

Edge Mount Processing 侧装连接器使用制程

Samtec edge-mount connectors have been designed for perpendicular (90°) and coplanar (180°) board-to-board applications. Samtec offers edge-mount variations of High Speed Board-To-Board, Micro Pitch Board-To-Board, Rugged/Power, Edge Card, Micro Backplane, and RF connectors. Samtec 设计了可用于垂直 (90°) 板到板应用以及平行 (180°) 板到板应用的侧装连接器。Samtec 提供各种类型的侧装连接器, 比如高速板到板侧装连接器, 细间距板到板侧装连接器, 高稳固性/电源侧装连接器, 板卡侧装连接器, 微型背板侧装连接器以及 RF 侧装连接器等。

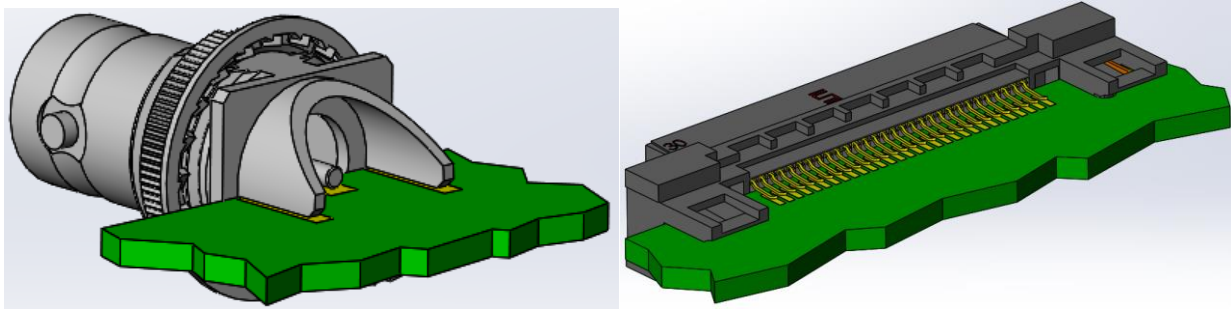


FIG 1: Edge Mounted RF Connector (Left); Edge Mounted Rugged High-Speed Socket Strip (Right)

图 1: RF 侧装连接器 (左边); 高稳固性高速侧装连接器 (右边)

General Processing Equipment and Conditions: 通用制程设备和制程条件:

- Thermal profile should adhere to solder paste manufacturer recommendations 炉温曲线应该根据锡膏的推荐参数进行设置
- An inert (nitrogen) reflow environment is recommended for Pb-free applications 对于无铅制程, 推荐使用氮气
- Edge-mount connectors are most commonly placed by hand 侧装连接器组装的时候通常用手工组装
- Samtec recommended footprint and stencil designs should be closely followed 应严格遵照 Samtec 推荐的焊盘设计和钢网设计
- PCB thickness and tolerance should match Samtec's recommendation shown on the footprint drawing PCB 板的厚度和公差应该与 Samtec 在 footprint 上面推荐的一致
- Stencil thickness should match Samtec's recommendation shown on the footprint drawing 钢网的厚度应该与 Samtec 在 footprint 上面推荐的一致

The processing procedure for edge-mount connectors will depend on the application. 侧装连接器的组装制程根据不同的应用会有所不同。

For a Single-Sided PCB (SMT components populated on one side of the PCB): 单面板 (所有的 SMT 元器件都组装在一个 PCB 面上)

1. Print solder paste on side one using the Samtec recommended stencil aperture design 用 Samtec 推荐的钢网开孔模板在 PCB 板的第一面印刷锡膏
2. Print solder paste on side two using the Samtec recommended stencil aperture design 用 Samtec 推荐的钢网开孔模板在 PCB 板的第二面印刷锡膏
3. Populate PCB, including the edge-mount connector 组装连接器到 PCB 板上 (通常用手工组装)
4. Reflow PCB 回流 PCB 板

For a Double-Sided PCB (SMT components populated on both sides of the PCB): 双面板 (SMT 元器件组装在 PCB 板的两面)

1. Print solder paste on side one using the Samtec recommended stencil aperture design 用 Samtec 推荐的钢网开孔模板在 PCB 板的第一面印刷锡膏
2. Populate side one, excluding the edge-mount connector 组装第一面的元器件，侧装连接器暂时不组装
3. Reflow PCB 回流 PCB 板
4. Flip PCB 翻转 PCB 板
5. Print solder paste on side two using the Samtec recommended stencil aperture design 用 Samtec 推荐的钢网开孔模板在 PCB 板的第二面印刷锡膏
6. Apply tacky flux to edge-mount solder mounds on side one 涂敷松香膏到 PCB 板第一面侧装连接器焊盘所在的位置上
7. Populate side two 组装第二面的元器件
8. Place the edge-mount connector 组装侧装连接器
9. Reflow PCB 回流 PCB 板

Special Considerations: 特别注意事项:

- Due to tail design and fine pin pitch, some connector stencil designs deposit the solder-paste off-set from the solder pad to prevent 'plowing' or displacement of the solder paste as the connector leads slide into their final position. 'Plowing' can increase the risk of solder bridging. 鉴于有些连接器的针间距非常小，有些钢网开孔设计锡膏的位置会与焊盘的位置有偏移。这样设计的目的是为了 避免由于组装连接器的时候针脚将锡膏推开到焊盘两边而导致连锡。

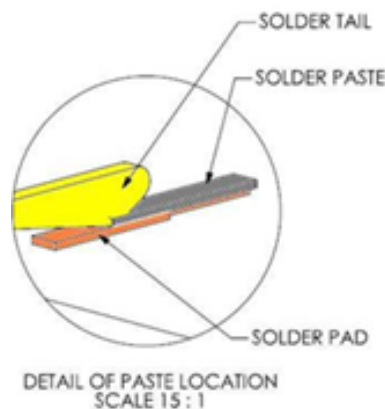


FIG 2: Solder-Paste Off-set from the Solder Pad

图 2: 锡膏与焊盘偏移

- For connectors that include an edge mounted ground plane (QSE/QTE, QSS/QTS, QSH/QTH), apply solder paste to the solder pad on the edge of the PCB using a solder gun, syringe or other direct application method. For a double-sided PCB this step can be performed after printing side two, prior to the application of tacky flux to the edge-mount solder mounds on side one. 针对一些有接地板的侧装连接器(QSE/QTE, QSS/QTS, QSH/QTH)，可以用锡膏枪，注射器或其他直接涂敷的方式将锡膏涂敷在侧面接地焊盘上面。这一步可以在印好第二面 PCB 板锡膏后，涂敷松香膏到第一面 PCB 板侧装连接器焊盘上前完成。

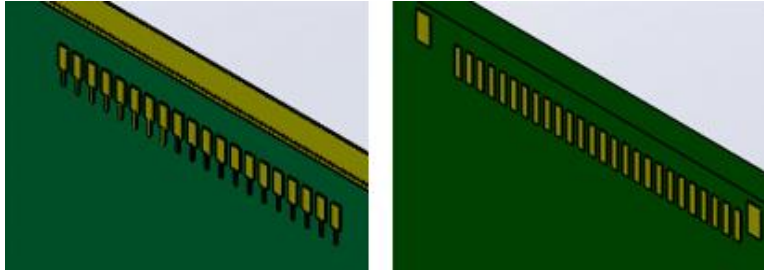


FIG 3: PCB for Connector **With** Edge Mounted Ground Plane (Left); PCB for Connector **Without** Edge Mounted Ground Plane (Right)

图 3: 带有侧面接地焊盘的 PCB 板 (左边); 不含接地焊盘的 PCB 板 (右边)

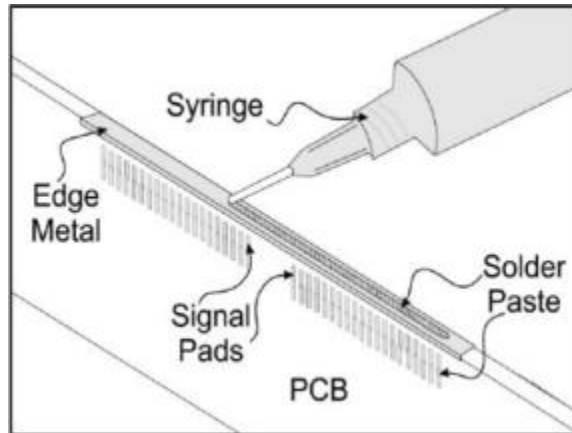


FIG 4: Solder Paste Application for Edge Mounted Ground Plane

图 4: 为带有接地焊盘的侧装连接器的 PCB 板涂敷锡膏

- Due to PCB tolerances, component tail design and component tolerances a fixture may be required to hold the connector parallel to the PCB during reflow. 由于 PCB 板，侧装连接器的误差以及侧装连接器针型的设计等原因，为了保证组装效果，回流的时候可能需要一个回流夹具来托住连接器和板以保证连接器与板平行。

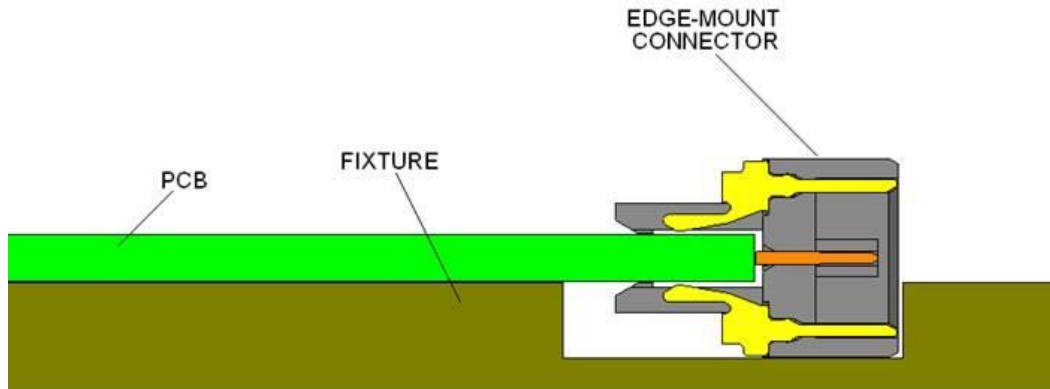


FIG 5: Example Reflow Fixture for Edge Mounted Connector

图 5: 侧装连接器回流夹具示例

- A fixture may be necessary if automatically placing the components. 如果自动组装侧装连接器，同样也需要合适的夹具辅助。

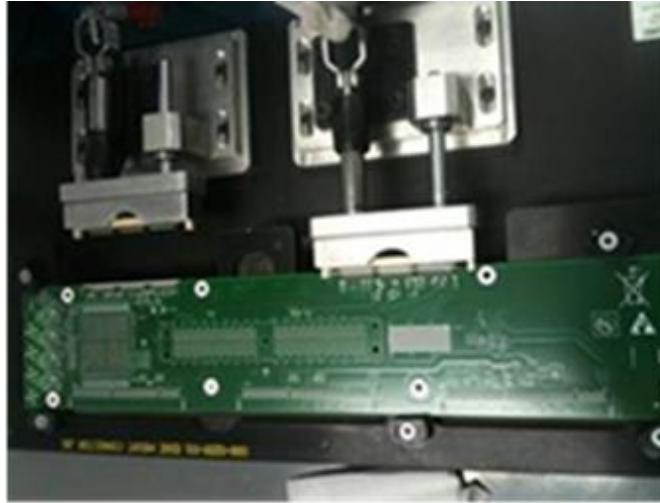


FIG 6: Example of Automatic Placement of Edge Mounted Connector

图 6: 自动组装侧装连接器时使用的夹具示例

These guidelines and suggestions should not be considered design requirements for all applications. Samtec highly recommends testing the edge-mount connectors on your boards and in your process to achieve optimum results. 以上指南和建议并不是所有的应用都需要严格遵守。Samtec 强烈建议客户在自己的应用基础上进行相应的组装测试以取得最好的结果。

For more information, please contact the Samtec Interconnect Processing Group at IPG@Samtec.com. 如需更多制程信息，请发送邮件至 IPG@Samtec.com 联系 Samtec 连接器应用制程组。