

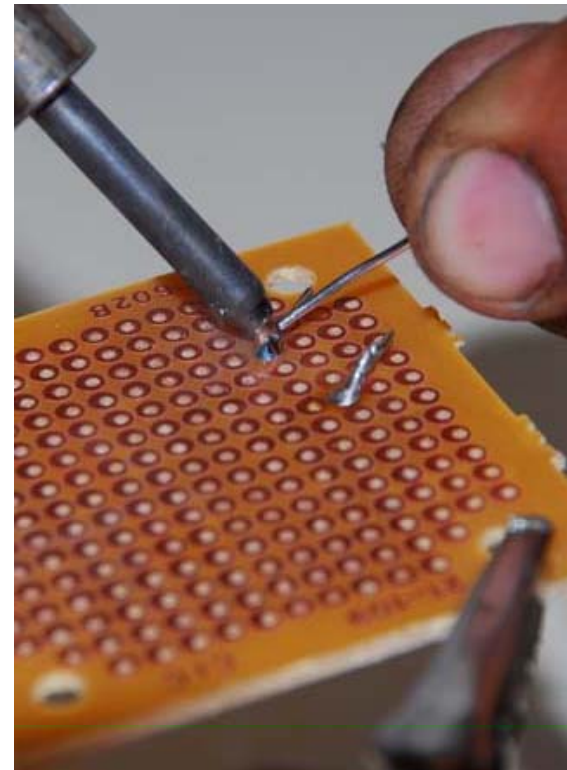
## Light-to-Sound Circuit and PCB

- The light-to-sound blinker circuit (at right) is somewhat more complicated to build.
- You and your partner will again each build a circuit.
- Review the Lab. #1 briefing to re-orient yourself.
- Again, follow instructions in the kit plus details in your lab book.



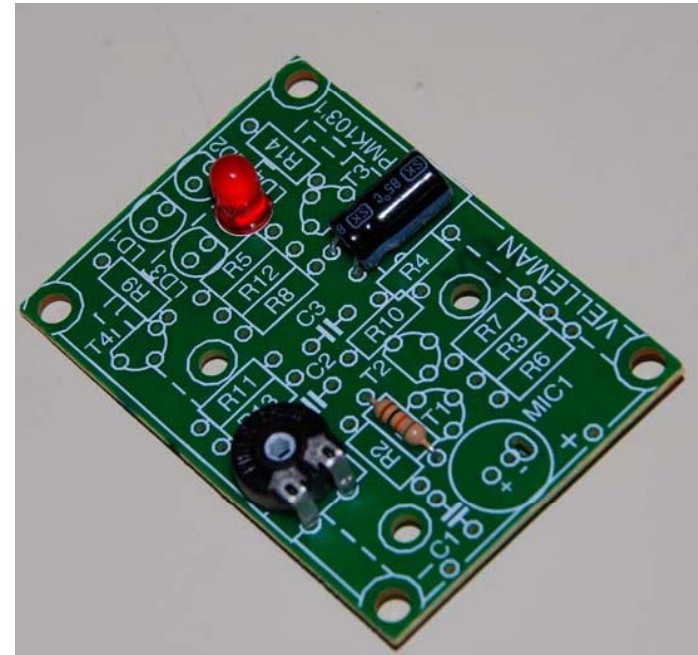
## Soldering Brush-Up

- Practice soldering a few wires on the practice board to get back “up to speed.”
- Summary of soldering steps:
  - Apply hot iron to wire and copper on board simultaneously.
  - Let heat for ~ 1 second.
  - Touch solder to junction of wire and board.
  - When solder flows, apply no more than ½ inch length of solder.
  - Remove solder and let iron stay in contact with junction about ½ sec.
  - Remove soldering iron. Board cools quickly.



## Building the Circuit

- Follow the previous directions:
  - Start with resistors. Insert them so that color code lines up – easier to check (color code in manual).
  - Use kit information to select each resistor for placement.
  - Insert from back (picture) side.
  - Bend leads to hold in place.
  - Clip leads to  $\frac{1}{4}$  inch.
  - Have partner check your work.
  - Solder. Continue with other components.
  - Be careful with capacitors and LED's, which are polarized, and must be connected in the correct direction.





## **Building the Circuit (2) – WARNING**

- **The four transistors in the kit look identical, but one is different!**
- **The output transistor (T4) is a BC557 (sometimes labeled B557C); the other three are BC547 (B547C).**
- **Make sure to solder the BC557 into the T4 position!**

## Building the Circuit (3)

- **Add the battery connector last.**
- **When you have finished the soldering, connect the battery.**
- **If the circuit is correctly assembled, the LED lights should immediately begin to blink due to ambient noise.**
- **Using the potentiometer, adjust the sensitivity rate of the sound detector and do the exercises as directed in the lab manual.**





## Summary Comments

- **This second electronics kit will give you the opportunity to solidify your circuit-building technique.**
- **Your report can be relatively short. Be sure to stress any new things you learned about either soldering or circuit-building.**
- **You and partner should remember to use each other as “quality control experts.” Your partner’s visual checks of your work – especially correct placement before soldering in the component – can prevent any number of serious problems before they become critical.**