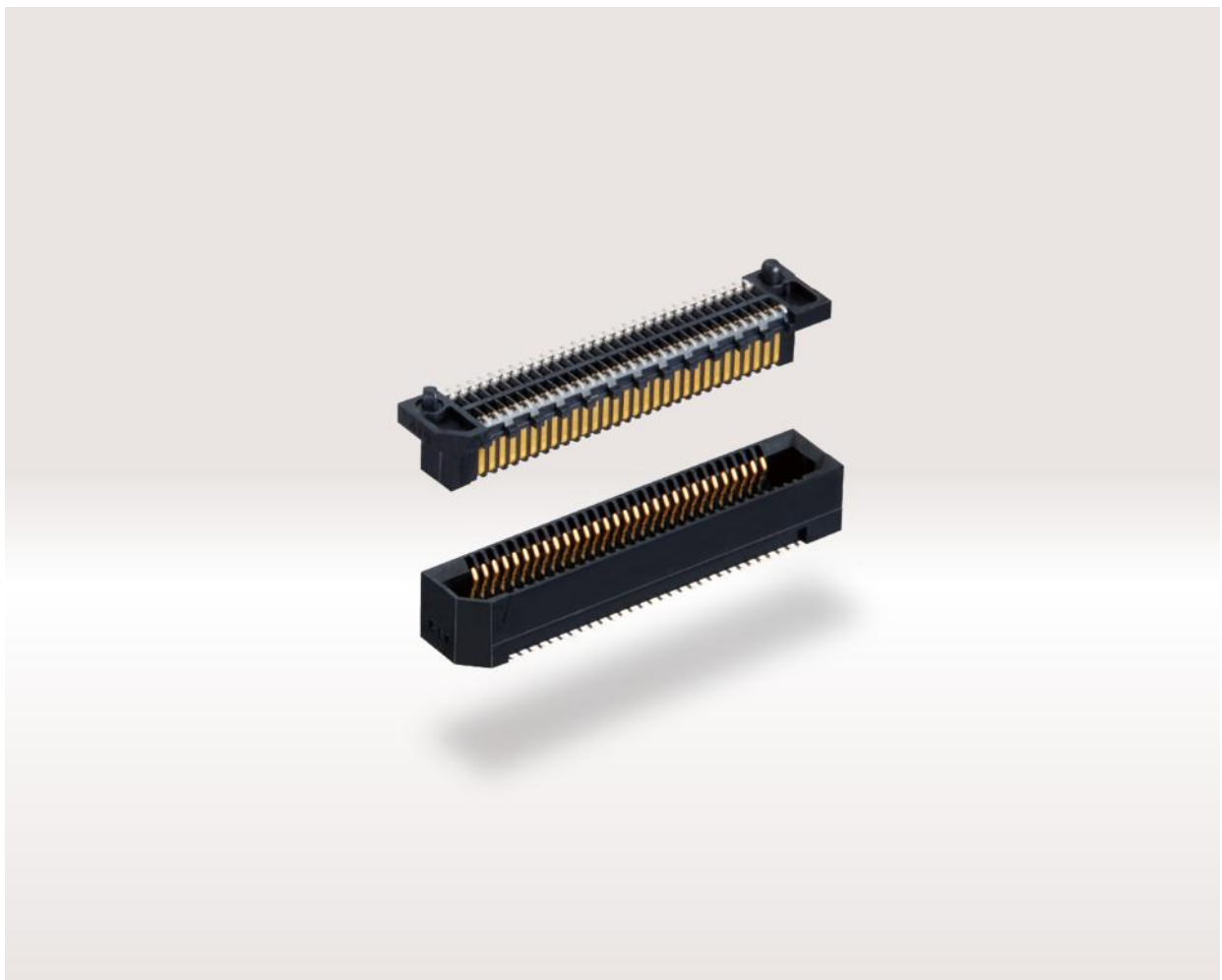


Hirose **ER8**™

Connector System

Design Notes



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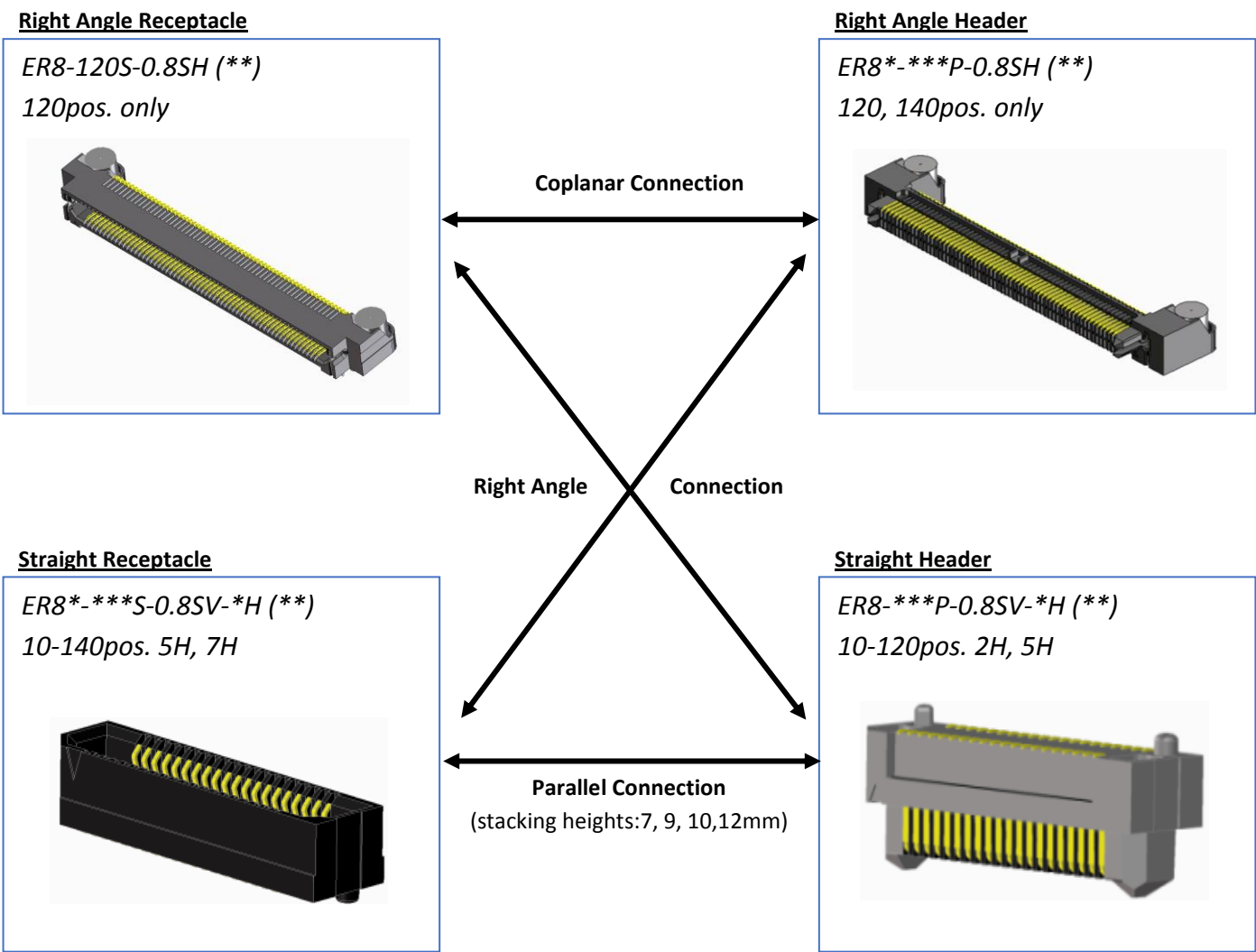
Document Number: ETAD-F0992

Revision No.	Description (Major changes)	Date
0.0	Initial release	Apr.5 th ,2024
1.0	Notation correction	Apr.8 th ,2024

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Section 1 Introduction

The Hirose **ER8** connector system is a licensed second source of the Samtec Edge Rate connector system. **ER8** is a 0.8mm pitch Board-to-Board SMT connector with PCIe Gen.4 high-speed transmission(16+Gbps). Wide varieties are available with connection types of Coplanar, Right Angle and Parallel. Position counts of 10, 20, 30, 40, 50, 60, 70, 80, 100, 120, 140pos and stacking heights of 7, 9, 10, 12mm are available. Please refer to individual product drawings for details.



1.2 Scope

*This guideline provides information useful for applications using the **ER8** SMT connector system. It provides information pertaining to:*

- a) General Information*
- b) Operating Characteristics*
- c) Signal Integrity Information¹*
- d) PWB Design Information*
- e) Stencil Printing Information*
- f) Pick and Place Information*
- g) Reflow Processing Information*
- h) Assembly Processing Information*

This document will be updated by Hirose as required to reflect current technologies and manufacturing capabilities. Please refer to individual product drawings for details.

1.3 Application and Interpretation

*This technical bulletin is intended to offer only general guidance and design concepts to customers. It does not limit customer designs nor guarantee results under all situations. Development of actual designs is the responsibility of each customer. Customers should consult with Hirose regarding their specific application, when, or if, any questions arise relating to these guidelines. Use of this technical bulletin is at customer's sole risk. This bulletin is provided "AS IS" and without warranty of any kind and HIROSE **expressly disclaims all warranties, express or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose.** HIROSE does not warrant that the guidelines contained in this bulletin will meet any customer's requirements. Furthermore, HIROSE does not warrant or make any representations regarding the use or the results of the use of information contained in this bulletin in terms of correctness, accuracy, reliability, or otherwise. Under no circumstance shall HIROSE or its directors, officers, employees or agents be liable for any incidental, special or consequential damages (including damages for loss of business, loss of profits, business interruption, loss of business information and the like) arising out of the use of the information contained in this bulletin.*

¹ Under Preparation

Section 2 General Information

This section discusses part number designation, connection method variations, component weights, manufacturing lot number, and general dimensions about the Hirose ER8 connector system.

2.1 Part Number Designation / Connection Method Variations

2.1.1 Part Number Designation

Table 2-1 Part Number Designation

Straight Header	Right Angle Header
Straight Receptacle	Right Angle Receptacle
ER8 * - *** * - 0.8 SV - * H (**)	ER8 * - *** * - 0.8 SH (**)
(1) (2) (3) (4) (5) (6) (7) (8)	(1) (2) (3) (4) (5) (6) (8)

(1) Series name
ER8
(2) Product Specifications
Blank: Standard Product L: With Latch (140pos. only)
(3) No. of Pos.
10-140
(4) Contact Type
P: Header S: Receptacle
(5) Contact Pitch
0.8mm
(6) Housing Configuration
SV: Straight Type SH: Right Angle Type
(7) Height
2,5: Header 5,7: Receptacle
(8) Plating Specification
Blank: Contact Area, Gold (0.76μm) + Ni (2.54μm) (10): Contact Area, Gold (0.25μm) + Ni (1.25μm)

2.1.2 Connection Method Variations

Table 2-2 Parallel Connection Type (10, 20, 30, 40, 50, 60, 70, 80, 100, 120pos.)

Stacking Heights (mm)	Straight Header	Straight Receptacle
7	ER8-***P-0.8SV-2H (**)	ER8-***S-0.8SV-5H (**)
9	ER8-***P-0.8SV-2H (**)	ER8-***S-0.8SV-7H (**)
10	ER8-***P-0.8SV-5H (**)	ER8-***S-0.8SV-5H (**)
12	ER8-***P-0.8SV-5H (**)	ER8-***S-0.8SV-7H (**)

Table 2-3 Right Angle Connection Type 1 (120pos. only)

Stacking Widths (mm)	Straight Header	Right Angle Receptacle
13.03	ER8-120P-0.8SV-2H (**)	ER8-120S-0.8SH (**)
16.03	ER8-120P-0.8SV-5H (**)	ER8-120S-0.8SH (**)

Table 2-4 Right Angle Connection Type 2 (120, 140pos. only)

Stacking Widths (mm)	Right Angle Header	Straight Receptacle
16.41	ER8L-140P-0.8SH (**)	ER8L-140S-0.8SV-5H (**)
16.41	ER8-120P-0.8SH (**)	ER8-120S-0.8SV-5H (**)
18.33	ER8-120P-0.8SH (**)	ER8-120S-0.8SV-7H (**)

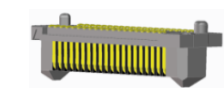
Table 2-5 Coplanar Connection Type (120pos. only)

Stacking Widths (mm)	Right Angle Header	Right Angle Receptacle
22.35	ER8-120P-0.8SH (**)	ER8-120S-0.8SH (**)

2.2 Component Weights

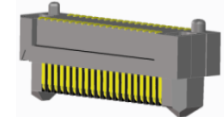
Straight Header

ER8-***P-0.8SV-2H (**)



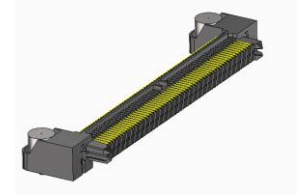
Straight Header

ER8-***P-0.8SV-5H (**)



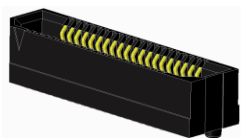
Right Angle Header

ER8*-***P-0.8SH (**)



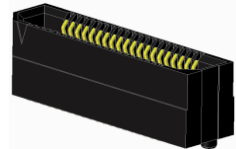
Straight Receptacle

ER8*-***S-0.8SV-5H (**)



Straight Receptacle

ER8-***S-0.8SV-7H (**)



Right Angle Receptacle

ER8-120S-0.8SH (**)

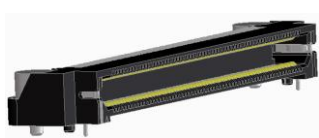


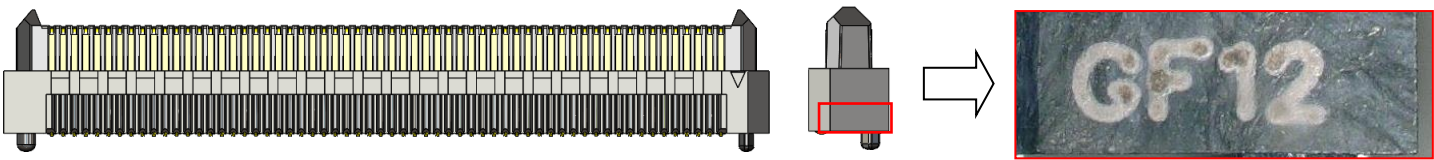
Table 2-6 Component Weights

Part Name	Contact Positions	Part Number	Weight (g)
Straight Header	10	ER8-10P-0.8SV-2H (**)	0.23
	20	ER8-20P-0.8SV-2H (**)	0.34
	30	ER8-30P-0.8SV-2H (**)	0.44
	40	ER8-40P-0.8SV-2H (**)	0.54
	50	ER8-50P-0.8SV-2H (**)	0.64
	60	ER8-60P-0.8SV-2H (**)	0.75
	70	ER8-70P-0.8SV-2H (**)	0.86
	80	ER8-80P-0.8SV-2H (**)	0.96
	100	ER8-100P-0.8SV-2H (**)	1.16
	120	ER8-120P-0.8SV-2H (**)	1.35
	10	ER8-10P-0.8SV-5H (**)	0.45
	20	ER8-20P-0.8SV-5H (**)	0.63
	30	ER8-30P-0.8SV-5H (**)	0.81
	40	ER8-40P-0.8SV-5H (**)	0.98
	50	ER8-50P-0.8SV-5H (**)	1.17
	60	ER8-60P-0.8SV-5H (**)	1.32
	70	ER8-70P-0.8SV-5H (**)	1.51
	80	ER8-80P-0.8SV-5H (**)	1.69
	100	ER8-100P-0.8SV-5H (**)	2.04
	120	ER8-120P-0.8SV-5H (**)	2.38
Right Angle Header	120	ER8-120P-0.8SH (**)	4.54
	140	ER8L-140P-0.8SH (**)	4.98

Part Name	Contact Positions	Part Number	Weight (g)
Straight Receptacle	10	ER8-10S-0.8SV-5H (**)	0.24
	20	ER8-20S-0.8SV-5H (**)	0.33
	30	ER8-30S-0.8SV-5H (**)	0.42
	40	ER8-40S-0.8SV-5H (**)	0.51
	50	ER8-50S-0.8SV-5H (**)	0.6
	60	ER8-60S-0.8SV-5H (**)	0.7
	70	ER8-70S-0.8SV-5H (**)	0.79
	80	ER8-80S-0.8SV-5H (**)	0.88
	100	ER8-100S-0.8SV-5H (**)	1.06
	120	ER8-120S-0.8SV-5H (**)	1.25
	140	ER8L-140S-0.8SV-5H (**)	1.46
	10	ER8-10S-0.8SV-7H (**)	0.36
	20	ER8-20S-0.8SV-7H (**)	0.49
	30	ER8-30S-0.8SV-7H (**)	0.65
	40	ER8-40S-0.8SV-7H (**)	0.78
	50	ER8-50S-0.8SV-7H (**)	0.93
	60	ER8-60S-0.8SV-7H (**)	1.06
	70	ER8-70S-0.8SV-7H (**)	1.21
	80	ER8-80S-0.8SV-7H (**)	1.35
	100	ER8-100S-0.8SV-7H (**)	1.63
	120	ER8-120S-0.8SV-7H (**)	1.92
Right Angle Receptacle	120	ER8-120S-0.8SH (**)	4.48

2.3 Manufacturing Lot Number

ex. Straight Header



ex. Straight Receptacle

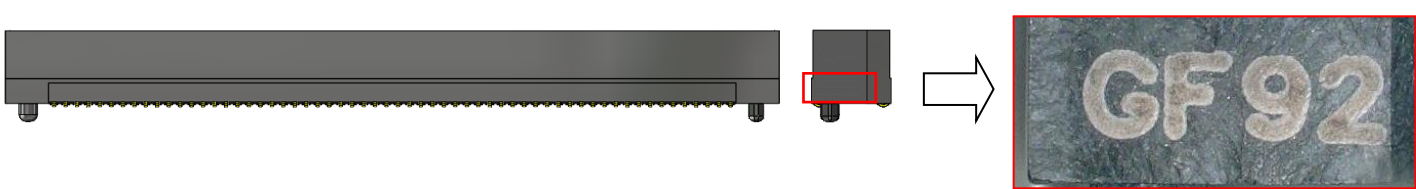
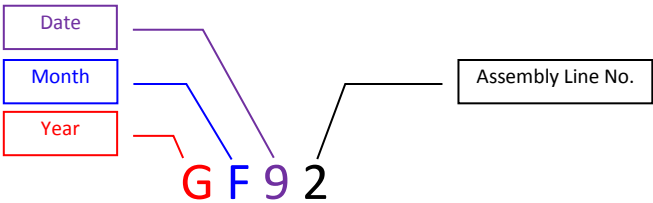


Figure 2-2 Indication

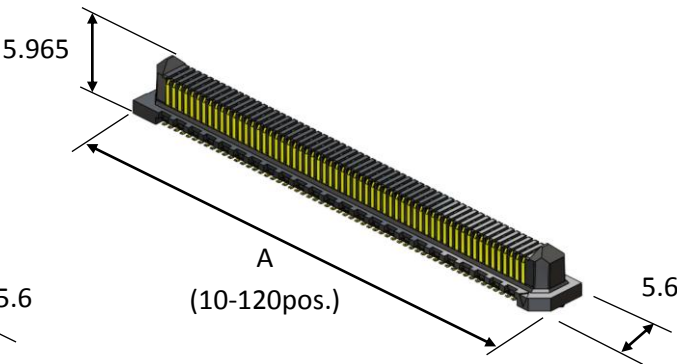
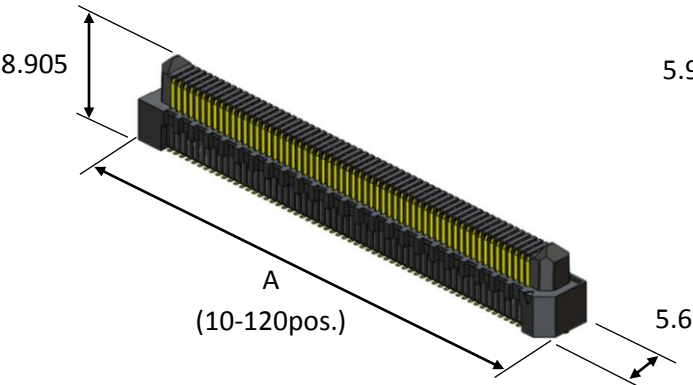


* Lot number indication may be subject to change.

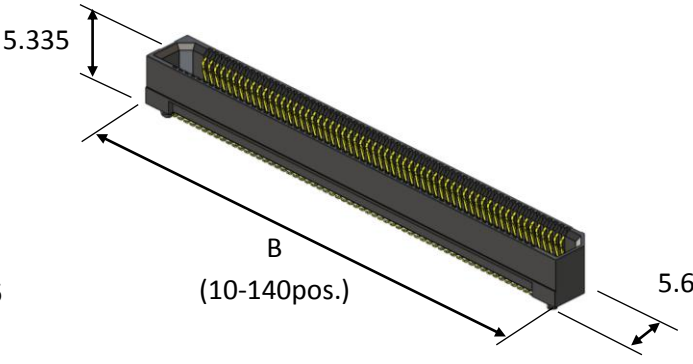
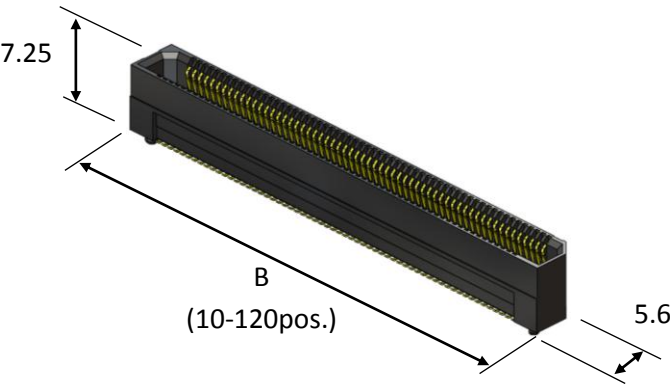
Year						Month		Date					
Year	Code	Year	Code	Year	Code	Month	Code	Date	Code	Date	Code	Date	Code
2010	0	2020	D	2030	P	January	A	1	1	11	B	21	M
2011	1	2021	E	2031	Q	February	B	2	2	12	C	22	N
2012	2	2022	F	2032	R	March	C	3	3	13	D	23	P
2013	3	2023	G	2033	S	April	D	4	4	14	E	24	Q
2014	4	2024	H	2034	T	May	E	5	5	15	F	25	R
2015	5	2025	J	2035	U	June	F	6	6	16	G	26	S
2016	6	2026	K	2036	V	July	G	7	7	17	H	27	T
2017	A	2027	L	2037	W	August	H	8	8	18	J	28	U
2018	B	2028	M	2038	X	September	I	9	9	19	K	29	V
2019	C	2029	N	2039	Y	October	J	10	A	20	L	30	W
						November	K					31	X
						December	L						

2.4 General Dimensions

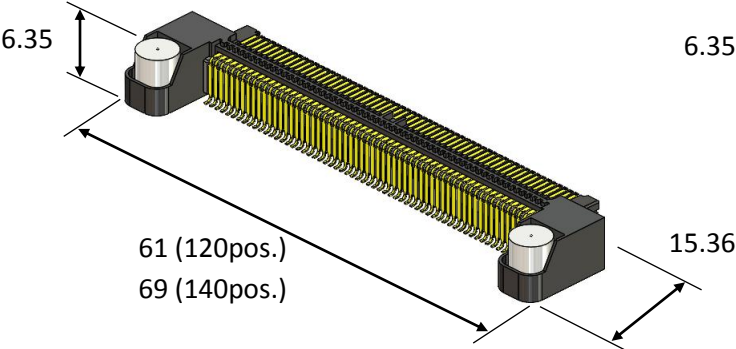
Straight Header Outline



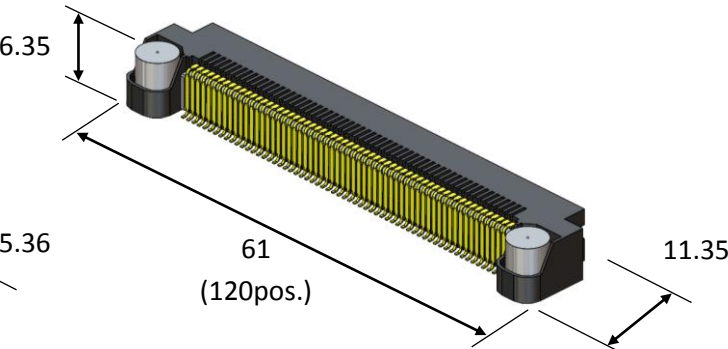
Straight Receptacle Outline



Right Angle Header Outline



Right Angle Receptacle Outline



No. of pos.	10pos.	20pos.	30pos.	40pos.	50 pos.	60 pos.	70 pos.	80 pos.	100 pos.	120 pos.	140 pos.
A dimension	10	14	18	22	26	30	34	38	46	54	—
B dimension	10	14	18	22	26	30	34	38	46	54	63.5

Please refer to individual product drawings for details.

Section 3 Operating Characteristics

This section discusses material, electrical, mechanical, and environmental characteristics.

3.1 Material

Numbering of component is same as customer drawing.

3.1.1 Straight Header

Table 3-1 Straight Header Material and Finish

No.	Component	Material	Finish & Remarks
1	Housing	LCP	Black , UL 94V-0
2	Contact	Copper Alloy	(00) Specifications Contact Area : Gold (0.76μm min) over Nickel (2.54μm min) Lead Area : Sn (3.81μm min) over Nickel (1.25μm min)
			(10) Specifications Contact Area : Gold (0.25μm min) over Nickel (1.25μm min) Lead Area : Sn (2.54μm min) over Nickel (1.25μm min)
3	Pick Up Tape	Polyimide	-
4	Embossed Carrier Tape	PS	-
5	Top Cove Tape	PE	-

3.1.2 Straight Receptacle

Table 3-2 Straight Receptacle Material and Finish

No.	Component	Material	Finish & Remarks
1	Housing	LCP	Black , UL 94V-0
2	Contact	Copper Alloy	(00) Specifications Contact Area : Gold (0.76μm min) over Nickel (2.54μm min) Lead Area : Sn (3.81μm min) over Nickel (1.25μm min)
			(10) Specifications Contact Area : Gold (0.25μm min) over Nickel (1.25μm min) Lead Area : Sn (2.54μm min) over Nickel (1.25μm min)
3	Pick Up Tape	Polyimide	-
4	Embossed Carrier Tape	PS	-
5	Top Cover Tape	PE	-

3.1.3 Right Angle Header

Table 3-3 Right Angle Header Material and Finish

No.	Component	Material	Finish & Remarks
1	Housing	LCP	Black , UL 94V-0
2	Locator	LCP	Black , UL 94V-0
3	Contact1	Copper Alloy	(00) Specifications Contact Area : Gold (0.76μm min) over Nickel (2.54μm min) Lead Area : Sn (3.81μm min) over Nickel (1.25μm min)
			(10) Specifications Contact Area : Gold (0.25μm min) over Nickel (1.25μm min) Lead Area : Sn (2.54μm min) over Nickel (1.25μm min)
4	Contact2	Copper Alloy	(00) Specifications Contact Area : Gold (0.76μm min) over Nickel (2.54μm min) Lead Area : Sn (3.81μm min) over Nickel (1.25μm min)
			(10) Specifications Contact Area : Gold (0.25μm min) over Nickel (1.25μm min) Lead Area : Sn (2.54μm min) over Nickel (1.25μm min)
5	Retention Peg	Copper Alloy	Sn (2.54μm min) over Nickel (1.25μm min)
6	Retention Pin	Copper Alloy	Sn (2.54μm min) over Nickel (1.25μm min)
7	Pick Up Tape	Polyimide	-
8	Embossed Carrier Tape	PS	-
9	Top Cover Tape	PE	-

3.1.4 Right Angle Receptacle

Table 3-4 Right Angle Receptacle Material and Finish

No.	Component	Material	Finish & Remarks
1	Housing	LCP	Black , UL 94V-0
2	Locator	LCP	Black , UL 94V-0
3	Contact1	Copper Alloy	(00) Specifications Contact Area : Gold (0.76μm min) over Nickel (2.54μm min) Lead Area : Sn (3.81μm min) over Nickel (1.25μm min)
			(10) Specifications Contact Area : Gold (0.25μm min) over Nickel (1.25μm min) Lead Area : Sn (2.54μm min) over Nickel (1.25μm min)
4	Contact2	Copper Alloy	(00) Specifications Contact Area : Gold (0.76μm min) over Nickel (2.54μm min) Lead Area : Sn (3.81μm min) over Nickel (1.25μm min)
			(10) Specifications Contact Area : Gold (0.25μm min) over Nickel (1.25μm min) Lead Area : Sn (2.54μm min) over Nickel (1.25μm min)
5	Retention Peg	Copper Alloy	Sn (2.54μm min) over Nickel (1.25μm min)
6	Retention Pin	Copper Alloy	Sn (2.54μm min) over Nickel (1.25μm min)
7	Embossed Carrier Tape	PS	-
8	Top Cover Tape	PE	-

3.2 Electrical

Table 3-5 Electrical Test Conditions and Requirements

Test	Test Condition	Requirement	Typical Value
Low Level Contact Resistance* (LLCR)	EIA-364-23	50mΩ max (*1)	-
Insulation Resistance (IR)	EIA-364-21	1000MΩ min	-
Dielectric Withstanding Voltage (DWV)	EIA-364-20 AC 300V for 60 seconds	No flashover or breakdown	-

* The value of contact resistance includes the bulk resistance.

3.3 Mechanical

Table 3-6 Mechanical Test Conditions and Requirements

Test	Test Condition	Requirement	Typical Value
Mechanical Operation	EIA-364-09 100 times insertion and extraction	1) Contact resistance change: 15mΩ or less 2) No flashover or breakdown 3) No damage, crack or looseness of parts	-
Random Vibration	EIA-364-28 Frequency: 20 TO 500Hz Power Spectral Density: 0.02G ² /Hz for 90 min in 3 directions	1) No electrical discontinuity of 1 μs or more 2) No damage, crack, or looseness of parts	No electrical discontinuity of 1 μs or more was found. No damage, crack, or looseness of parts were found
Mechanical shock	EIA-364-27 980 m/s ² , Duration of pulse: 6 ms 18 times total, 3 each direction, 3 axis	1) No electrical discontinuity of 1 microsecond or more 2) No damage, crack or looseness of parts	-
Wiping Length	1.5mm		
Normal Force	0.3N min		-

3.4 Environmental

Based on accelerated high temperature tests that store connectors at 105 °C for more than 250 hours according to EIA-364-1000.01, the **ER8** can be stored for up to 10 years. Refer to Table 3-7 for the environmental standards and conditions that the **ER8** has been tested to meet.

Table 3-7 Environmental Test Conditions and Requirements

Test	Test Condition	Requirement	Remarks
Thermal Shock	EIA-364-32 Condition I Temperature (°C): -55 → 20 ~ 35 → 85 → 20 ~ 35 Time (min): 30 → 2 ~ 3 → 30 → 2 ~ 3 Under 25 cycles	1) Contact resistance change: 15mΩ or less 2) No damage, crack or looseness of parts	-
Cyclic Temperature & Humidity	EIA-364-31 @ 25°C, 90~95% RH: 120 min Dwell time ↓ 120 min Ramp time @ 65°C, 90~95% RH: 120 min Dwell time Under 12 cycles	3) No flashover or breakdown 4) Insulation resistance: 1000MΩ min	-
Dry Heat	EIA-364-17 Exposed at 105 °C, 250 hours	1) Contact resistance change: 15mΩ or less	-
Gas Tight	EIA-364-36 Nitric Acid vapor 60 min		-

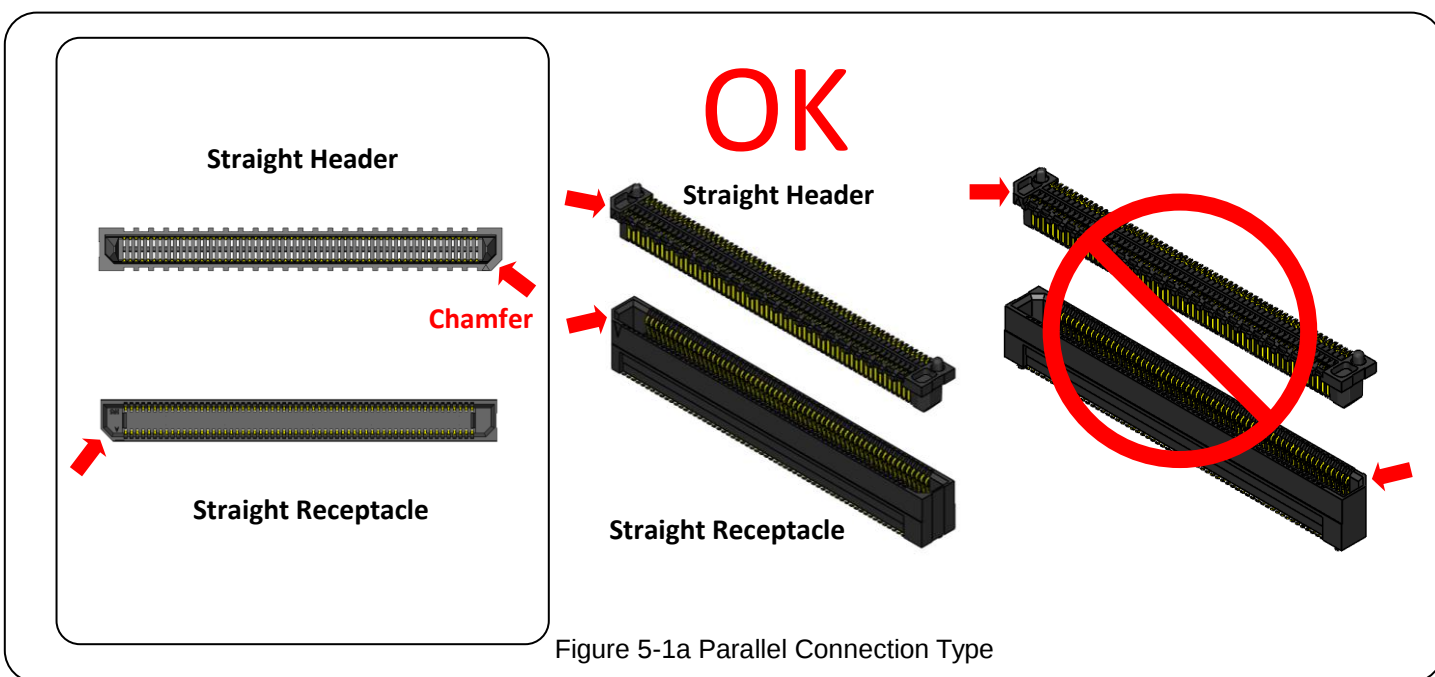
Section 5 PWB Design Information

This section discusses footprint, multi-connector systems, PWB fixing, clearance between connectors, and alignment tolerances.

5.1 Footprint

5.1.1 Polarity

Header and receptacle have polarization features. The chamfer direction should be matched as shown in the figure shown below; otherwise housing may deform or break and cause a system error.



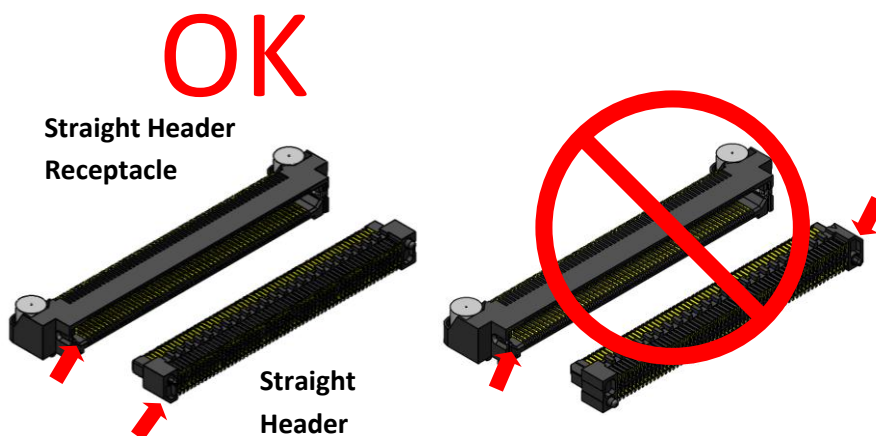
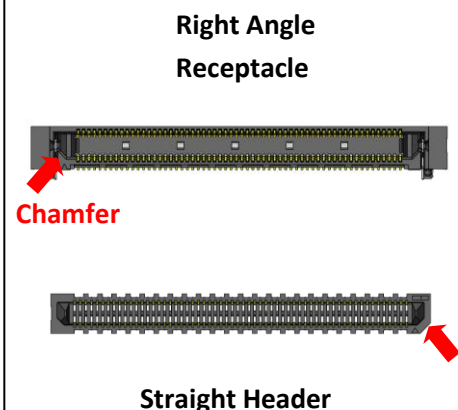


Figure 5-1b Right Angle Connection Type

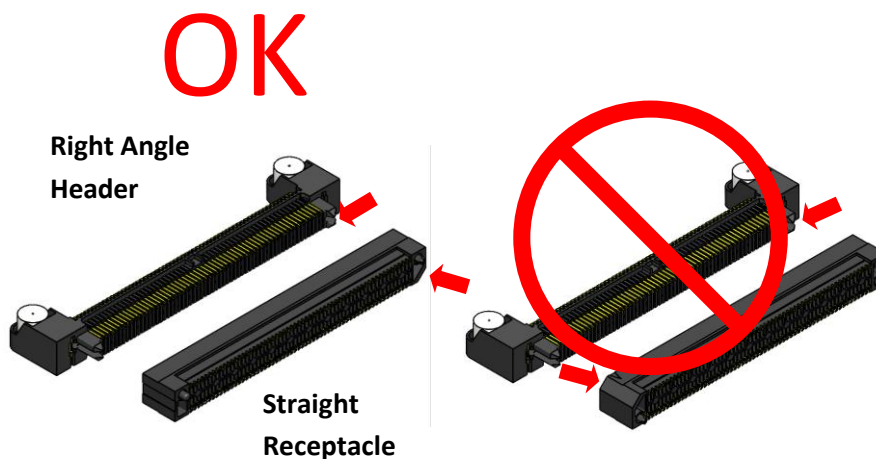
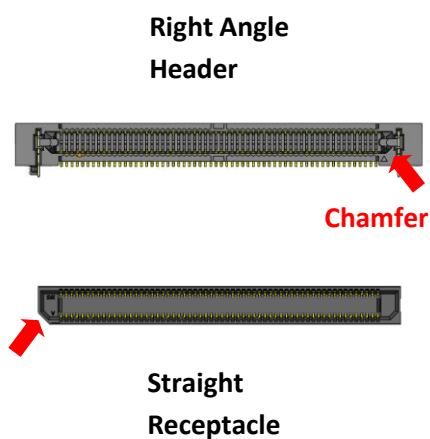
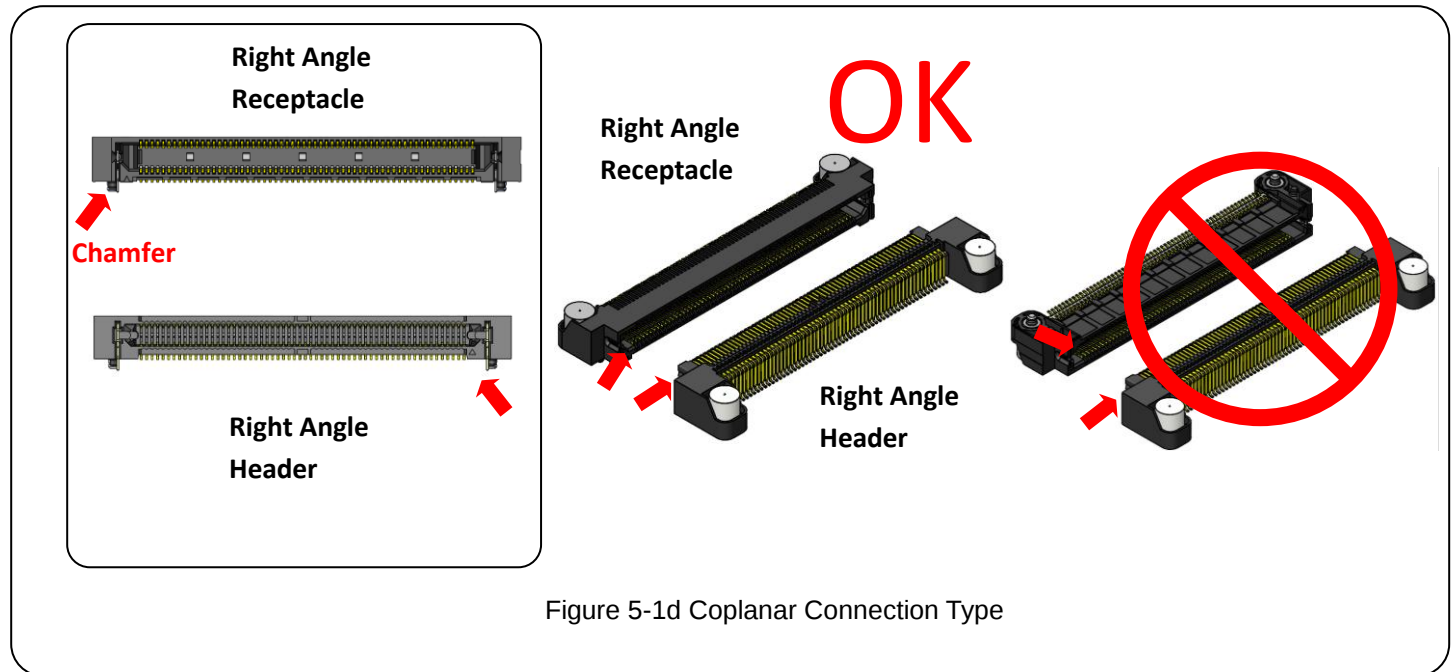


Figure 5-1c Right Angle Connection Type



5.1.2 Pad Specifications

- Pad finish: OSP (Organic Solderability Preservative) or HASL (Hot Air Solder Leveler).

PWB pad finish is typically Organic Solderability Preservative (OSP) or Hot Air Solder Level (HASL), but the component can also be used with Electroless Nickel-Immersion Gold (ENIG), Immersion Silver, and Immersion Tin.

5.1.3 Component Footprint and Contact Assignment

Straight Header

ex. ER8-***P-0.8SV-*H (**)

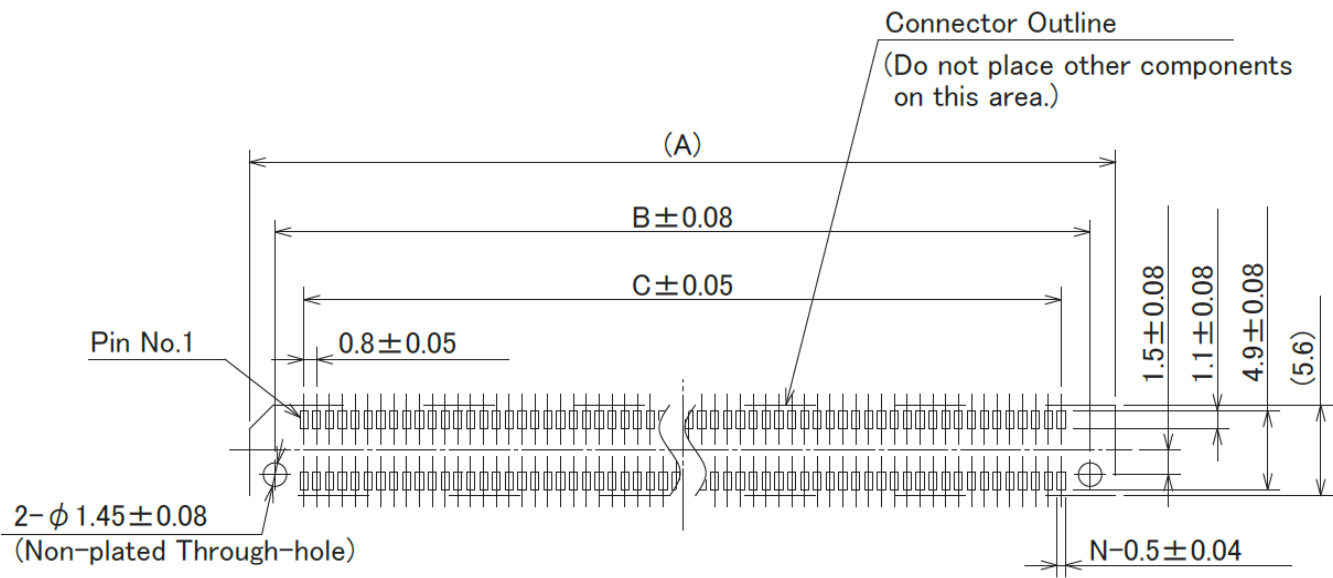
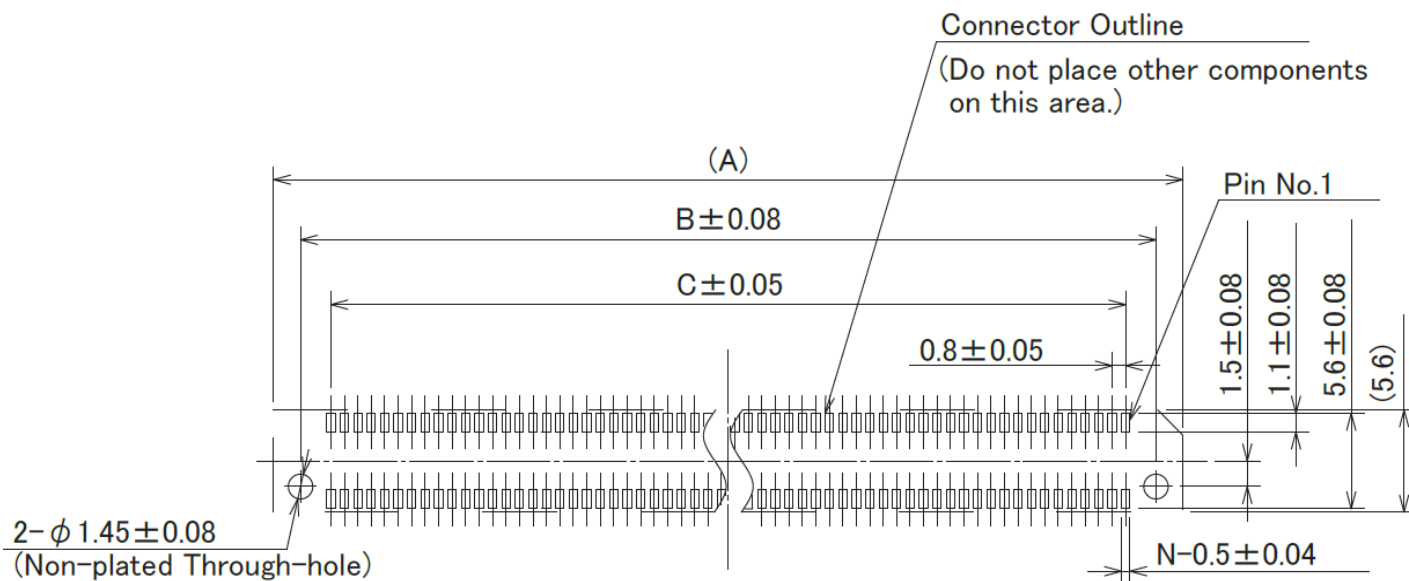
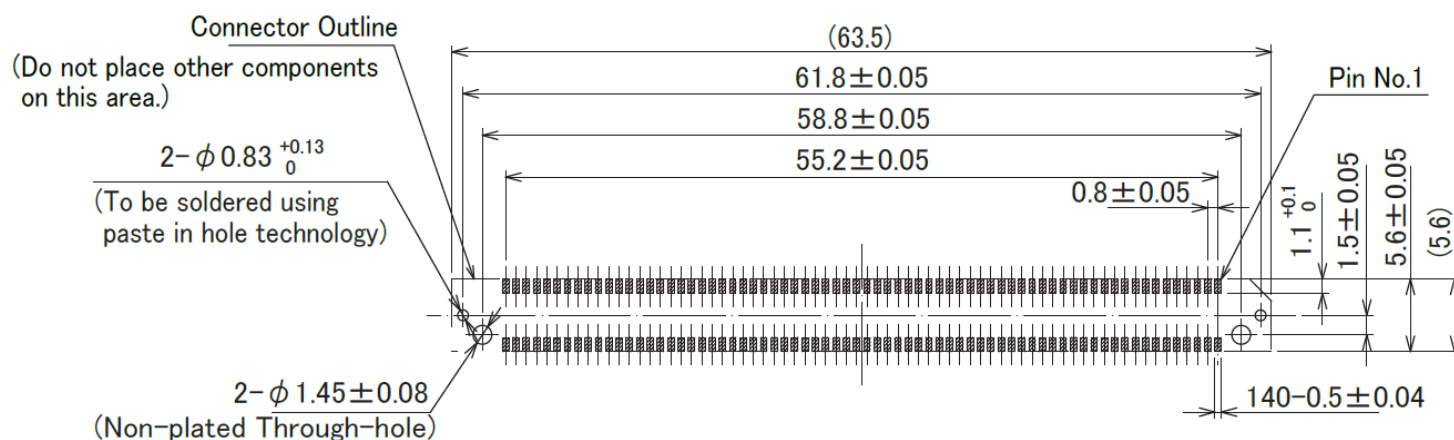


Table 5-1a Straight Header Footprint (dimensions in mm)

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

Straight Receptacle**10-120Pos.**

ex. ER8-***S-0.8SV-*H(**)

**140Pos.**

Right Angle Header**10-120Pos.**

ex. ER8-***P-0.8SH (**)

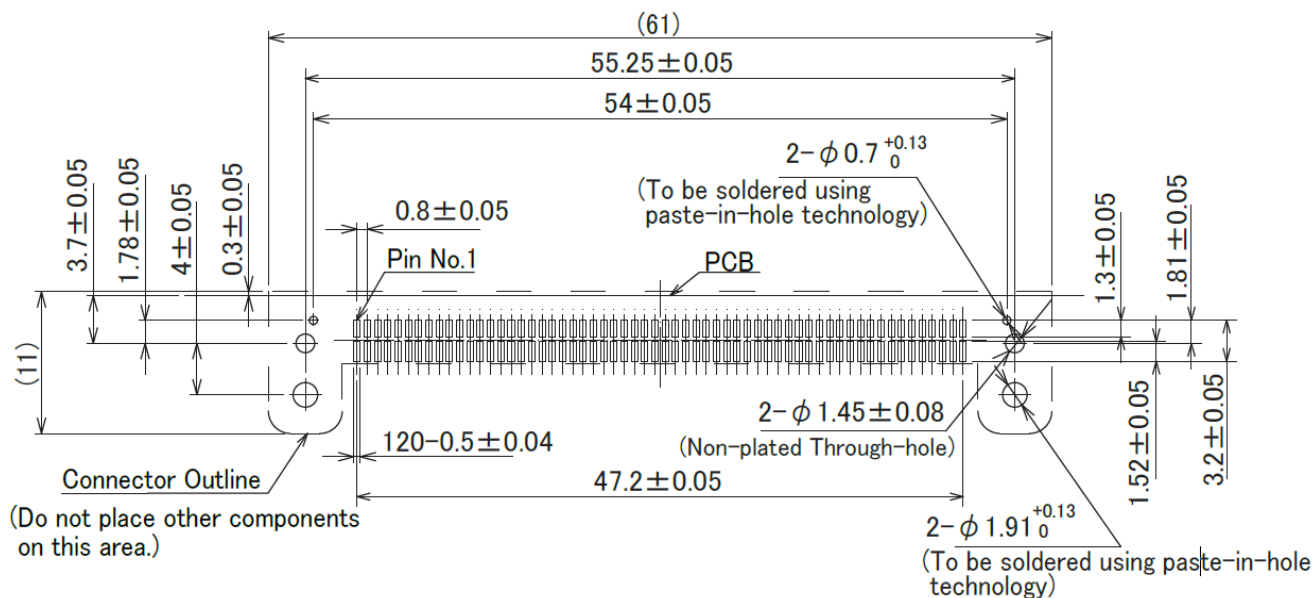
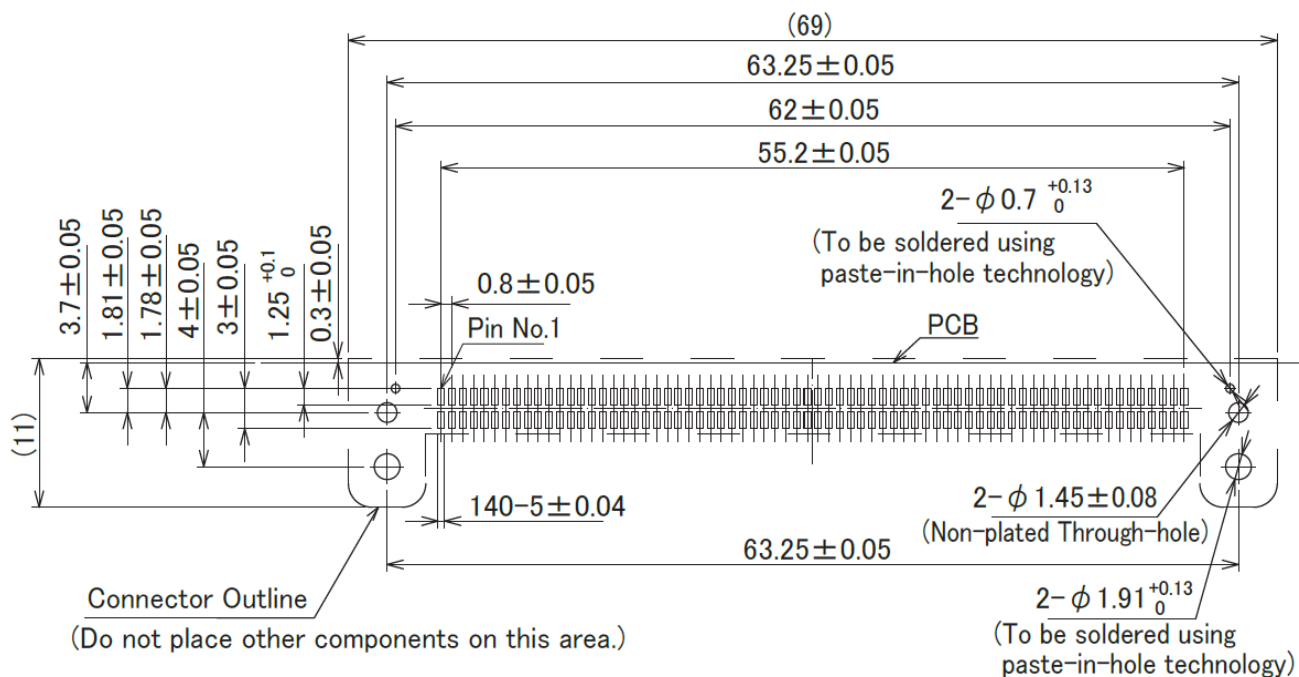
**140Pos.**

Table 5-1b Straight Receptacle / Right Angle Header Footprint (dimensions in 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

ex. ER8-120S-0.8SH ()**

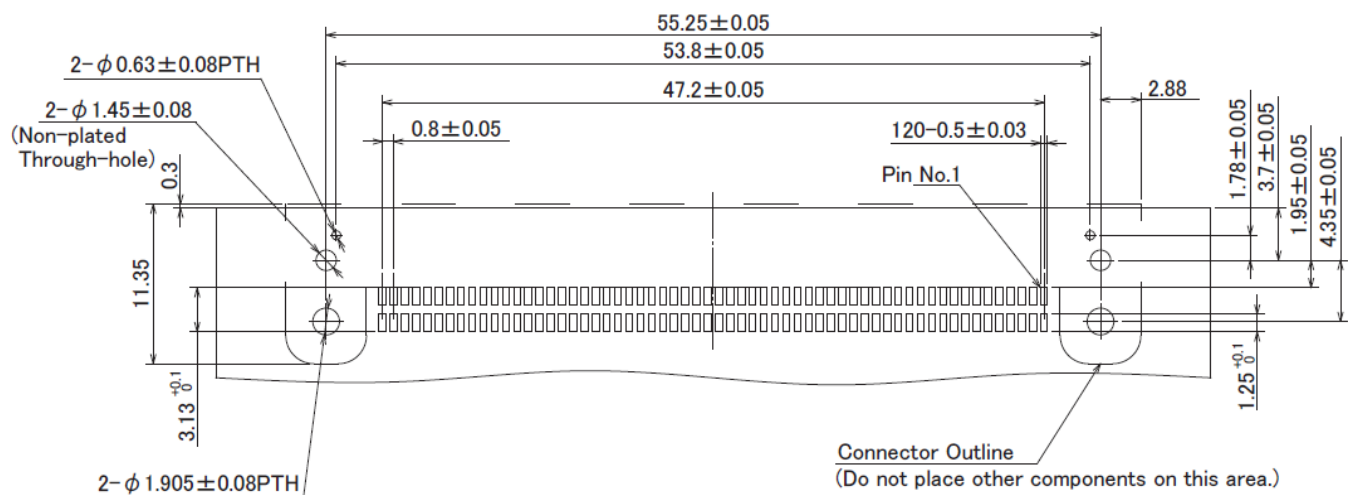


Figure 5-1e Right Angle Header Receptacle Footprint (dimensions in mm)

5.2 PWB Fixing

PWB's are necessary to be fixed with each other to protect the SMT solder joints and connectors. This connector can absorb misalignment of boards but cannot absorb vibration itself. When boards are supported by a connector only, the connector will be loaded excessively, which may result in a damage or contact failure. Take measures to secure boards with an object other than connector as shown in the following figure.

Fix by spacer or metal fittings

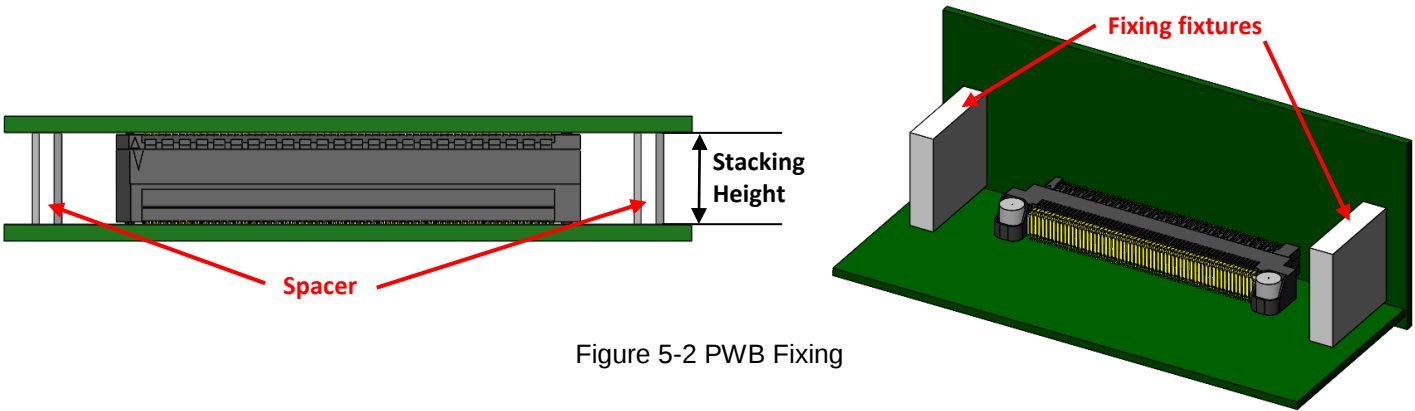


Figure 5-2 PWB Fixing

Table 5-2 Spacer Height

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

Section 6 Stencil Printing Information

This section discusses stencil printing.

6.1 Solder Paste Selection

*The **ER8** connectors are compatible with lead-free solder pastes. The user should assure that the solder alloy used in the assembly process is compatible with the appropriate component configuration.*

ex.

Manufacturers: Senjyu Metal Industry Co., Ltd

Product Part No. : M705-GRN360-K2-V

Alloy Composition (wt%): Sn-3.0Ag-0.5Cu

6.2 Recommended Stencil Designs

Recommendations for the stencil thickness is 0.15mm.

Section 7 Pick and Place Information

This section discusses connector pick and place.

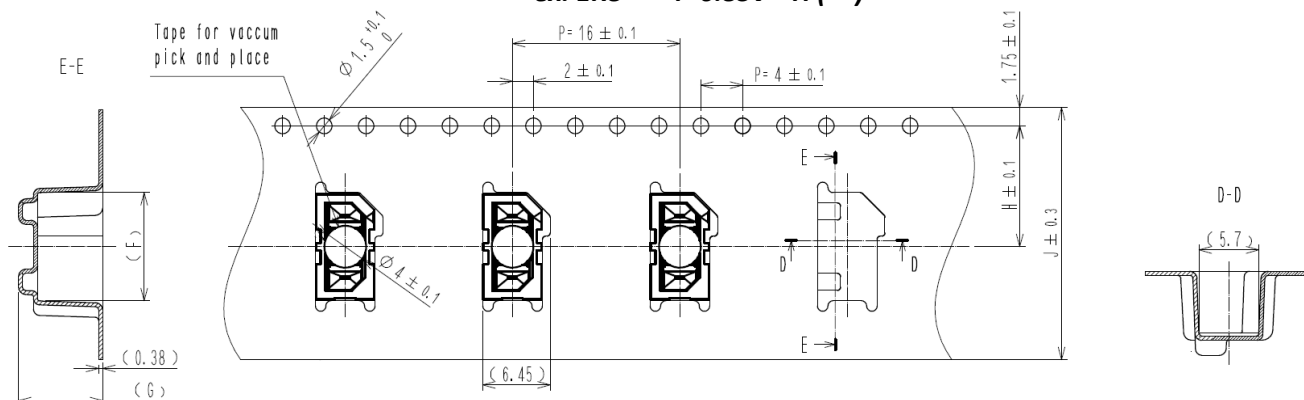
7.1 Packaging

7.1.1 Straight Header

ER8 Straight Header components are shipped in embossed carrier tape with pick and place adhesive tapes attached on as shown below.

10Pos.

ex. ER8-***P-0.8SV-*H(**)



20-120Pos.

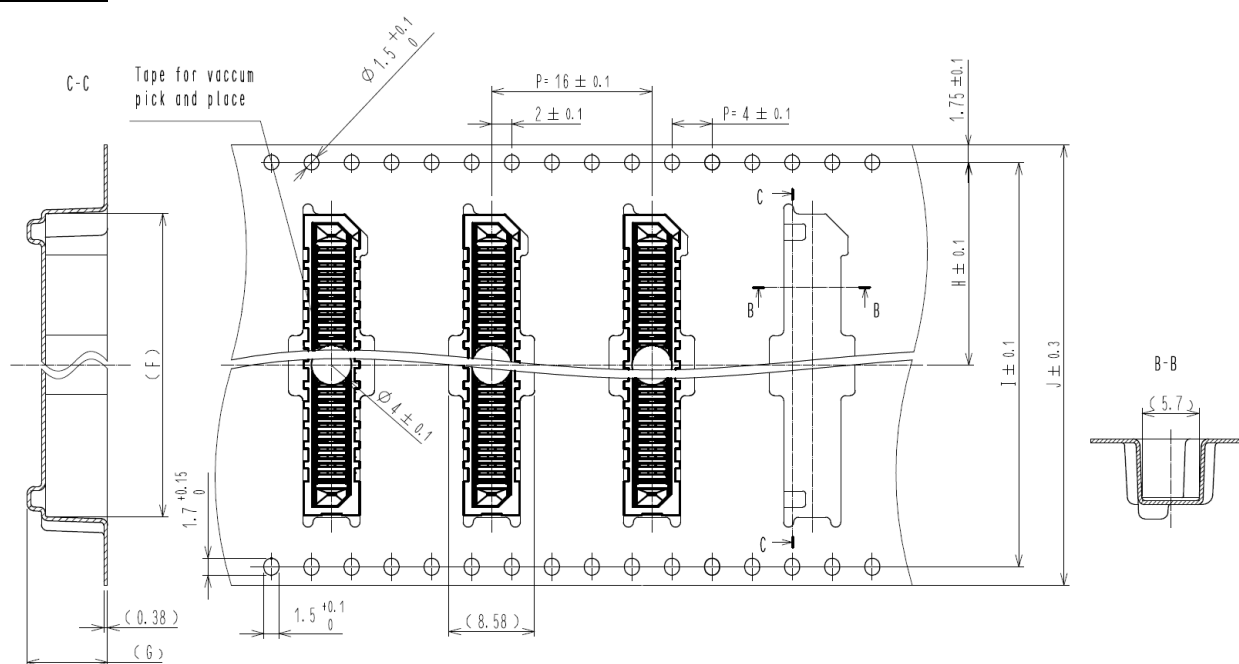


Figure 7-1a Embossed Carrier Tape for ER8 Straight Header

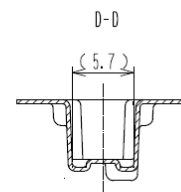
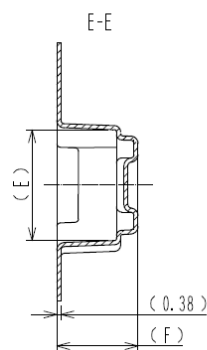
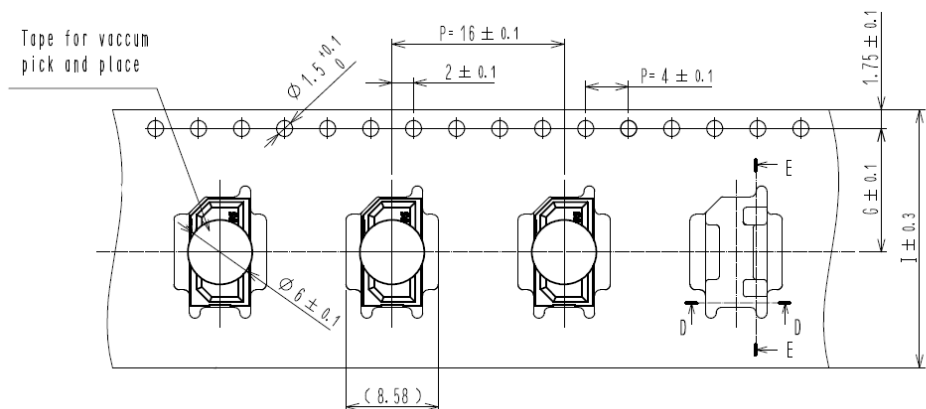
Table 7-1a Straight Header Packaging (dimensions in mm)

Part No.	Code No.	Contact positions(N)	Dimensions					Qty/reel
			F	G	H	I	J	
ER8-10P-0.8SV-2H(**)	CL625-0008-8-**-	10	10.3	8.03	11.5	-	24	450
ER8-20P-0.8SV-2H(**)	CL625-0011-0-**-	20	14.3	8.03	14.2	28.4	32	475
ER8-30P-0.8SV-2H(**)	CL625-0012-0-**-	30	18.3	8.03	20.2	40.4	44	475
ER8-40P-0.8SV-2H(**)	CL625-0013-0-**-	40	22.3	8.03	20.2	40.4	44	350
ER8-50P-0.8SV-2H(**)	CL625-0009-0-**-	50	26.3	8.03	20.2	40.4	44	350
ER8-60P-0.8SV-2H(**)	CL625-0017-0-**-	60	30.3	8.03	20.2	40.4	44	350
ER8-70P-0.8SV-2H(**)	CL625-0021-0-**-	70	34.3	8.03	26.2	52.4	56	350
ER8-80P-0.8SV-2H(**)	CL625-0022-0-**-	80	38.3	8.03	26.2	52.4	56	350
ER8-100P-0.8SV-2H(**)	CL625-0023-0-**-	100	46.3	8.03	34.2	68.4	72	350
ER8-120P-0.8SV-2H(**)	CL625-0003-4-**-	120	54.3	8.03	34.2	68.4	72	375
ER8-10P-0.8SV-5H(**)	CL625-0024-0-**-	10	10.3	11	11.5	-	24	325
ER8-20P-0.8SV-5H(**)	CL625-0025-0-**-	20	14.3	11	14.2	28.4	32	325
ER8-30P-0.8SV-5H(**)	CL625-0026-0-**-	30	18.3	11	20.2	40.4	44	325
ER8-40P-0.8SV-5H(**)	CL625-0020-0-**-	40	22.3	11	20.2	40.4	44	250
ER8-50P-0.8SV-5H(**)	CL625-0027-0-**-	50	26.3	11	20.2	40.4	44	250
ER8-60P-0.8SV-5H(**)	CL625-0019-0-**-	60	30.3	11	26.2	52.4	56	250
ER8-70P-0.8SV-5H(**)	CL625-0028-0-**-	70	34.3	11	26.2	52.4	56	250
ER8-80P-0.8SV-5H(**)	CL625-0029-0-**-	80	38.3	11	26.2	52.4	56	250
ER8-100P-0.8SV-5H(**)	CL625-0030-0-**-	100	46.3	11	34.2	68.4	72	250
ER8-120P-0.8SV-5H(**)	CL625-0031-0-**-	120	54.3	11	34.2	68.4	72	250

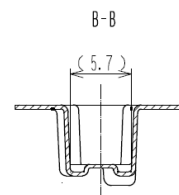
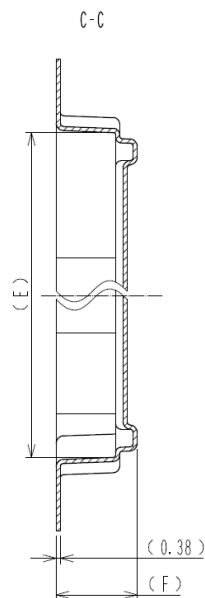
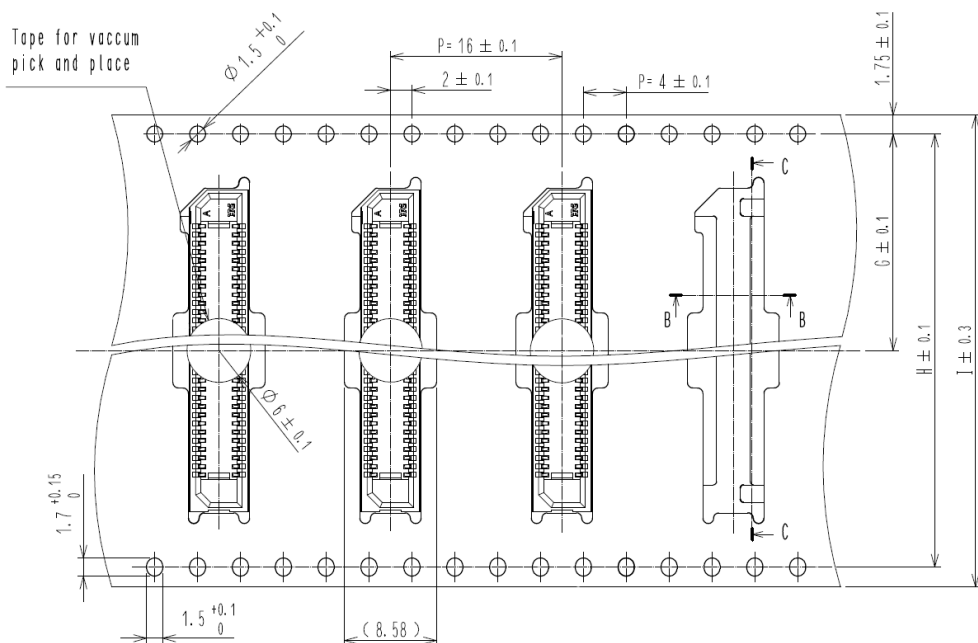
7.1.2 Straight Receptacle.

10Pos.

ex. ER8-***S-0.8SV-*H (**)



20-120Pos.



ex. ER8L-140S-0.8SV-5H (**)

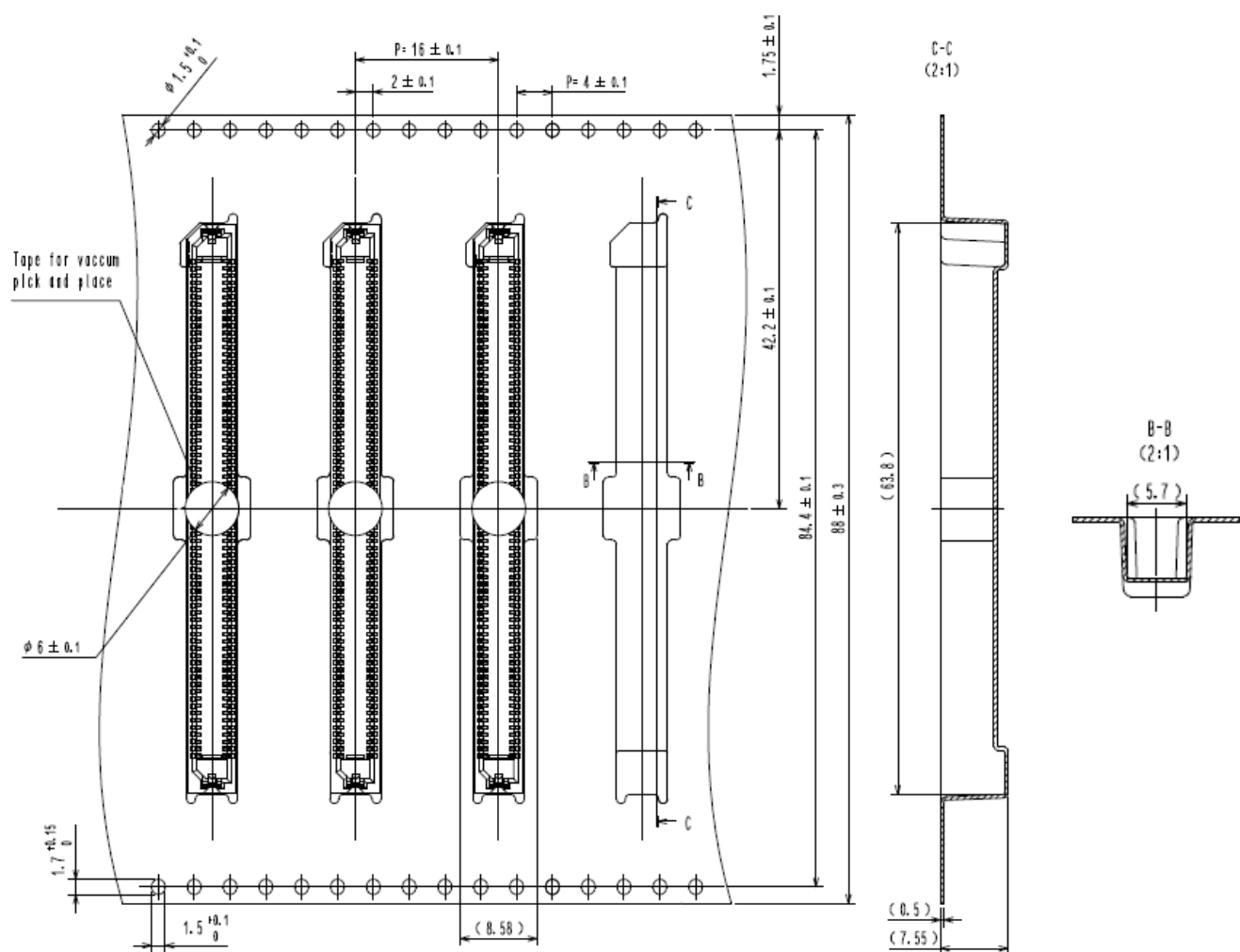


Figure 7-1b Embossed Carrier Tape for ER8 Straight Receptacle

Table 7-1b Straight Receptacle Packaging (dimensions in mm)

Part No.	Code No.	Contact positions(N)	Dimensions					Qty/reel
			E	F	G	H	I	
ER8-10S-0.8SV-5H(**)	CL625-0007-5-**-	10	10.3	7.55	11.5	-	24	475
ER8-20S-0.8SV-5H(**)	CL625-0014-0-**-	20	14.3	7.55	14.2	28.4	32	500
ER8-30S-0.8SV-5H(**)	CL625-0015-0-**-	30	18.3	7.55	20.2	40.4	44	475
ER8-40S-0.8SV-5H(**)	CL625-0016-0-**-	40	22.3	7.55	20.2	40.4	44	375
ER8-50S-0.8SV-5H(**)	CL625-0010-0-**-	50	26.3	7.55	20.2	40.4	44	375
ER8-60S-0.8SV-5H(**)	CL625-0018-0-**-	60	30.3	7.55	20.2	40.4	44	375
ER8-70S-0.8SV-5H(**)	CL625-0032-0-**-	70	34.3	7.55	26.2	52.4	56	375
ER8-80S-0.8SV-5H(**)	CL625-0033-0-**-	80	38.3	7.55	26.2	52.4	56	375
ER8-100S-0.8SV-5H(**)	CL625-0034-0-**-	100	46.3	7.55	34.2	68.4	72	375
ER8-120S-0.8SV-5H(**)	CL625-0035-0-**-	120	54.3	7.55	34.2	68.4	72	375
ER8L-140S-0.8SV-5H(**)	CL625-0046-0-**-	140	63.8	7.55	42.4	84.4	88	375
ER8-10S-0.8SV-7H(**)	CL625-0036-0-**-	10	10.3	9.45	11.5	-	24	400
ER8-20S-0.8SV-7H(**)	CL625-0037-0-**-	20	14.3	9.45	14.2	28.4	32	375
ER8-30S-0.8SV-7H(**)	CL625-0038-0-**-	30	18.3	9.45	20.2	40.4	44	400
ER8-40S-0.8SV-7H(**)	CL625-0039-0-**-	40	22.3	9.45	20.2	40.4	44	300
ER8-50S-0.8SV-7H(**)	CL625-0040-0-**-	50	26.3	9.45	20.2	40.4	44	300
ER8-60S-0.8SV-7H(**)	CL625-0041-0-**-	60	30.3	9.45	20.2	52.4	44	300
ER8-70S-0.8SV-7H(**)	CL625-0042-0-**-	70	34.3	9.45	26.2	52.4	56	300
ER8-80S-0.8SV-7H(**)	CL625-0043-0-**-	80	38.3	9.45	26.2	52.4	56	300
ER8-100S-0.8SV-7H(**)	CL625-0044-0-**-	100	46.3	9.45	34.2	68.4	72	300
ER8-120S-0.8SV-7H(**)	CL625-0045-0-**-	120	54.3	9.45	34.2	68.4	72	300

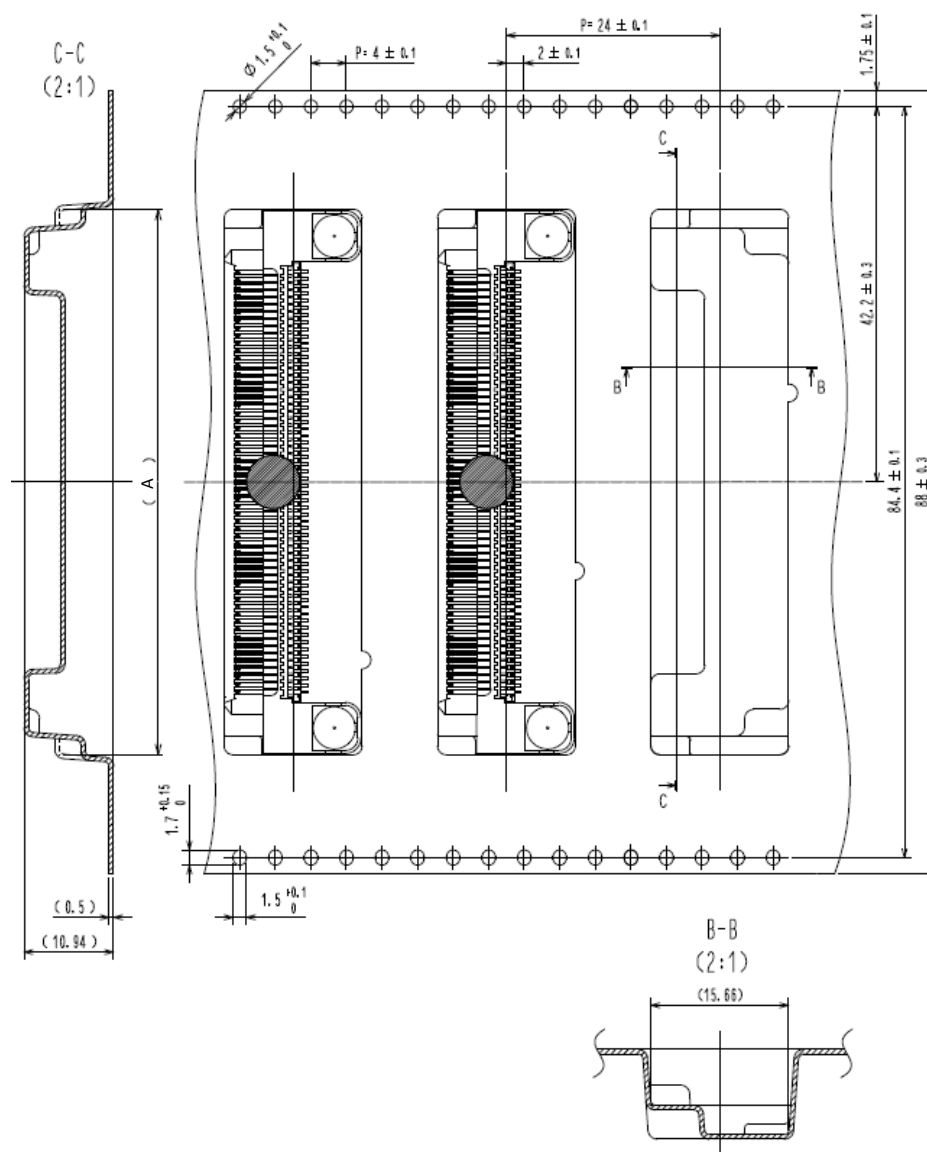
7.1.3 Right Angle header*ex. ER8*-***P-0.8SH (**)*

Figure 7-1c Embossed Carrier Tape for ER8 Right Angle Header (dimensions in mm)

No. of Pos.	A
120	61.3
140	69.3

7.1.4 Right Angle Receptacle

ex. ER8-120S-0.8SH (**)

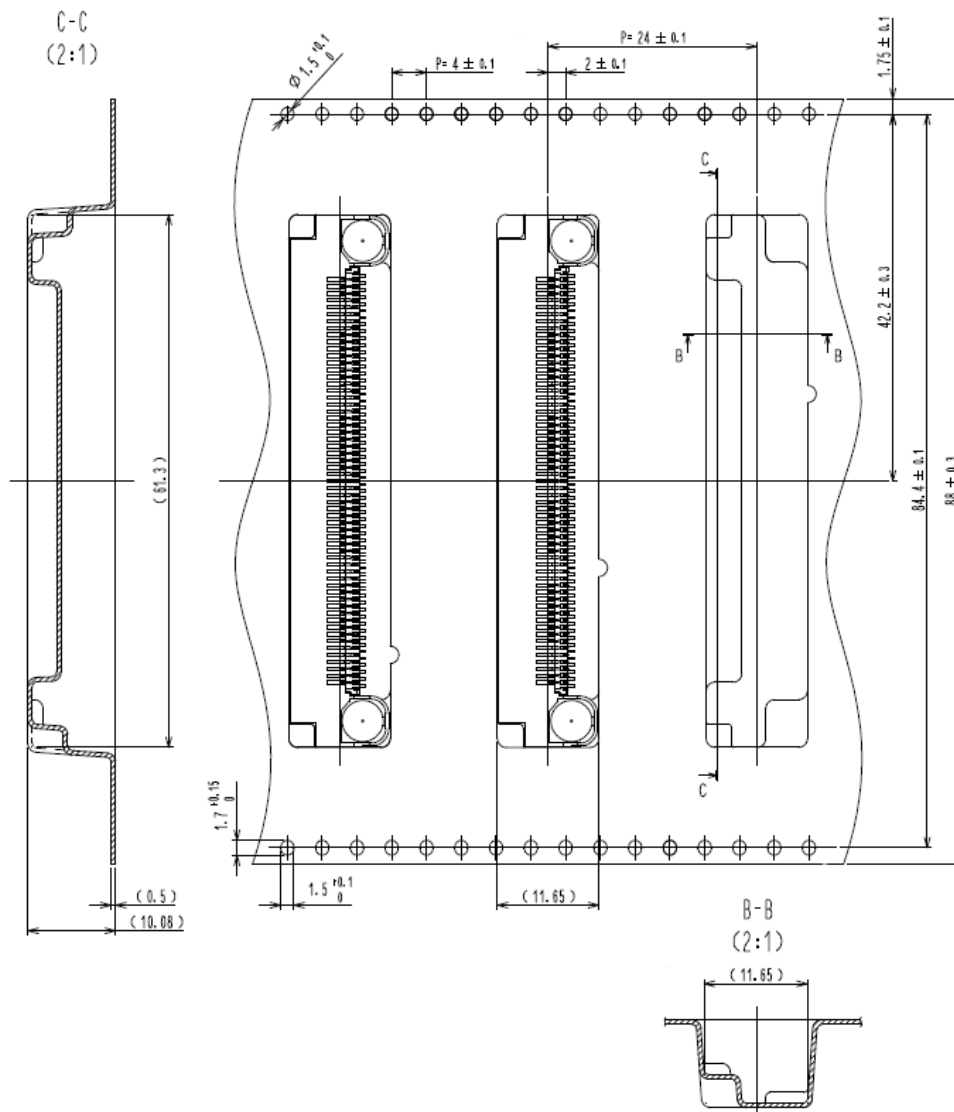


Figure 7-1d Embossed Carrier Tape for ER8 Right Angle Receptacle (dimensions in mm)

Please refer to individual product drawings for details.

7.2 Polarity

ER8 connectors have polarity as mentioned on Chapter 5.1.1.

Section 8 Reflow and Solder Bath Processing Information

This section discusses ER8 reflow and solder bath processing.

8.1 Reflow Profile for Lead-free Solder

Preheat /Soak (150 to200°C)	Max. Ramp Up Rate	Reflow Time (above 217°C)	Peak Temp	Time within 5 °C of 260 °C	Max Ramp Down Rate	Time 25°C to Peak Temp
60-120sec.	3°C/s max.	40-150sec.	260°C	30 sec. max.	6°C max.	8 min max.

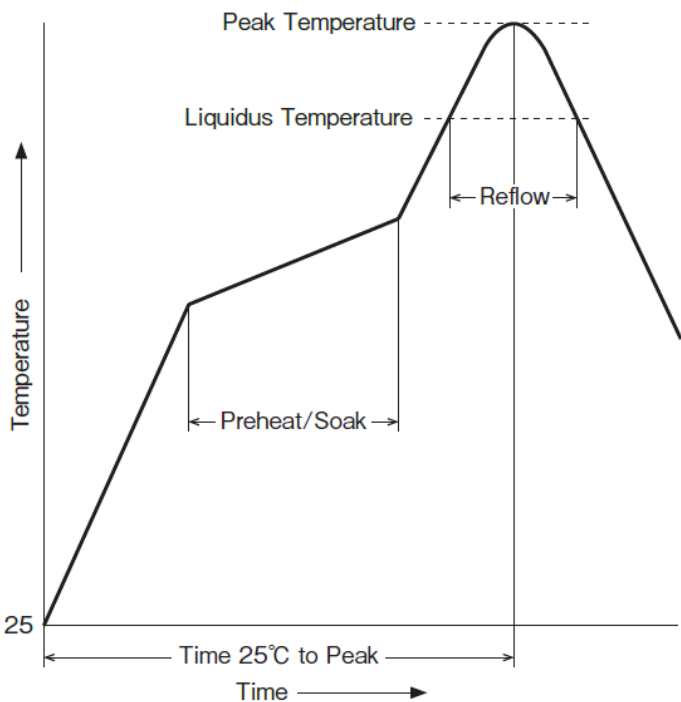


Figure 8-1 Thermal Profile Ranges

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.

8.2 Nitrogen Environment

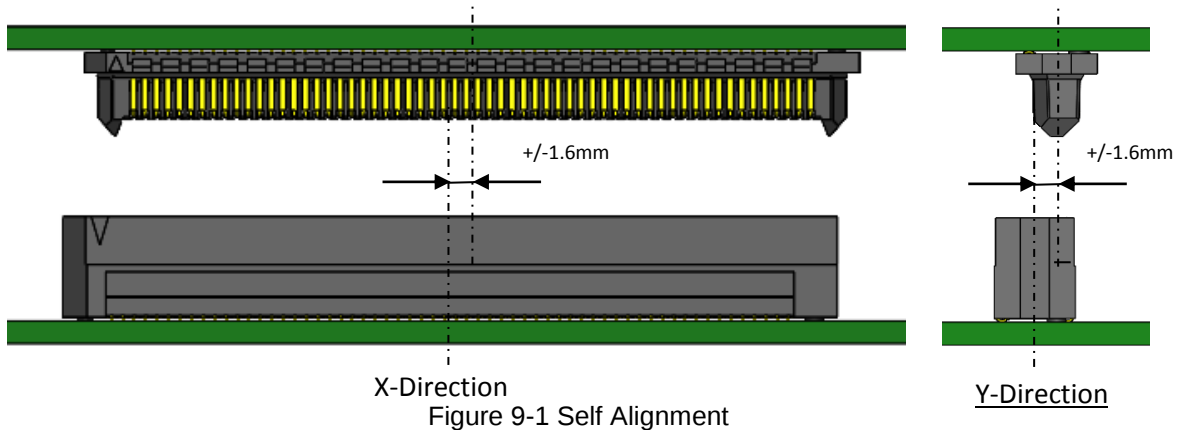
To improve solderability, a low-oxygen environment typically achieved through nitrogen gas infusion) is recommended for the reflow process.

Section 9 Assembly Process Information

This section of the Design Note discusses the summarized **ER8** assembly process.

9.1 Mating Self Alignment Tolerance

ER8 Series can accept mating self-alignment of up to $\pm 1.6\text{mm}$ tolerance in the X-axis and up to $\pm 1.6\text{mm}$ in the Y-axis.



These values do not include the influence of misalignment in other axes nor the rotation/inclination in the same time, except for the misalignment in the single axis shown in each figure.

9.2 Mated State Tolerances

ER8 Series can accept mating tolerances of up to $\pm 0.16\text{mm}$ tolerance in the X-axis and up to $\pm 0.16\text{mm}$ in the Y-axis.

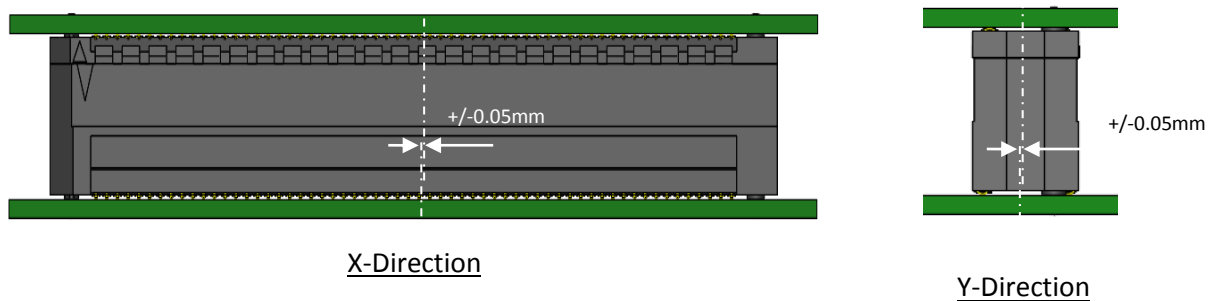


Figure 9-2 Mating Tolerances

These values do not include the influence of misalignment in other axes nor the rotation/inclination in the same time, except for the misalignment in the single axis shown in each figure.

This structure is not for vibration absorption. Sufficient fixing fixtures (mentioned in Chapter 5.3) are necessary to support the PWBs and protect the SMT solder joints and connectors.

9.3 Wiping Length

ER8 Series contact wiping length is 1.5 mm.

9.4 Overall Assembly and Disassembly Process

In mating and un-mating operation, 0° for following angles are preferred. A mating angle of 5° is allowed in the longitudinal (X) direction. Mating at an angle in the lateral (Y) direction is not recommended.(shown below)

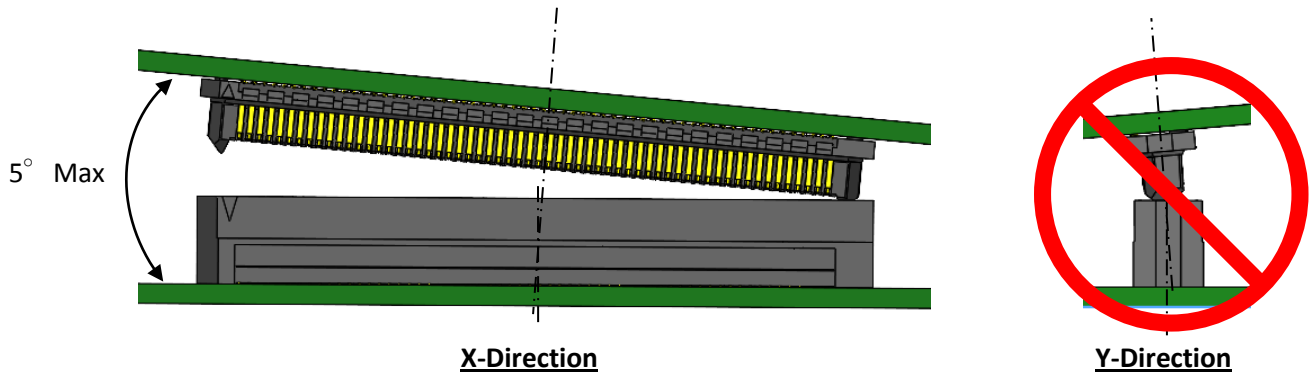


Figure 9-4 Mating Angle Tolerance

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.

Section 10 Technical Document Library

Following data and documents are available.

10.1 Technical Document

No	Item	Format	File name (Ex.) or Document number
1	Quality evaluation test report	PDF	TR0625E-10003
2	Intermateability Confirmation test report	PDF	TR0625E-20001
3	Thermal Shock, Humidity Evaluation Test report	PDF	TR0625E-20004
4	1000 Time Durability report	PDF	TR0625E-20008
5	Dry heat test report	PDF	TR0625E-20013
6	Design notes	PDF	ETAD-F0992

Contact our company Sales for the latest specifications, drawings, and availability.



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<https://www.hirose.com>