HIGH VOLTAGE POWER SCHOTTKY WITH ALUMINUM BARRIER METAL SPACED FROM FIRST DIFFUSED RING

ABSTRACT OF THE DISOLOSURE

A vertical conduction Schottky device having a reverse voltage rating in excess of 400 volts uses an aluminum barrier metal(31)in contact with an N^- epitaxial silicon surface (11). A diffused P^+ guard ring (30) surrounds the barrier metal contact (31) and is spaced therefrom by a small gap which is fully depleted at a low reverse voltage to connect the ring (30) to the barrier contact (31) under reverse voltage conditions. Lifetime killing is used for the body of the diode.

Figure 2