV-K-TR

● Right Angle Receptacle

Part No.	HRS No.	Samtec Part No.
ER8-120S-0.8SH	CL0625-1001-4-00	ERF8-060-01-L-D-RA-TR

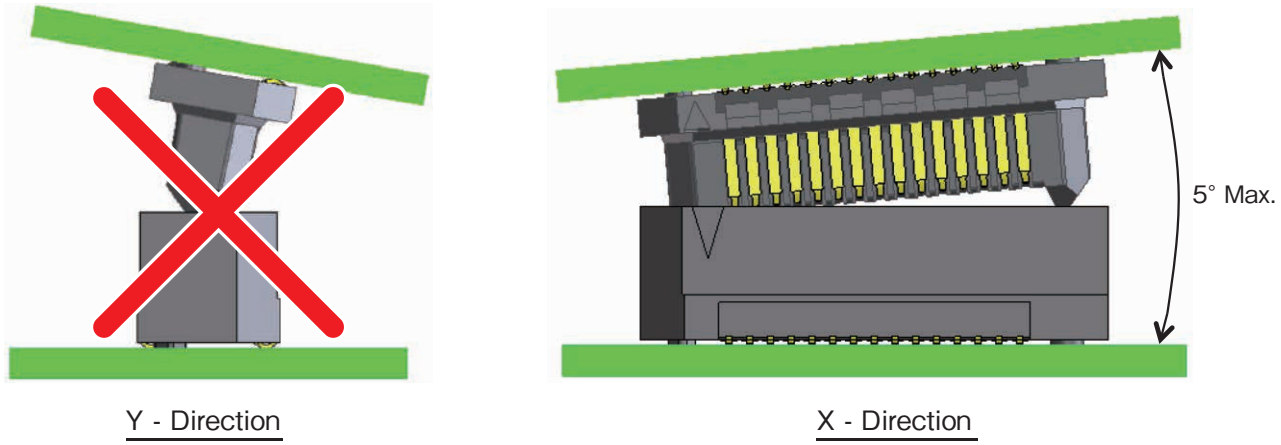
Mating Operation

● Mating Self-Alignment Tolerance (Note)



● Mating Angle Tolerance (Note)

A mating angle of 5° is allowed in the longitudinal (X) direction.
Mating at an angle in the lateral (Y) direction is not recommended.



Note : The above mating conditions show the allowed values for the mating self-alignment and mating angles separately.
The self alignment tolerance and angle tolerance are not satisfied at the same time.

Recommended Spacer Height

Spacers are required to support PWB's and protect the SMT solder joints.

Unit : mm

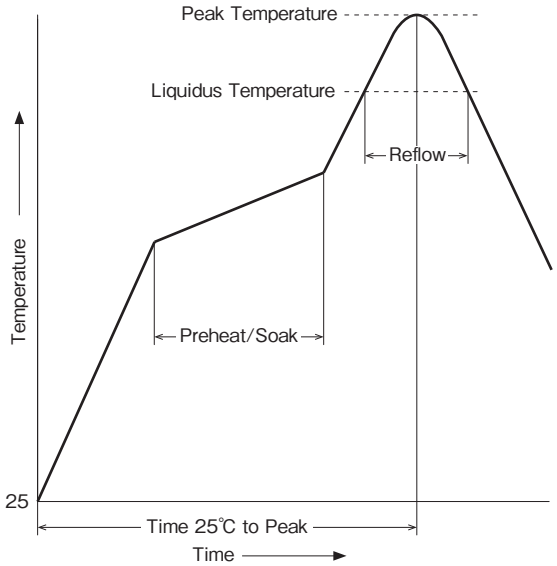
Stacking Height	Recomended Spacer Height
7	7.15 ± 0.05
9	9.15 ± 0.05
10	10.15 ± 0.05
12	12.15 ± 0.05

Mounting Temperature Profile (Reference)

● Pb-Free Assembly

Preheat / Soak (150 to 200℃)	Max. Ramp Up Rate	Reflow Time (217℃ Min.)	Peak Temperature	Peak Temperature Time	Cooling Rate	Time Between Normal Temperature and Peak
60 - 120 sec.	3℃ Max./s	40 - 150 sec.	260℃	30 sec. Max.	6℃ Max./s	8 min Min.

Recommended Temperature Profile



Temperature profile may change depending on the solder paste types, manufacturers, PCB size, and other soldering materials. Please fully check the mounting conditions before use.

Cleaning Conditions

● Cleaning with Organic Solvent

Solvent	Cleaning at Normal Temperature	Heated Cleaning
IPA (Isopropyl Alcohol)	Yes	Yes
HCFC (Hydrochlorofluorocarbon)	Yes	Yes