

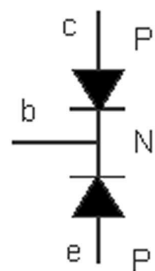
Testing Transistors

Learnabout-Transistors

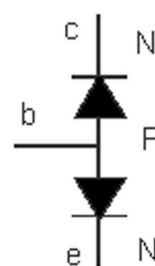
Use the diode range on a digital meter



Fig 3.1.22
The Avo 8

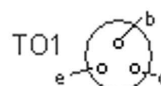
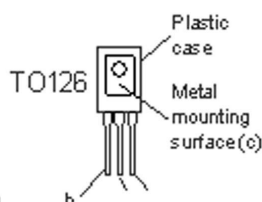
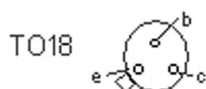


Junction model for a PNP bipolar transistor

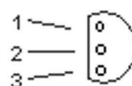


Junction model for an NPN bipolar transistor

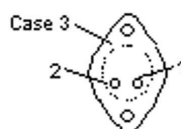
Identify the package type from supplier's data sheets



TO92
TO237



Variant	1	2	3
A	b	c	e
B	e	b	c
C	c	b	e
D	d	g	s
E	g	s	d
F	g	d	s
G	s	g	d
H	s	d	g



TO3, SO55, TO204

Variant	1	2	3	Case
A	b	e	c	
B	g	d	s	
C	g	s	d	

Note:
FET variants are shown shaded

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

To find the base
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 (analogue) meter.

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

* 4. Both measurements read about 500Ω to $1K\Omega$

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

* 6. One measurement reads about 500Ω to $1K\Omega$ 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 0Ω (short circuit result)

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

* If you get result 4 you've found the base and it's a NPN transistor.
If you find result 6 or 8 you have not found the base, or the transistor is faulty. Start at test 2 again and carry out more tests until you find the base
If you find any two pins read 0Ω between them (result 10) the transistor is faulty