PowerPeg thermal connectors are designed for streamline integration with power SMT packages in FR4 PCB assemblies.

PowerPegs have minimal mass and high conductivity for easy soldering.

Large and complex heatsinks can be connected after soldering.

This two-part system provides limitless possibilities for cooling systems.

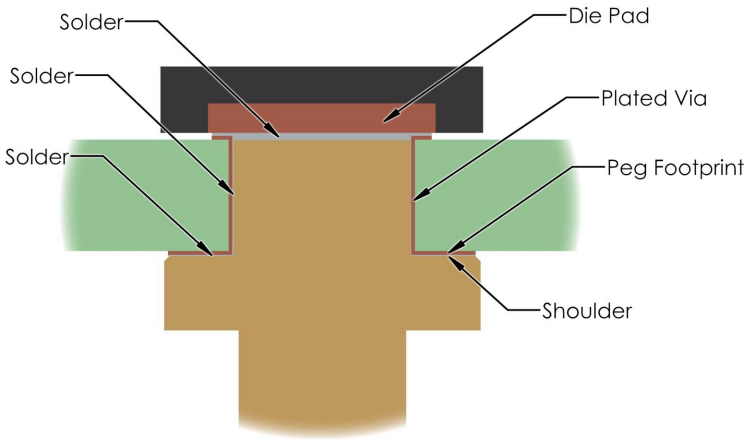
A. Overview

PowerPeg thermal connectors connect to SMT heat sources through a plated opening in the PCB.

Bottom-facing thermal pads are soldered directly to the top surface of PowerPeg.

Careful consideration is required to avoid air bubbles, flux residue or other contaminants trapped within the solder joint.

To achieve proper connection: a hybrid process of hand-soldering, followed by reflow is recommended.



B. Preparation

Soldering should be done in a well ventilated area with plenty of light.

PowerPeg is hand-soldered to the PCB before installation of other components.

For best results solder PowerPeg using a jig. The jig can be as simple as a wooden board with a ⌀0.1” hole.

Tools

- Soldering iron with medium-sized tip (>50 Watts)
- Tweezers
- Heat-resistant work surface
- Magnification
- Fume extractor

Supplies

- 0.02” lead free solder wire
- No-clean water soluble soldering flux
- Cotton swabs
- Ethyl or Isopropyl alcohol 70%+

Pat. No. US 8.929.077 B2

C. Hand soldering procedure

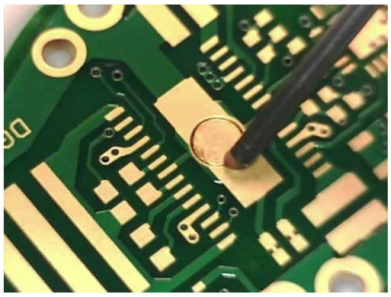
1. **Apply flux to peg**

   Apply a drop of flux to the upper shoulder of PowerPeg.

   When the peg is heated the droplet will wick into the solder joint.

2. **Insert peg into PCB**

   Insert PowerPeg into the PCB opening.



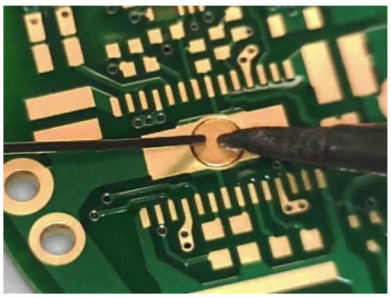
   Ensure the bottom surface of PCB is pressed against the upper shoulder.

   A jig can be used to hold the peg in an upright position during soldering.

   The jig should be constructed from a thermally insulating material, capable of withstanding temperatures as high as 350°C. Ask a sales representative about specialized soldering tools.

3. **Apply flux to PCB**

   Once the peg is inserted, flip the PCB to the upright position (with the component side facing up).

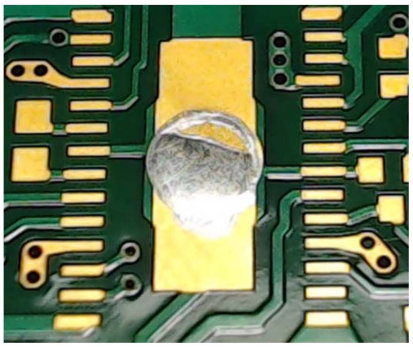


   Apply another droplet of flux upon the circular gap between the peg and plated opening.

4. **Heating**

   Apply heat to the junction with a soldering iron.

   Depending on the temperature and jig material; heating may require between twenty and forty seconds.

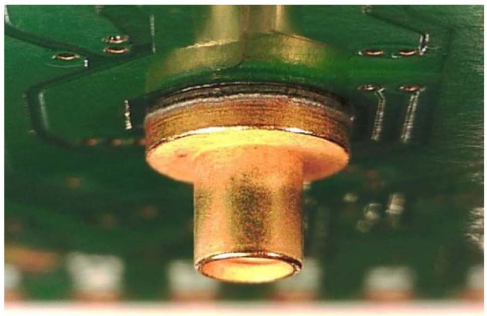


5. **Apply Solder**

   Once the components are heated, apply solder to the circular gap.

   Allow enough time for solder to flow into the bottom portion.

   The completed solder joint should extend all the way around the circle, and should remain mostly flat on the top surface.



D. Proceed to SMT assembly

Once PowerPeg is soldered in place, clean the surface with alcohol.

Proceed with stenciling, placement, and reflow as usual.

Capillary action holds PowerPeg in place during reflow.

Pat. No. US 8,929,077 B2