

# Practical Components helps diagnose and treat Head-in-Pillow failure

**Head-in-Pillow** (HiP) soldering defects are common with modern SMT component placement. As a result, [Practical Components](#) has introduced the **PBGA 928-HiP**, a component that is designed specifically to be susceptible to HiP defects. It features a large 4×4 body size, 928 balls and a single small die that has a propensity toward the ball-in-socket HiP soldering defect.

The HiP effect takes place when the solder joint and the sphere are touching but no intermetallic layer is formed. Lead-free assemblies have increased warpage due to their higher processing temperatures. Mastering the correct soldering profile and paste is essential. **PBGA 928-HiP** is maximized to create the HiP effect due to component warpage with its large plastic body size combined with the small single die. This combination creates the maximum thermal expansion mismatch. These components have a 1.0 mm pitch with perimeter ball alignment.



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