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G850



Intel® Pentium® Processor G850  
(3M Cache, 2.90 GHz)

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Specifications


Essentials

Status	Launched
Launch Date	Q2'11
Processor Number	G850
# of Cores	2
# of Threads	2
Clock Speed	2.9 GHz
Intel® Smart Cache	3 MB
Bus/Core Ratio	29
DMI	5 GT/s
Instruction Set	64-bit
Instruction Set Extensions	SSE4.1/4.2
Embedded Options Available	Yes
Lithography	32 nm
Max TDP	65 W
Recommended Channel Price	

Memory Specifications

Max Memory Size (dependent on memory type)	32 GB
Memory Types	DDR3-1066/1333
# of Memory Channels	2
Max Memory Bandwidth	21 GB/s

Graphics Specifications

Processor Graphics	 Intel® HD Graphics
Graphics Base Frequency	850 MHz
Graphics Max Dynamic Frequency	1.1 GHz
Intel® Quick Sync Video	No
Intel® InTru™ 3D Technology,	No
Intel® Insider™	No

Intel® Wireless Display	No
Intel® Flexible Display Interface (Intel® FDI)	Yes
Intel® Clear Video HD Technology	No
Dual Display Capable	Yes
Expansion Options	
PCI Express Revision	2.0
Package Specifications	
Max CPU Configuration	1
TCASE	69.1°C
Package Size	37.5mm x 37.5mm
Sockets Supported	FCLGA1155
Halogen Free Options Available	Yes
Advanced Technologies	
Intel® Turbo Boost Technology	No
Intel® vPro Technology	No
Intel® Hyper-Threading Technology	No
Intel® Virtualization Technology (VT-x)	Yes
Intel® Virtualization Technology for Directed I/O (VT-d)	No
Intel® Trusted Execution Technology	No
AES New Instructions	No
Intel® 64	Yes
Idle States	Yes
Enhanced Intel SpeedStep® Technology	Yes
Thermal Monitoring Technologies	Yes
Intel® Fast Memory Access	Yes
Intel® Flex Memory Access	Yes
Execute Disable Bit	Yes

Ordering and Spec Information

Ordering and Spec Information  
Intel® Pentium® Processor G850 (3M Cache, 2.90 GHz) FC-LGA10D, Tray

Socket	Step	Step TDP	Ordering Code	Spec Code	Halogen Free	VT-x
FCLGA1155		65 W	CM8062301046204	SR05Q	Yes	Yes

Boxed Intel® Pentium® Processor G850 (3M Cache, 2.90 GHz) FC-LGA10D

Socket	Step	Step TDP	Ordering Code	Spec Code	Halogen Free	VT-x
FCLGA1155		65 W	BX80623G850	SR05Q	Yes	Yes

Boxed Intel® Pentium® Processor G850 (3M Cache, 2.90 GHz) FC-LGA10D, for China

Socket	Step	Step TDP	Ordering Code	Spec Code	Halogen Free	VT-x
FCLGA1155		65 W	BXC80623G850	SR05Q	Yes	Yes

Compatible Products

Chipsets

Intel® B65 Express Chipset  
Intel® B65 Platform Controller Hub  
# of CPUs: 1  
Embedded: Yes  
System Price: \$123

System TDP: 71.1W

Intel® C206 Chipset

Intel® C206 Platform Controller Hub  
# of CPUs: 1  
Embedded: Yes  
System Price: \$135  
System TDP: 65W

Intel® H61 Express Chipset

Intel® H61 Platform Controller Hub  
# of CPUs: 1  
Embedded: No  
System Price: \$116  
System TDP: 71.1W

Intel® H67 Express Chipset

Intel® H67 Platform Controller Hub  
# of CPUs: 1  
Embedded: No  
System Price: \$129  
System TDP: 71.1W

Intel® P67 Express Chipset

Intel® P67 Platform Controller Hub  
# of CPUs: 1  
Embedded: No  
System Price: \$126  
System TDP: 71.1W

Intel® Q65 Express Chipset

Intel® Q65 Platform Controller Hub  
# of CPUs: 1  
Embedded: No  
System Price: \$126  
System TDP: 71.1W

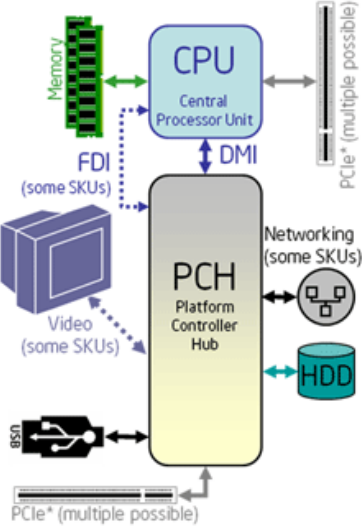
Intel® Q67 Express Chipset

Intel® Q67 Platform Controller Hub  
# of CPUs: 1  
Embedded: Yes  
System Price: \$130  
System TDP: 71.1W

Intel® Z68 Express Chipset

Intel® Z68 Platform Controller Hub  
# of CPUs: 1  
Embedded: No  
System Price: \$134  
System TDP: 71.1W

Block Diagrams



## Disclaimers

“Announced” SKUs are not yet available. Please refer to the Launch Date for market availability.

Enabling Execute Disable Bit functionality requires a PC with a processor with Execute Disable Bit capability and a supporting operating system. Check with your PC manufacturer on whether your system delivers Execute Disable Bit functionality.

64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Consult with your system vendor for more information.

Hyper-Threading Technology (HT Technology) requires a computer system with an Intel® processor supporting HT Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See [www.intel.com/products/ht/hyperthreading\\_more.htm](http://www.intel.com/products/ht/hyperthreading_more.htm) for more information including details on which processors support HT Technology.

Intel® Virtualization Technology requires a computer system with a processor, chipset, BIOS, virtual machine monitor (VMM) and for some uses, certain platform software, enabled for it. Functionality, performance or other benefit will vary depending on hardware and software configurations. Intel Virtualization Technology-enabled VMM applications are currently in development.

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Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See [http://www.intel.com/products/processor\\_number](http://www.intel.com/products/processor_number) for details.

System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

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Halogen Free implies the following:

Bromine and/or chlorine in materials that may be used during processing, but do not remain within the final product are not included in this definition. The halogens fluorine (F), iodine (I), and astatine (At) are not restricted by this standard.

“BFR/CFR and PVC-Free” Definition: :

All PCB laminates must meet Br and Cl requirements for low halogen as defined in IPC-4101B  
For components other than PCB laminates, all homogeneous materials must contain < 900 ppm (0.09%) of Bromine [if the Bromine (Br) source is from BFRs] and < 900 ppm (0.09%) of Chlorine [if the Chlorine (Cl) source is from CFRs or PVC. Higher concentrations of Br and Cl are allowed in homogenous materials of components other than PCB laminates as long as their sources are not BFRs, CFRs, PVC.  
Although the elemental analysis for Br and Cl in homogeneous materials can be performed by any analytical method with sufficient sensitivity and selectivity, the presence or absence of BFRs, CFRs or PVC must be verified by any acceptable analytical techniques that allow for the unequivocal identification of the specific Br or Cl compounds, or by appropriate material declarations agreed to between customer and supplier.

Max Turbo Frequency refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology, which requires a PC with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software, and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel Turbo Boost Technology. See [www.intel.com/technology/turboboost/](http://www.intel.com/technology/turboboost/) for more information.