

We report the characteristics of sub-50nm pMOSFETs using Laser Thermal Process and the technique for enhancing their drive current. SD-Extension depth, overlap and R_s were controlled by pre-amorphization Ion Implantation energies, and the first two parameters could be thusly controlled regardless of dopant dose. This enabled us to design highly activated profiles without inducing any short channel deterioration. So, we achieved higher drive current for the same V_{th} -rolloff and a 13% improvement in drivability for 45nm pMOSFETs.