

MOSFET Technology with Zero-Voltage and Zero-Current Transitions

September 3 2004



[STMicroelectronics](#) has introduced an n-channel [MOSFET](#) for use in HID lamps, high-end ballasts and switch-mode power supplies that use zero-voltage and zero-current transitions. The STx9NK60ZD is the first device built using a new high-voltage process technology known as SuperFREDMesh™. Thanks to this advanced technology that realizes a new carrier lifetime control process on the ST's basic High Voltage SuperMESH™ series, the device shows, along with optimal dynamic performance, optimized body diode reverse-recovery time (t_{rr}) and very soft recovery. All these features help reduce switching losses.

Devices built using the SuperFREDMesh technology also benefit from reduced on-resistance, Zener gate protection, high dv/dt capability and cost competitiveness.

The part handles 600V, a drain current of up to 7A and offers a typical $R_{DS(on)}$ of 0.85 Ω . The STF9NK60ZD handles up to 30W, while the STB9NK60ZD and STP9NK60ZD each handle up to 125W.

The parts are 100% avalanche tested and are available in TO-220, TO-220FP and D2PAK packages.

US pricing is 0.80\$US in quantities of 100k pieces. Further information is available at www.st.com/pmos

Citation: MOSFET Technology with Zero-Voltage and Zero-Current Transitions (2004, September 3) retrieved 20 April 2024 from <https://phys.org/news/2004-09-mosfet-technology-zero-voltage-zero-current-transitions.html>

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