# SPECIFICATIONS

Essentials

Memory Specifications

**Graphics Specifications** 

**Expansion Options** 

Package Specifications

Advanced Technologies

COMPATIBLE PRODUCTS

BLOCK DIAGRAMS

ORDERING / SSPECS / STEPPINGS

# Specifications

Essentials		
Status	Launched	
Launch Date	Q2'11	
Processor Number	i3-2330E	
# of Cores	2	
# of Threads	4	
Clock Speed	2.2 GHz	
Intel® Smart Cache	3 MB	
DMI	5 GT/s	
Instruction Set	64-bit	
Instruction Set Extensions	AVX	
Embedded Options Available	Yes	
Lithography	32 nm	
Max TDP	35 W	
Memory Specifications		
Max Memory Size (dependent on memory type)	16 GB	
Memory Types	DDR3-1066/1333	
# of Memory Channels	2	
Max Memory Bandwidth	21.3 GB/s	
ECC Memory Supported	No	
Graphics Specifications		
Processor Graphics	Intel® HD Graphics 3000	
Graphics Base Frequency	650 MHz	
Graphics Max Dynamic Frequency	1.05 GHz	
Graphics Output	eDP/DP /HDMI/SDVO/CRT	
Intel® Quick Sync Video	Yes	
Intel® InTru™ 3D Technology,	Yes	
Intel® Wireless Display	Yes	
	Yes	
Intel® Flexible Display Interface (Intel® FDI)	res	
Intel® Flexible Display Interface (Intel® FDI)  Intel® Clear Video HD Technology	Yes	

# COMPARE PRODUCTS

- Add to Compare
- Compare Now (0)
- Visit the Embedded Design Center >

# QUICK LINKS

- Products formerly Sandy Bridge
- Download Datasheet

# ADDITIONAL INFORMATION

# PCN/MDDS INFORMATION

**SR02V** 910245: PCN | MDDS

Expansion Options	
PCI Express Revision	2.0
PCI Express Configurations	1x16 1x4, 2x8 1x4, 1x8 3x4
Package Specifications	
T <sub>JUNCTION</sub>	100 C
Package Size	37.5mm x 37.5mm (rPGA988)
Graphics and IMC Lithography	32 nm
Sockets Supported	FCPGA988
Halogen Free Options Available	Yes

"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 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

Note: Prices subject to change without notice. Prices are for direct Intel customers in 1000-unit bulk quantities and, unless specified, represent the latest technology versions of the products. Taxes and shipping, etc. not included. Prices may vary for other package types and shipment quantities, and special promotional arrangements may apply.

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 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.

All information provided is subject to change at any time, without notice. Intel may make changes to manufacturing life cycle, specifications, and product descriptions at any time, without notice. The information herein is provided "as-is" and Intel does not make any representations or warranties whatsoever regarding accuracy of the information, nor on the product features, availability, functionality, or compatibility of the products listed. Please contact system vendor for more information on specific products or systems.

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 CI 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 (CI) source is from CFRs or PVC. Higher concentrations of Br and CI
are allowed in homogeneous materials of components other than PCB laminates as long as their
sources are not BFRs, CFRs, PVC.
Although the elemental analysis for Br and CI 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 CI 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/ for more information.

Advanced Technologies			
Intel® Turbo Boost Technology	No		
Intel® vPro Technology	No		
Intel® Hyper-Threading Technology	Yes		
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		
Intel® Anti-Theft Technology	Yes		
Intel® My WiFi Technology	Yes		
4G WiMAX Wireless Technology	Yes		
Idle States	Yes		
Enhanced Intel SpeedStep® Technology	Yes		
Intel® Demand Based Switching	No		
Thermal Monitoring Technologies	Yes		
Intel® Fast Memory Access	Yes		
Intel® Flex Memory Access	Yes		
Execute Disable Bit	Yes		

\*Trademarks

©Intel Corporation



Compare Queue (0) Send Feedback

English

Type Here to Search Products

Product Specs

Intel® Processors

2nd Generation Intel® Core™ i3 Processors

Intel® Core™ i3-2300 Mobile Processor Series

i3-2330F



# Intel® Core™ i3-2330E Processor (3M Cache, 2.20 GHz)

**BLOCK DIAGRAMS** 

SPECIFICATIONS COMPATIBLE PRODUCTS

BLOCK DIAGRAMS

ORDERING / SSPECS / STEPPINGS

# **CPU** 1 DMI FDI (some SKUs) **PCH** Platform Controlled Hub (some SKUs)

## COMPARE PRODUCTS

- Add to Compare
- Compare Now (0)

 Visit the Embedded Design Center >

## QUICK LINKS

- · Products formerly Sandy
- Download Datasheet

ADDITIONAL INFORMATION

PCN/MDDS INFORMATION

SR02V

910245: PCN | MDDS

"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

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 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.

Note: Prices subject to change without notice. Prices are for direct Intel customers in 1000-unit bulk quantities and, unless specified, represent the latest technology versions of the products. Taxes and shipping, etc. not included. Prices may vary for other package types and shipment quantities, and special promotional arrangements may apply.

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 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.

All information provided is subject to change at any time, without notice. Intel may make changes to manufacturing life cycle, specifications, and product descriptions at any time, without notice. The information herein is provided "as-is" and Intel does not make any representations or warranties whatsoever regarding accuracy of the information, nor on the product features, availability, functionality, or compatibility of the products listed. Please contact system vendor for more information on specific products or systems.

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 (f), and astatine (At) are not restricted by this standard.

# "BFR/CFR and PVC-Free" Definition:

"BFRCFR and PVC-Free" Definition: All PCB laminates must meet Br and CI 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 (CI) source is from CFRs or PVC. Higher concentrations of Br and CI 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 CI 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 CI compounds, or by appropriate material declarations agreed to between customer and



Compare Queue (0) Send Feedback

English

Type Here to Search Products

Product Specs

Intel® Processors

2nd Generation Intel® Core™ i3 Processors

Intel® Core™ i3-2300 Mobile Processor Series

i3-2330F



# Intel® Core™ i3-2330E Processor (3M Cache, 2.20 GHz)

SPECIFICATIONS
COMPATIBLE PRODUCTS
BLOCK DIAGRAMS
ORDERING / SSPECS / STEPPINGS

Ordering / sSpecs / Steppings Retired and Discontinued

# ORDERING AND SPEC INFORMATION

Ordering and Spec Information Intel® Core™ i3-2330E Processor (3M Cache, 2.20 GHz) FC-PGA10,

Socket	Step	Step TDP	Ordering Code	Spec Code	Halogen Free	VT-x
FCPGA988	D2	35 W	FF8062700849000	SR02V	Yes	Yes

### COMPARE PRODUCTS

- Add to Compare
- Compare Now (0)

 Visit the Embedded Design Center >

# QUICK LINKS

- Products formerly Sandy
- Download Datasheet

ADDITIONAL INFORMATION

PCN/MDDS INFORMATION

SR02V

910245: PCN | MDDS

"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

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/hl/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.

Note: Prices subject to change without notice. Prices are for direct Intel customers in 1000-unit bulk quantities and, unless specified, represent the latest technology versions of the products. Taxes and shipping, etc. not included. Prices may vary for other package types and shipment quantities, and special promotional arrangements may apply.

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 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.

All information provided is subject to change at any time, without notice. Intel may make changes to manufacturing life cycle, specifications, and product descriptions at any time, without notice. The information herein is provided "as-is" and Intel does not make any representations or warranties whatsoever regarding accuracy of the information, nor on the product features, availability, functionality, or compatibility of the products listed. Please contact system vendor for more information on specific products or systems.

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 (f), and astatine (At) are not restricted by this standard.

# "BFR/CFR and PVC-Free" Definition:

"BFRCFR and PVC-Free" Definition: All PCB laminates must meet Br and CI 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 (CI) source is from CFRs or PVC. Higher concentrations of Br and CI 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 CI 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 CI compounds, or by appropriate material declarations agreed to between customer and