

Re: Tunnel diode rectification

Source: <http://sci.tech-archive.net/Archive/sci.electronics.components/2005-03/0269.html>

From: mike (*spamme0_at_netscape.net*)

Date: 03/09/05

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Theo Markettos wrote:

> *Fred Abse* <excretatauris@cerebrumconfus.it> wrote:

>

>> *On Mon, 07 Mar 2005 16:31:25 +0000, Theo Markettos wrote:*

>> *The valley floor has to be above zero, otherwise the device would contain*
>> *a voltage source.*

>

>

> *True, good point.*

>

>

>> *"Reverse breakdown" isn't really a property of tunnel diodes, they conduct*
>> *in the reverse direction more or less from zero.*

>>

>> *Tunnel diodes don't rectify, in the sense that I take you to mean the*
>> *term.*

>

>

> *Am I misreading something from the graph at:*

> <http://www.americanmicrosemi.com/tutorials/tunnelodiode.htm>

>

> *which seems to suggest that they're basically like a Zener except the*
> *tunnelling current means they have a lower resistance at low applied*
> *voltages than at medium ones? I suppose the problem is lack of scale on the*
> *left/lower parts of the graph. It does seem to suggest that they're*
> *actually better at conducting in the reverse direction than the forward*
> *direction – is this true? I can't seem to find any datasheets on these*
> *diodes.*

>

> *My interest is for a crystal radio, where the forward voltage drop of a*
> *silicon, Schottky or germanium diode means you lose a lot of signal, but*
> *power isn't available. I was wondering whether a tunnel diode might be more*
> *efficient? Are there any other types of diode that might do the trick*
> *instead?*

>

> *Thanks*

> *Theo*