Title (en)

HOT ELECTRON TRANSISTOR

Title (de)

HEISSELEKTRONEN-TRANSISTOR

Title (fr)

TRANSISTOR A ELECTRONS CHAUDS

Publication

EP 1743379 A2 20070117 (EN)

Application

EP 05739776 A 20050425

Priority

- US 2005014249 W 20050425
- US 56570004 P 20040426

Abstract (en)

[origin: WO2005106927A2] A hot electron transistor includes an emitter electrode, a base electrode, a collector electrode, and a first tunneling structure disposed and serving as a transport of electrons between the emitter and base electrodes. The first tunneling structure includes at least a first amorphous insulating layer and a different, second insulating layer such that the transport of electrons includes transport by means of tunneling. The transistor further includes a second tunneling structure disposed between the base and collector electrodes. The second tunneling structure serves as a transport of at least a portion of the previously mentioned electrons between the base and collector electrodes by means of ballistic transport such that the portion of the electrons is collected at the collector electrode. An associated method for reducing electron reflection at interfaces in a thin-film transistor is also disclosed.

IPC 8 full level

H01L 29/06 (2006.01); **H01L 21/00** (2006.01); **H01L 29/08** (2006.01); **H01L 29/76** (2006.01); **H01L 29/82** (2006.01); **H01L 39/00** (2006.01); H01L 27/082 (2006.01)

CPC (source: EP KR)

H01L 29/70 (2013.01 - KR); **H01L 29/7606** (2013.01 - EP); **H10N 70/00** (2023.02 - EP)

Citation (search report)

See references of WO 2005106927A2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2005106927 A2 20051110; **WO 2005106927 A3 20051229**; CN 101015066 A 20070808; EP 1743379 A2 20070117; JP 2007535178 A 20071129; KR 20070053160 A 20070523

DOCDB simple family (application)

US 2005014249 W 20050425; CN 200580013289 A 20050425; EP 05739776 A 20050425; JP 2007510882 A 20050425; KR 20067023210 A 20061106