

EE105 - Fall 2005
Microelectronic Devices and Circuits

Lecture 29

**BJT Biasing
Summary**

Announcements

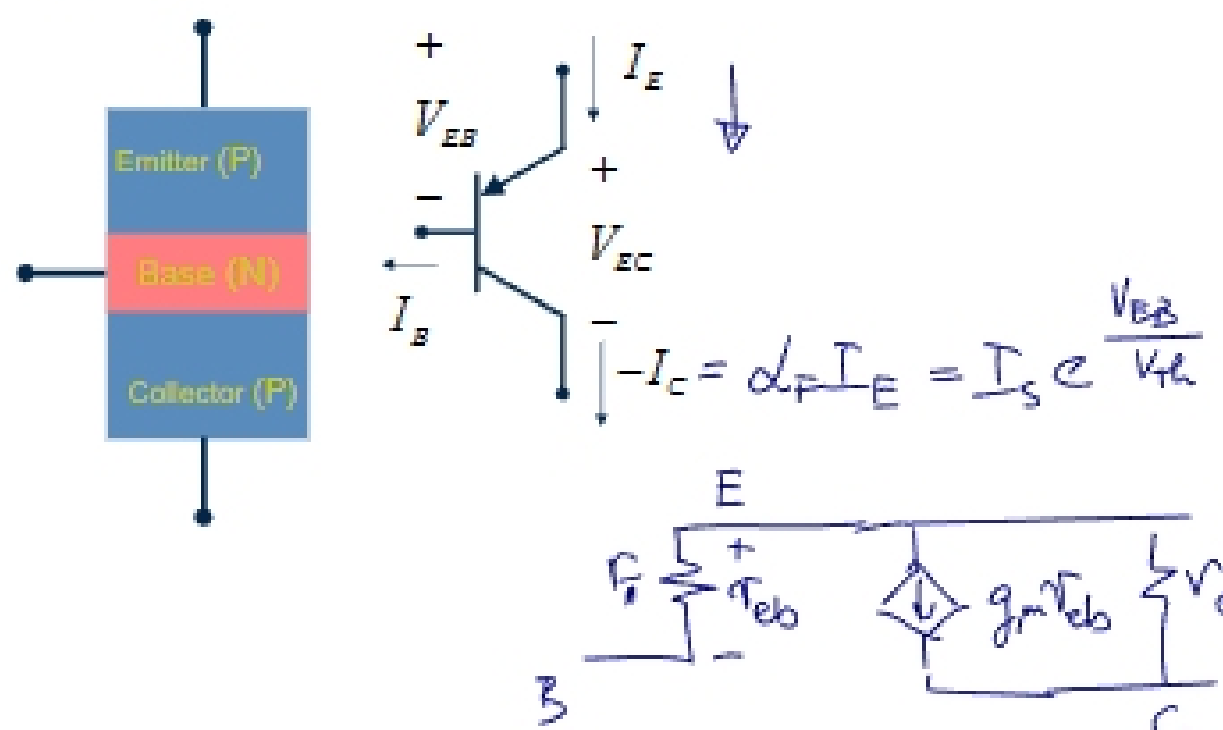
- › **Lab 9 reports due now!**
 - › Check your homework/lab grades next week!
- › **Reading: Chapter 9.6, 10.7.2**
- › **Final: December 20, 12:30-3:30pm, Bechtel Aud. (Sibley)**

Lecture Material

- › **Last lecture**
 - › BJT amplifiers: common emitter, common collector, common base
- › **This lecture**
 - › BJT biasing
 - › Example amplifier
 - › Review

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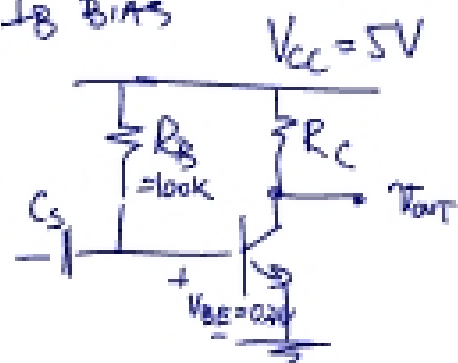
PNP Transistor



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DISCRETE BJT Biasing

¹ I_B Bias

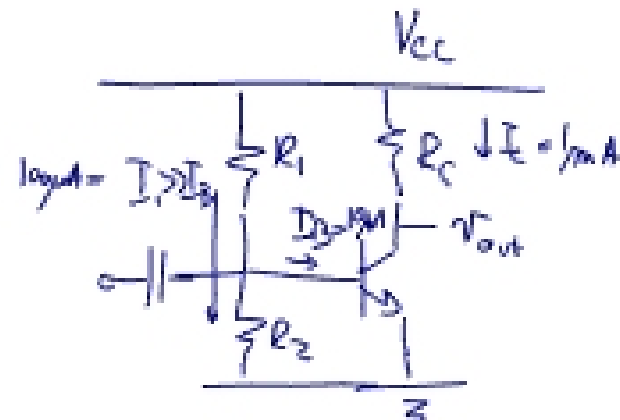


$$I_B = \frac{V_{CC} - V_{BE}}{R_B} = \frac{4.3}{100k} = 43\mu A$$

$$I_C = \beta I_B = 4.3mA$$

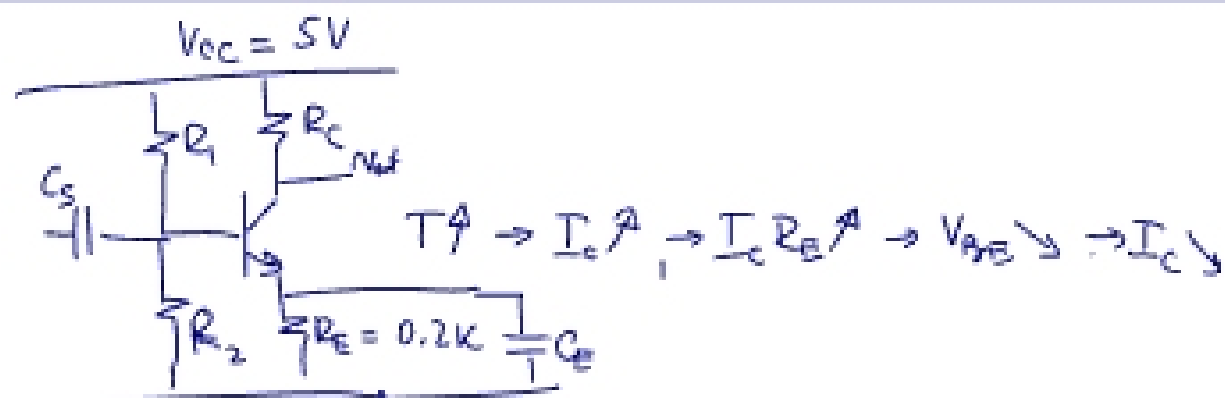
$$R_C = 1k\Omega$$

$$V_{CE} = V_{CC} - R_C I_C = 0.7V$$



$$\frac{R_2}{R_1 + R_2} V_{CC} = V_{BE}$$

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$$I_C = 1mA$$

$$V_B = I_C R_E + V_{BE} = 0.9V$$

$$\frac{R_2}{R_1 + R_2} = \frac{0.9V}{V_{CC}}$$

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