

## **Suggestions for Re-soldering a Diode to a Heat Sink**

**By Richard R. Vensel**

1. Clean thoroughly with hot water or clear virgin solvent
2. Remove bad diode using a controlled heat. Use a heat dam to limit the heat transfer to any of the other diodes. Wipe off excess solder with a clean rag.
3. Clean diode-mounting surface. If **any contaminants** are left at this point they can ruin the solder connection.
4. Using a high-speed grinder or a dremel tool with a brass or copper small wire brush, polish the surface where the diode is to be replaced. This can work great on aluminum heat sinks once you get the process.
5. **Clean again! Keep in mind that the heat dam is still there.**
6. Using solder with a melting point below the melting point of the solder used inside the diode, tin the surface where the diode is to be soldered. A good solder would be 97% Tin, 3% Copper, which is liquid at approximately 465 degrees Fahrenheit.
7. **Clean** the surface of the diode to be soldered on the heat sink. **Do not touch this surface after cleaning.**
8. Heat the heat sink until the solder just melts. Place the diode in the solder and allow it to settle flat in the solder. **Keep in mind the heat dam is still there.**
9. Remove the heat dam, clean again and let cool.
10. Retest the re-soldered diode and all the other diodes too. **The better the test the longer the life expectancy. Voltage Junction Drop is very important.**

### **Note:**

- If the rectifier is held in place like a CS130 rectifier is, make your test with all surfaces under equal force, as it will be in actual operation.
- Cracked diodes fail no matter how good they test.
- Cold solder has a grainy or gray appearance with pits in it.
- The diode should be parallel with the heat sink and there should be no voids. The tilt on a button diode should be less than 6 degrees.

**Remember....if you don't do it correctly the first time you are wasting time and money.**