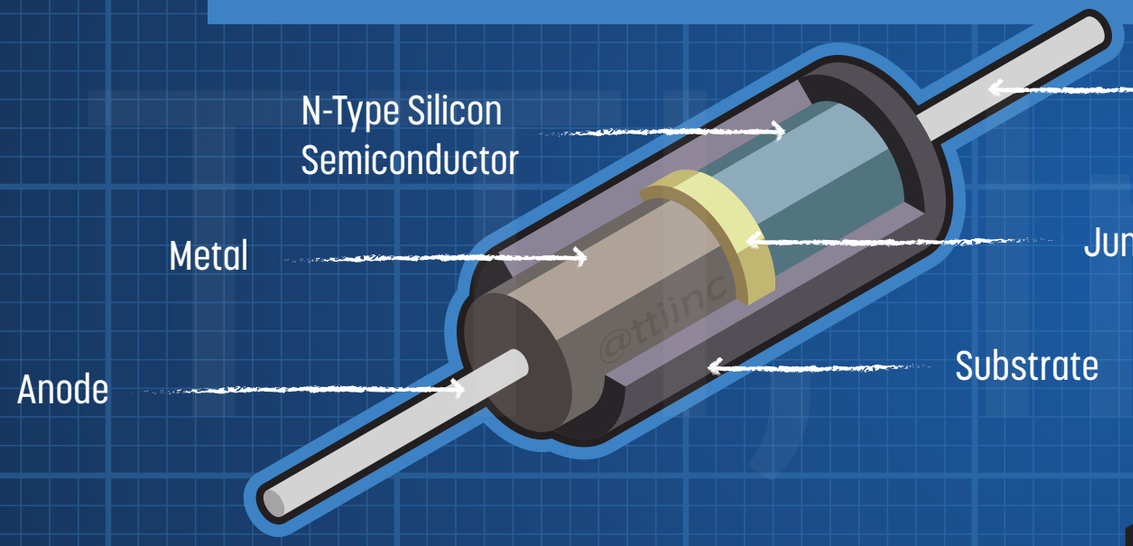
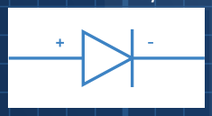
SCHOTTKY DIODES *vs.* CONVENTIONAL DIODES

Schottky diodes: metal junction = fast switching & low forward voltage drop
Conventional silicon diodes: slower switching & higher forward voltage drop

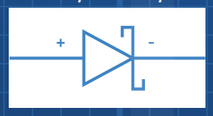


Generic Diode Symbol



What's the Difference at 10A Current?

Schottky Diode Symbol



Silicon P-N

0.7V is needed to "turn on":
I_F = 10A → V_F = 0.7V

And 7W of power is consumed:
P = V×I = 0.7×10 = 7W

Schottky

0.3V is needed to "turn on":
I_F = 10A → V_F = 0.3V

And 3W of power is consumed:
P = V×I = 0.3×10 = 3W

Schottky diodes enhance power efficiency in RF applications such as smartphones and laptops due to their **fast switching speeds** and **low forward voltage drops**, minimizing power loss.