

## PROCESSING RECOMMENDATIONS

### For Samtec's AcceleRate® HP (APF6/APM6) High-Performance Array Sockets

The method used to solder these high-performance array sockets is the same as that used for many BGA devices.

#### 1. Basic Recommendations

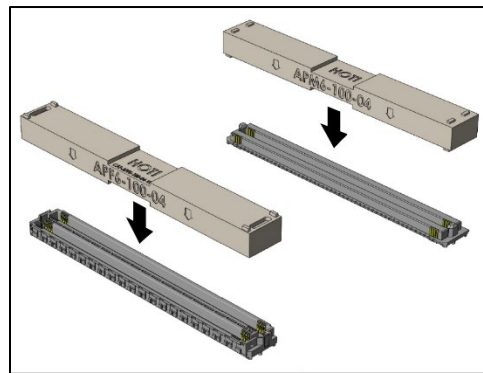
- Stencil thickness to be .005" (0.127mm),
  - Follow Samtec recommended footprints and stencil designs

#### 2. Solder Screen Printing Process

- Complete solder pad coverage is critical. Automated inspection of each print is recommended. If solder paste does not completely cover the solder pad, the assembly should be rejected, cleaned and re-printed.

#### 3. Component Placement

- Automatic connector placement is highly recommended. The use of a Fixture Tool is required for the APF6-**100**-03.5 and APM6-**100**-01.5 connectors to maintain co-planarity through the reflow process. The Fixture Tool (P/N: CAT-APF6-100-04-VT) is reusable and should be manually installed on the connector just prior to entering the reflow oven.



#### 4. Proper Profiling

- Samtec recommends the use of a low-level oxygen environment (typically achieved through nitrogen gas infusion) in the reflow process to increase the wettability of the soldering surfaces. Many variables affect the level of residual oxygen required to optimize a given reflow process, but generally the levels should be less than 1000 ppm.
- The importance of properly profiling the fully populated printed circuit assembly cannot be overstated. Certain components can be sensitive to time and temperature, so both variables must be controlled, and thermal profiling must be performed prior to processing or production. Thermocouples should be placed as close to the solder ball as possible (underneath the part) in the center and on the outside edge.
- Due to the variances in solder pastes and applications (board design, oven type, component density, etc.), Samtec does not specify a recommended profile for our connectors. Our suggestion is to use a profile within the parameters of the solder paste manufacturer's guidelines. These parameters can usually be found on the solder paste manufacturer's website.
- The APX6 components are lead free reflow compatible and compliant with the reflow profile parameters detailed in IPC/JEDEC J-STD-020. This standard requires that components be capable of withstanding a peak temperature of 260°C as well as 30 seconds above 255°C.

For further information or questions about anything in this document or processing questions about any Samtec connectors, please contact the Interconnect Processing Group at:

Phone: 1 (800) SAMTEC9 or 1 (800) 726-8329

E-mail: [ipg@samtec.com](mailto:ipg@samtec.com)