

Title (en)  
Semiconductor electron emission device.

Title (de)  
Halbleiter-Elektronenemittierende Einrichtung.

Title (fr)  
Dispositif semiconducteur émetteur d'électrons.

Publication  
**EP 0504603 A1 19920923 (EN)**

Application  
**EP 92102746 A 19920219**

Priority  
• JP 4557991 A 19910220  
• JP 5559791 A 19910228  
• JP 23445691 A 19910913  
• JP 23445791 A 19910913

Abstract (en)  
On a high density p-type semiconductor substrate, a high density p-type semiconductor region and a p-type semiconductor region 104 for supplying carriers to the high density p-type semiconductor region are disposed in contact, further, a p-type semiconductor region and a low density p-type semiconductor region are disposed outwardly around the high density p-type semiconductor region and the p-type semiconductor region, and on a surface of device, a Schottky electrode which is a metallic film for forming the Schottky barrier junction with the high density p-type semiconductor region is disposed. The density relation between carrier densities of the semiconductor regions is such that high density p-type semiconductor region > p-type semiconductor region > p-type semiconductor region > low density p-type semiconductor region. <IMAGE>

IPC 1-7  
**H01J 1/30; H01J 9/02**

IPC 8 full level  
**H01J 1/308** (2006.01)

CPC (source: EP)  
**H01J 1/308** (2013.01)

Citation (search report)  
• [A] US 4801994 A 19890131 - VAN GORKOM GERARDUS G P [NL], et al  
• [AD] EP 0331373 A2 19890906 - CANON KK [JP]  
• [AD] US 4303930 A 19811201 - VAN GORKOM GERARDUS G P, et al

Cited by  
US7399987B1

Designated contracting state (EPC)  
AT BE CH DE DK ES FR GB GR IT LI LU NL PT SE

DOCDB simple family (publication)  
**EP 0504603 A1 19920923; EP 0504603 B1 19970716**; AT E155610 T1 19970815; DE 69220823 D1 19970821; DE 69220823 T2 19980122

DOCDB simple family (application)  
**EP 92102746 A 19920219**; AT 92102746 T 19920219; DE 69220823 T 19920219