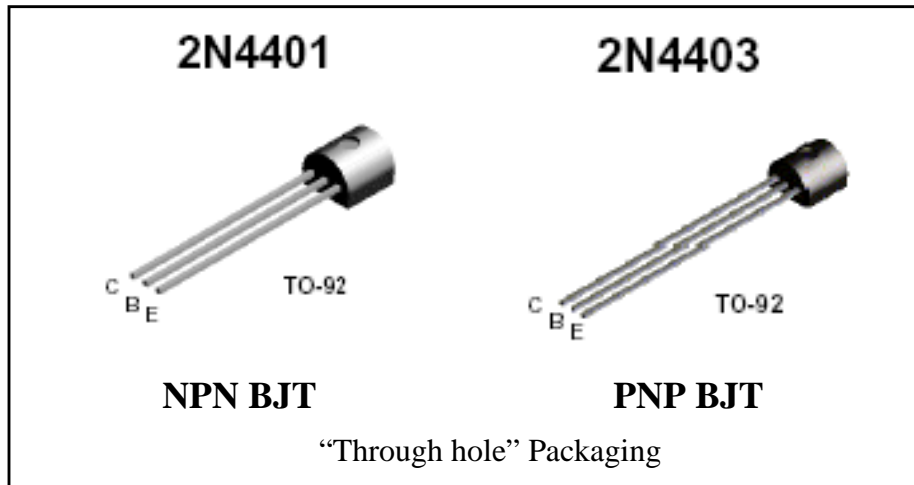
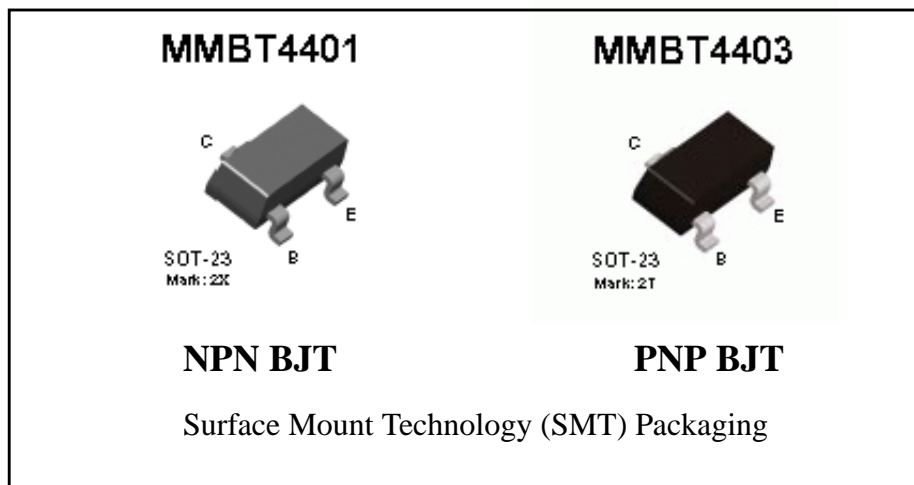


Bipolar Junction Transistors (BJTs) - Structure

Transistors provide circuit designers with a compact and efficient means of controlling a current or voltage with a separate much smaller current or voltage. They are used for two primary purposes: to electronically switch signals on and off, and to amplify signals. Below are shown two common transistors in both their “through-hole” and surface mounted versions. The Tek-



bot charger board uses the through hole parts while the motor control board uses surface mounted parts. Surface mounted parts are much smaller and can be placed on a printed circuit board and soldered in an entirely automated process.



The transistors shown above are packaged in an inexpensive black epoxy body. Other transistors may be packaged differently depending upon the amount of heat to be dissipated. The TO-92 or SOT-23 cases shown typically dissipate about one-half watt safely. Bigger cases, usually made of metal, can dissipate up to several hundred watts. Often the same transistor type is found in 3 or 4 different package styles.