

Title (en)
ELECTRICAL MEASUREMENT OF THE THICKNESS OF A SEMICONDUCTOR LAYER

Title (de)
ELEKTRISCHE MESSUNG DER DICKE EINER HALBLEITERSCHICHT

Title (fr)
MESURE ELECTRIQUE DE L'EPAISSEUR D'UNE COUCHE DE SEMICONDUCTEUR

Publication
EP 1819982 A1 20070822 (DE)

Application
EP 05814654 A 20051116

Priority
• DE 2005002063 W 20051116
• DE 102004055181 A 20041116

Abstract (en)
[origin: WO2006053543A1] A method for the electrical measurement of the thickness of semiconductor layers (10, 11, 12) is disclosed. Active layers on SOI wafers, EPI layers with inverse conductor types and membrane thickness can be measured by use of a test structure which can routinely be measured during a production process. The embodiment of the test structure (Al to Fl) is preferably annular, such that a high degree of symmetry is achieved on propagation of the measuring current and such that no interactions occur with surrounding structures. The diameter of the arrangement can be matched to the corresponding thickness range of the semiconductor layer for measurement. The arrangement can be measured using conventional U-I parameter test systems, conventionally applied in semiconductor production. The determination of layer thickness is achieved by means of two sequential quadrupole measurements at six contact points.

IPC 8 full level
G01B 7/06 (2006.01); **G01N 27/04** (2006.01); **G01R 27/14** (2006.01); **H01L 21/66** (2006.01)

CPC (source: EP US)
G01B 7/06 (2013.01 - EP US); **G01N 27/041** (2013.01 - EP US); **H01L 22/34** (2013.01 - EP US)

Citation (search report)
See references of WO 2006053543A1

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 LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
DE 102004055181 B3 20060511; DE 112005003278 A5 20070927; EP 1819982 A1 20070822; US 2008100311 A1 20080501;
WO 2006053543 A1 20060526

DOCDB simple family (application)
DE 102004055181 A 20041116; DE 112005003278 T 20051116; DE 2005002063 W 20051116; EP 05814654 A 20051116;
US 57663905 A 20051116