Power Amplifier is the important candidate of RF transceiver. Power amplifier in RFICs of wireless hand held devices, is highly prone to ESD induced damages. Even though ESD protection for digital circuits have been known for a while, RF-ESD is a challenge. The basic principle for RF-ESD design is to provide high ESD robustness with lower degradation in RF circuit performance. However, with increasing frequency it almost becomes impossible to design ESD protection independent of RF design. The focus of this thesis has been to investigate an effective ESD protection design for RF power amplifiers and also to analyze the impact of ESD on RF Power Amplifiers.