

Title (en)

METHOD FOR FABRICATING TANTALUM CONTACTS ON A N-TYPE CONDUCTING SILICON SEMICONDUCTOR SUBSTRATE

Publication

EP 0000743 B1 19800917 (DE)

Application

EP 78100525 A 19780727

Priority

US 82791277 A 19770826

Abstract (en)

[origin: US4215156A] A silicon semiconductor device having contacts which include tantalum. The tantalum is useful in particular for fabricating Schottky barrier diodes having a low barrier height. The method includes: precleaning the silicon substrate prior to depositing the tantalum; depositing the tantalum at low pressure and low substrate temperature to avoid oxidation of the tantalum; and sintering the contact to reduce any interfacial charges and films remaining between the silicon and tantalum. When a metal which reacts with silicon during processing, such as aluminum, is used as interconnection metallurgy, a layer of chrome must be deposited between the tantalum and aluminum.

IPC 1-7

H01L 21/285; **H01L 29/40**; **H01L 21/60**; **H01L 23/48**

IPC 8 full level

H01L 21/28 (2006.01); **H01L 21/285** (2006.01); **H01L 21/338** (2006.01); **H01L 21/60** (2006.01); **H01L 21/768** (2006.01); **H01L 23/532** (2006.01); **H01L 29/43** (2006.01); **H01L 29/45** (2006.01); **H01L 29/47** (2006.01); **H01L 29/872** (2006.01)

CPC (source: EP US)

H01L 21/28512 (2013.01 - EP US); **H01L 21/28537** (2013.01 - EP US); **H01L 23/53223** (2013.01 - EP US); **H01L 24/03** (2013.01 - EP US); **H01L 24/05** (2013.01 - EP US); **H01L 29/456** (2013.01 - EP US); **H01L 29/47** (2013.01 - EP US); **H01L 29/66848** (2013.01 - EP US); **H01L 2224/05083** (2013.01 - EP US); **H01L 2224/05171** (2013.01 - EP US); **H01L 2224/05181** (2013.01 - EP US); **H01L 2224/05624** (2013.01 - EP US); **H01L 2224/05647** (2013.01 - EP US); **H01L 2924/01005** (2013.01 - EP US); **H01L 2924/01006** (2013.01 - EP US); **H01L 2924/01013** (2013.01 - EP US); **H01L 2924/01014** (2013.01 - EP US); **H01L 2924/01022** (2013.01 - EP US); **H01L 2924/01024** (2013.01 - EP US); **H01L 2924/01029** (2013.01 - EP US); **H01L 2924/01032** (2013.01 - EP US); **H01L 2924/01033** (2013.01 - EP US); **H01L 2924/01037** (2013.01 - EP US); **H01L 2924/01046** (2013.01 - EP US); **H01L 2924/01068** (2013.01 - EP US); **H01L 2924/01072** (2013.01 - EP US); **H01L 2924/01073** (2013.01 - EP US); **H01L 2924/01074** (2013.01 - EP US); **H01L 2924/01078** (2013.01 - EP US); **H01L 2924/01079** (2013.01 - EP US); **H01L 2924/01082** (2013.01 - EP US); **H01L 2924/12032** (2013.01 - EP US); **H01L 2924/14** (2013.01 - EP US); **Y10S 438/951** (2013.01 - EP US); **Y10S 438/974** (2013.01 - EP US)

C-Set (source: EP US)

1. **H01L 2924/12032** + **H01L 2924/00**
2. **H01L 2924/14** + **H01L 2924/00**

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