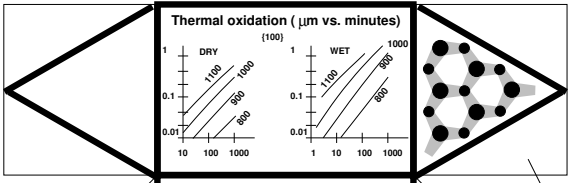
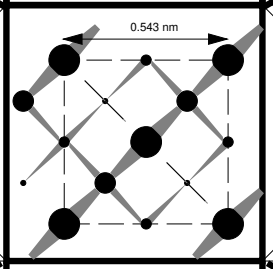
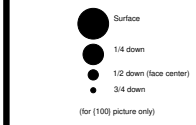




These are tabs to aid assembly.

{111}



{111}

(001)

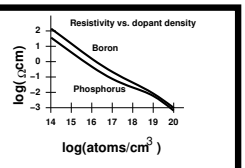
Etch rate in KOH

44 gm in 100ml H_2O @ 85 C

{100}	1.4
{111}	0.0035
SiO_2	0.0014
Si_3N_4	not etched

μ/min

$(\bar{1}11)$ (101) (111)



Etching Si+Boron

Presence of boron reduces etch rate in KOH and EDP.
No dependence below $10^{19}/cm^3$. At $10^{20}/cm^3$ reduced by 100 (EDP) reduced by 10–100 (KOH).

$(0\bar{1}0)$ (110) Available via anonymous ftp from synergy.icsl.ucla.edu in pub/crystal.i – ksjp (100) (110)

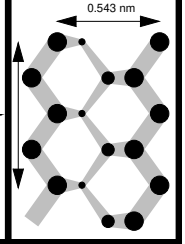
pister@ee.ucla.edu, 1/26/93

[100]

(010)

$[\bar{1}00]$

<100>



Etch rate in EDP

750 ml Ethylene Diamine
120 gm Pyrocatechol
100 ml water @115C

{100}	0.75
{111}	0.021
SiO_2	0.0002
Si_3N_4	0.0001

μ/min

110

(abc) specific plane
{abc} equivalent planes
[abc] specific direction
<abc> equivalent directions

Single crystal silicon

$_{14}Si^{28.1}$

density: 2.33 gm/cm^3
melting point: 1415 °C
band gap: 1.12 eV
electron mobility: 1350 cm^2/Vs
hole mobility: 480 cm^2/Vs
resistivity: 2.5×10^5 Ω-cm (intr.)
relative permitivity: 11.8
Young's modulus: 1.9×10^{11} Pa
thermal conductivity: 1.57 W/cm ℃
yield strength: 7.0×10^9 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.