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Intel® Core™ i3-8145U Processor

4M Cache, up to 3.90 GHz

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Product Collection	8th Generation Intel® Core™ i3 Processors
Code Name	Products formerly Whiskey Lake
Vertical Segment	Mobile
Processor Number ?	i3-8145U
Status	Launched
Launch Date ?	Q3'18
Lithography ?	14 nm
Recommended Customer Price ?	

CPU Specifications

# of Cores ?	2
# of Threads ?	4
Processor Base Frequency ?	2.10 GHz
Max Turbo Frequency ?	3.90 GHz
Cache ?	4 MB Intel® Smart Cache
Bus Speed ?	4 GT/s
Intel® Turbo Boost Technology 2.0 Frequency‡ ?	3.90 GHz
TDP ?	15 W
Configurable TDP-up Frequency ?	2.30 GHz
Configurable TDP-up ?	25 W
Configurable TDP-down Frequency ?	800 MHz
Configurable TDP-down ?	10 W

Supplemental Information

Embedded Options Available ?	No
Datasheet	View now

Memory Specifications

Max Memory Size (dependent on memory type) ?	64 GB
Memory Types ?	DDR4-2400, LPDDR3-2133
Max # of Memory Channels ?	2
Max Memory Bandwidth ?	37.5 GB/s
ECC Memory Supported ‡ ?	No

Processor Graphics

Processor Graphics ‡ ?	Intel® UHD Graphics for 8th Gen Intel® Processors
Graphics Base Frequency ?	300 MHz
Graphics Max Dynamic Frequency ?	1.00 GHz
Graphics Video Max Memory ?	32 GB
Graphics Output ?	eDP/DP/HDMI/DVI
4K Support ?	Yes, at 60Hz
Max Resolution (HDMI)‡ ?	4096x2304@24Hz
Max Resolution (DP)‡ ?	4096x2304@60Hz
Max Resolution (eDP - Integrated Flat Panel)‡ ?	4096x2304@60Hz
DirectX* Support ?	12
OpenGL* Support ?	4.5
Intel® Quick Sync Video ?	Yes
Intel® Clear Video HD Technology ?	Yes
Intel® Clear Video Technology ?	Yes
# of Displays Supported ‡	3
Device ID	0x3EA0

Expansion Options

PCI Express Revision ?	3.0
PCI Express Configurations ‡ ?	1x4, 2x2, 1x2+2x1 and 4x1
Max # of PCI Express Lanes ?	16

Package Specifications

Sockets Supported ?	FCBGA1528
Max CPU Configuration	1
$T_{JUNCTION}$?	100°C
Package Size	46x24

Advanced Technologies

Intel® Optane™ Memory Supported ‡	Yes
Intel® Speed Shift Technology	Yes
Intel® Turbo Boost Technology ‡	2.0
Intel vPro® Platform Eligibility ‡	No
Intel® Hyper-Threading Technology ‡	Yes
Intel® Virtualization Technology (VT-x) ‡	Yes
Intel® Virtualization Technology for Directed I/O (VT-d) ‡	Yes
Intel® VT-x with Extended Page Tables (EPT) ‡	Yes
Intel® Transactional Synchronization Extensions	No
Intel® 64 ‡	Yes
Instruction Set	64-bit
Instruction Set Extensions	Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2
Intel® My WiFi Technology	Yes
Idle States	Yes
Enhanced Intel SpeedStep® Technology	Yes
Thermal Monitoring Technologies	Yes
Intel® Flex Memory Access	Yes
Intel® Identity Protection Technology ‡	Yes
Intel® Smart Response Technology	Yes

Security & Reliability

Intel® AES New Instructions	Yes
Secure Key	Yes
Intel® Software Guard Extensions (Intel® SGX)	Yes with Intel® ME
Intel® OS Guard	Yes
Intel® Trusted Execution Technology ‡	No
Execute Disable Bit ‡	Yes
Intel® Boot Guard	Yes

More support options for Intel® Core™ i3-8145U Processor (4M Cache, up to 3.90 GHz)

Product Support

Downloads and Software

Support Community

Warranty and Replacement

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Refer to Datasheet for formal definitions of product properties and features.

‡ This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory, BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality, performance, and other benefits of this feature may vary depending on system configuration.

Max Turbo Frequency refers to the maximum single-core processor frequency that can be achieved with Intel® Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

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

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

Intel® Smart Response Technology requires a select Intel® Core™ processor, an enabled chipset, Intel® Rapid Storage Technology software, and a properly configured hybrid drive (HDD + small SSD). Depending on system configuration, your results may vary. Contact your system manufacturer for more information.

See http://www.intel.com/content/www/us/en/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading for more information including details on which processors support Intel® HT Technology.

Check http://ipt.intel.com/ for systems that support Intel® Identity Protection Technology (Intel® IPT).

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update.

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/content/www/us/en/processors/processor-numbers.html for details.

Processors that support 64-bit computing on Intel® architecture require an Intel 64 architecture-enabled BIOS.

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