

*Lecture 06 – BJT Regions of Operation in Circuits and Small Signal Models*

Draw large signal models for the four regions of operation of a BJT, include both T shaped and U shaped versions of the circuits and explain their relation to one another.

Draw two different graphs that capture large signal BJT behavior.

What is base width modulation and why do we care?

What is the reverse active region? What does BJT breakdown look like? Consider a graph.

When you're building a biasing circuit for a BJT device what variable do you usually try to control? Draw a circuit that does this.

If you assume your BJT is in FAR, how can you use circuit analysis to check your assumptions and verify that you are not operating in saturation?

Draw a small signal model for an NPN transistor. How did you derive each value?

What's a typical way to get small signals into a biased BJT? What's the mid-band?