MATE-AX,HEADER 90 DEGREE ASSY,SEALED 4 POSITION Applications

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A1	Add Panel detail & potting instruction	Z.ZHOU	22SEP2023				
A	Initial Release	Z.ZHOU	09AUG2023	PAGE **1 OF 11**	Title **4Pos Sealed MATE-AX Header Conn. Applications**		
REV	REVISION RECORD	APVD	DATE				

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1. SCOPE

范围

This application specification describes the recommendation for the handling and assembling process of the 4P SEALED MATE-AX-header Conn..

本应用规范描述了4P密封MATE-AX板端连接器的操作和组装过程的建议。。

2. DELIVERY CONDITION – PACKAGING

交货状态-包装

The MATE-AX pin header will be delivered in tape and reel(Option-1) or Tray(Option-2) packaging.

MATE-AX板端连接器将以载带和卷盘（方式一）或者Tray（方式二）包装的形式交付。

The material from tape and reel is out of polystyrene. It fulfills the ESD requirement according to DIN EN 61340-5-3.

载带和卷盘的材料是聚苯乙烯制成的。它符合 DIN EN 61340-5-3 的 ESD 要求

The material from tray is out of polystyrene terephthalate. It fulfills the ESD requirement according to DIN EN 61340-5-3.

托盘的材料是聚乙烯对苯二甲酸脂制成的。它符合 DIN EN 61340-5-3 的 ESD 要求

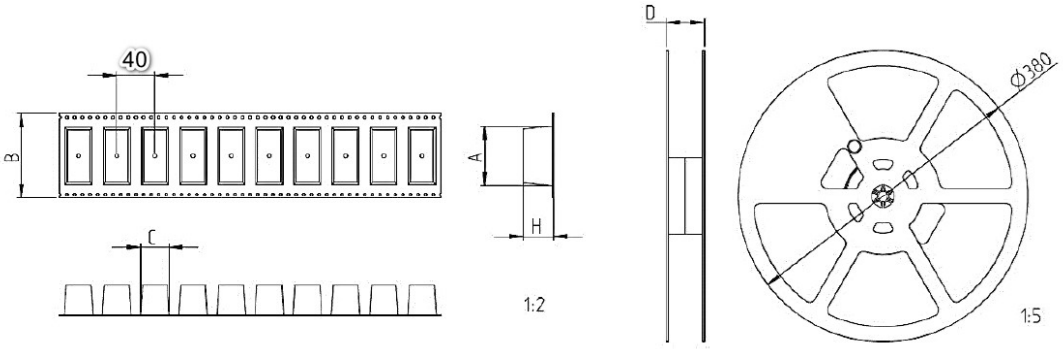


FIG. 1: Reel Packaging Dimension
卷盘包装尺寸

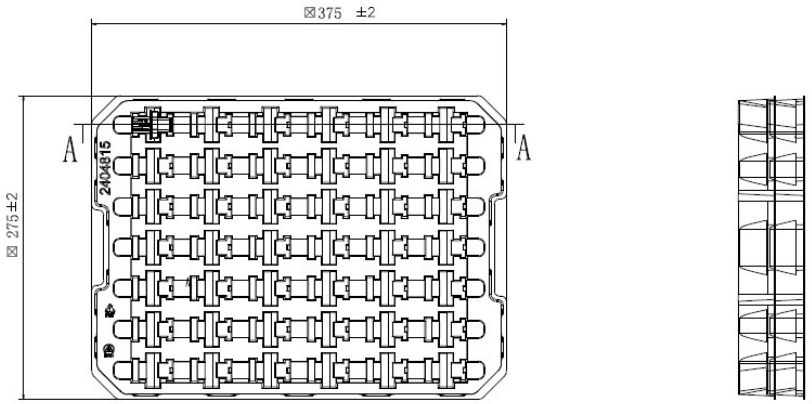
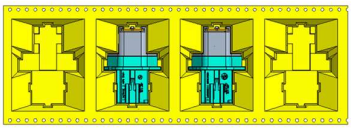
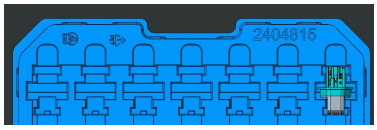


FIG. 2: Tray Packaging Dimension
托盘包装尺寸

TE Number，Coding TE 料号 防呆 Key	Unwinding direction loaded 放卷方向	Dimension(mm)					Quantity on reel 一卷（盘）数量
		B	H	A	C	D	
MATE-AX Header 90° Sealed 4Pos 90 度 4pos 板端连接器 2404815-1/2 A,B		56.00	23.65	36.44	27.30	77.50	68
MATE-AX Header 90° Sealed 4Pos 90 度 4pos 板端连接器 1-2404815-1/2 A,B 2404815-9 Z		/	/	/	/	/	42

3. PICK & PLACE

抓取和摆放

Suction Area 抓取面
For dimension and location please refer to the last revision of the respectiveTE customer drawing.
尺寸和位置请参考最新的 TE 客户图面

- **Nozzle 喷嘴**
  To be defined 待定义

- **Processing Parameter 加工参数**
  To be defined 待定义

4. CIRCUIT BOARD ARRANGEMENT

电路板安装

The Connector design supports a placement either by hand or by fully automated handling
连接器的设计既支持手动放置，也支持全自动处理放置

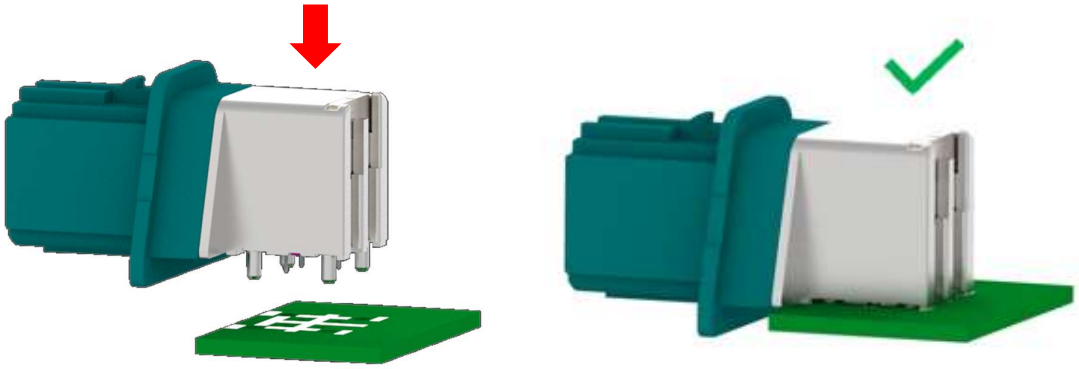


Fig.3 Pin Header 90° TE-NO. 2404815

5. PCB-LAYOUT

PCB 布局图

The recommended PCB-Layout is included in this specification (chapter 5.1).
Hole sizes and tolerances are to be regarded as recommendation and must be adapted to own mounting and soldering conditions.

推荐的 PCB 布局包含在本规范中(第 5.1 章)。
孔尺寸和公差被视为推荐值，必须加以调整拥有安装和焊接条件。

5.1 LAYERSTACK AND CIRCUIT RECOMMENDATION
层栈和电路推荐

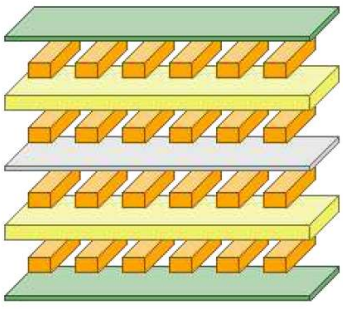
The below shown layerstack and the circuit design for serial printed circuit boards are exemplarily and is intended as a recommendation.
下面所示的层叠和串行印刷电路板的电路设计是典型的，并打算作为建议。

Please note, that the given layout is not optimized to fit all of the possible board configurations regarding RF-performance and represents in general a recommendation. In order to guarantee optimal high frequency properties, an RF-analysis of the connector to board transition is needed.
请注意，给定的布局并没有优化到适合所有可能的关于rf性能的板配置，并且通常代表建议。为了保证最佳的高频特性，需要对连接器到电路板的过渡进行RF分析。

For exact footprint details please refer to the specific TE data file which can be obtained by request.
有关确切的内存占用细节，请参考具体的TE数据文件，该文件可通过请求获得。

Subsequently the PCB layout for the 4 position MATE-AX header is shown for each layer in principle with the main values. It refers to the layer stack mentioned in chapter 4.2.5.
随后，每个层的4位置MATE-AX标头的PCB布局原则上与主要值一起显示。它指的是4.2.5章中提到的层栈。

All measurement values are exemplarily and have to be adapted to the real PCB circumstances.
所有的测量值都是典型的，必须适应实际的 PCB 环境



Layer Name	Type	Material	Thickness (mm)	Dielectric Material	Dielectric Constant
Top Solder	Solder Mask/Co...	Surface Material	0.0254	Solder Resist	3.5
Top Layer	Signal	Copper	0.03556		
Dielectric Top	Dielectric	Core	0.508	RO4350B	3.45
Signal Layer 1	Signal	Copper	0.017		
Dielectric Inner	Dielectric	Prepreg	0.2032	RO4350B	3.45
Signal Layer 2	Signal	Copper	0.017		
Dielectric Bottom	Dielectric	Core	0.508	RO4350B	3.45
Bottom Layer	Signal	Copper	0.03556		
Bottom Solder	Solder Mask/Co...	Surface Material	0.0254	Solder Resist	3.5

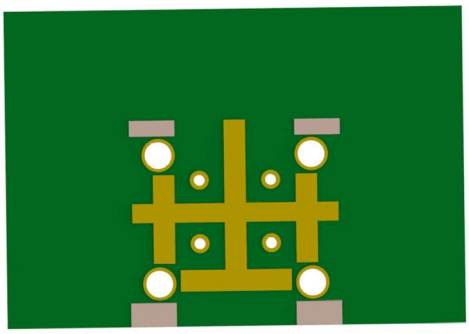
Fig.4 Detail of layer construction with nominal thickness and dielectric constant

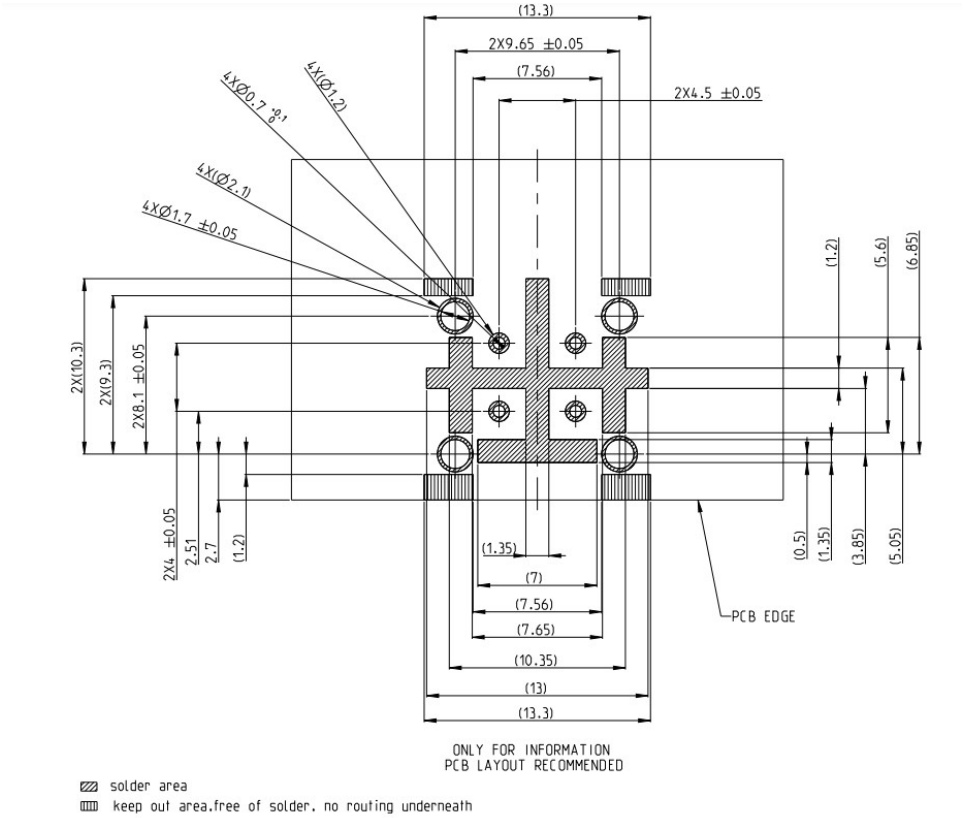
5.1.1 PCB FOOTPRINT 4POS SEALED 90° PIN HEADER

4POS 90 度防水板端 PCB 的面板封装

This footprint layout is suitable for reflow soldering processes

这种封装布局适用于回流焊工艺



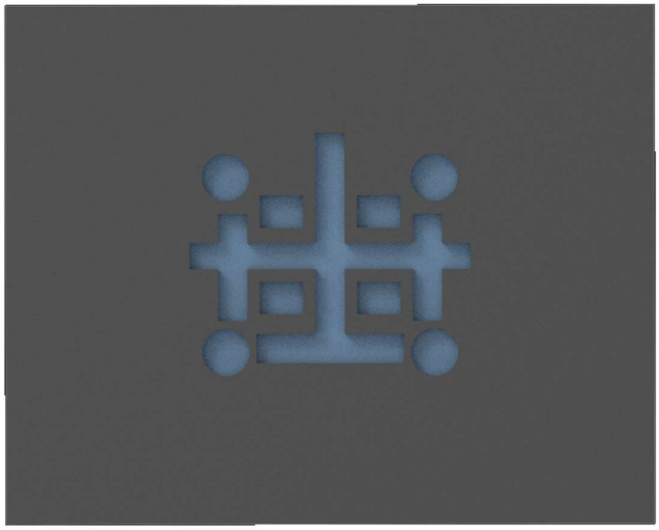


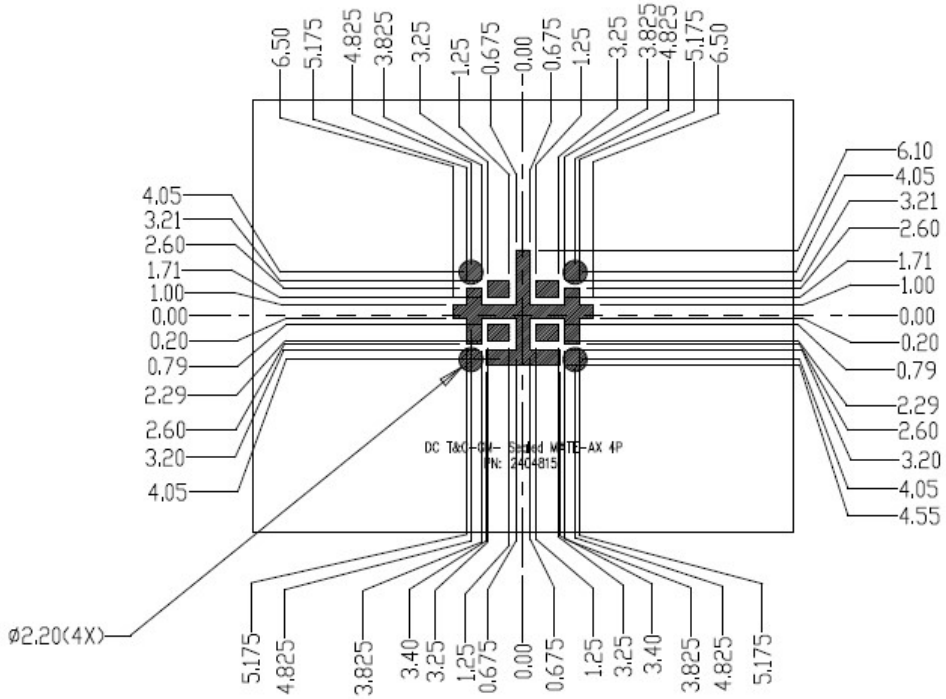
5.1.2 SOLDER PASTE RECOMMENDATION 4 POS 90° SEALED PIN HEADER

4POS 90 度防水板端 PCB 的焊接区域

The shown solder paste layout is defined for stencil thickness of 0.15mm and a PCB thickness of 1.6mm

所示的锡膏布局是为模板厚度为 0.15mm 和 PCB 厚度为 1.6mm 定义的





6. SOLDERING PROCESS

焊接工艺

Due to large variations of existing processes, equipment and accessory and the different demands to the soldering process, it is not possible to define an ideal soldering proposal for all situations.

由于现有工艺、设备和配件的巨大变化以及对焊接工艺的不同要求，不可能为所有情况定义理想的焊接方

案。

This header is designed for reflow soldering application.
此板端连接器是专为回流焊应用。

A recommended soldering processes is possible only in reference to the respective soldering standard (JEDEC).
Fig. 7 shows the recommended reflow soldering process according JEDEC J-STD-020D.
推荐的焊接工艺只能参考各自的焊接标准(JEDEC)。
图7显示了JEDEC J-STD-020D推荐的回流焊工艺

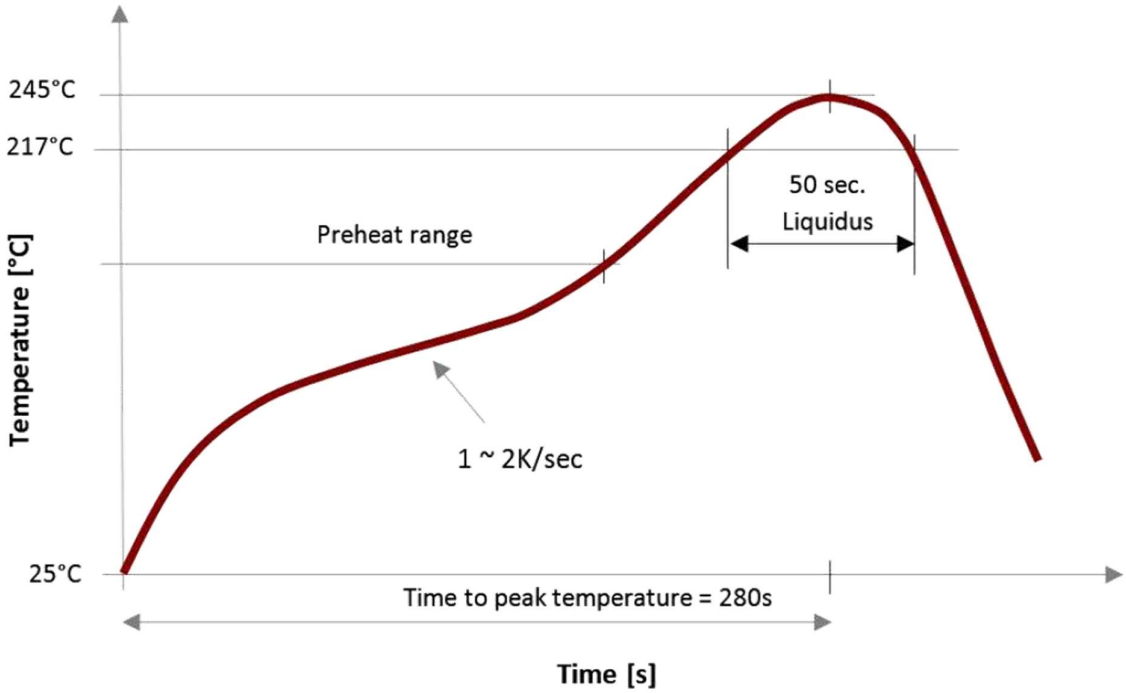


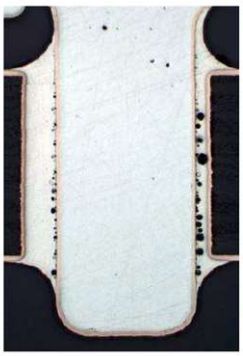
Fig. 7

In the course of the qualification of the MATE-AX header, detailed soldering inspections were performed. All these tests and process parameters reflects a recommendation and must be adapted to the according re-flow soldering process and its restrictions.
在对MATE-AX头进行鉴定的过程中，进行了详细的焊接检查。所有这些测试和工艺参数反映了一个建议，必须根据回流焊工艺及其限制进行调整。

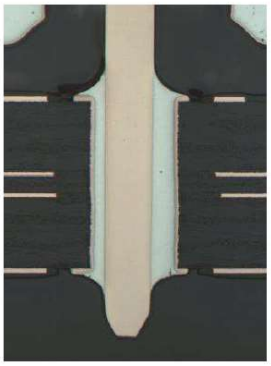
6.1 Judgement of the soldering joint
焊接接头的判断

For an ideal soldering joint it is necessary to have at least a 75% solder passage.
对于一个理想的焊接接头，至少有75%的焊料通道是必要的。

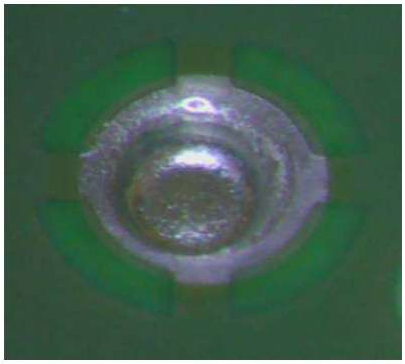
Judgement of the soldering joint will be done by optical inspection according to the acceptance criteria of IPC A610.
焊接接头的判断将根据IPC A610的验收标准进行光学检查。



Cross section picture soldered shielding pin
焊接屏蔽针的截面图



Cross section picture soldered signal pin
焊接信号引脚的截面图



Soldered Shield Pin
焊接屏蔽引脚

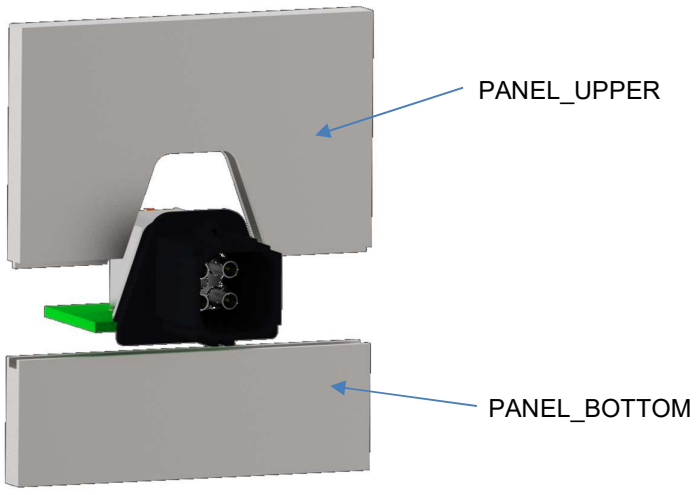
Soldered Data Pin
焊接数据引脚

7. Assembly of pin header with device housing and mating with cable connector

板端连接头与设备外壳的组装，以及与电缆接头的配合

7.1 Recommended Panel cutout/Enclosure geometry

推荐的面板切割/外壳几何形状



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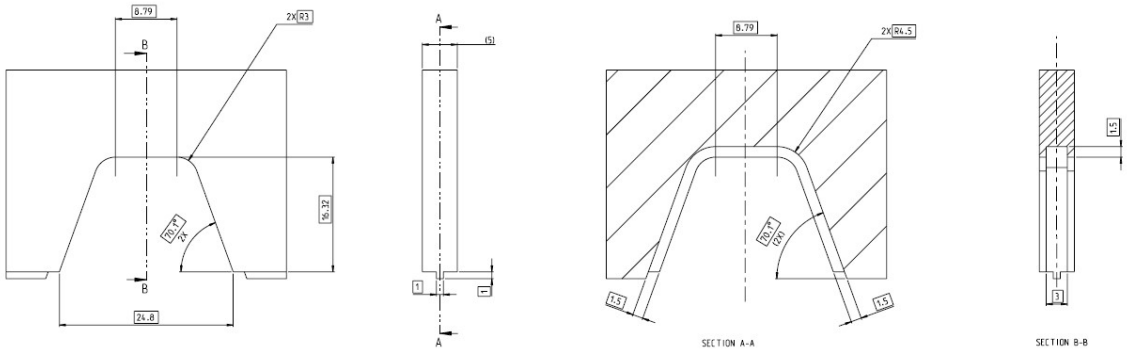
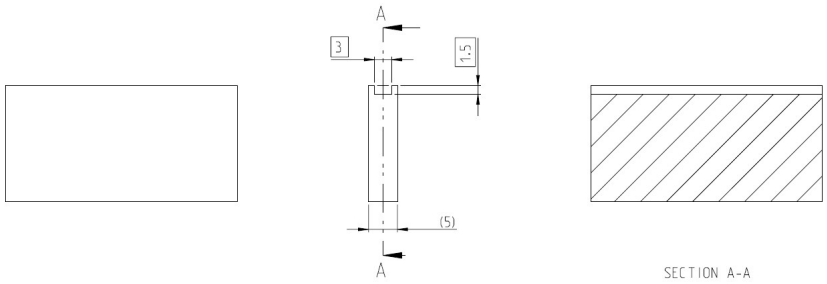


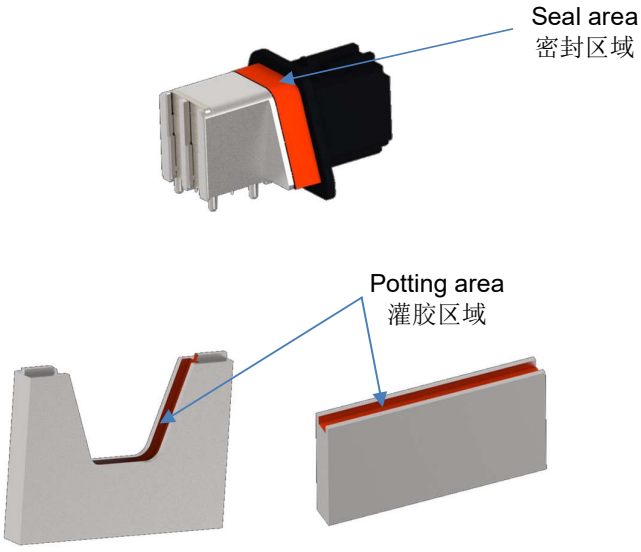
Recommended Panel_upper dimension
推荐上面板尺寸



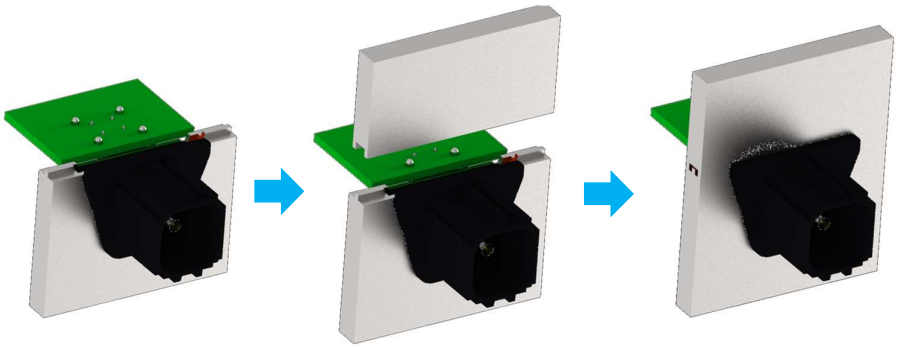
Recommended Panel_bottom dimension
推荐下面板尺寸

7.2 Potting Area & Method

点胶区域和方式



In the potting area, the sealing agent Semicosil 987 (grey) or. DC7091 (black) is manually or automatically applied into the slot of both the panel_upper and the panel_bottom.
在点胶区域，密封剂半石化 987(灰色)或 DC7091(黑色)手动或自动涂入上面板和下面板的槽中。

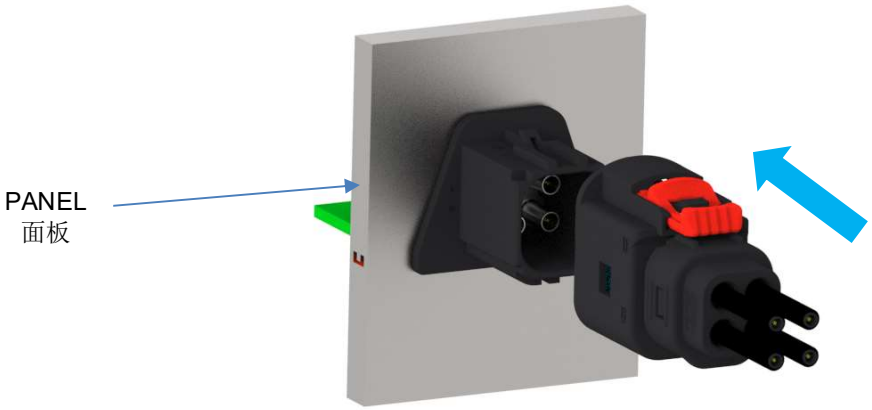


Recommend potting installation process
推荐点胶暗转过程

7.3 Mating with cable connector

配对线段产品

Follow the arrow when plugging
按箭头方向插拔



Orientation of cable connector and assembly in this direction ! (Arrow)
电缆连接器和组件朝向这个方向!(箭头所指)