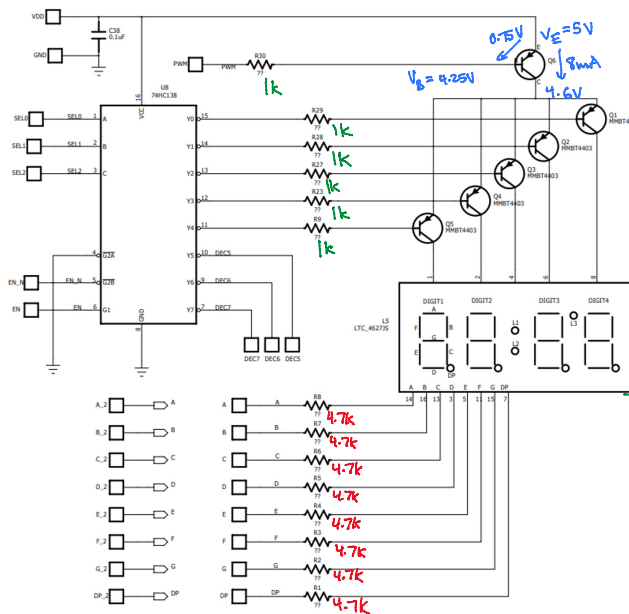


# Lab 2 Calculation

Monday, October 11, 2021 17:31



$$\beta = 10$$

$$I_C = \beta I_B$$

$$I_B = \frac{I_C}{\beta} = \frac{8mA}{10} = 0.8mA$$

$$R_{B0} = \frac{V_B}{I_B} = \frac{4.25V}{0.8mA} = 5.3k\Omega \approx 1k$$

$$V_C = 4.6V$$

$$V_{CE} = 0.4V$$

$$V_E = 4.6V \quad I_E = 8mA$$

$$V_B = 3.9V$$

$$\beta = 10$$

$$I_E = (\beta + 1) I_B$$

$$I_B = \frac{I_E}{(\beta + 1)} = \frac{8mA}{11} = 0.73mA \approx 1mA$$

$$R = \frac{V}{I} = \frac{5V}{0.73mA} = 6875\Omega \approx 1k\Omega$$

$$V_{in} = V_{cc} = 5V$$

$$I_{max\_rating} = 25mA$$

$$R = \frac{V}{I} = \frac{5V}{25mA} = 200\Omega$$

$$V_{in} = V_{cc} = 5V$$

$$I_{avg} = 1mA$$

$$R = \frac{V}{I} = \frac{5V}{1mA} = 5000\Omega$$