

Matthias Neumeister, Siemens AG, D



Short Biography:

Matthias Neumeister was born in Löbau, Germany, in 1975. From 1992 till 1997 he passed an apprenticeship as electrician. From 2000 till 2002 he successfully completed his certified technician. Since 2002 he studied electrical engineering at the Chemnitz University of Technology. He received the diploma degree in the main discipline of power engineering in 2007. He then became a member of the scientific staff of the Siemens AG in October 2007. His fields of activity are traction converts.

Title of the Paper:

Investigation of Surge Current Capability of SiC MPS Diodes

Summary of the Paper:

In the paper the surge current capability of Silicon Carbide (SiC) Merged-Pin-Schottky (MPS) diodes is investigated. The diodes were impinged with trapezoidal respectively sinus shaped surge current pulses at different pulse times and temperatures. Thereby the diode structures provide a different responsiveness depending on the diodes design. The destruction mechanisms for a sort of is temperature limitation of the material, in this case the anode metallisation. An other sort of diodes shows destruction at lower current density by occurring hot spots. While surge current, the first sort of diodes reaches astonishingly high temperatures on the anode face. This sort of diodes was simulated with a simplified temperature model.