Securing Right Angle Connectors Using Solder Locks

When using right angle connectors, added mechanical support is often required to absorb the forces experienced during mating and unmating and to avoid solder joint damage. This may be accomplished with hardware, like screws and bolts, but the real estate and additional labor costs can be prohibitive. Samtec has incorporated this necessary structural strength into several of our right angle connectors by adding a feature called a Solder Lock. Samtec connectors equipped with Solder Locks require no additional hardware or labor steps and are processed like any other surface mount device. The Solder Locks are molded into the plastic insulator housing and secure the part by becoming locked into a plated through hole after soldering. The representative geometry can be seen in Figure 1.

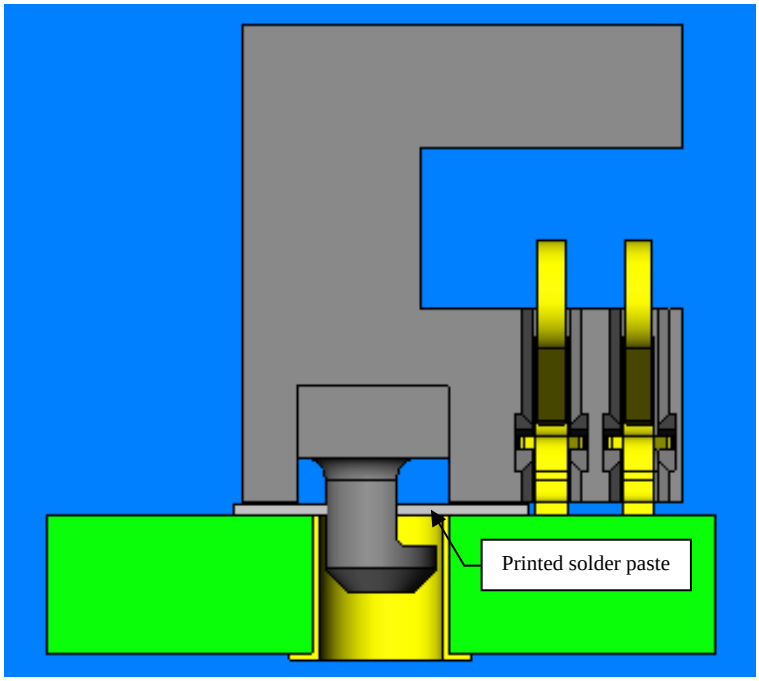

Figure 1. Typical Solder Lock geometry with printed solder paste over the plated through hole.

The process steps are as follows:

1. Print solder paste on PWB, according to Samtec's recommended footprint.
2. Populate PWB with components.
3. Reflow using standard SMT processing parameters.

The solder is printed with sufficient volume and in the appropriate location so that it flows into the plated through hole and fills the under cut area. Once it solidifies, it locks the plastic in place and provides adequate stability to protect the solder joints during normal mating and unmating cycles (see Figure 2).

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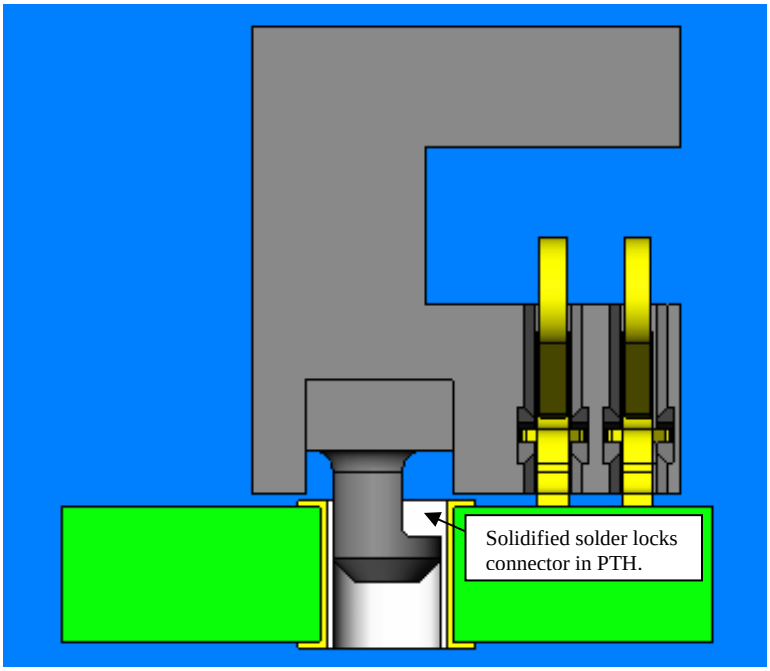

Figure 2. Solidified solder locks the connector in place by filling the undercut.

For more information about Samtec connectors equipped with Solder Locks, please contact Samtec's Interconnect Processing Group at eipg@samtec.com or David Decker at david.decker@samtec.com.