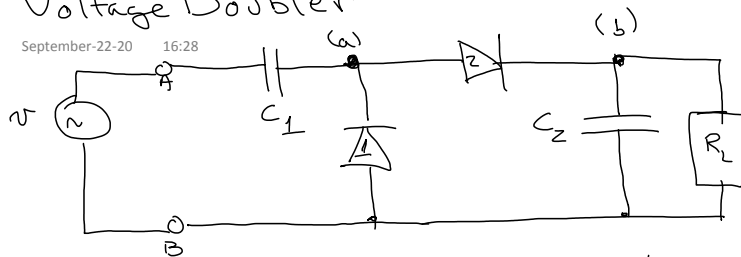
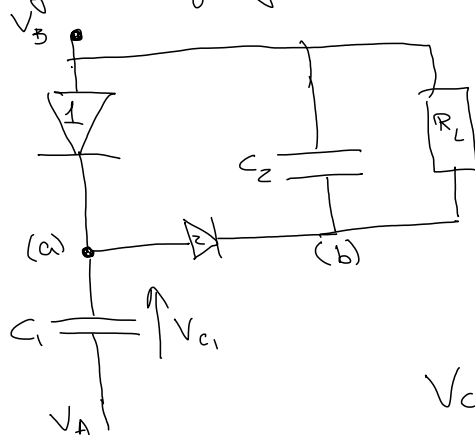


Voltage Doubler

September-22-20 16:28



① Negative half cycle $V_B = V_P > V_A$



$$a) = V_B - 0.7V$$

$\therefore (a) < V_B$
AND D2 is R.B
No current flows
through R_L or C_2
Since D2 is off

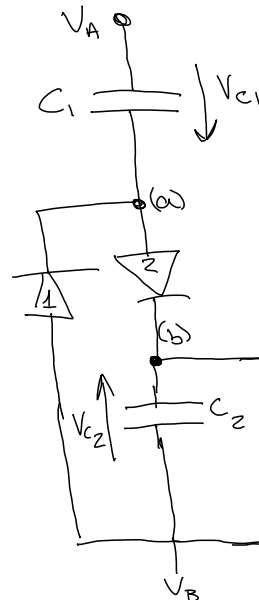
(a) charges C_1 to

$$V_{C1} = V_B - 0.7V$$

$$= V_P - 0.7V$$

$$(a) > V_A \text{ so } V_{C1} \uparrow$$

② Positive half cycle $V_A > V_B$
 $V_A = V_P$



$$(a) = V_A + V_{C1}$$

$$(b) = V_A + V_{C1} - 0.7V$$

This charges
 C_2 to the
Voltage at (b)

$$V_{C2} = V_A + V_{C1} - 0.7V$$

$$= V_P + V_P - 0.7 - 0.7V$$

$$V_{C2} = 2V_P - 1.4V$$

$$\text{So, } V_{C2} \approx 2V_P$$

