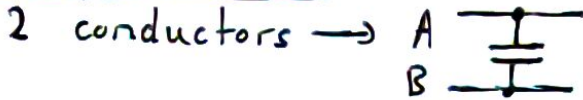
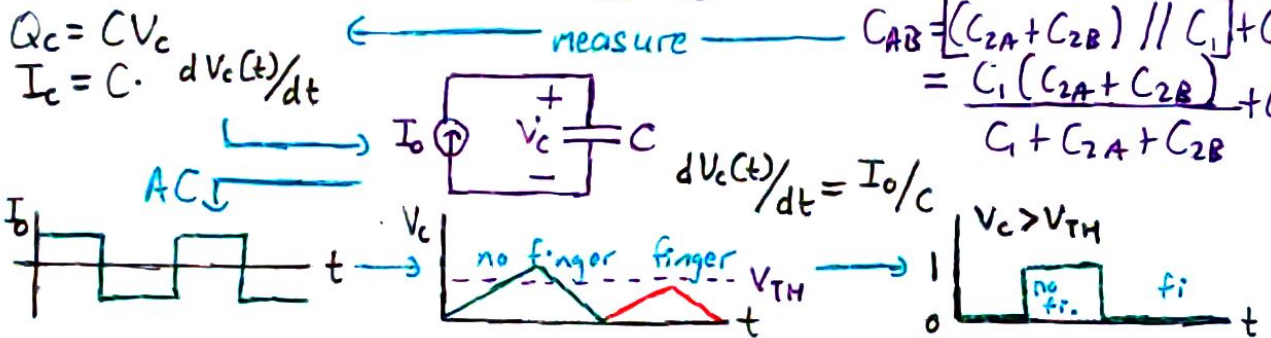
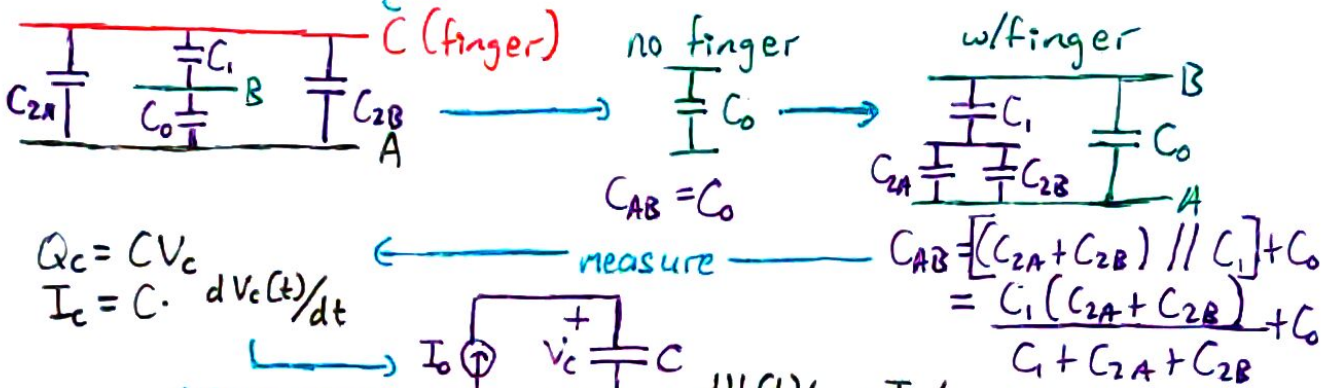
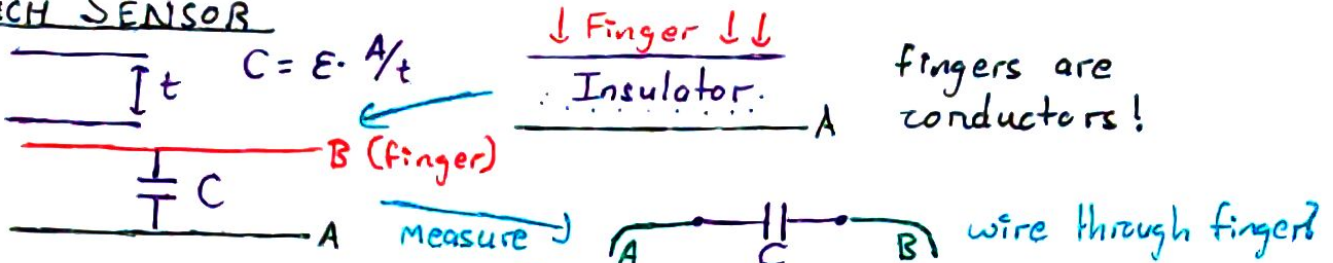


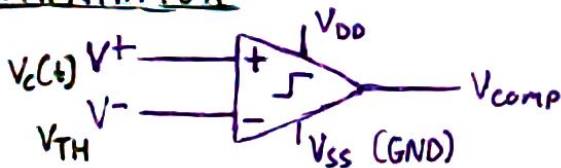
CAPACITOR RECAP



TOUCH SENSOR



COMPARATOR



if $V^+ > V^-$, $V_{comp} = V_{DD}$
 else, $V_{comp} = V_{SS}$

ENERGY

$P_c(t) = V_c(t) \cdot I_0$
 $V_c(t) = I_0/c \cdot t$
 $P_c(t) = I_0^2/c \cdot t$
 $dV_c(t) = I_0/c \cdot dt$
 $E = \int P(t) dt$
 $E = I_0^2/c \cdot \int t dt$
 $E = I_0^2/2c \cdot t^2 = (I_0 t)^2/2c$
 $E = Q_c^2/c \cdot 1/2 = \frac{1}{2} C V_c^2$