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USER GUIDE
for CX90B1-24P

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1. Revision History

Rev. No.	Description of revisions	Prepared	Approved	Date
1.00	Draft version	JH.BOO	HJ.LEE	2018/1/15
2.00	Release	HJ.KIM	HJ.LEE	2018/4/24
2.10	Revised(RE-2-2767)	YI.KIM		2025/4/21

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2. Introduction

2.1 Purpose

The guidelines are intended to provide information on product features and how to handle them.

Guidelines are intended to provide general information and do not limit your design or guarantee results in all situations.

2.2 Scope

Guidelines describe basic design information, recommended device dimensions, and regulatory requirements.

These guidelines will be revised from time to time to reflect changes in technology and production capacity.

2.3 Reference Specification

- Universal Serial Bus Type-C Cable and Connector Specification
  Revision 2.1 May 2021

3. Product Information

3.1 Product Feature

1) Compliant to USB Type-C specification
2) 5A current rating for quick charging.
3) Improved peeling strength using 4 THR* mounting posts.
   * Through-Hole-Reflow
4) Reversible plug orientation ensures easy insertion.
5) USB4 Gen.2 x 2 (20Gbps) transmission speed
6) Clear tactile click due to superior lock Design
   * When using 2 HRS products

3.2 Specification

No. of Contacts	24
P.C.B Mounting type	Top-Mount
Soldering type	Double row SMT
Current rating	1.25A Max. for each power pin(A1, A4, A9, A12, B1, B4, B9, B12), 1.25A Max. Vconn(i.e. B5) 0.25A for the other pins
Voltage rating	48V AC/DC
Operating Temperature	-40℃ ~ +105℃ (Including Temp.rise), 95% RH MAX
Storage Condition	-10℃ ~ +60℃ (With Packing), 15% ~ 70% RH
Contact Resistance	40mΩ Max. (Initial)
Withstanding Voltage	100V AC for 1 minute
Insulation Resistance	100MΩ Min. (500V DC)
Mating Cycles	10,000 times
Insertion/ Extraction Force	Insertion: 5~20N, Extraction: 8~20N (Initial), 6~20N (After test)

Note

* Storage conditions apply to original packaging only, void if opened. Warranty period is 12month max. in the storage conditions above and calculated by manufacture date

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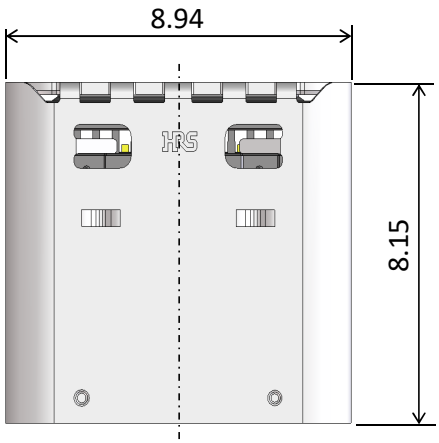
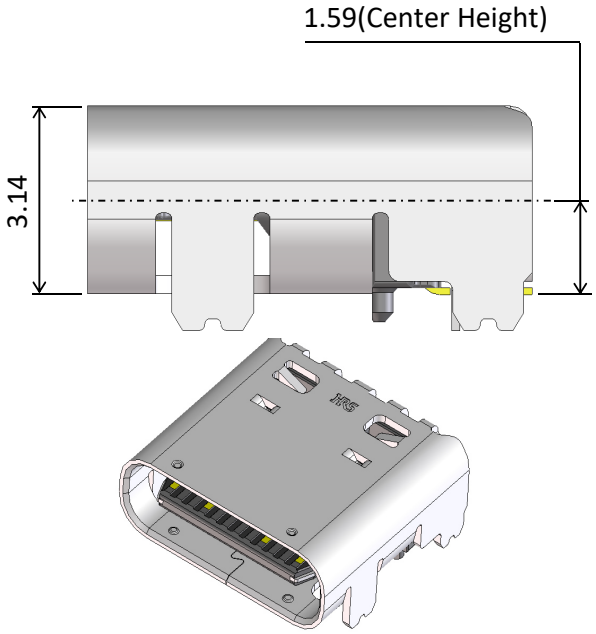
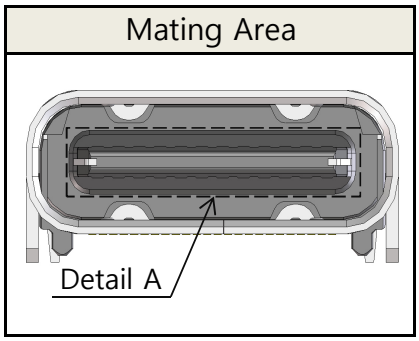
3.3 Product Size

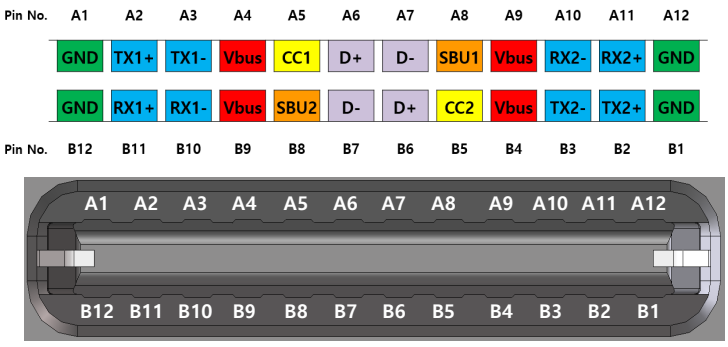
Unit : mm



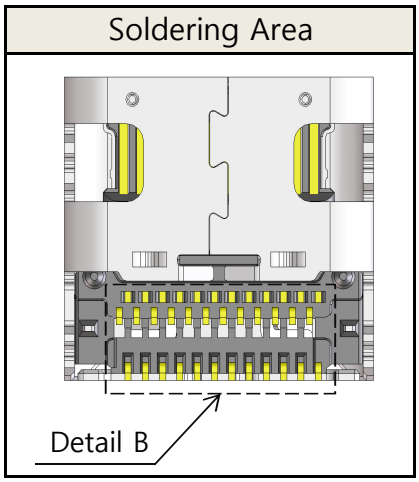


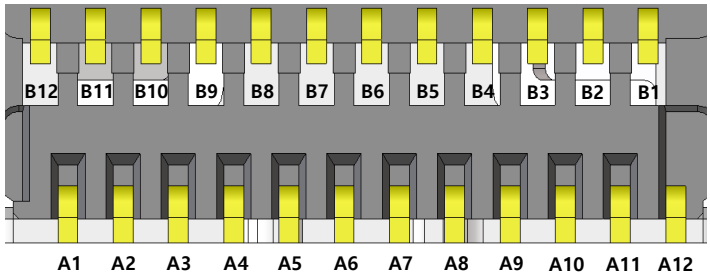
3.4 Pin Assignment





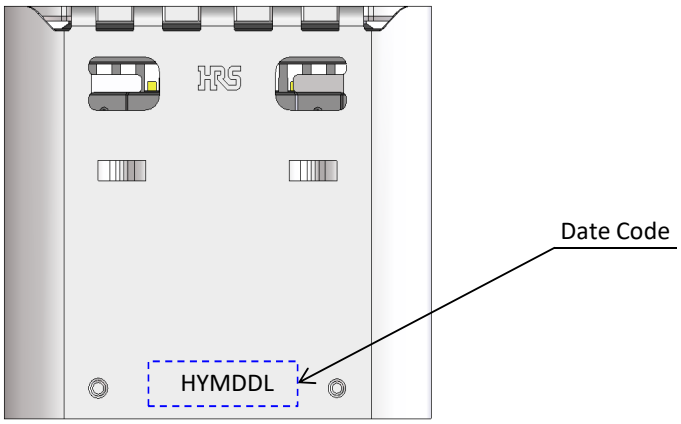
Detail A

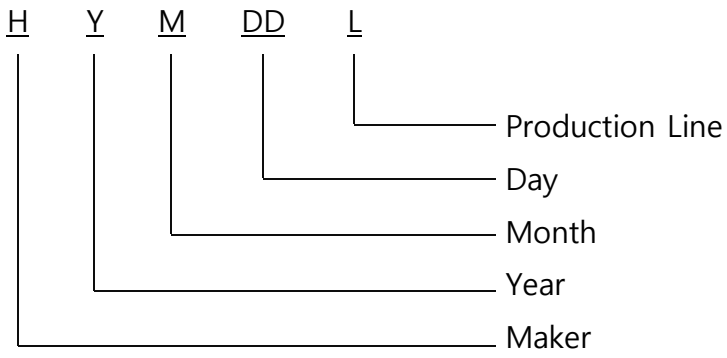




Detail B

3.5 Manufacturing Date Code System





Maker		Year		Month		Day		Production Line	
Ex.	Mark	Ex.	Mark	Ex.	Mark	Ex.	Mark	Ex.	Mark
Hirose	H	2017	7	Jan.	1	1st	01	Manual	1
		2018	8	Feb.	2	2nd	02	…	…
		2019	9	Mar.	3	3rd	03	Auto #1	A
		2020	0	Apr.	4	4th	04	Auto #2	B
		2021	1	May	5	5th	05	Auto #3	C
		2022	2	Jun.	6	6th	06	…	…
		2023	3	Jul.	7	7th	07	…	…
		2024	4	Aug.	8	8th	08	…	…
		2025	5	Sep.	9	9th	09	…	…
		2026	6	Oct.	A	10th	10	…	…
				Nov.	B	11th	11	…	…
				Dec.	C	…	…	…	…

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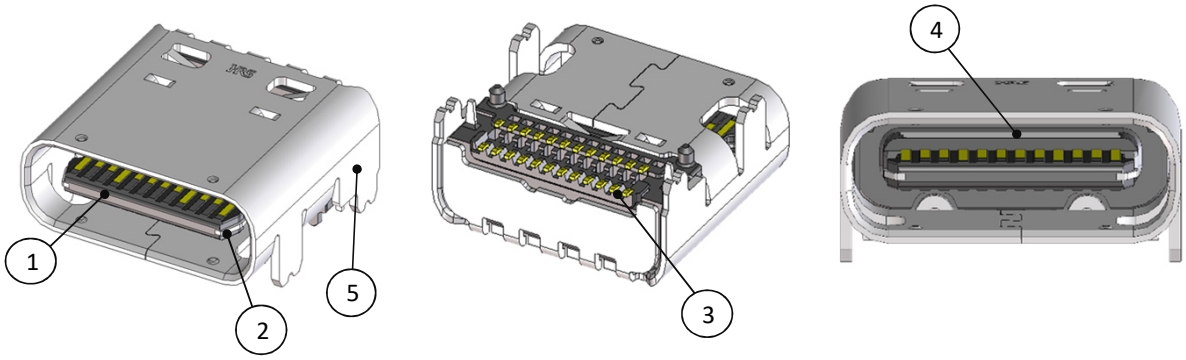
3.6 Part List

No	Part	Materials	Finish / Color
1	Insert Case	Thermoplastic	UL94V-0, Black Color
2	Mid Plate	Stainless Steel	Ni 1~5μm
3	Contact	Copper Alloy	Contact Area : Au 0.05μm Min over Pd-Ni 0.75μm Min over Ni 2~5μm Solder Tails : Au 0.03μm Min over Ni 1~5μm
4	GND Plate	Stainless Steel	Cleansing
5	Metal Shell	Stainless Steel	Ni 1~5μm



3.7 Configuration of Product Name

CX ① 90 ② B ③ 1 ④ - 24 ⑤ P ⑥

①	Series Name	CX	CX Series
②	Soldering Type	90	Rignt angle SMT
③	Mounting Type	B	Top-mount
④	Serial No	1	None or 1,2,3...
⑤	Contact No	24	24 position
⑥	Contact Type	P	Male contacts

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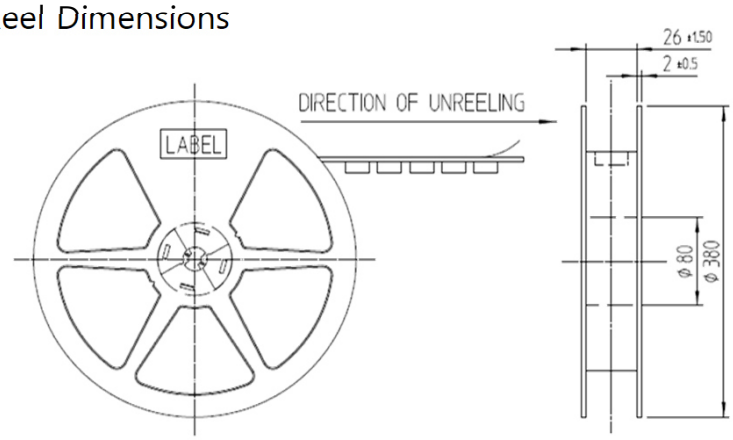
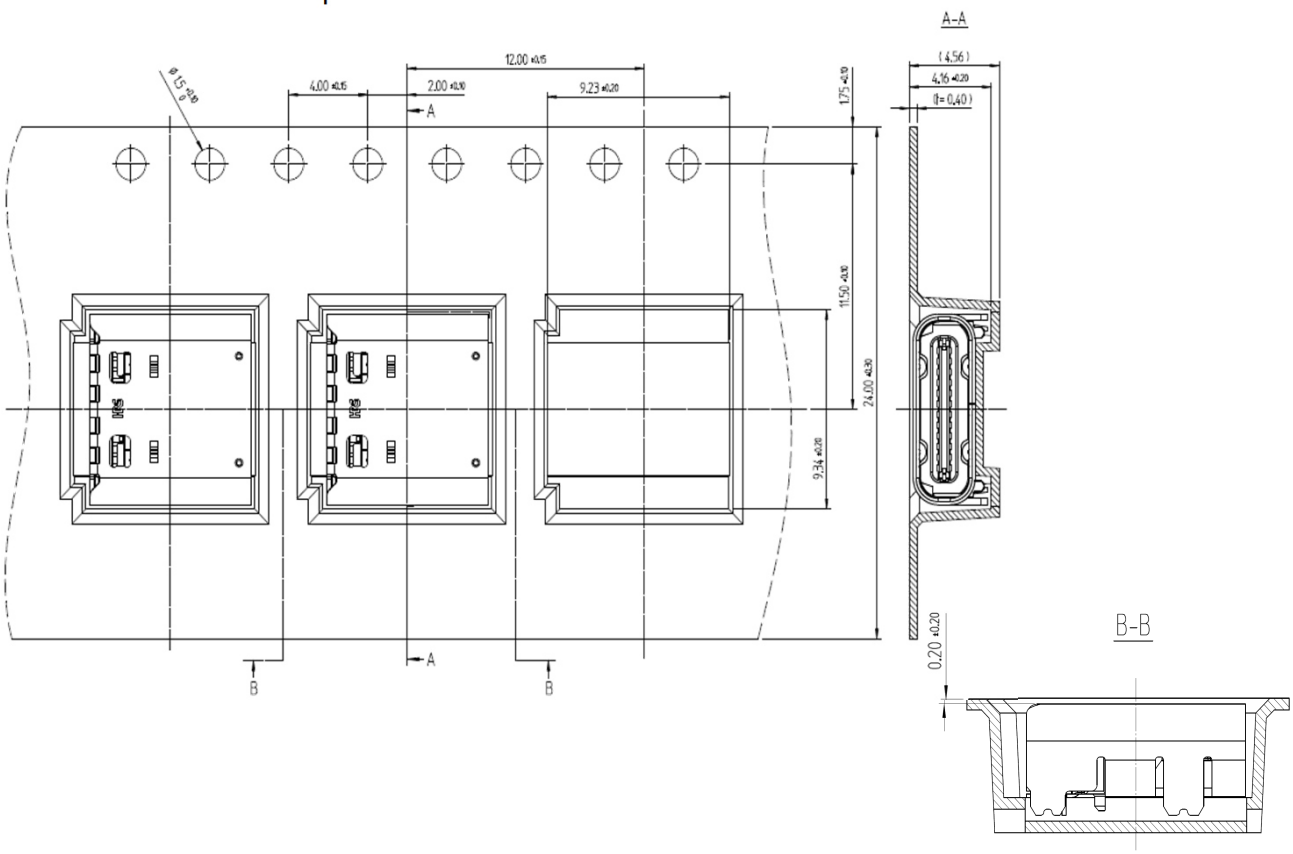
3.8 Reel Dimensions



3.9 Emboss Carrier Tape Dimensions



※ For details, Please refer to the latest drawing

3.10 Packing Quantity Peer Reel : 1500 PCS

3.11 Peeling Strength:

Cover tape shall have a total peel strength of from 0.1N to 1.3N

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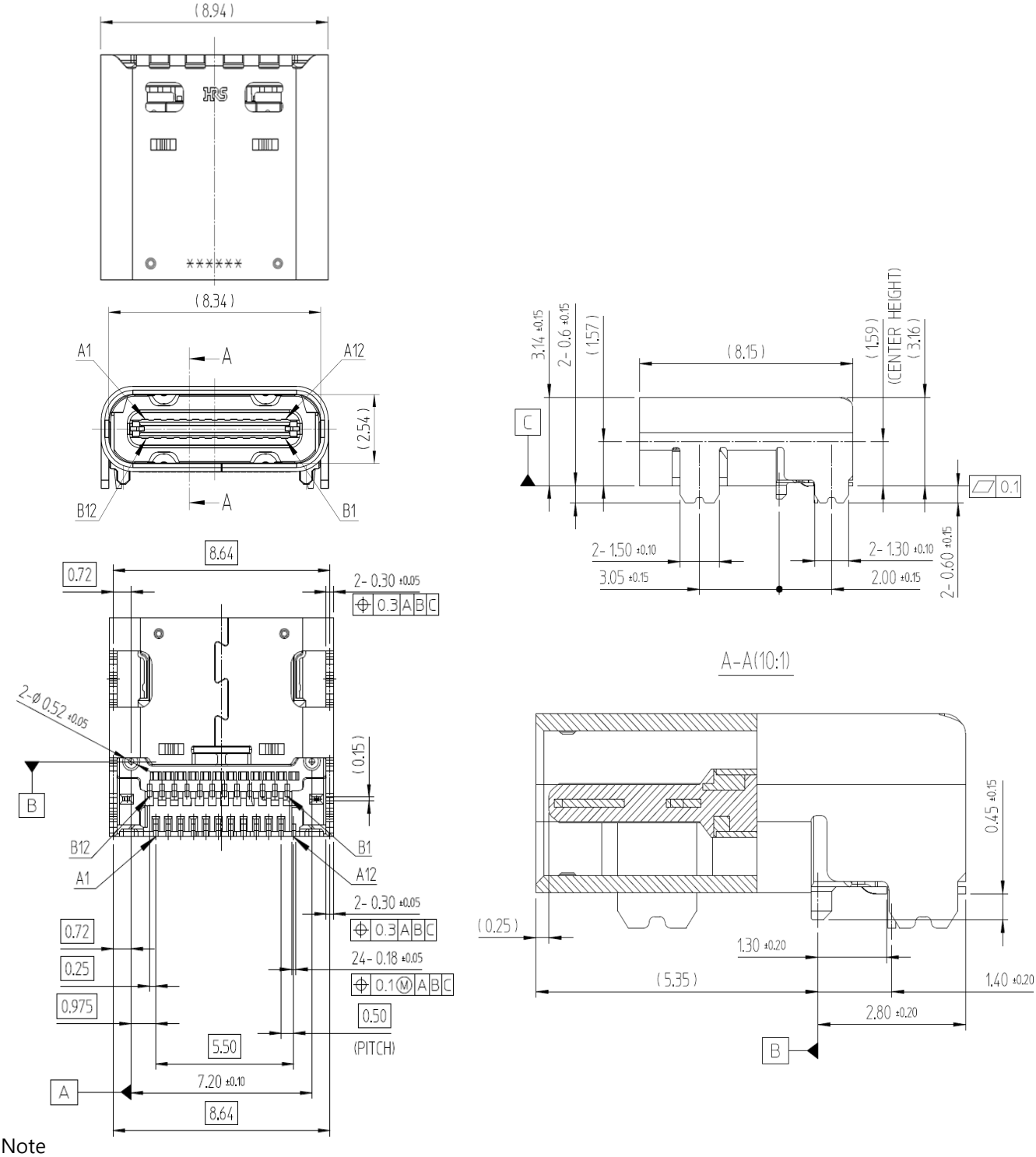
3.12 Product Dimensions

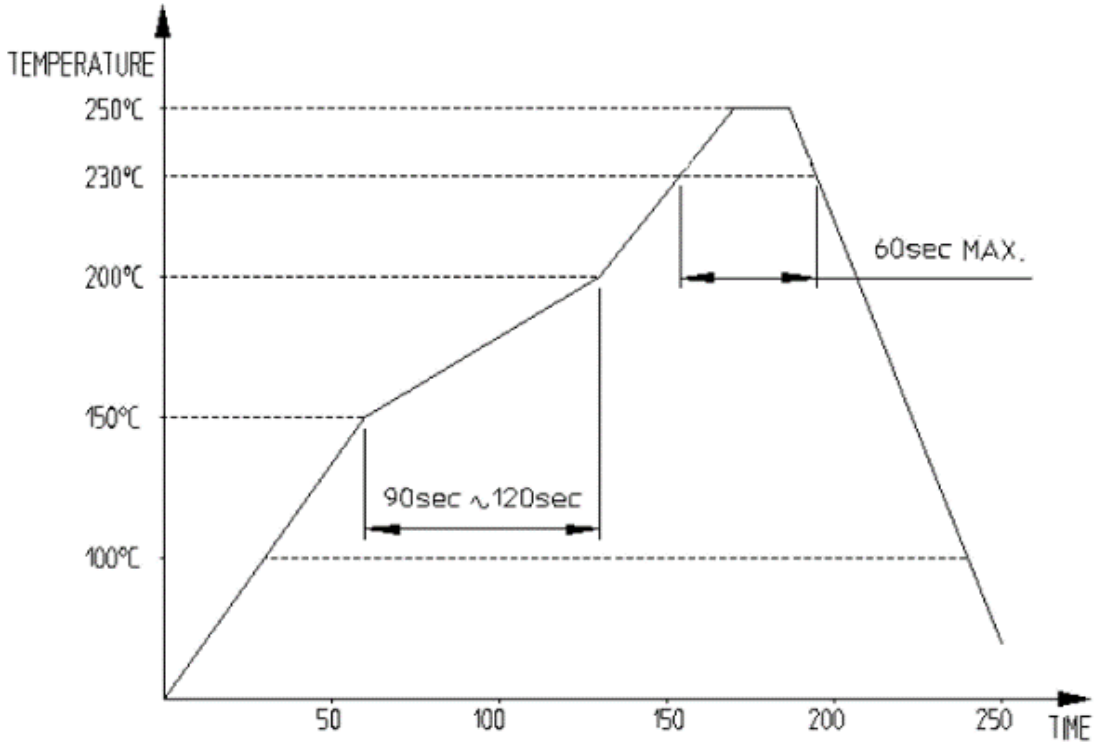


Note

* Specifications herein are subjected to change without notice. Please see the latest drawing to confirm the detail.
* General tolerance : ±0.2

4. Notice for Soldering

4.1 Recommended Reflow Temperature Profile



• Profile measuring point
The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.

• Reflow cycles
Up to 2 cycles of reflow soldering are possible under the same
* Temperature between 1st and 2nd reflow must be cooled down to room temperature

• Reflow heating method and condition
Far-infrared heater and hot convective blowers used in combination, normal atmosphere, or nitrogen atmosphere.

• Top surface of the contact leads may not covered by solder depending on reflow condition

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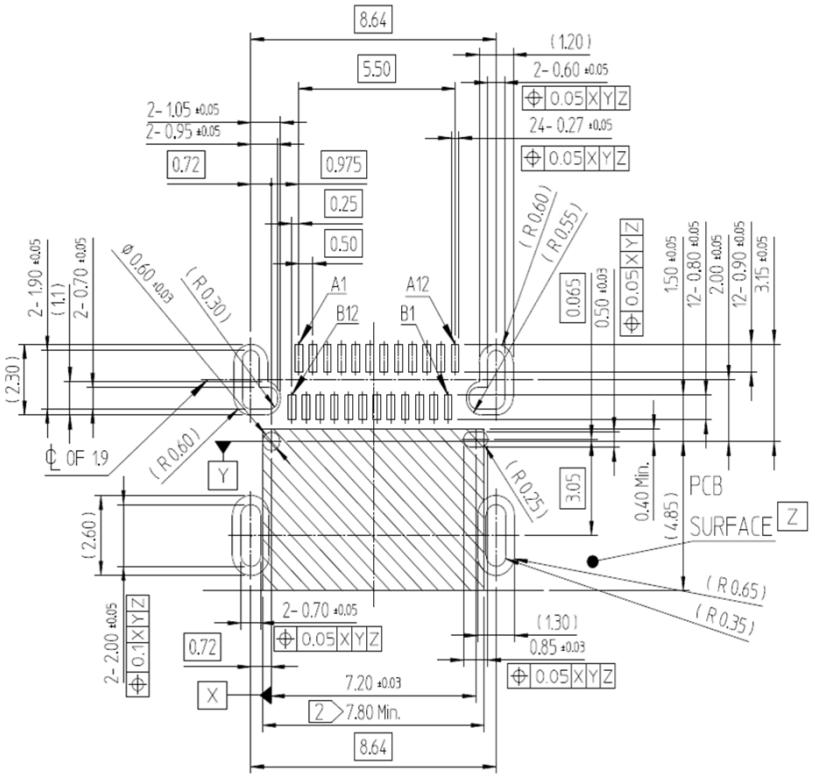
4.2 PCB Designing

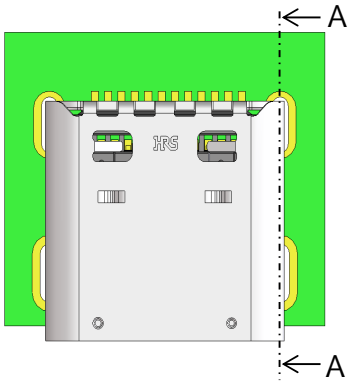
RECOMMENDED PCB LAYOUT (TOP-VIEW)

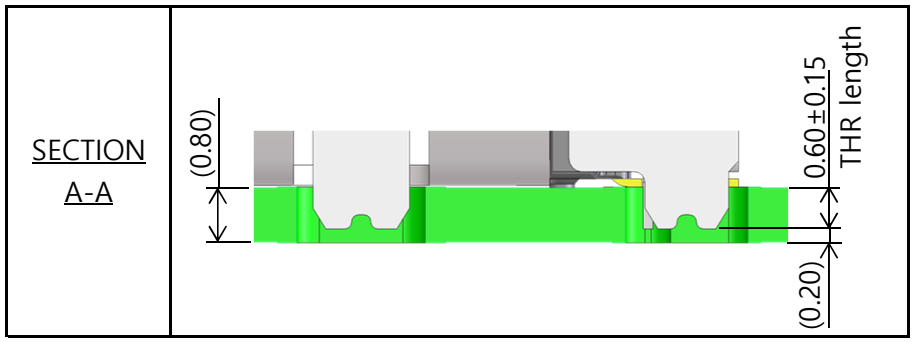
(REFERENCE ONLY)

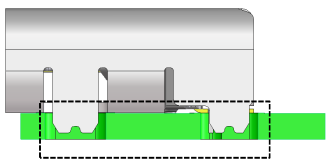


4.3 PCB Thickness

Recommended PCB thickness is (0.80)mm considering 0.60±0.15mm of THR length.





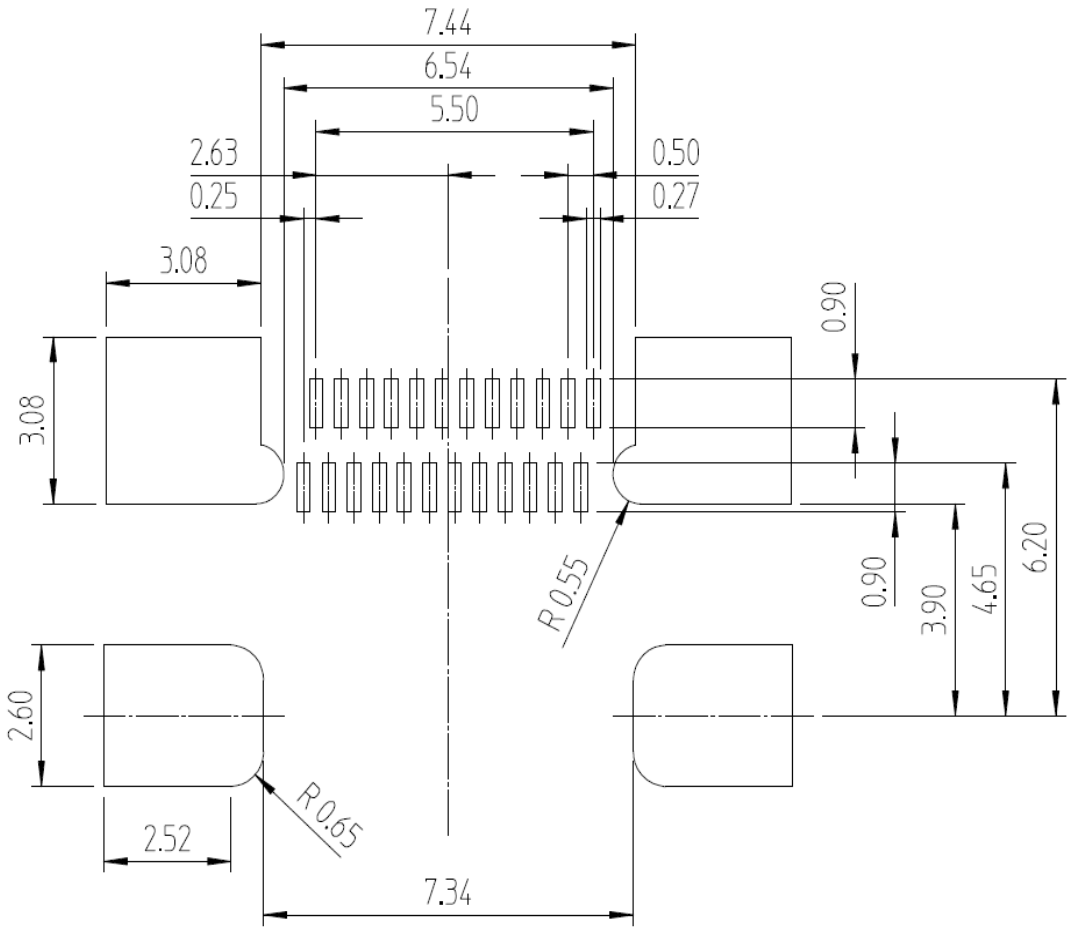


Section A-A

The THR can be protruded to the bottom side of PCB in case the PCB thickness is less than the THR length.

4.4 Metal Mask Designing

RECOMMENDED METAL MASK LAYOUT (TOP-VIEW)



Note

* Recommended metal mask thickness is 0.1mm. Above metal mask dimensions are suggested based on 0.80mm of PCB thickness. Please adjust the metal mask opening size in case of thicker PCB than recommended because the lack of solder amount at the PIP holes can be happened.

4.5 Solder Paste

Lead-free solder paste

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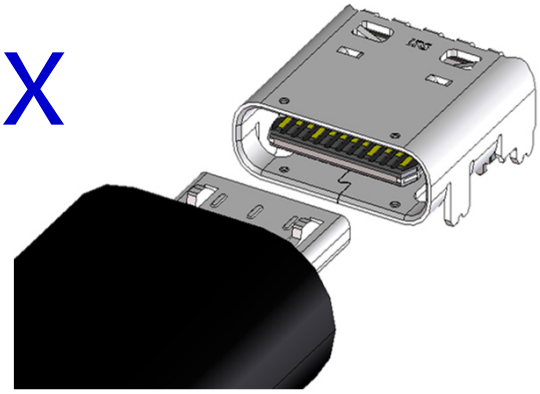
5. Notice for Connector Handling

5.1 Mating Plug

Please use USB Type-C Plug only

With USB Type-C Plug	With the other Plugs
O	X 

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