

Hall Effect



Method for determining whether charge carriers are positively or negatively charged.

- Magnetic field \vec{B} pulls charge carriers to one side of conducting strip.
- Accumulation of charge carriers on that side and depletion on opposite side produce transverse electric field \vec{E} .
- Transverse forces on charge carrier: $F_E = qE$ and $F_B = qv_d B$.
- In steady state forces are balanced: $\vec{F}_E = -\vec{F}_B$.
- Hall voltage in steady state: $V_H = Ew = v_d Bw$.

