28nm Embedded RRAM for Consumer and Industrial Products: Design and Reliability

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Kurzfassung

We discuss design aspects of an embedded RRAM macro in a 28nm advanced logic foundry process employed for consumer and industrial products and we present high statistic reliability data of the embedded RRAM coming from test devices and first products to demonstrate the matureness und usability of the embedded emerging memory. We compare failure modes and counter measures with embedded flash from the previous generations. Overall, the 28nm-embedded RRAM is an adequate and available successor of embedded flash from previous generations.

Curriculum Vitae

Jan Otterstedt received the Dr.-Ing. degree in electrical engineering from the University of Hannover, Germany, in 1997. Afterwards, he has joined the Semiconductor Group of Siemens, which later became the Infineon Technologies AG.
Since more than 15 years, he is responsible for concept engineering for embedded non-volatile memories, mostly covering consumer and industrial applications. He now is a Senior Principal. Since 2006, he lectures on "Testing Digital Circuits" at the Technische Universität München (TUM).