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## Microprocessor Quick Reference Guide

Learn all the significant processor evolution facts, including Introduction date, ratings and number of transistors. Click on the processor family below to view facts on each processor in that family, or scroll down the page to see them all. For an informative overview of Intel processor history, view ["The Evolution of a Revolution."](#) (PDF 2.9MB - this file is for historical reference only and is not kept updated beyond 2008)

**This page is for historical reference only. For products introduced after December 2008, please refer to [ark.intel.com](http://ark.intel.com).**

Choose a processor family, or scroll down to browse:

- Intel® Atom™ Processor
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- Intel® Itanium® Processor Family || Intel® Xeon™ Processor
- Intel® Pentium® 4 Processor || Intel® Pentium® III Processor
- Intel® Celeron® Processor || Intel® Pentium® III Xeon™ Processor
- Intel® Pentium® II Xeon™ Processor || Intel® Pentium® II Processor
- Intel® Pentium® Pro Processor || Intel® Pentium Processor
- Intel486™ Processors and Earlier

View the Quick Reference Guide by [date of introduction](#)

### Intel® Atom™ Processor

Processor	Clock Speed(s)	Intro Date(s)	Mfg. Process	Transistors	Cache	Addressable Memory	Bus Speed	Typical Use
Intel® Atom™ Processor Z500	800 MHz	Apr-08	45nm	47 million	512 kB L2	4 GB	400MT/s	MID
Intel® Atom™ Processor Z510	1.10 GHz	Apr-08	45nm	47 million	512 kB L2	4 GB	400MT/s	MID
Intel® Atom™ Processor Z520	1.33 GHz	Apr-08	45nm	47 million	512 kB L2	4 GB	533MT/s	MID
Intel® Atom™ Processor Z530	1.60 GHz	Apr-08	45nm	47 million	512 kB L2	4 GB	533MT/s	MID
Intel® Atom™ Processor Z540	1.86 GHz	Apr-08	45nm	47 million	512 kB L2	4 GB	533MT/s	MID
Intel® Atom™ Processor N270	1.60 GHz	Jun-08	45nm	47 million	512 kB L2	4 GB	533 MHz	MID
Intel® Atom™ Processor Z30	1.60 GHz	Jun-08	45nm	47 million	512 kB L2	4 GB	533 MHz	MID

\*Chipset may limit actual physical memory supported by platform

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### Intel® Core™2 Processor

Processor	Clock Speed(s)	Intro Date(s)	Mfg. Process	Transistors	Addressable Memory	Cache	Bus Speed	Typical Use
Intel® Core™2 Extreme Q9000	2 GHz	Dec-08	45nm	410 million	64 GB	6 MB	1066 MHz	Enthusiast Notebook
Intel® Core™2 Duo processor T9800	2.93 GHz	Dec-08	45nm	410 million	64 GB	6 MB	1066 MHz	Mobile PC
Intel® Core™2 Duo processor P9600	2.66 GHz	Dec-08	45nm	410 million	64 GB	6 MB	1066 MHz	Mobile PC
Intel® Core™2 Duo processor P9550	2.66 GHz	Dec-08	45nm	410 million	64 GB	6 MB	1066 MHz	Mobile PC
Intel® Core™2 Duo processor P8700	2.53 GHz	Dec-08	45nm	410 million	64 GB	6 MB	1066 MHz	Mobile PC
Intel® Core™2 Extreme QX9300	2.53 GHz	Aug-08	45nm	820 million	64 GB	12 MB	1066 MHz	Enthusiast Notebook
Intel® Core™2 Quad Q9100	2.26 GHz	Aug-08	45nm	820 million	64 GB	12 MB	1066 MHz	Mobile PC
Intel® Core™2 Duo processor SP9400	2.40 GHz	Aug-08	45nm	410 million	64 GB	6 MB	1066 MHz	Mobile PC

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## Intel Microprocessor QuickReference Guide - Product Family

Intel® Core™2 Duo processor SP9300	2.26 GHz	Aug-08	45nm	410 million	64 GB	6 MB	1066 MHz	Mobile PC
Intel® Core™2 Duo processor SL9400	1.86 GHz	Aug-08	45nm	410 million	64 GB	6 MB	1066 MHz	Mobile PC
Intel® Core™2 Duo processor SL9300	1.60 GHz	Aug-08	45nm	410 million	64 GB	6 MB	1066 MHz	Mobile PC
Intel® Core™2 Duo processor SU9400	1.40 GHz	Aug-08	45nm	228 million	64 GB	3 MB	800 MHz	Mobile PC
Intel® Core™2 Duo processor SU9300	1.20 GHz	Aug-08	45nm	228 million	64 GB	3 MB	800 MHz	Mobile PC
Intel® Core™2 Solo SU 3300	1.20 GHz	Aug-08	45nm	205 million	64 GB	3 MB	800 MHz	Mobile PC
Intel® Core™2 Extreme Processor QX9775	3.20 GHz	Feb-08	45nm	820 million	64 GB	12 M L2	1600 MHz	Enthusiast Notebook
Intel® Core™2 Extreme Processor QX9770	3.20 GHz	Dec-07	45nm	820 million	64 GB	12 M L2	1600 MHz	Enthusiast Notebook
Intel® Core™2 Extreme Processor X9100	3.06 GHz	Jul-08	45nm	410 million	64 GB	6 M L2	1066 MHz	Enthusiast Notebook
Intel® Core™2 Duo Processor P9500	2.53 GHz	Jul-08	45nm	410 million	64 GB	6 M L2	1066 MHz	Mobile PC
Intel® Core™2 Duo Processor P8600	2.40 GHz	Jul-08	45nm	410 million	64 GB	3 M L2	1066 MHz	Mobile PC
Intel® Core™2 Duo Processor P8400	2.26 GHz	Jul-08	45nm	410 million	64 GB	3 M L2	1066 MHz	Mobile PC
Intel® Core™2 Extreme Processor X9000	2.80 GHz	Jan-08	45nm	410 million	64 GB	6 MB	800 MT/s	Enthusiast Notebook
Intel® Core™2 Duo Processor E8300	2.83 GHz	Apr-08	45nm	410 million	64 GB	6 MB	1333 MT/s	Desktop PC
Intel® Core™2 Duo Processor E7200	2.53 GHz	Apr-08	45nm	228 million	64 GB	3 MB	1066 MT/s	Desktop PC
Intel® Core™2 Duo Processor T9600	2.80 GHz	Jul-08	45nm	410 million	64 GB	6 M L2	1066 MHz	Mobile PC
Intel® Core™2 Duo Processor T9500	2.60 GHz	Jan-08	45nm	410 million	64 GB	6 MB	800 MT/s	Mobile PC
Intel® Core™2 Duo Processor T9400	2.53 GHz	Jul-08	45nm	410 million	64 GB	6 M L2	1066 MHz	Mobile PC
Intel® Core™2 Duo Processor T9300	2.50 GHz	Jan-08	45nm	410 million	64 GB	6 MB	800 MT/s	Mobile PC
Intel® Core™2 Duo Processor T8300	2.40 GHz	Jan-08	45nm	410 million	64 GB	3 MB	800 MT/s	Mobile PC
Intel® Core™2 Duo Processor T8100	2.10 GHz	Jan-08	45nm	410 million	64 GB	3 MB	800 MT/s	Mobile PC
Intel® Core™2 Duo Processor E8500	3.16 GHz	Jan-08	45nm	410 million	64 GB	6 MB	1333 MT/s	Desktop PC
Intel® Core™2 Duo Processor E8400	3 GHz	Jan-08	45nm	410 million	64 GB	6 MB	1333 MT/s	Desktop PC
Intel® Core™2 Duo Processor E8200	2.66 GHz	Jan-08	45nm	410 million	64 GB	6 MB	1333 MT/s	Desktop PC
Intel® Core™2 Duo Processor E8190	2.66 GHz	Jan-08	45nm	410 million	64 GB	6 MB	1333 MT/s	Desktop PC
Intel® Core™2 Quad Processor Q9550	2.83 GHz	Jan-08	45nm	820 million	64 GB	12 MB	1333 MT/s	Desktop PC
Intel® Core™2 Quad Processor Q9450	2.66 GHz	Jan-08	45nm	820 million	64 GB	12 MB	1333 MT/s	Desktop PC
Intel® Core™2 Quad Processor Q9300	2.50 GHz	Jan-08	45nm	820 million	64 GB	6 MB	1333 MT/s	Desktop PC
Intel® Core™2 Extreme Processor QX9650	3 GHz	Nov-07	45nm	820 million	64 GB	12 MB	1333 MHz	Enthusiast PC
Intel® Core™2 Extreme Processor QX6850	3 GHz	Jul-07	65nm	582 million	64 GB	8 MB	1066-1333 MHz	Enthusiast PC
Intel® Core™2 Extreme Processor QX6800	2.93 GHz	Apr-07	65nm	582 million	64 GB	8 MB	1066 MHz	Enthusiast PC
Intel® Core™2 Extreme Processor QX6700	2.66 GHz	Nov-07	65nm	582 million	64 GB	8 MB	1066 MHz	Enthusiast PC
Intel® Core™2 Processor Q6700	2.66 GHz	Jul-07	65nm	582 million	64 GB	8 MB	1066 MHz	Desktop PC
Intel® Core™2 Quad Processor Q6600	2.40 GHz	Jan-07	65nm	582 million	64 GB	8 MB	1333 MHz	Desktop PC
Intel® Core™2 Extreme Processor X6800	2.93 GHz	Jul-06	65nm	291 million	64 GB	4 MB	1066 MHz	Desktop PC
Intel® Core™2 Duo Processor E6850-6550	2.33-3 GHz	Jul-07	65nm	291 million	64 GB	4 MB	1333 MHz	Desktop PC
Intel® Core™2 Duo Processor E6700-6500	2.40-2.66 GHz	Jul-06	65nm	291 million	64 GB	4 MB	1066 MHz	Desktop PC

## Intel Microprocessor QuickReference Guide - Product Family

Intel® Core™2 Duo Processor E4500	2.20 GHz	Apr-07	65nm	167 million	64 GB	2 MB	800 MHz	Desktop PC
Intel® Core™2 Duo Processor E4400	2 GHz	Apr-07	65nm	167 million	64 GB	2 MB	800 MHz	Desktop PC
Intel® Core™2 Duo Processor E4300	1.80 GHz	Apr-07	65nm	167 million	64 GB	2 MB	800 MHz	Desktop PC
Mobile Intel® Core™2 Extreme Processor X7900	2.80 GHz	Sep-07	65nm	291 million	64 GB	4 MB	800 MHz	Enthusiast Notebook
Mobile Intel® Core™2 Extreme Processor X7800	2.60 GHz	Jul-07	65nm	291 million	64 GB	4 MB	800 MHz	Enthusiast Notebook
Mobile Intel® Core™2 Duo Processor T7800	2.60 GHz	Sep-07	65nm	291 million	64 GB	4 MB	800 MHz	Mobile PC
Mobile Intel® Core™2 Duo Processor T7600/T7400/T7200	2.33/2.16/2 GHz	Jul-07	65nm	291 million	64 GB	4 MB	667 MHz	Mobile PC
Mobile Intel® Core™2 Duo Processor T7700/T7500/T7300/T7100	2.40/2.20/2/1.80 GHz	Jul-06	65nm	291 million	64 GB	4 MB	800 MHz	Mobile PC
Mobile Intel® Core™2 Duo Processor T5600-T5500	1.83-1.66 GHz	Jul-06	65nm	167 million	64 GB	2 MB	667 MHz	Mobile PC
Mobile Intel® Core™2 Duo Processor L7400/L7200	1.50 GHz/1.33 GHz	Jul-06	65nm	291 million	64 GB	4 MB	667 MHz	Mobile PC
Mobile Intel® Core™2 Duo Processor L7500/L7300	1.60 GHz/1.40 GHz	Jul-06	65nm	291 million	64 GB	4 MB	800 MHz	Mobile PC
Mobile Intel® Core™2 Duo Processor U7700/U7500	1.20/1.06 GHz	Jul-06	65nm	167 million	64 GB	2 MB	533 MHz	Mobile PC
Intel® Core™2 Solo ULV Processor U2200/U2100	1.20/1.06 GHz	Jan-06	65nm	291 million	64 GB	1 MB	533 MHz	Mobile PC

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## Intel® Core™ Processor

Processor	Clock Speed(s)	Intro Date(s)	Mfg. Process	Transistors	Cache	Addressable Memory	Bus Speed	Typical Use
Intel® Core™ i7-965 Extreme Edition	3.20 GHz	Nov-08	45nm	731 million	8 MB	64 GB		Desktop PC
Intel® Core™ i7-940	2.93 GHz	Nov-08	45nm	731 million	8 MB	64 GB		Desktop PC
Intel® Core™ i7-920	2.66 GHz	Nov-08	45nm	731 million	8 MB	64 GB		Desktop PC
Intel® Core™ Duo Processor T2700-2300	2.33-1.66 GHz	Aug-06	65nm	152 million	2MB L2 Cache	2 GB	667 MHz	Mobile PC
Intel® Core™ Duo Processor T2300E	1.66 GHz	May-06	65nm	152 million	2MB L2 Cache	2 GB	667 MHz	Mobile PC
Intel® Core™ Duo Processor T2450/2350/2250/2050	2/1.86/1.73/1.60 GHz	Feb-06	65nm	152 million	2MB L2 Cache	2 GB	533 MHz	Mobile PC
Intel® Core™ Duo LV Processor L2500-L2300	1.83-1.50 GHz	Aug-06	65nm	152 million	2 MB L2 Cache	2 GB	667 MHz	Mini/Thin and Light
Intel® Core™ Duo ULV Processor U2500-U2400	1.20-1.06 GHz	Mar-06	65nm	152 million	2MB L2 Cache	2 GB	533 MHz	Mini/Thin and Light
Intel® Core™ Solo Processor T1350	1.86 GHz	Jul-06	65nm	152 million	2MB L2 Cache	2 GB	533 MHz	Mobile PC
Intel® Core™ Solo Processor T1400/T1300	1.83/1.66 GHz	Aug-06	65nm	152 million	2MB L2 Cache	2 GB	667 MHz	Mobile PC
Intel® Core™ Solo ULV Processor U1300	1.06 GHz	Mar-06	65nm	152 million	2MB L2 Cache	2 GB	533 MHz	Mini/Thin and Light
Intel® Core™ Solo ULV Processor U1500/U1400	1.33/1.20 GHz	Mar-06	65nm	151 million	2MB L2 Cache	2 GB	533 MHz	Mobile PC

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## Intel® Pentium® D Processor

Processor	Clock Speed(s)	Intro Date(s)	Mfg. Process	Transistors	Cache	Addressable Memory	Bus Speed	Typical Use
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Processor 900			micron		Cache		MHz	PC
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Processor	Clock Speed(s)	Intro Date(s)	Mfg. Process	Transistors	Cache	Addressable Memory	Bus Speed	Core Voltage	Thermal Design Power (TDP)	Typical Use
Intel® Pentium® M Processor	1.70 GHz - 900 MHz	Mar-03	130nm	77 million	1024 kB L2 Cache	4 GB	400 MHz			Mini-notebooks, sub-notebooks & tablet PCs
Intel® Pentium® M Processor	2.13-1 GHz	May-04	90nm	140 million	2048 kB L2 Cache	4 GB	533 MHz 400 MHz			Full-size and thin & light Mobile PC
Intel® Pentium® M Processor 770 760 750 740 730	2.13 GHz 2 GHz 1.86 GHz 1.73 GHz 1.60 GHz	Jan-05	90nm	140 million	2 MB L2 Cache		533 MHz	1.260-1.372 V Max Perf. Mode 0.988V Battery Optimized Mode	27 W	Full-size and thin & light Mobile PC
Intel® Pentium® M Processor 765 755 745 735 725 715	2.10 GHz 2 GHz 1.80 GHz 1.70 GHz 1.60 GHz 1.50 GHz	May-04	90nm	140 million	2 MB L2 Cache		400 MHz	1.276-1.340V Max Perf. Mode 0.988V Battery Optimized Mode	21 W	Full-size and thin & light Mobile PC
Intel® Pentium® M Processor	1.70 GHz 1.60 GHz 1.50 GHz 1.40 GHz 1.30 GHz	Mar-03	130nm	77 million	1 MB L2 Cache		400 MHz	1.484V In Max. Perf. Mode 0.956V Battery Optimized Mode (1.40-1.70 GHz)  1.39V in Max Perf. Mode 0.96V in Battery Optimized Mode (1.30 GHz)	24.5 W	Full-size and thin & light Mobile PC

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Processor	Clock Speed(s)	Intro Date(s)	Mfg. Process/ Transistors	Cache	Bus Speed	Core Voltage	Thermal Design Power (TDP)	Typical Use
Intel® Pentium® M Processor 758 738	1.50 GHz 1.40 GHz	July-04	90nm 140 million	2 MB L2 Cache	400 MHz	1.116V in Max. Perf. Mode  0.988V Battery Optimized Mode	10 W	Mini-notebooks, sub-notebooks & tablet PCs
Intel® Pentium® M Processor	1.30 GHz	Apr-04	0.13-micron 77 million	1 MB L2 Cache	400 MHz	1.180V in Max. Perf. Mode  0.956V Battery Optimized Mode	12 W	Mini-notebooks, sub-notebooks & tablet PCs
Intel® Pentium® M Processor	1.20 GHz 1.10 GHz	Mar-03	0.13-micron 77 million	1 MB L2 Cache	400 MHz	1.180V In Max. Perf. Mode  0.956V Battery Optimized Mode	12 W	Mini-notebooks, sub-notebooks & tablet PCs

<b>Ultra Low Voltage</b>								
Processor	Clock Speed(s)	Intro Date(s)	Mfg. Process/ Transistors	Cache	Bus Speed	Core Voltage	Thermal Design Power (TDP)	Typical Use
Intel® Pentium® M Processor 753 733 723	1.20 GHz 1.10 GHz 1 GHz	Jul-04	90nm 140 million	2MB L2 Cache	400 MHz	0.940V In Max. Perf. Mode 0.812V Battery Optimized Mode	5W	Mini-notebooks, sub-notebooks & tablet PCs
Intel® Pentium® M Processor	1.10 GHz	Apr-04	0.13-micron 77 million	1 MB L2 Cache	400 MHz	1.004V in Max. Perf. Mode 0.844V in Battery Optimized Mode	7 W	Mini-notebooks, sub-notebooks & tablet PCs
Intel® Pentium® M Processor	1 GHz 900 MHz	Jun-03 1 GHz Mar. 12, 2003 900 MHz	0.13-micron 77 million	1 MB L2 Cache	400 MHz	1.00V In Max. Perf. Mode 0.85V In Battery Optimized Mode	7 W	Mini-notebooks, sub-notebooks & tablet PCs

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Processor	Clock Speed(s)	Intro Date(s)	Mfg. Process	Transistors	Cache	Addressable Memory	Bus Speed	Typical Use
Dual-core Intel® Itanium Processor 9150M	1.66 GHz	Oct-07	90nm	1.72 billion	24 MB	1024 GB	667 MHz	Demanding enterprise-class servers and high-performance applications
Dual-core Intel® Itanium Processor 9150N	1.60 GHz	Oct-07	90nm	1.72 billion	24 MB	1024 GB	400/533 MHz	Demanding enterprise-class servers and high-performance applications
Dual-core Intel® Itanium Processor 9140M	1.66 GHz	Oct-07	90nm	1.72 billion	18 GB	1024 GB	667 MHz	Demanding enterprise-class servers and high-performance applications
Dual-core Intel® Itanium Processor 9140N	1.60 GHz	Oct-07	90nm	1.72 billion	18 GB	1024 GB	400/533 MHz	Demanding enterprise-class servers and high-performance applications
Dual-core Intel® Itanium Processor 9120N	1.42 GHz	Oct-07	90nm	1.72 billion	12 GB	1024 GB	533 MHz	Demanding enterprise-class servers and high-performance applications
Dual-core Intel® Itanium Processor 9130M	1.66 GHz	Oct-07	90nm	1.72 billion	8 GB	1024 GB	667 MHz	Demanding enterprise-class servers and high-performance applications
Dual-core Intel® Itanium Processor 9110N	1.60 GHz	Oct-07	90nm	1.72 billion	12 GB	1024 GB	400/533 MHz	Demanding enterprise-class servers and high-performance applications
Dual-core Intel® Itanium Processor 9150M	1.66 GHz	Oct-07	90nm	1.72 billion	24 GB	1024 GB	667 MHz	Demanding enterprise-class servers and high-performance applications

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