# CORE'13

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

Specifications

# SPECIFICATIONS

All
Essentials
Memory Specifications
Graphics Specifications
Expansion Options
Package Specifications
Advanced Technologies
COMPATIBLE PRODUCTS

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BLOCK DIAGRAMS

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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	A	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
		Yes
Intel® Wireless Display		
Intel® Flexible Display		Yes

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# 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	
TJUNCTION	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 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.

### 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.

"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 FRS and region ppm (0.09%) of Chlorine [if the Chlorine (CI) source is from FRS and region ppm (0.09%) of Chlorine [if the Chlorine (CI) source is from FRS and region 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 an applicing method with sufficient specificity than despecificity. It homogeneous of BFRs

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/ 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

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COMPATIBLE PR BLOCK DIAGRAI					ormation Processor (3M C	Cache, 2.20	GHz) FC-PG	A10,	<ul> <li>Add to Compare</li> <li>Compare Now (0)</li> </ul>	
ORDERING / SSI	PECS /	Socket	Step	Step TDP	Ordering Code	Spec Code	Halogen Free	VT-x		
STEPPINGS	FCPGA988	D2	35 W	FF8062700849000	SR02V	Yes	Yes			
All										
Ordering / sSpec	s / Steppings									

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