Testing Transistors

Identify the package type from supplier's data sheets

The TO39 package
Collector pin NOT insulated from metal case

Tab usually indicates emitter

Use the diode range on a digital meter

The Avo 8

Junction model for a PNF bipolar transistor

Junction model for an NPN bipolar transistor

1. Switch your meter to the correct range for diode testing

2. Connect the positive lead of your meter to one of the pins. The red lead on a digital meter the black lead on a moving coil (anologue) meter.

3. Touch the other two leads in turn. One of four results will occur

4. Both measurements read about 500Ω to 1KΩ

5. Your positive lead is on the base and it's a NPN transistor

6. One measurement reads about 500Ω to 1KΩ the other reads infinity

7. Your positive lead is not on the base - go back to 2 and try the positive lead on another pin

8. Both measurements read infinity

9. Either the transistor is faulty or it's a PNP - go back to 2 and try using the negative lead to find the base

10. One or both tests show a Ω (short circuit result)

11. The transistor is faulty - one or both junctions are short circuit

Note: FET variants are shown shaded

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