# SanDisk® X300s SE-SSD
(Self-Encrypting Solid-State Drive)

INTRODUCING SECURITY, LOW POWER, HIGH PERFORMANCE, AND

Ideal for corporate PCs and notebooks, the SanDisk X300s SE-SSD[1] (Self-Encrypting Solid-State Drive) is built on industry-leading 1Ynm multi-level cell (MLC) NAND flash technology and incorporates hardware-based full disk encryption and advanced power management.

The X300s features support for the TCG Opal 2.0 and Microsoft® Encrypted Hard Drive security standards and a SATA DEVSLP low-power mode that is compatible with Microsoft® InstantGo. Users will appreciate greater productivity with more useable hours per battery charge[2] while companies can seamlessly secure their data for their on-the-go employees.
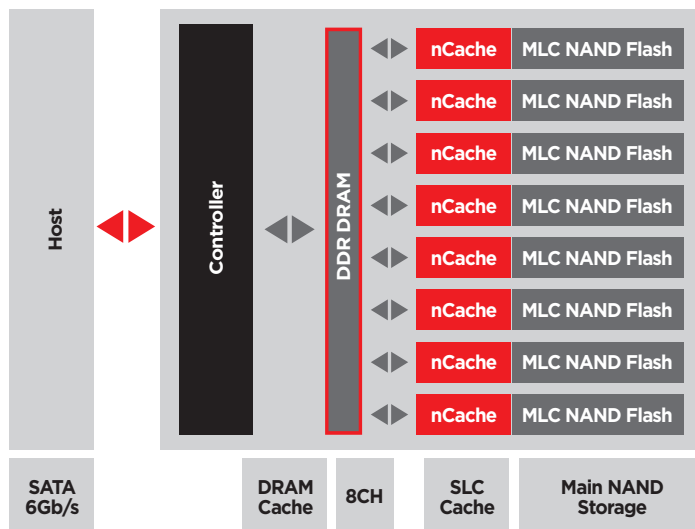
SATA	SAS	PCIe	

X300S KEY FEATURES

AVAILABLE IN TWO FORM FACTORS: 2.5" 7MM AND M.2 2280

CAPACITIES OF UP TO 1TB

SE-SSD (SELF-ENCRYPTING SOLID-STATE DRIVE) – HARDWARE-BASED FULL-DISK ENCRYPTION USING 256-BIT AES ENCRYPTION

TCG OPAL AND MICROSOFT® ENCRYPTED HARD DRIVE – COMPLIANT WITH INDUSTRY-STANDARD SECURITY SPECIFICATIONS (3RD PARTY ISVs-INQUIRE WITHIN)

ADVANCED POWER MANAGEMENT WITH DEVSLP LOW-POWER MODE – COMPATIBLE WITH MICROSOFT® INSTANTGO

TESTED FOR >80 TERABYTES WRITTEN (TBW) – EQUIVALENT TO 43GB/DAY OVER 5 YEARS

NCACHE™ – NON-VOLATILE WRITE CACHE

SATA REVISION 3.2 6GB/S INTERFACE

WINDOWS® WHCK CERTIFIED

DYNAMIC THERMAL THROTTLING

Performance

The X300s uses a tiered caching structure to improve random write performance. Modern operating systems typically access the storage device using small 4KB access blocks. These small access blocks conflict with the physical block structure (>1MB) of newer flash memory technology. To bridge this difference, the X300s employs three storage layers: Volatile cache - DDR DRAM cache, nCache™ - A non-volatile flash write cache, Mass storage – MLC NAND flash.

The nCache™ write cache is used to accumulate small writes at high speed then flush and consolidate them into the larger MLC section of the NAND flash memory array.

Security[3]

The X300s SE-SSD seamlessly encrypts the drive data on the fly using hardware-based 256-bit AES encryption. It supports the following industry-standard security specifications: ATA Security Feature Set, TCG Opal 2.0, Microsoft® Encrypted Hard Drive (TCG OPAL 2.0 + IEEE 1667)

Thermal Throttling

A performance throttling technique is used as a safety measure to protect the integrity of the data and prevent excessive heat dissipation. The X300s employs an on-board thermal sensor to monitor the SSD's critical component temperature. If it exceeds the normal range, drive performance is reduced until the temperature decreases to an acceptable level, at which time full performance is restored.

Contact information
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SanDisk® X300s SE-SSD Product Features and Specifications Specifications are preliminary and subject to change					
Device	SanDisk X300s SE-SSD				
Form Factor	7mm 2.5-inch Cased, M.2 2280				
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)				
Performance[4]	64GB	128GB	256GB	512GB	1TB
Seq. Read up to (MB/s)	510	510	520	520	TBD
Seq. Write up to (MB/s)	140	300	460	460	TBD
Rand Read up to (IOPS)	71k	85k	90k	96k	TBD
Rand Write up to (IOPS)	37k	66k	80k	80k	TBD
Endurance (TBW)[5]	>40	>80	>80	>80	TBD
Latency Read	55µs	55µs	55µs	55µs	TBD
Latency Write	65µs	65µs	65µs	65µs	TBD
Power (Average)	64GB	128GB	256GB	512GB	1TB
Active Power (mW)[6]	120	120	120	120	TBD
Max Read Operating (mW)	2,900	2,900	3,000	3,100	TBD
Max Write Operating (mW)	2,600	3,600	4,900	5,000	TBD
Slumber (mW)	80	80	80	90	TBD
DEVSLP (mW)[7]	5.0	5.0	5.0	6.5	TBD
MTTF[8]	Up to 2,000,000 hours				
Weight (g) 2.5"/M.2 2280	51±3/7±0.5		55±3/7±0.5		TBD
Product Dimensions	2.5": 7.0mm x 69.85mm x 100.5mm				
	M.2 2280: 2.23mm x 22.0mm x 80.0mm				

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, BSMI, VCCI
Warranty[9]	5 Years

Ordering Information

SKU #	Capacity	Form Factor	Security	Pack-Out
SD7SN3Q-064G	64GB	M.2	Not Avail	1022/1122
SD7SB3Q-064G	64GB	2.5"	Not Avail	1022/1122
SD7UN3Q-128G	128GB	M.2	Enabled	1022/1122
SD7UB3Q-128G	128GB	2.5"	Enabled	1022/1122
SD7UN3Q-256G	256GB	M.2	Enabled	1022/1122
SD7UB3Q-256G	256GB	2.5"	Enabled	1022/1122
SD7UN3Q-512G	512GB	M.2	Enabled	1022/1122
SD7UB2Q-512G	512GB	2.5"	Enabled	1022/1122
SD7UB2Q-010T	1TB	2.5"	Enabled	1022/1122

Pack-Out Option:
1022 = Bulk
1122 = Singulated 10-Pack