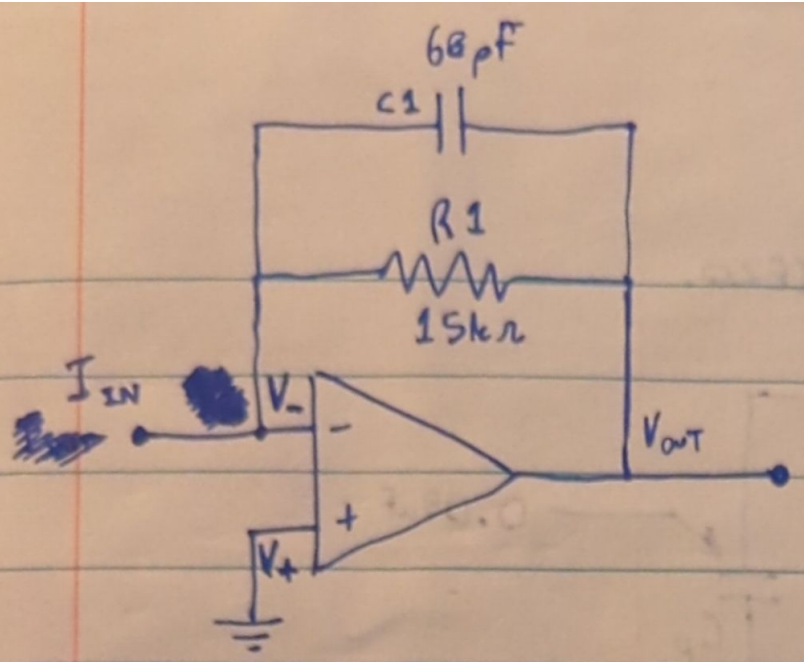

$V_+ = V_-$

$I_- = I_+ = 0$

$I_- = 0$, thus I_{IN} is going straight to $(R1 \parallel C1)$

$$I_{IN} = \frac{(V_-)-(V_{OUT})}{Z_{(R1\parallel C1)}}$$

$V_- = V_+ = 0V$ (sub in $V_- = 0V$)

$$I_{IN} = \frac{0 - V_{OUT}}{Z_{(R1\parallel C1)}}$$

① $$\left|Z_{(R1\parallel C1)}\right| = \frac{1}{\sqrt{\left(\frac{1}{R}\right)^2 + (2\pi f_C)^2}}$$

② $$V_{OUT} = -(I_{IN})\left(Z_{(R1\parallel C1)}\right)$$

sub ① into ②

$$V_{OUT} = -(I_{IN})\left(\frac{1}{\sqrt{\left(\frac{1}{R_1}\right)^2 + (2\pi f_{C_1})^2}}\right)$$

Cutoff Freq.

$-3dB$ f_c at $\frac{1}{2\pi R_1 C_1}$

$$f_c = \frac{1}{2\pi(15k)(68p)}$$

$f_c \approx 156kHz$

Case 1: HIGH FREQ ($f \uparrow$)

$$V_{OUT} = -(I_{IN})\left(\frac{1}{\infty}\right)$$

$\infty \rightarrow 0$

$$\frac{V_{OUT}}{I_{IN}} = 0$$

Case 2: LOW FREQ ($f \downarrow$)

$$V_{OUT} = -(I_{IN})\left(\frac{1}{\sqrt{\left(\frac{1}{R_1}\right)^2 + (0)^2}}\right)$$

$$V_{OUT} = -(I_{IN})(R_1)$$

TRANSIMPED. AMP ACTS LIKE LOW PASS FILTER.