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Sommario/riassunto	This paper presents the high temperature behaviour of RF LDMOSFETs used in wireless applications. Self heating is an important issue in RF power transistors. Self heating could cause thermal runaway in the device if the package has not been optimally designed to dissipate the heat generated in the device. Temperature rise due to self heating is of greater concern in SOI devices because of the presence of the buried oxide layer which has lesser thermal conductivity than bulk Si. In this work, 2D finite element electrothermal simulators were used to investigate the extent of self heating. Thermal models were solved in the MIXEDMODE circuit/device simulator with the package parasitics included, to study the temperature rise in the device due to self heating.