intel.

Intel Core i9-13900KS processor 36 MB Smart Cache Box

Brand : Intel

Product family: Core

Product code:
BX8071513900KS

Product name : i9-13900KS

intel. CORE™ i9

intel vPRO i9

Boxed Intel® Core™ i9-13900KS Processor (36M Cache, up to 6.00 GHz) FC-LGA16A
Intel Core i9-13900KS. Processor family: Intel® Core™ i9, Processor socket: LGA 1700, Processor manufacturer: Intel. Memory channels: Dual-channel, Maximum internal memory supported by processor: 128 GB, Memory types supported by processor: DDR4-SDRAM, DDR5-SDRAM. On-board graphics card model: Intel UHD Graphics 770, On-board graphics card outputs supported: Embedded DisplayPort (eDP) 1.4b, DisplayPort 1.4a, HDMI 2.1, On-board graphics card base frequency: 300 MHz. Market segment: Desktop, Use conditions: PC/Client/Tablet, PCI Express slots version: 5.0, 4.0. Intel® Turbo Boost Max Technology 3.0 frequency: 5.8 GHz, Intel® Thermal Velocity Boost Frequency: 6 GHz

Processor

Processor manufacturer *	Intel
Processor generation	13th gen Intel® Core™ i9
Processor model *	i9-13900KS
Processor family *	Intel® Core™ i9
Processor cores *	24
Processor socket *	LGA 1700
Processor threads	32
Processor operating modes *	64-bit
Performance cores	8
Efficient cores	16
Processor boost frequency	6 GHz
Performance-core boost frequency	5.4 GHz
Performance-core base frequency	3.2 GHz
Efficient-core boost frequency	4.3 GHz
Efficient-core base frequency	2.4 GHz
Processor cache	36 MB
Processor cache type	Smart Cache
Box *	✓
Processor base power	150 W
Maximum turbo power	253 W
Stepping	B0
Bus type	DMI4
Maximum number of DMI lanes	8
Memory bandwidth supported by processor (max)	89.6 GB/s
Processor codename	Raptor Lake
Processor ARK ID	232167

Memory

Maximum internal memory supported by processor	128 GB
Memory types supported by processor	DDR4-SDRAM, DDR5-SDRAM
Memory channels *	Dual-channel
ECC	✓
Memory bandwidth (max)	89.6 GB/s

Graphics

On-board graphics card *	✓
Discrete graphics card *	✗
On-board graphics card model *	Intel UHD Graphics 770
On-board graphics card outputs supported	Embedded DisplayPort (eDP) 1.4b, DisplayPort 1.4a, HDMI 2.1
On-board graphics card base frequency	300 MHz

Features

Commodity Classification Automated Tracking System (CCATS)	740.17B1

Processor special features

Intel® Hyper Threading Technology (Intel® HT Technology)	✓
Intel® Turbo Boost Technology	2.0
Intel® Quick Sync Video Technology	✓
Intel® Clear Video HD Technology (Intel® CVT HD)	✓
Intel® AES New Instructions (Intel® AES-NI)	✓
Enhanced Intel SpeedStep Technology	✓
Intel Trusted Execution Technology	✓
Intel® Speed Shift Technology	✓
Intel® Thermal Velocity Boost	✓
Intel® Adaptive Boost Technology	✓
Intel® Turbo Boost Max Technology 3.0 frequency	5.8 GHz
Intel® Gaussian & Neural Accelerator (Intel® GNA) 3.0	✓
Intel® Thermal Velocity Boost Frequency	6 GHz
Intel® Control-flow Enforcement Technology (CET)	✓
Intel® Thread Director	✓
Intel VT-x with Extended Page Tables (EPT)	✓
Intel® Secure Key	✓
Intel® Active Management Technology (Intel® AMT)	✓
Intel Stable Image Platform Program (SIPP)	✓
Intel® OS Guard	✓
Intel 64	✓
Intel Virtualization Technology (VT-x)	✓
Intel Virtualization Technology for Directed I/O (VT-d)	✓
Intel Turbo Boost Max Technology 3.0	✓
Intel® Boot Guard	✓
Intel® Deep Learning Boost (Intel® DL Boost)	✓

Graphics

On-board graphics card dynamic frequency (max)	1650 MHz
Number of displays supported (on-board graphics)	4
On-board graphics card DirectX version	12.0
On-board graphics card OpenGL version	4.5
On-board graphics card maximum resolution (DisplayPort)	7680 x 4320 pixels
On-board graphics card maximum resolution (eDP - Integrated Flat Panel)	5120 x 3200 pixels
On-board graphics card maximum resolution (HDMI)	4096 x 2160 pixels
On-board graphics card refresh rate at maximum resolution (DisplayPort)	60 Hz
On-board graphics card refresh rate at maximum resolution (eDP - Integrated Flat Panel)	120 Hz
On-board graphics card refresh rate at maximum resolution (HDMI)	60 Hz
On-board graphics card ID	0xA780
Discrete graphics card model *	Not available
Number of execution units	32
Multi-Format Codec Engines	2

Features

Execute Disable Bit	✔
Idle States	✔
Thermal Monitoring Technologies	✔
Market segment	Desktop
Use conditions	PC/Client/Tablet
Maximum number of PCI Express lanes	20
PCI Express slots version	5.0, 4.0
PCI Express configurations	1x16+1x4, 2x8+1x4
Supported instruction sets	SSE4.1, SSE4.2, AVX 2.0
Scalability	1S
CPU configuration (max)	1
Embedded options available	✘
Direct Media Interface (DMI) Revision	4.0
Export Control Classification Number (ECCN)	5A992C

Processor special features

Intel® Volume Management Device (VMD)	✔
Mode-based Execute Control (MBE)	✔
Intel® vPro™ Platform Eligibility	✔
Intel® Standard Manageability (ISM)	✔
Intel® One-Click Recovery	✔
Intel® Stable IT Platform Program (SIPP)	✔
Intel® Remote Platform Erase (RPE)	✔
Intel® Virtualization Technology with Redirect Protection (VT-rp)	✔
Intel vPro® Enterprise Platform Eligibility	✔
Intel® Threat Detection Technology (TDT)	✔
Intel® Hardware Shield Eligibility	✔
Intel® Total Memory Encryption - Multi Key	✔
Intel vPro® Essentials Platform Eligibility	✔

Operational conditions

Tjunction	100 °C

Technical details

Target market	Gaming, Content Creation
OpenCL version	3.0
Launch date	Q1'23
Status	Launched

Logistics data

Harmonized System (HS) code	8542310001

Packaging data

Package type	Retail box

Other features

L2 cache	32768 KB
Maximum internal memory	128 GB
Graphics output	eDP 1.4b, DP 1.4a, HDMI 2.1

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