

Title (en)
VERTICAL COMPONENT WITH HIGH-VOLTAGE STRENGTH

Title (de)
VERTIKALE ANORDNUNG MIT HOCHSPANNUNGSFESTIGKEIT

Title (fr)
COMPOSANT VERTICAL A TENUE EN TENSION ELEVEE

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EP 1328978 A1 20030723 (FR)

Application
EP 01976404 A 20011011

Priority
• FR 0103150 W 20011011
• FR 0013077 A 20001012

Abstract (en)
[origin: FR2815471A1] The vertical four-layer component comprises a thick lightly doped zone (1) of n-type conductivity surrounded by a peripheral wall (2) of p-type conductivity extending vertically from the rear to the front surface of the component, a highly doped layer (3) of p-type conductivity extending over the rear surface of the component, and in addition a lightly doped layer (21) of p-type conductivity extending over the interface between the thick lightly doped zone (1) and the highly doped layer (3). The addition of the lightly doped layer (21) increases the reverse-bias breakdown voltage from 1050 V to 1350 V, that is gives an increase of 25%. In a variant of the device, the vertical semiconductor component constituting a triac comprises a highly doped zone of n-type conductivity formed on the side of the rear surface in the highly doped layer (3), and the highly doped layer (21) is interrupted with respect to the additional highly doped zone, which is equipped with short-circuits of emitter. This modification prevents higher threshold current caused by the addition of the lightly doped layer (21), but the breakdown voltage is increased from 1050 V to 1220 V, that is an increase of 15%.

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H01L 29/74; **H01L 29/08**

IPC 8 full level
H01L 29/08 (2006.01); **H01L 29/747** (2006.01)

CPC (source: EP US)
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