Figure 1

Different types of tips.

Far left: Sharp point, skinny.

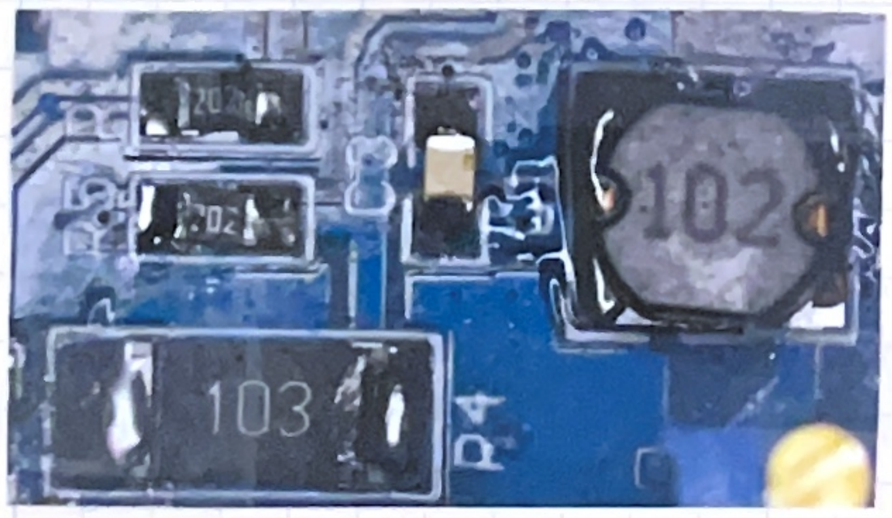
Middle: Rounded point.

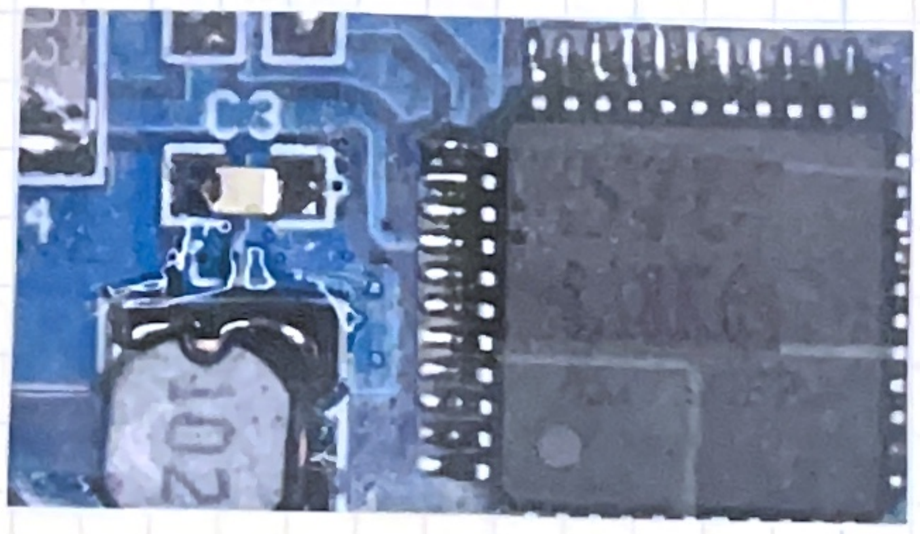
Far Right: Flat angle

I don't like this tip. The tip doesn't get hot enough. The solder stays toward the center. Even at 750° F.

I like this tip for through hole soldering. It can work for some surface mount but not closely spaced pins of a microcontroller.

This tip is good for just about anything I throw at it. Surface mount microcontrollers are doable, but you have to go slow.





Examples of surface mount components when finished.

Surface Mount Soldering Notes

For soldering Surface mount resistors and capacitors:

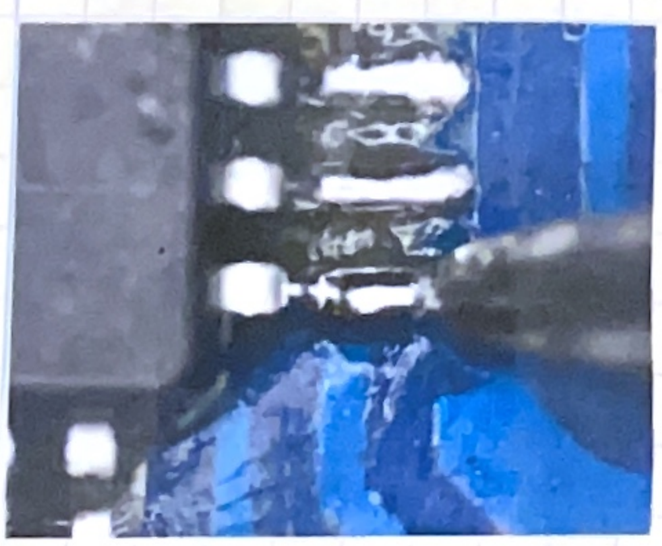
Pretin one pad. Use the tweezers to hold the component. Reheat the pretinned pad and use the tweezers to place the component. You can push down with the tweezers to ensure the component is flush. Finally solder the other side.

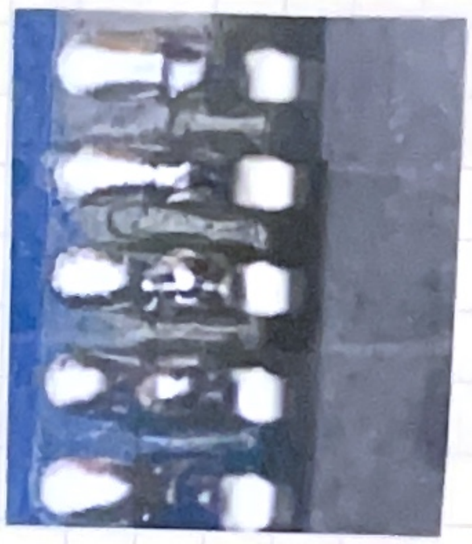
For the main microcontroller:

Flux is a must! Flux helps keep the solder on the metal pads and off of the PCB board.

I found success with the following procedure:

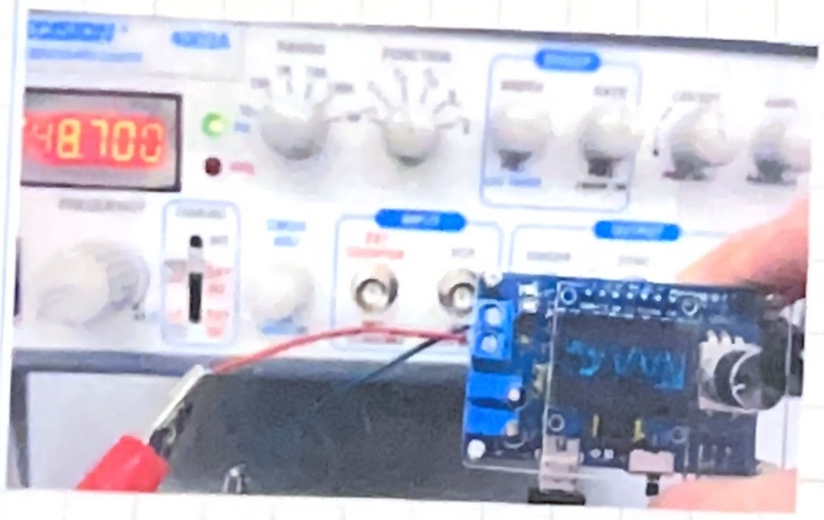
Pretin two pins on the corners. Use the tweezers and reheat one pin. Once the microcontroller is aligned do the other corner. Try to solder one row. If a bridge occurs, use lots of flux and drag the solder iron inbetween the bridged pins. If there is too much solder, use a solder sucker to remove excess.



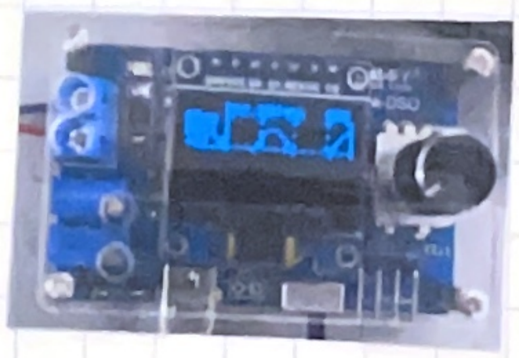


Example of soldering a pin.

Good Solders



Bad Solders
(This still works though)



Fully functioning tiny oscilloscope!