

BJT Bias Collector Bias (H.8)

20170124

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References

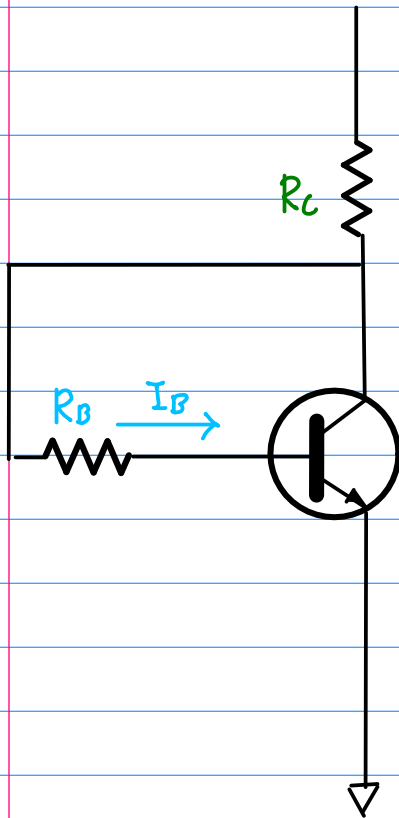
Based

[1] Floyd, Electronic Devices 7th ed

[2] Cook,

[2] en.wikipedia.org

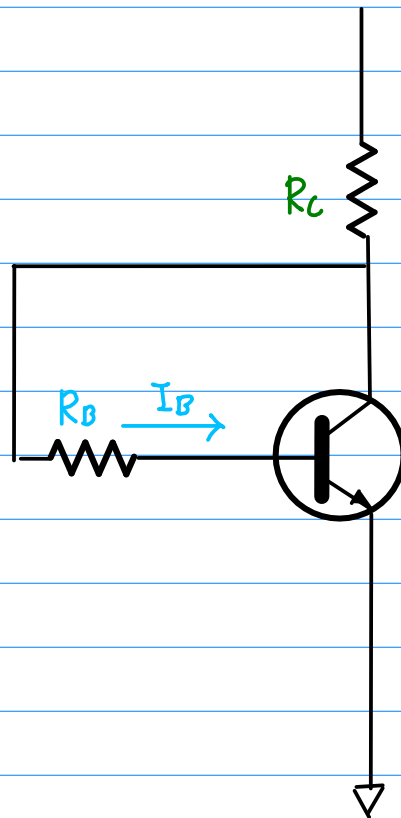
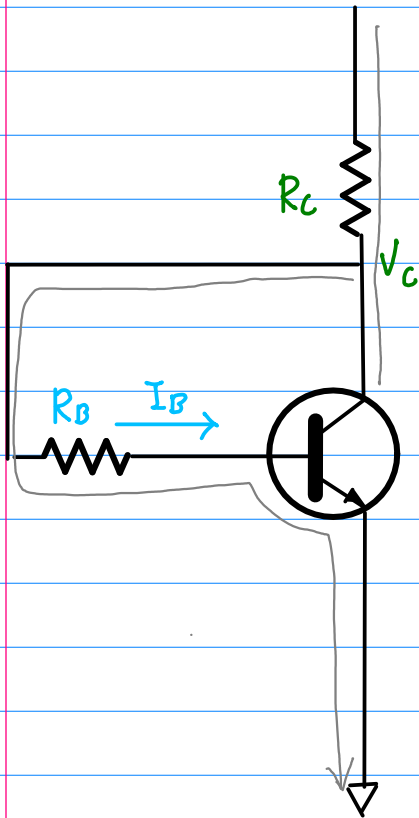
Collector Feedback Bias



$$I_C \approx I_E$$

$$I_C = \frac{V_{CC} - V_{BE}}{R_C + R_B/\beta_{DC}}$$

$$V_{CE} = V_{CC} - I_C R_C$$



$$I_B = \frac{V_C - V_{BE}}{R_B}$$

$$V_{CE} = V_C$$

$$V_{CE} = V_{CC} - I_C R_C$$

$$I_C \gg I_B$$

$$V_C \cong V_{CC} - I_C R_C$$

$$I_B = \frac{I_C}{\beta_{DC}} = \frac{V_{CC} - I_C R_C - V_{BE}}{R_B}$$

$$\frac{R_B}{\beta_{DC}} I_C = V_{CC} - I_C R_C - V_{BE}$$

$$\left(\frac{R_B}{\beta_{DC}} + R_C \right) I_C = V_{CC} - V_{BE}$$

$$I_C = \frac{V_{CC} - V_{BE}}{R_C + R_B / \beta_{DC}}$$







