



Soldering Workshop

Led by Ethan Tabler



What is **solder** and why do we use it?

Solder is...

- Metal
 - Several types of metal, typically alloyed
 - Lead vs lead-free
- Flux
 - **Rosin flux** helps the mechanical strength and electrical contact of electrical joints
- More permanent
 - Breadboards are for quick testing
 - Soldered circuits are sturdy and more reliable



Solder can be used to...

- Electrically connect components
 - Conductive
 - Can be used in place of wiring
- Mechanically connect components
 - Strength varies with alloy/mix
 - Take a look at your potentiometers!
- What about non-electrical uses?



What other tools might be helpful?

- Solder wick
- Tweezers
- Solder sucker
- Wire cutters
- Wet sponge
- Silicone Pad
- Tip cleaner (brass)
- Wire stripper
- Microscope
- Helping Hand

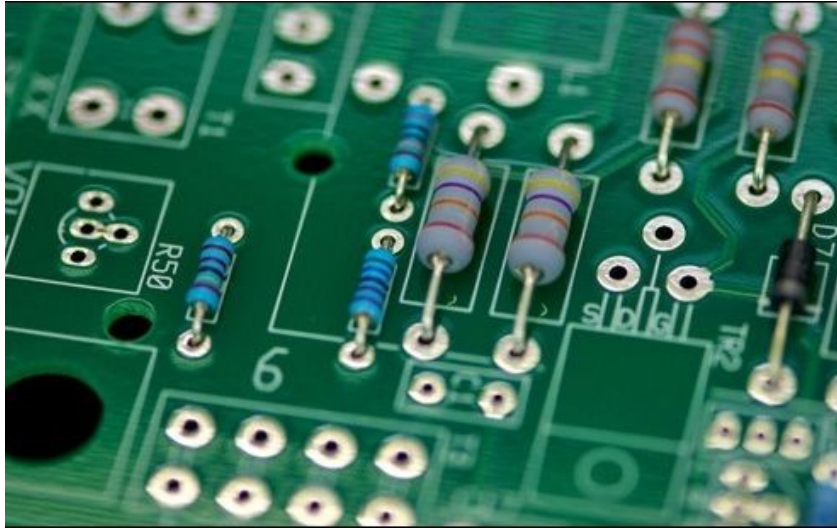


Soldering Iron Tips

- Different tips are used for specific purposes
 - Finer tips are used for SMD parts and smaller TH devices
 - Thicker, wedge-shaped tips are used for larger components or mechanical joints
- Larger tips have more thermal mass and can melt solder faster

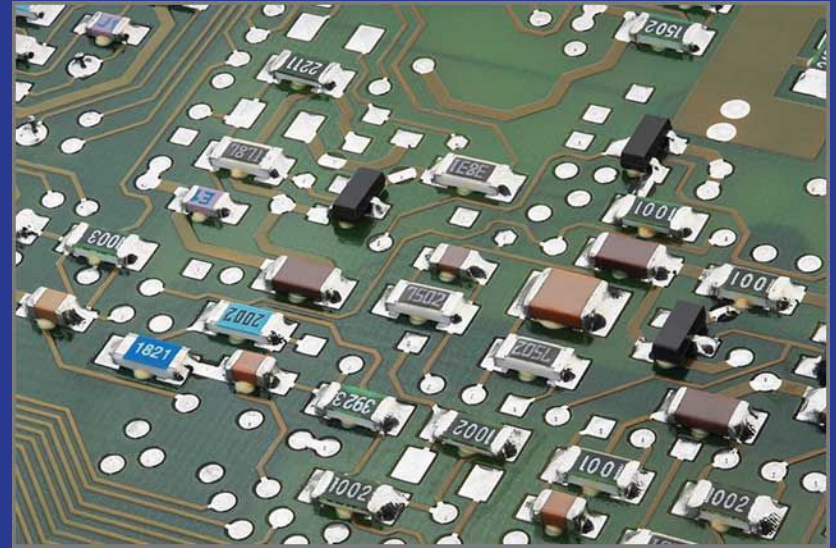


Through-Hole



**Part physically goes through the board;
easier to solder**

Surface-Mount



Only mounted on *one* side of the board;
harder to solder



Demonstration