

## Promise of Tunnel Diode Integrated Circuits

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The promise of the tunnel diode has long been the promise of economy and speed [1]. Device performance [2-4], circuit simulations [5-7], and circuit demonstrations [8-10] continue to show the utility of the tunnel diode when incorporated into a transistor process. Can a low-cost, production-compatible silicon tunnel diode be demonstrated? If the answer is yes, then the tunnel diode offers a way to increase circuit speed and density (economy) without increasing power dissipation. Tunnel diode circuits should extend silicon performance after scaling and beyond the SIA roadmap.

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