Intel CPU Die-Size and Microarchitecture

800mm2 700mm2 600mm2 500mm2 400mm2 350mm2 300mm2 280mm2 260mm2 240mm2 220mm2 200mm2 190mm2 180mm2 170mm2 160mm2 150mm2 140mm2 130mm2 120mm2 110mm2 100mm2 90mm2 80mm2 70mm2 60mm2 50mm2 40mm2 30mm2 20mm2

91 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 03 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

800nm 600nm 350nm 250nm 180nm 130nm 90nm 65nm 45nm 32nm 22nm

Pentium(P5) 294mm2

Pentium Pro(P6) 306mm2

Pentium Pro

Pentium

Pentium (P54C) 163mm2

MMX Pentium (P55C) 140mm2

MMX Pentium

Pentium (P54Cs) 90mm2

Pentium Pro (P6) 196mm2

Pentium II (klamath) 203mm2 7.5M

Pentium II

Pentium II (Deschutes)130mm2 7.5M

Tillamook 90mm2

Katmai (Pentium III) 128mm2 9.5M

Coppermine 100mm2 28M

Timna

Pentium III

Tualatin 80.4mm2

P5 Microarchitecture

P6 Microarchitecture

Missing P7 (changed to IA-64 Merced)

Pentium 4ではこのダイサイズのCPUがない

0.13μmから始まるデスクトップCPUの新アーキテクチャ世代も抜けている。

Willamette 217mm2 42M

Pentium 4

Northwood 146mm2

Northwood 131.4mm2 55M

Prescott 1 core 112mm2 125M

NetBurst Microarchitecture

Tejas 1 core 213mm2 2xxM?

Smithfield 2 Cores 206mm2 230M

Pentium D

NetBurst Dual-Core

マルチコア化により、垂直型に展開するCore MA

Tulsa 2 Cores 435mm2 1.328B

Core

Yonah 2 cores 90.3mm2 151.6M

CedarMill 1 core 81mm2 188M

Banias 82mm2 77M

Dothan 1 core 87mm2 140M

Pentium M

Banias/Yonah Microarchitecture

Kentsfield 4 Cores 2 Dies 286mm2 582M

Presler 2Cores 2Dies 162mm2 376M

Merom 4M 2 Cores 143mm2 291M

Core2

Merom 2M 2 Cores 113mm2

Merom-L 1 core 80mm2

Penryn 6M 2 cores 107mm2 410M

Penryn 3M 2 cores 81mm2

Penryn-L 1core

Core Microarchitecture

Nehalem-EX Beckton 8 Cores 684mm2 2.3B

Dunnington 6 Cores 503mm2 1.9B

Core i

Lynnfield 4 Cores 296mm2 774M

Bloomfield 4 Cores 263mm2 731M

Yorkfield 4 Cores 2 Dies 214mm2 820M

Yorkfield 6MB 4 Cores 2 Dies 162mm2

Nehalem Microarchitecture

Westmere-EX 10 Cores 513mm2 2.27B

Sandy Bridge-E 8 Cores 416mm2 2.27B

Sandy Bridge-E 4 Cores Xx mm2 1.27B

Westmere 6-Core 6 Cores 240mm2 1.17B

Sandy Bridge 4 Cores+GPU 216mm2 1.16B

Sandy Bridge Microarchitecture

Haswell 4 Cores+GPU <190mm2?

Ivy Bridge 4 Cores+ GPU 160mm2 1.4B

Sandy Bridg 2 Cores+GP 149mm2 624M

Sandy Bridge 2 Cores +GPU 131mm2 504M

Ivy Bridge 4 Cores+GPU <138mm2

Ivy Bridge 2 Cores+ GPU <120mm2

Ivy Bridge 2 Cores+ GPU <90mm2

Pineview 2 cores +GPU 87mm2 176M

Westmere 2 Cores 79mm2 384M

Lincroft Oak Trail

Pineview 1 core+GPU 66mm2,123M

Cedarview 60mm2

Diamondville DC 2 core

Atom

Silverthorne Diamondville SC 1 core 24.2mm2, 47M

Bonnell Microarchitecture

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