

ELECTROSTATIC DISCHARGE PROTECTION SILICON CONTROLLED RECTIFIER (ESD-SCR) FOR SILICON GERMANIUM TECHNOLOGIES

ABSTRACT OF THE DISCLOSURE

An electrostatic discharge (ESD) protection device (102) having a silicon controlled rectifier (SCR) (103) for protecting circuitry of an Integrated circuit (IC) (100). The SCR (103) includes a N-doped layer (208) disposed over a substrate (203) and a first P doped region (214) disposed over the N-doped layer (208). At least one first N⁺ doped region (216) forming a cathode (124) is disposed over the P-doped region and coupled to ground 9112). The at least one first N⁺ doped region (216), first P-doped region (214), and N-doped layer (208) form a vertical NPN transistor (131) of the SCR (103). A second P doped region (212) forming an anode (122) is coupled to a protected pad (104). The second P doped region (212) is disposed over the N-doped layer (208), and is laterally positioned and electrically isolated with respect to the first P doped region (214). The second P doped region (212), N-doped layer (208), and first P doped region (214) form a lateral PNP transistor (132) of the SCR (103).

Fig. 1A



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