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Subject: Re: Current Drive

Posted by [Wayne Parham](#) on Wed, 30 Jan 2019 16:27:17 GMT

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Honestly, transistors are current devices. They "multiply" the amount of current flowing from base to emitter by some amount and allow that much current to flow from collector to emitter. The only part that voltage plays is it has to be enough to exceed the forward bias voltage of the semiconductor junction (around 0.3 for germanium and 0.7 for silicon) and then past that, however much voltage is required to push the requisite current. The drive signal doesn't increase the voltage across the junction much at all - It increases the current through it. See the link below:

[Transistor Drive Signal](#)

So say you have a silicon transistor with gain of 100 and you present it a signal that flows 0.01 amperes through the base: The current flowing through the collector will be 1.0 amp. It's a current device.

[Transistor as Current Amplifier](#)

Of course, Ohm's Law applies so no matter how we discuss things, i.e. "current-centric" or "voltage-centric" we can also look at things the other way. We can talk about the current flow through various parts of the circuit and if we know the resistances in the circuit, we can also know the voltages. Or if we know the voltages across a particular part we can know the resistance it is presenting. It's just different ways of looking at it.

But the bottom line is the issues in play here are not new and are very well understood. Each designer makes the most of what he or she thinks is important.

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