In today’s competitive semiconductor environment, product performance and market timing has never been more valuable. Design IP, speed to market, and taking advantage of the most advanced technology are three ways fabless companies can maintain an advantage over the competition. Foundries target these demands by offering superior support, competitive technology, and rapid development cycles. Using the advanced tool suites of SEM, FIB, TEM, and Atomic Force NanoProbing (AFP) the failure analysis community now has the ability to investigate and compare foundry performance on the device level. Specifically, we will compare the physical and electrical characteristics of the SRAM cell transistors for these two leading foundry process technologies.