SILICON-ON-INSULATOR BODY-COUPLED GATED DIODE FOR ELECTROSTATIC DISCHARGE (ESD) AND ANALOG APPLICATIONS

ABSTRACT

A body-coupled gated diode for silicon-on-insulator (SOI) technology is disclosed. The body-coupled gated diode is formed from an SOI field-effect transistor (FET). The body (18), gate (22) and drain (17) of the SOI FET are tied together, forming the first terminal (A) of the diode. The source (16) of the SOI FET forms the second terminal (B) of the diode. Both NFETs and PFETs may be used to create the diode. An SOI circuit comprising at least one body-coupled gated diode formed from the SOI FET provides electrostatic discharge (ESD) protection and ideal diode characteristics.

Fig. 1

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