AMD Opteron™ 6300 Series processor Quick Reference Guide

Real-World Performance. Real-World Value. Do the Math.

AMD Opteron™ 6300 Series processor

Offering up to 37% performance uplift over its previous generation and optimized performance per watt per dollar.[1]

Why Upgrade?	Customer Benefit
Second generation of AMD's modular core architecture – codenamed "Piledriver"	Enables improved TCO with higher performance and better price/performance than the previous generation.[1,2]
Same power envelope	Provides enhanced power efficiency by running applications faster while staying within the same power budget.
Socket compatible	Extends life of investment by leveraging current socket platform.

Product Specifications

	Model Number	Core Count	Base Frequency/ North Bridge	AMD Turbo CORE Frequency P1	AMD Turbo CORE Frequency P0	Power Band	Max DDR3	L2 Cache	L3 Cache
	6386 SE	16	2.8 / 2.0 GHz	3.2 GHz	3.5 GHz	140W	1866	8x2M	16M
	6380	16	2.5 / 2.0 GHz	2.8 GHz	3.4 GHz	115W	1866	8x2M	16M
	6378	16	2.4 / 2.0 GHz	2.7 GHz	3.3 GHz	115W	1866	8x2M	16M
	6376	16	2.3 / 2.0 GHz	2.6 GHz	3.2 GHz	115W	1866	8x2M	16M
NEW!	6370P	16	2.0/2.0 GHz	2.2 GHz	2.5 GHz	99W	1866	8x2M	16M
	6366 HE	16	1.8 / 1.8 GHz	2.3 GHz	3.1 GHz	85W	1866	8x2M	16M
	6348	12	2.8 / 2.0 GHz	3.1 GHz	3.4 GHz	115W	1866	6x2M	16M
	6344	12	2.6 / 2.0 GHz	2.9 GHz	3.2 GHz	115W	1866	6x2M	16M
NEW!	6338P	12	2.3/2.0 GHz	2.5 GHz	2.8 GHz	99W	1866	6x2M	16M
	6328	8	3.2 / 2.0 GHz	3.5 GHz	3.8 GHz	115W	1866	4x2M	16M
	6320	8	2.8 / 2.0 GHz	3.1 GHz	3.3 GHz	115W	1866	4x2M	16M
	6308	4	3.5 / 2.0 GHz	N/A	N/A	115W	1866	2x2M	16M

1. AMD Opteron™ 6300 Series processors are expected to have up to 37% higher java performance/watt than AMD Opteron 6200 Series processors. Estimate based on preliminary measurements of java performance/watt in AMD labs as of August 2012 comparing AMD Opteron™ processor Models 6380 and 6278. SVR-217
2. AMD Opteron™ 6300 Series processors are expected to offer better price-performance than AMD Opteron 6200 Series processors. AMD Opteron 6300 Series pricing will be approximately 10% higher than AMD Opteron 6200 Series -- $1088 for AMD Opteron 6380 vs. $988 for AMD Opteron 6278. AMD Opteron™ 6300 Series processors are expected to have up to 24% higher Java performance than AMD Opteron 6200 Series processors. Estimate based on preliminary measurements of server side Java performance in AMD labs as of August 30, 2012. 1,199,838 operations per second using 2 x AMD Opteron™ processors Model 6278. 1,489,668 operations per second using 2 x AMD Opteron™ processors Model 6380. SVR-224

Technology Specifications

Processor Technology	32-Naometer SOI (silicon-on-insulator) technology
HyperTransport™ Technology Links	Four x16 links at up to 6.4GT/s per link
Memory	Integrated DDR3 memory controller – Up to 51.2 GB/s memory bandwidth per socket
Number of Channels and Types of Memory	Quad channel support for U/RDDR3 up to DDR3-1866; LV, ULV and LRDIMM support
Die Size	315mm^2
Packaging	Socket G34 – 1944-pin organic Land Grid Array (LGA)

AMD SP5100 SouthBridge Product Specifications

USB Ports	12 USB 2.0 + 2 USB 1.1
PCi Bus Support	PCi rev 2.3
Serial ATA	AHCI 1.1 SATA 3.0 GB/s with SW RAID support
SATA Ports	6 (can be independently disabled)
Max TDP/idle	4W/1W
Process Technology	TSMC .13um
Package	528 ball FCBGA, 21x21mm, 0.8mm pitch

AMD SR5650, SR5670, SR5690 I/O Hub Product Specifications

Model Number	Processor Interface	PCI Express®	Number of PCIe® Ports/Engines	Virtualization	Error Detection/ Isolation	Max TDP/Idle (w/c1e)	Process Technology	Package
SR5650	HyperTransport™ 3.0 Technology (5.2 GT/s)	v2.0	22 lanes/ 8 engines	AMD-Vi (IOMMU 1.26)	HyperTransport error handling, PCIe® Advanced Error Reporting, PCIe® end-to-end Cycle Redundancy Check	12.6W/ 5.4W	TSMC 65nm	29 x 29 mm FCBGA
SR5670	HyperTransport™ 3.0 Technology (5.2 GT/s)	v2.0	30 lanes/ 9 engines	AMD-Vi (IOMMU 1.26)	HyperTransport error handling, PCIe® Advanced Error Reporting, PCIe® end-to-end Cycle Redundancy Check	15.4W/ 5.75W	TSMC 65nm	29 x 29 mm FCBGA
SR5690	HyperTransport™ 3.0 Technology (5.2 GT/s)	v2.0	42 lanes/ 11 engines	AMD-Vi (IOMMU 1.26)	HyperTransport error handling, PCIe® Advanced Error Reporting, PCIe® end-to-end Cycle Redundancy Check	18W/ 6.15W	TSMC 65nm	29 x 29 mm FCBGA