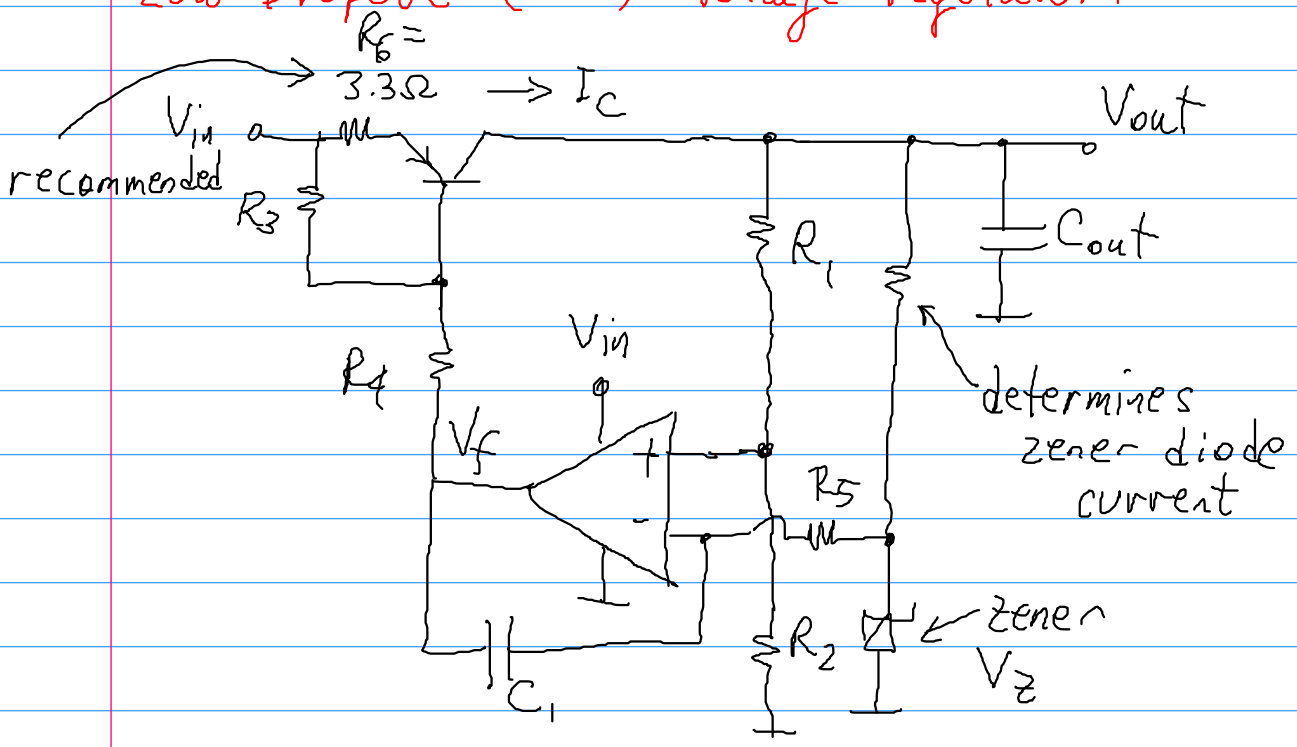
Low-Dropout (LDO) voltage regulator:



$$V_{out}\frac{R_2}{R_1+R_2}=V_z \Rightarrow V_{out}=V_z\frac{R_1+R_2}{R_2}$$

C_1 needed for stability. $f=\frac{1}{2\pi R_5 C_1}$ ← Freq. Band of feedback

When $V_f=0 \Rightarrow$ Maximum I_C

Regulation is present if OPAMP is not saturated.

OPAMP is not sat, if $0<V_f<V_{in}-2$

β, R_6, R_3, R_4, and V_{in} determines the short circuit current.