

NUMBER GS-20-0813	CATEGORY CUSTOMER SPECIFIC APPLICATION SPECIFICATION	Amphenol ICC	
TITLE DensiStak Board to board connector		PAGE 1 of 6	REVISION A
		GUARDIAN (VERIFIED BY) LQ.Lei	DATE Nov 2023
		APPROVED BY Tim.Yao	
CLASSIFICATION : CONFIDENTIAL			

1.0 OBJECTIVE

This specification provides information and requirements regarding customer application of DensiStak **Connector**. This specification is intended to provide general guidance for application process development. It is recognized that no single application process will work under all customer scenarios and that customers will develop their own application processes to meet their needs. However, if these application processes differ greatly from the one recommended, AICC cannot guarantee results.

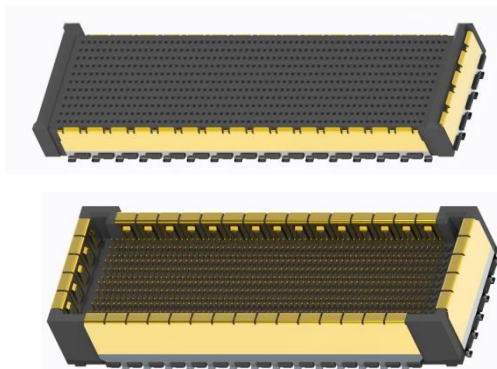
2.0 SCOPE

This specification provides information and requirements regarding customer application of DensiStak **Connector**.

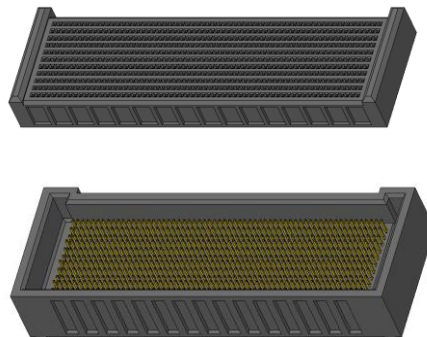
3.0 GENERAL

This document is meant to be an application guide. If there is a conflict between the product drawings and specifications, the drawings take precedence.

Shield version



Without Shield version



4.0 DRAWINGS AND APPLICABLE DOCUMENTS

- AICC PRODUCT SPECIFICATION GS-12-1806
- AICC PRODUCT DRAWINGS
 - Header connector, Drawing No: 10169063
 - Receptacle connector, Drawing No: 10169064
- APPLICATION MANUALS/INSTRUCTION SHEETS (IF NOT INCLUDED IN THIS DOCUMENT)

Product drawings and **AICC's GS-12-1806** Product Specification are available at www.fci.com. In the event of a conflict between this application specification and the drawing, the drawing will take precedence. Customers are advised to refer to the latest revision level of AICC product drawings for appropriate details.

5.0 APPLICATION REQUIREMENTS

5.1 Mounting method to PCB

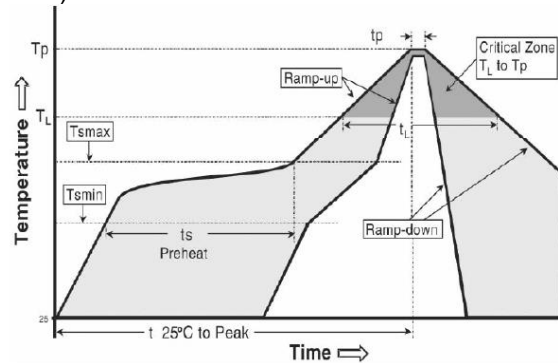
IR-Reflow accordance with IPCECA J-STD-002

Soldering temperature: 260 °C max.

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Soldering time: 20-40 s
Recommended Solder: SAC305 (Sn - 3.0Ag - 0.5Cu)

Profile Feature	Su-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (TSMAX to Tp)	3° C/second max.	3° C/second max.
Preheat		
- Temperature Min (T _{min})	100 °C	150 °C
- Temperature Max (T _{max})	150 °C	200 °C
- Time (T _{min} to T _{max}) (ts)	60-120 seconds	60-180 seconds
Time maintained above:		
- Temperature (T _L)	183 °C	217 °C
- Time (t _L)	60-150 seconds	60-150 seconds
Peak Temperature (Tp)	See Table 4.1	See Table 4.2
Time within 5°C of actual Peak Temperature (tp) ²	10-30 seconds	20-40 seconds
Ramp-down Rate	6 °C/second max.	6 °C/second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.



Note

- 1) Please take care to prevent penetrating flux on to the contact portion during soldering process.
- 2) Soldering must be done by confirming that there is no slanting or floating of the connector.
- 3) Please do not solder when connector is mated condition.
- 4) Please control warpage of PCB. Soldering may become poor, if PCB warpage is large.
- 5) Please take care during hand soldering of rework, do not apply external force to the contact lead section at the soldering iron point.
- 6) Please do not touch the contact portion by hand.
- 7) Please do not give the excessive force to a connector before mounting. Connector may be damaged.
- 8) Do not apply any forces affecting soldered joints when PC Board cut off multiple board and screw clamp of board etc.
- 9) Recommended to have mounting trial making before mass-production

5.2 Requirement for 2nd reflow inverted

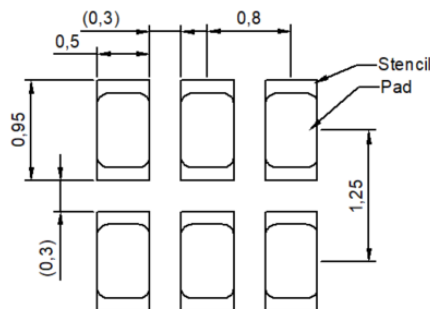
Generally Mass to soldering area ratio $\leq 0.10\text{g/mm}^2$ is workable for 2nd reflow inverted. Due to other variables involved (connector orientation, reflow temperature, PCB thickness and PCB size) during the 2nd (inverted) reflow, it is recommended for the user to conduct trial under actual manufacturing condition. These are to ensure the product and process capability.

5.3 PCB thickness

PCB thickness should be based on the intended purposes.

5.4 Stencil Design.

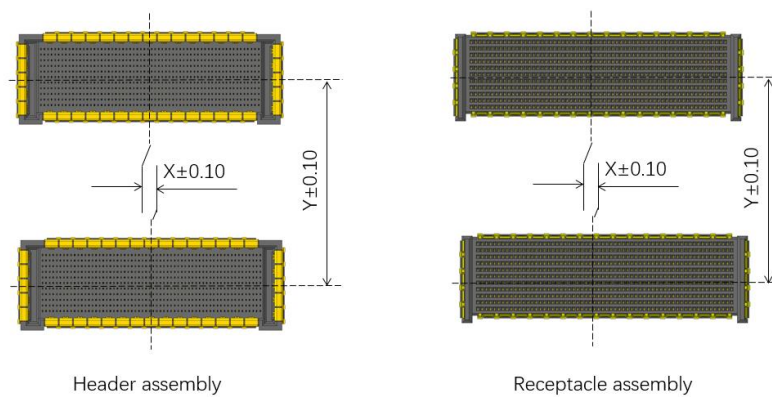
The minimum thickness for solder paste is 0.12mm, recommended 0.16-0.20mm.



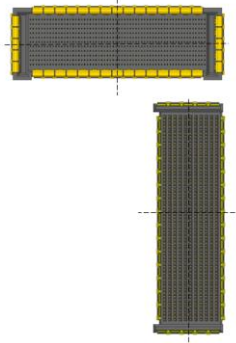
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5.5 Consideration for alignment tolerances for multiple applications

5.5.1 It is recommended that multiple connectors are to be parallel to each other or in the same orientation, each connector must be aligned in both directions to within 0.20 true position with respect to every other connector of the same type, on the same PCB, and any other feature of the assembly that affects the mating alignment. Required placement tolerance for each connector, length-wise or width-wise is 0.00 +/- 0.10



5.5.2 Non-parallel applications are not recommended

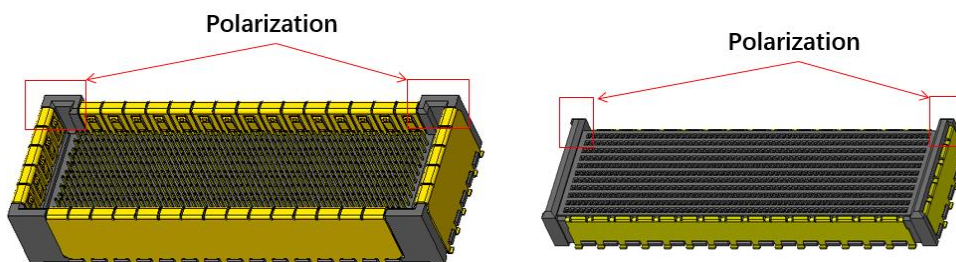


5.6 Cautions in mating operations

6.0 MATING AND UN-MATING OF PLUG AND RECEPTACLE

6.1 Cautions in mating operations

This connector is designed to prevent reverse insertion, and applying excessive force during mating can damage it. To avoid any potential damage, please refrain from using excessive force when mating the connector. Please ensure that the following connector properties are confirmed before mating.

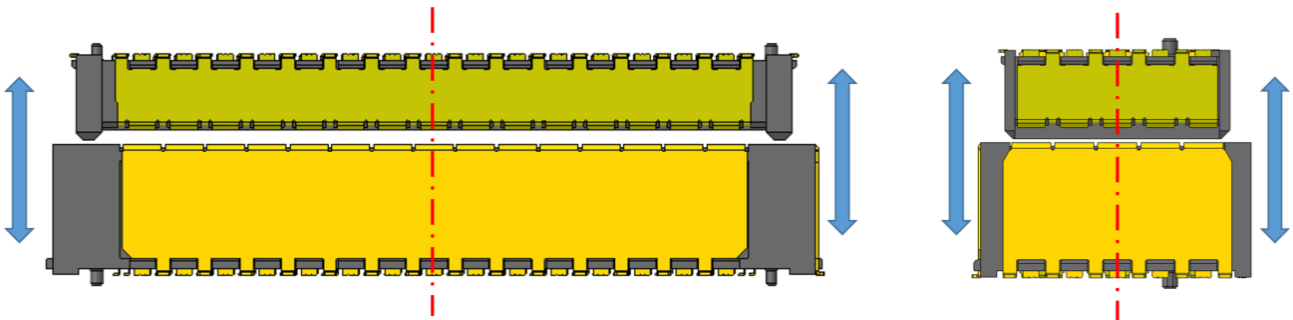


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6.2 Mating and un-mating

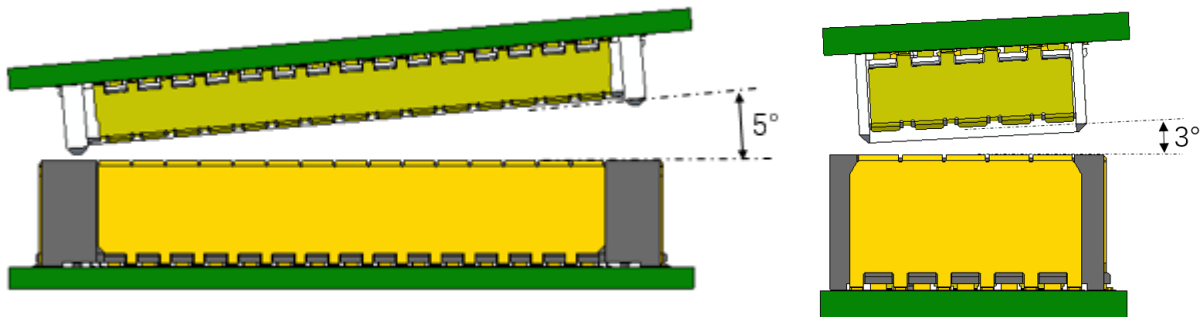
After confirming polarizing direction of plug and receptacle, make an adjustment the centerline of connectors. And then push upper surface of PCB with uniform force and insert until plug and receptacle touch each other.

For the separation of plug and receptacle, putting force on PCB uniformly.



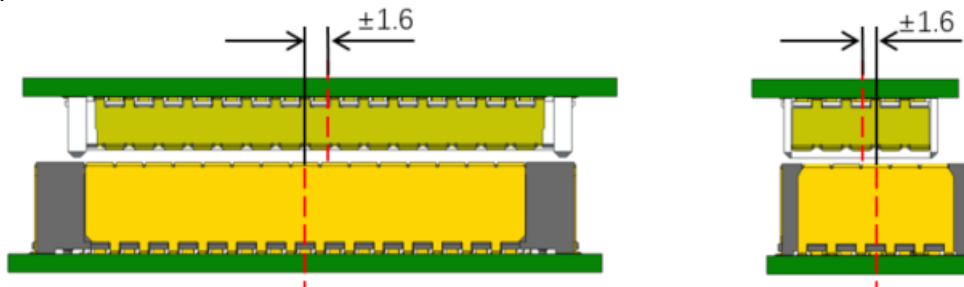
6.3 Allowance guiding angle of mating and un-mating

Allowance of mating angle is the following figure. These allowances are common for right angle type and straight type.



6.4 Allowance of guiding distance of mating and un-mating

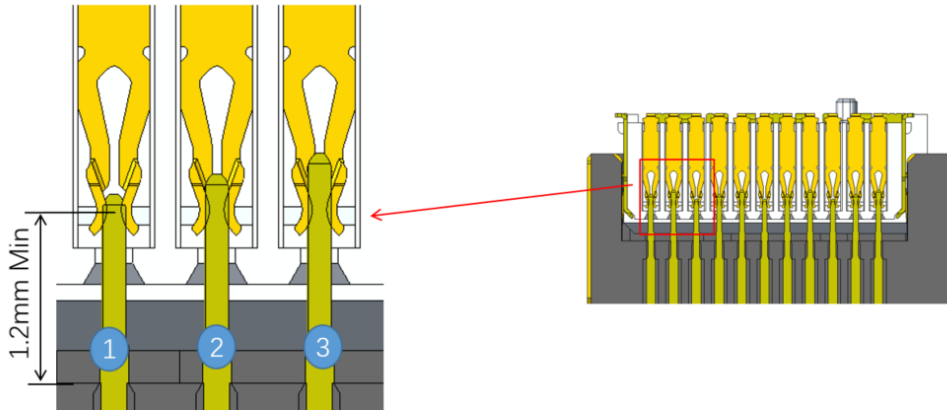
Allowance of mating distance is the following figure. These allowances are common for right angle type and straight type.



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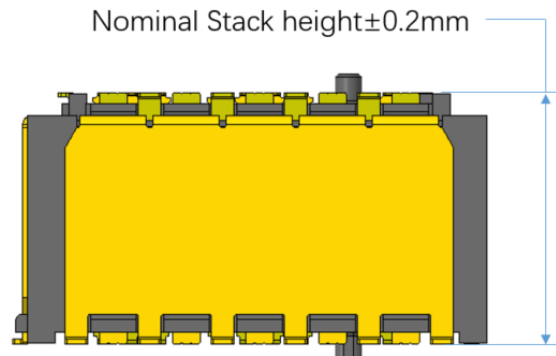
6.5 Consideration for Wipe length

The minimum wipe length of the product is 1.2 mm. (In general, overlap should be keep 0.5mm are safety margin for product mating, this also means that there allow 0.7mm de-mate.)



6.5 Stack height tolerance.

The minimum wipe length of the product is 1.2 mm. (In general, overlap should be keep 0.5mm are safety margin for product mating, this also means that there allow 0.7mm de-mate.)



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REVISION HISTORY

REV	PAGES	DESCRIPTION	EC #	DATE
A	All	Initial released	/	Nov 30 2023