

Intel 22nm 3-D Tri-Gate Transistor Technology

VERSION 29

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Overview

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- Intel announces a major breakthrough and historic innovation in microchips: the world's first 3-D transistors in mass production
- The transition to 3-D continues the pace of technology advancement, fueling Moore's Law for years to come.
- An unprecedented combination of performance improvement and power reduction to enable new innovations across a range of future 22nm-based devices from the smallest handhelds to powerful cloud-based servers.
- Intel demonstrates a 22nm microprocessor -- code-named Ivy Bridge -- that will be the first high-volume chip to use 3-D transistors.

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Intel Reinvents Transistors Using New 3-D Structure

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Fact Sheets & Backgrounders

Fact Sheet: Global Intel Manufacturing Fact Sheet (PDF 414KB)

Presentation: Intel Announces New 22nm 3D Tri-gate Transistors (PDF 6.4MB)

Presentation: 22nm Details (PDF 1.1MB)

Fun Facts: How small is 22nm? (PDF 150KB)

Backgrounder: History of the Transistor (PDF 218KB)

Quotes

"For years we have seen limits to how small transistors can get," said Gordon E. Moore. "This change in the basic structure is a truly revolutionary approach, and one that should allow Moore's Law, and the historic pace of innovation, to continue." - Gordon E. Moore

"Intel's scientists and engineers have once again reinvented the transistor, this time utilizing the third dimension. Amazing, world-shaping devices will be created from this capability as we advance Moore's Law into new realms." - Paul Otellini, Intel President and CEO

"The performance gains and power savings of Intel's unique 3-D Tri-Gate transistors are like nothing we've seen before. This milestone is going further than simply keeping up with Moore's Law. The low-voltage and low-power benefits far exceed what we typically see from one process generation to the next. It will give product designers the flexibility to make current devices smarter and wholly new ones possible. We believe this breakthrough will extend Intel's lead even further over the rest of the semiconductor industry." - Mark Bohr, Intel Senior Fellow

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Video: May 4th San Francisco Announcement Event

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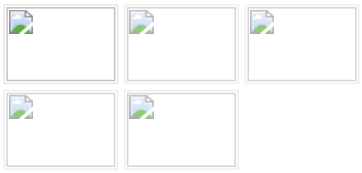
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Global-Intel-Manufacturing_FactSheet.pdf (413.1 K)
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