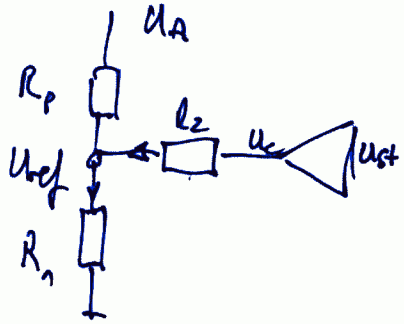
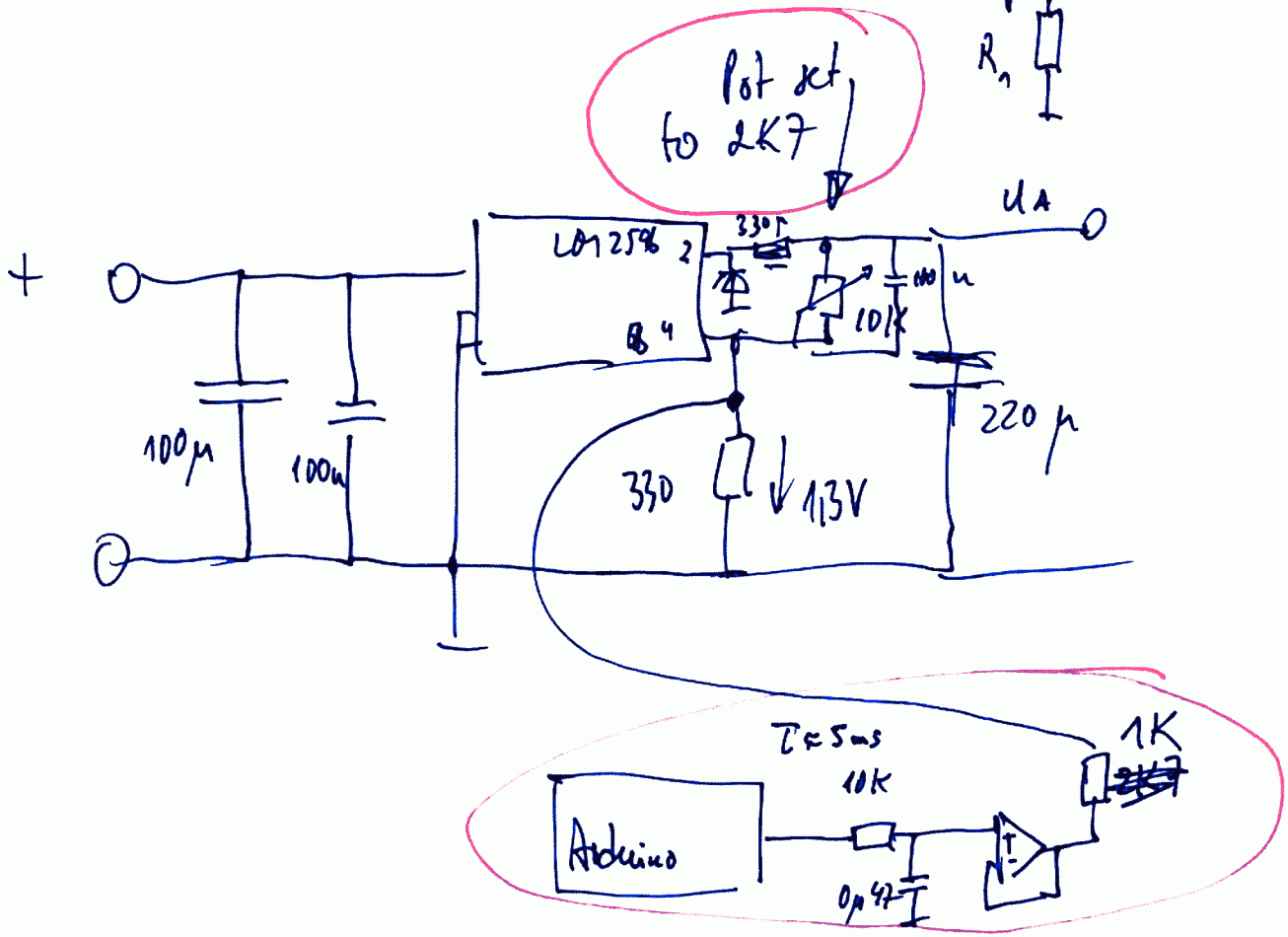
LM 2596 Module

$$U_{ref} = \frac{U_A - U_{ref}}{R_p} + \frac{U_C - U_{ref}}{R_2}$$





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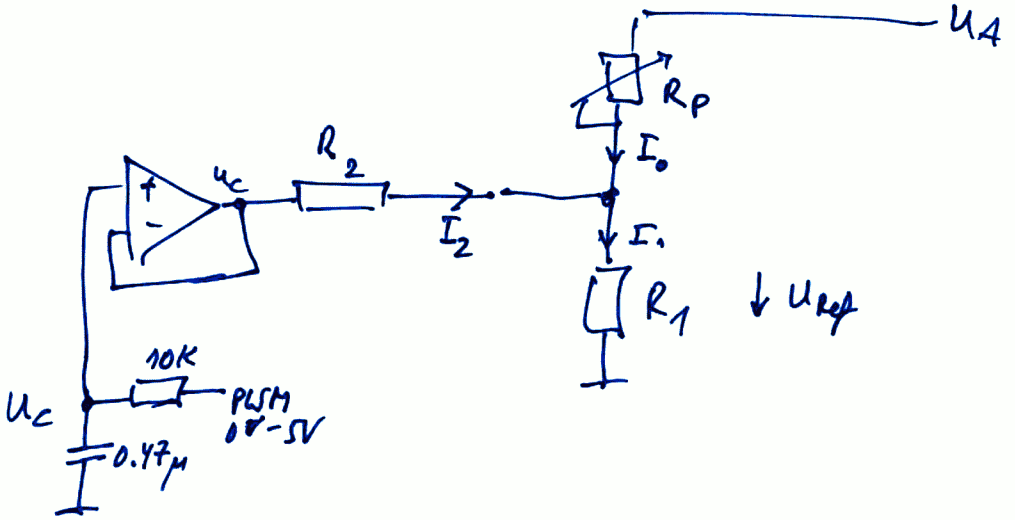
LM 2596 Current Injection



$$U_{ref} = R_1 I_1 = R_1 (I_0 + I_2)$$

$$U_{ref} = R_1 \left(\frac{U_A - U_{ref}}{R_P} \right) + \left(\frac{U_C - U_{ref}}{R_2} \right)$$

$$U_{ref} = \frac{R_1}{R_P} U_A - \frac{R_1}{R_P} U_{ref} + \frac{R_1}{R_2} U_C - \frac{R_1}{R_2} U_{ref}$$

$$U_{ref} \left(1 + \frac{R_1}{R_P} + \frac{R_1}{R_2}\right) - \frac{R_1}{R_2} U_C = \frac{R_1}{R_P} U_A \quad | \cdot \frac{R_P}{R_1}$$

$$\boxed{U_{ref} \left(\frac{R_P}{R_1} + 1 + \frac{R_P}{R_2}\right) - \frac{R_P}{R_2} U_C = U_A}$$

$$U_A = U_{Ref} \left(1 + R_P \left(\frac{1}{R_1} + \frac{1}{R_2}\right)\right) - \frac{R_P}{R_2} U_C$$

$$1{,}3V \quad \left(1 + 4700 \left(\frac{1}{330} + \frac{1}{1000}\right)\right) - \frac{4700}{1000} \cdot U_C$$

$R_2 = 1K$

$R_P = 4K7$

$$\boxed{U_A = 25{,}925V - 4{,}7 \cdot U_C}$$

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