



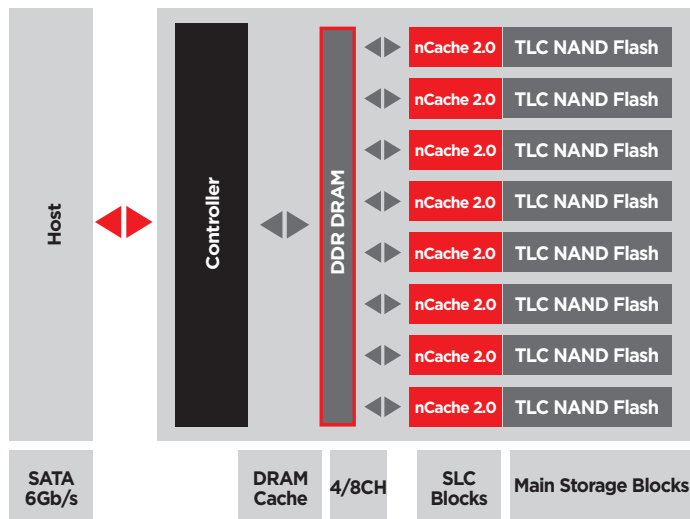
SanDisk® X300 SSD (Solid State Drive)

RELIABLE AND RESPONSIVE PERFORMANCE WITH LOW POWER



Based on state of the art 1Ynm TLC flash technology, the SanDisk X300 SSD delivers performance with high reliability and low power. It features nCache™ 2.0, SanDisk's next generation tiered caching technology, designed to improve SSD responsiveness for most corporate and consumer workloads.

The X300 is highly versatile and can accommodate a wide range of computing platforms. It is available in 2.5" 7mm cased, M.2 2280, and mSATA form factors with capacities of 128GB, 256GB, 512GB, and 1TB.



SATA	SAS	PCIe
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X300 KEY FEATURES

NCACHE 2.0 - IMPROVES SSD RESPONSIVENESS FOR HIGH PRODUCTIVITY WORKLOADS

ON CHIP COPY (OCC) - OFFLOADS WORK FROM CONTROLLER AND DDR RESOURCES TO IMPROVE PERFORMANCE

MULTI PAGE RECOVERY (MPR) - PROVIDES AN ADDITIONAL LAYER OF DATA PROTECTION USING PAGE-LEVEL STRIPING WITH DISTRIBUTED PARITY

LOW POWER WITH DEVSPLP SUPPORT AND INSTANTGO COMPATIBILITY

UP TO 1TB CAPACITIES IN 2.5" 7MM, M.2 2280, AND MSATA FORM FACTORS

TESTED FOR >72 TBW (128GB) AND >80 TBW (256GB-1TB)

SATA REVISION 3.2 6GB/S INTERFACE

WINDOWS® WHCK CERTIFIED

DYNAMIC THERMAL THROTTLING

nCache 2.0 Technology

nCache 2.0 uses a combination of both SLC and TLC flash blocks to improve endurance, increase efficiency, and boost performance. By first writing all of the data to SLC blocks, the write amplification on the TLC blocks is minimized. The new On Chip Copy (OCC) mechanism then independently copies the SLC cache blocks into the TLC blocks in main storage, thus offloading the burden from the controller and DDR resources. This leaves the DRAM cache and controller free for other tasks.

Reliability

The X300 SSD also includes a new and robust on-the-fly error handling mechanism called Multi-Page Recovery (MPR). It uses page-level striping with distributed parity for an added layer of data protection and can recover errors that other traditional error correction mechanisms cannot.

Low Power

The X300 utilizes a SATA DEVSLP low-power mode, compatible with Microsoft® InstantGo, to minimize its power consumption during idle periods. DEVSLP enables the SSD to completely shut off its SATA PHY, thus resulting in much lower power consumption compared to SATA Slumber. This increases the amount of usable hours per battery charge, which is essential for modern mobile devices.

TCO

SanDisk SSDs are more reliable than HDDs, which can improve total cost of ownership (TCO) by reducing downtime due to hard drive failures. They also offer lower latency and greater read/write speeds over traditional HDDs¹, so users may experience a noticeable improvement in responsiveness. IT departments can extend the useful life of their PC inventory by upgrading the HDDs to the X300 SSD, thus prolonging replacement cycles and maximizing asset value.

SanDisk®

SOLID STATE FOR BUSINESS

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SanDisk® X300 SSD Product Features and Specifications

Specifications are preliminary and subject to change

Device	SanDisk X300 SSD			
Form Factor	7mm 2.5-inch Cased, M.2 2280, mSATA			
Interface	SATA Revision 3.2 (6 Gb/s) backward compatible to SATA Revision 2.0 (3 Gb/s) and SATA Revision 1.0 (1.5 Gb/s)			
Performance³	128GB	256GB	512GB	1TB
Seq. Read up to (MB/s)	520	520	530	520
Seq. Write up to (MB/s)	415	470	470	460
Rand Read up to (IOPS)	73k	91k	94k	98k
Rand Write up to (IOPS)	40k	57k	70k	67k
Endurance (TBW)⁴	up to 72	up to 80	up to 80	up to 80
Power (Average)	128GB	256GB	512GB	1TB
Active Power (mW)⁵	95	95	95	95
Max Read Operating (mW)	2,300	2,450	2,500	2,500
Max Write Operating (mW)	2,950	3,900	3,750	3,850
Slumber (mW)	70	70	70	70
DEVSLP (mW)⁶	<7	<7	<7	<7
MTTF⁷	Up to 1,750,000 hours			
Weight (g) 2.5"/M.2 2280/mSATA	55.8/7.15/7.4			
Product Dimensions	2.5":	7.00mm x 69.85mm x 100.5mm		
	M.2 2280:	2.23mm x 22.00mm x 80.0mm		
	mSATA:	3.60mm x 29.85mm x 50.80mm		
Environmental				
Operating Temperatures	0°C to 70°C			
Non-operating Temperatures	-55°C to 85°C			
Operating Vibration	5.0 gRMS, 10 - 2000 Hz			
Non-operating Vibration	4.9 gRMS, 7 - 800 Hz			
Operating/Non-operating Shock	1,500 G @0.5 msec half sine			
Certifications	FCC, UL, TUV, KC, BSMI, VCCI			

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Contact information

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Specifications subject to change without notice.
¹ As compared to 7200 RPM SATA 2.5" hard drive. Based on published specifications and internal benchmarking tests.
² Performance is based on the CrystalDiskMark benchmark using a 1000MB range for an X300 SSD setup as a secondary drive on a GIGABYTE GA-Z77X-UD5H host system consisting of an Intel® i7-3770 3.4GHz, 8M, Ivy Bridge, 8GB RAM, Windows 8, and IRST 12.9.
³ Up to stated speed. Based on internal testing; performance may vary based on host device. 1 megabyte (MB) = 1 million bytes. IOPS = input/output operations per second. TBW = terabytes written.
⁴ Approximations based on SanDisk internal metrics that quantifies how much data can be written to an SSD in its lifespan expressed in TBW.
⁵ Power measurements 25°C. Based on FW version with HiPM-enable.
⁶ Typical power for 256GB product.
⁷ MTTF = Mean time between failures based on parts stress analysis.
⁸ 5 year warranty in regions not recognizing "limited". See www.sandisk.com/wug for more details.