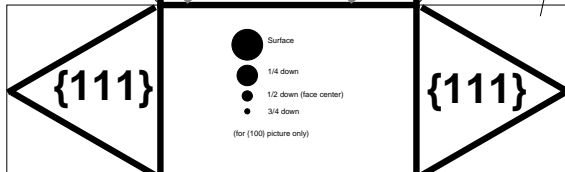
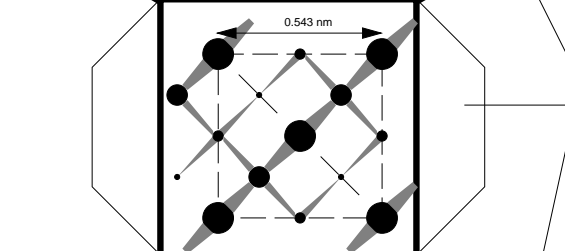


These are tabs to aid assembly.



(001)

Etch rate in KOH

44 gm in 100ml H₂O @ 85 C

{100} 1.4 μ/min

{111} 0.0035

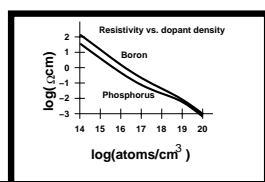
SiO₂ 0.0014

Si₃N₄ not etched

($\bar{1}11$)

(101)

(111)



Etching Si+Boron

Presence of boron reduces etch rate in KOH and EDP.

No dependence below 10¹⁹/cm³. At 10²⁰/cm³ reduced by 100 (EDP) reduced by 10-100 (KOH).

($\bar{0}10$)

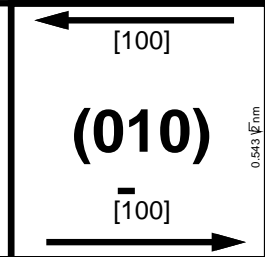
($\bar{1}10$)

Available via anonymous ftp from synergy.icsl.ucla.edu in pub/crystal.i - ksjp

pister@ee.ucla.edu, 1/26/93

(100)

(110)



Etch rate in EDP

750 ml Ethylene Diamine

120 gm Pyrocatechol

100 ml water @115C

{100} 0.75 μ/min

{111} 0.021

SiO₂ 0.0002

Si₃N₄ 0.0001

110

110

<100>

(abc) specific plane

{abc} equivalent planes

[abc] specific direction

<abc> equivalent directions

0.543 nm

Single crystal silicon

¹⁴Si^{28.1}

density: 2.33 gm/cm³

melting point: 1415 °C

band gap: 1.12 eV

electron mobility: 1350 cm²/Vs

hole mobility: 480 cm²/Vs

resistivity: 2.5 x 10⁵ Ω-cm (intr.)

relative permittivity: 11.8

Young's modulus: 1.9x10¹¹ Pa

thermal conductivity: 1.57 W/cm °C

yield strength: 7.0x10⁹ Pa

The idea for the shape came from a similar paper model that I saw once. I don't know who made that one. Perhaps Monsanto?

Most of the data comes from "Silicon as a mechanical Material", by Peterson (Proc.IEEE, v70n5, 1982, pp.420-457).

Other data from "VLSI Technology", edited by Sze (McGraw-Hill) and "Solid State Electronic Devices", by Streetman (Prentice-Hall).

This is an idraw generated PostScript file. Feel free to hack it up (physically and electronically) as much as you like.