

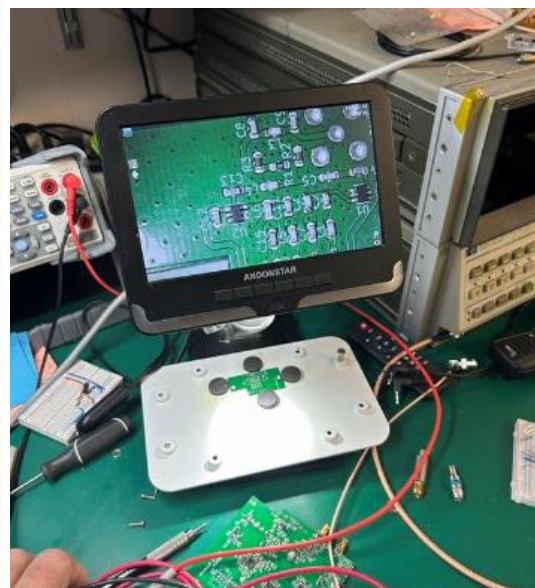
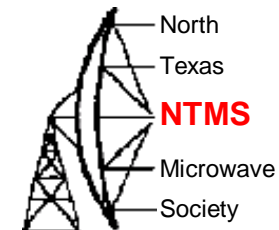
How to solder SMD parts Cowtown Jan 19-20, 2024

- North Texas Microwave Society

SMD soldering methods

- Multiple methods
- Manually solder with fine tip iron
 - Spread flux on to pads
 - Use thin solder on the roll .010“
 - tack one point - continue
 - <https://www.youtube.com/watch?v=EW9Y8rDm4kE&t=144s>
- Use solder paste applied manually or with stencil
- Manually flow paste with fine tip iron or
- Use hot plate and heat gun or
- Use oven to bake

Magnification

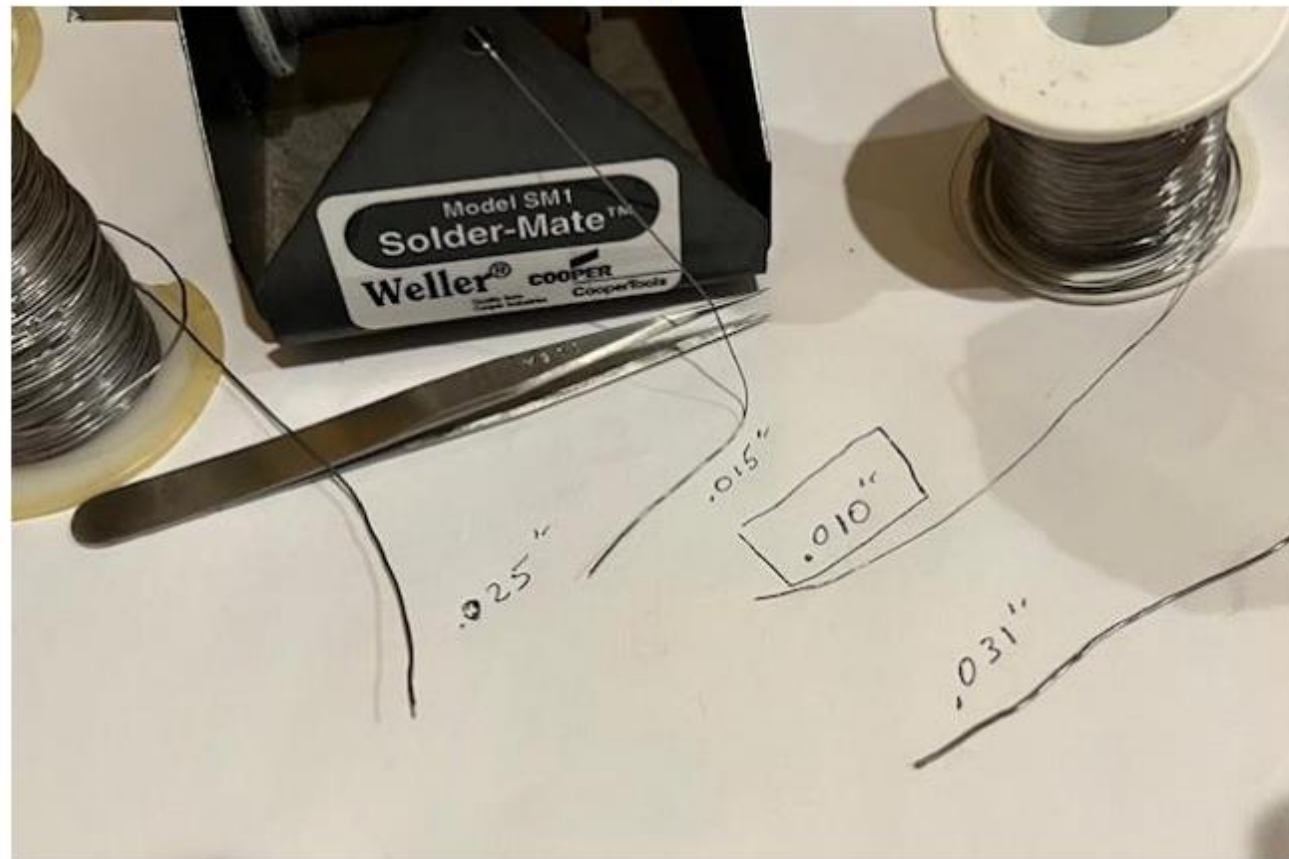
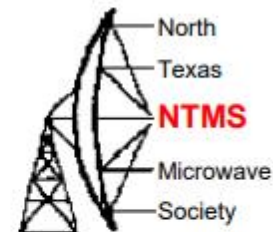


- N5BRG Bob's microscope

- KM5PO Jim's scope. Can zoom x4
- Also use head mount magnifier

Solder - 60/40 Tin Lead

0.10" and .015" Diameter Most Important for SMD parts.



.015" Mouser #910-SMD2SW015100G

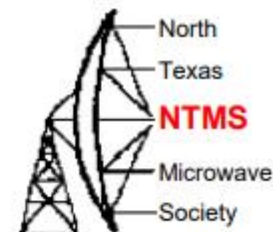
Solder Wick

Use small solder wick



1.5 mm Mouser 910-SOLDERWICK1.5
2.0 mm Mouser 910-SOLDERWICK2.0

Solder Flux and Clean Stick Help to solder and holds part in position till heated

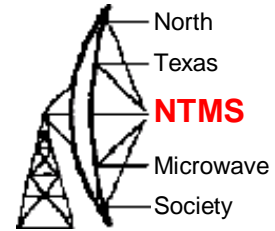


15g Mouser 910-SMD291AX

Clean up



800F heat gun on 230F pre-heated plate




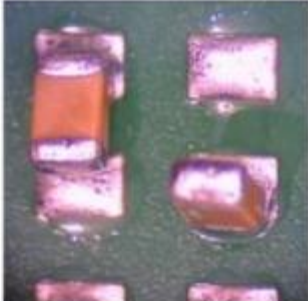
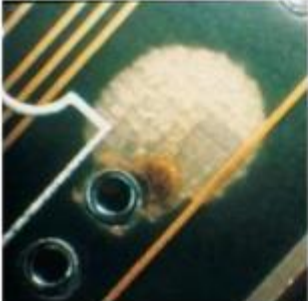



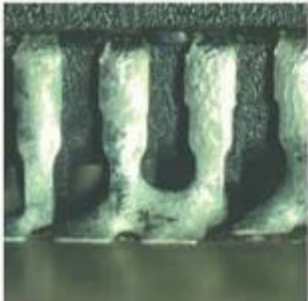
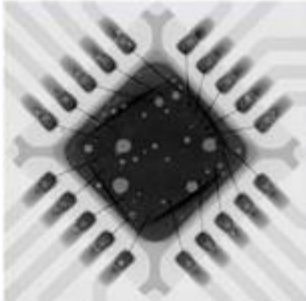
Before flow begins



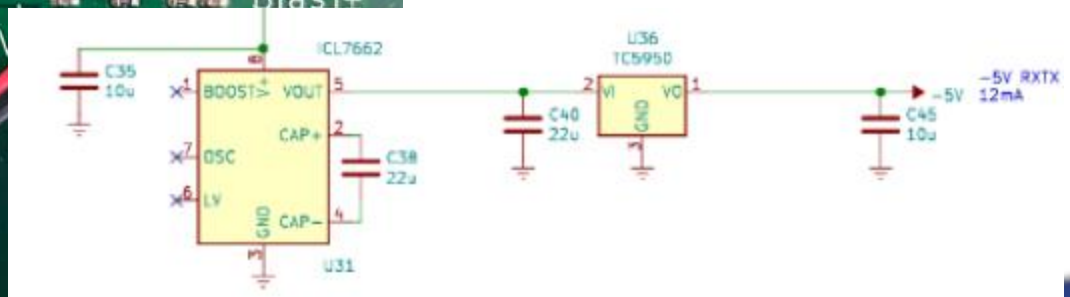
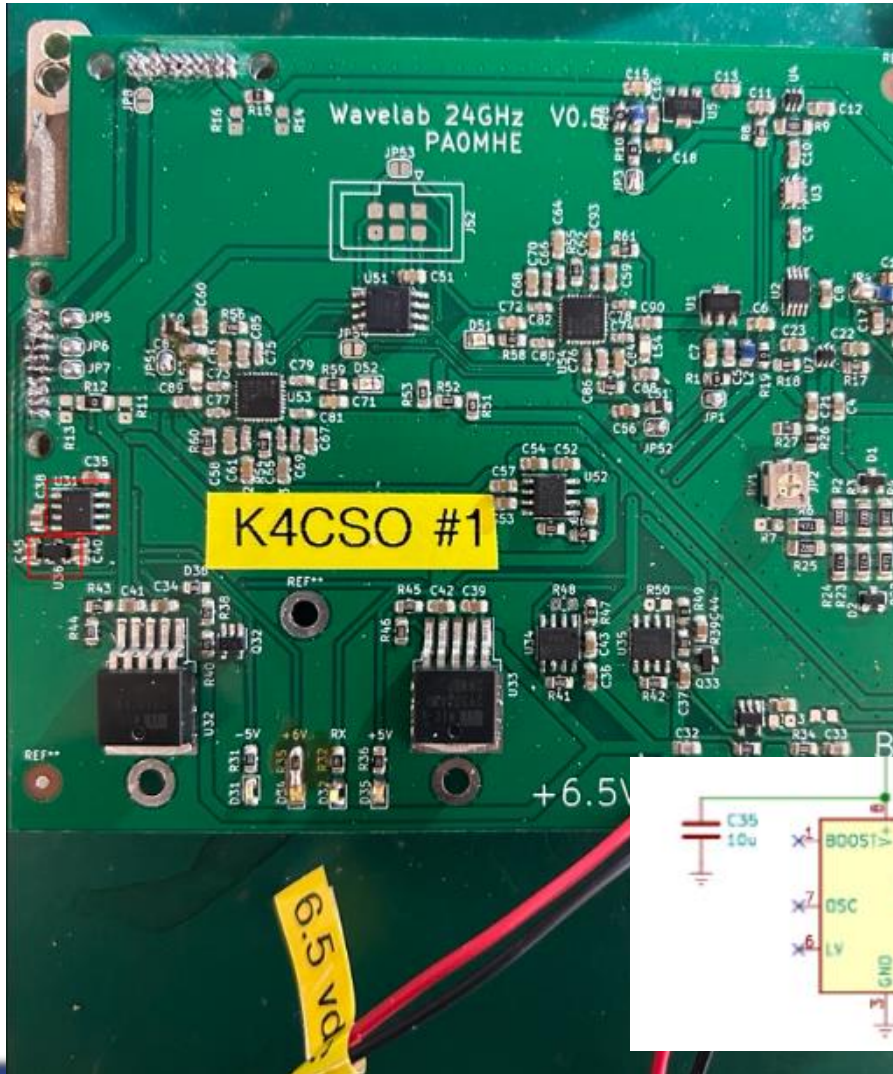
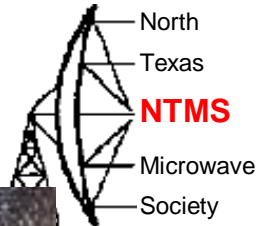
After flow complete



Defects

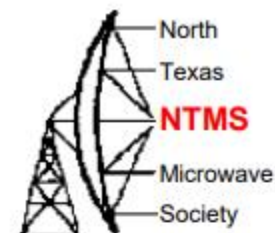
Fractured solder	Tombstones	Delamination	Non-Wetting
			
Cold connection	Solder balls	Solder bridges	Voids
			

Short !



MSL Rating

Kapton Tape



Plastic Package
Can absorb water!

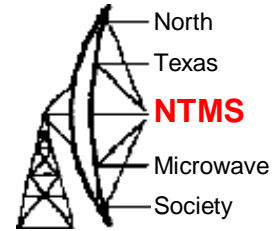
Rapid heating can
Convert water to
Steam and Pop-Corn
Package.

MSL rating defines sensitive
1-5, 5 most sensitive

If unsure bake your parts at
70 C 158 F for 2 hours.

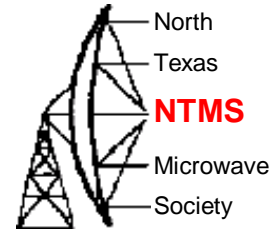


Demo



- Hot plate and hot air gun
- Clean up with Everclear

Questions?



- Thank you for attending