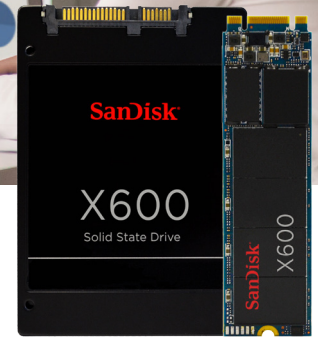# SanDisk® X600 3D NAND SATA SSD (Solid State Drive)

EXCEPTIONAL STORAGE OPTIONS FOR A BROAD RANGE OF COMPUTING APPLICATIONS

High Performance and High Capacity for Computing

Based on Western Digital 64-layer 3D NAND, the SanDisk® X600 3D NAND SATA SSD delivers high performance, high capacity, and superior endurance. In capacities of up to 2TB, the X600 3D NAND SATA SSD achieves this while expending up to 25% less power than our previous generations of SATA SSDs.

The X600 3D NAND SATA SSD combines Western Digital's state-of-the-art 64-layer 3D NAND technology with our proven SSD platform. It also incorporates nCache™ 2.0, a tiered caching technology designed to improve responsiveness for corporate and consumer workloads. nCache 2.0 uses a combination of both SLC (single level cell) and TLC flash blocks to improve endurance, increase efficiency, and boost performance. Writing data first to the SLC cache reduces write amplification on the TLC blocks.

Lower Power, Higher Capacity and Thin Form Factors Offers Design Flexibility

The X600 3D NAND SATA SSD is optimized for the demanding power management requirements of ultra-thin and small form factor products.

It features Device Sleep (DEVSLP), more frequent use of low-power modes, and faster transitions between various power modes. Also included for superior error recovery, DataGuard™ Client provides a robust on-the-fly error handling technology.

With a variety of design and integration options for manufacturers and systems builders, the X600 3D NAND SATA SSD is available in either an SATA 2.5"/7mm cased or an M.2 2280 form factor, with capacities of 128 gigabytes[2] (GB), 256GB, 512GB, 1 terabyte[2] (TB), and 2 terabyte[2] (TB).

SATA	SAS	PCIe	

X600 KEY FEATURES

WESTERN DIGITAL 64-LAYER 3D NAND DELIVERS CAPACITIES UP TO 2TB FOR A MULTITUDE OF DESIGN OPTIONS

ACTIVE POWER DRAW UP TO 25% LESS POWER THAN THE PREVIOUS GENERATION OF 2D SSDS

2/5"/7MM CASED OR M.2 2280 FORM FACTORS PROVIDE NEEDED SPACE SAVINGS AND DESIGN FLEXIBILITY.

LEADING EDGE SATA PERFORMANCE UP TO 560MB/S SEQUENTIAL READ

SanDisk X600 3D NAND SATA SSD Product Features and Specifications
Specifications are subject to change

Form Factor		2.5″/7mm cased, M.2 2280
Interface[1,2]		SATA 6 Gb/s
Size & Weight	2.5″/7mm cased: 128GB - 1TB:	7.00mm x 69.85mm x 100.2mm @ 37.4g
	2TB:	7.00mm x 69.85mm x 100.2mm @ 59.7g
	M.2 2280: 128GB - 1TB:	2.23mm x 22.00mm x 80.0mm @ 7 ± 1g
	2TB:	2.38mm x 22.00mm x 80.0mm @ 7 ± 1g

Performance [4KB QD32][2,3]	128GB	256GB	512GB	1TB	2TB
Sequential Read up to (MB/s)	530	550	560	560	560
Sequential Write up to (MB/s)	490	525	530	530	530
Random Read up to (IOPS)	82K	95K	95K	95K	95K
Random Write up to (IOPS)	74K	81K	84K	84K	84K
Endurance (TBW)[4]	72	100	200	400	500
Power[5]	128GB	250GB	500GB	1TB	2TB
Avg. Active Power (mW)	52	52	52	60	60
Max Read Operating (mW)	2050	2200	2050	2550	2650
Max Write Operating (mW)	1700	2250	3350	3750	3800
Slumber (mW)	52	56	56	56	56
DEVSLP (mW)	5-7	5-7	5-7	5-12	5-12

Reliability	
MTTF[6]	Up to 1.75M hours

Environmental	
Operating Temperatures	0°C to 70°C
Non-operating Temperatures	-55°C to 85°C
Operating Vibration	5.0 grRMS, 10 – 2000 Hz
Non-operating Vibration	4.9 gRMS, 7 – 800 Hz
Shock	1,500 G @ 0.5 msec half sine
Certifications	FCC, UL, TUV, KC, BSMI, VCCI, Morocco
Limited Warranty[7]	5 years

[1] Backwards compatible to SATA 3 Gb/s and SATA 1.5 Gb/s.
[2] As used for storage capacity, one megabyte (MB) = one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabit per second (Gb/s) = one billion bits per second. Effective maximum SATA 6 Gb/s transfer rate calculated according to the Serial ATA specification published by the SATA-IO organization as of the date of this specification sheet. Visit www.sata-io.org for details.
[3] Measured using CrystalDiskMark, 1000MB LBA range, on Laptop Asus N550J HM86 Express chipset, Windows 8.1 Pro with Intel iRST version 14.8.16.1063, secondary drive with Intel® Core™ i7-4700HQ 2.4GHz, 8GB DDR3 1600MHz RAM.
[4] TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.
[5] Power measurements at 25°C. Based on firmware version with DIPM enabled. Measured using MobileMark® 2014 on Lenovo T560, Intel® Core™ i5-6200U 2.30GHz Processor, DDR3L 4GB 1600MHz RAM, Windows 10 with Intel Driver iRST 14.8.0.1042.
[6] MTTF = Mean Time To Failure based on internal testing using Telcordia stress part testing.
[7] See http://www.sandisk.com/wug for regional specific warranty details.

	Capacity	Form Factor	SKU
X600	128GB	2.5″/7mm cased	SD9SB8W-128G
X600	256GB	2.5″/7mm cased	SD9SB8W-256G
X600	512GB	2.5″/7mm cased	SD9SB8W-512G
X600	1TB	2.5″/7mm cased	SD9SB8W-1T00
X600	2TB	2.5″/7mm cased	SD9SB8W-2T00
X600	128GB	M.2 2280	SD9SN8W-128G
X600	256GB	M.2 2280	SD9SN8W-256G
X600	512GB	M.2 2280	SD9SN8W-512G
X600	1TB	M.2 2280	SD9SN8W-1T00
X600	2TB	M.2 2280	SD9SN8W-2T00
X600 SED	128GB	2.5″/7mm cased	SD9TB8W-128G
X600 SED	256GB	2.5″/7mm cased	SD9TB8W-256G
X600 SED	512GB	2.5″/7mm cased	SD9TB8W-512G
X600 SED	1TB	2.5″/7mm cased	SD9TB8W-1T00
X600 SED	2TB	2.5″/7mm cased	SD9TB8W-2T00
X600 SED	128GB	M.2 2280	SD9TN8W-128G
X600 SED	256GB	M.2 2280	SD9TN8W-256G
X600 SED	512GB	M.2 2280	SD9TN8W-512G
X600 SED	1TB	M.2 2280	SD9TN8W-1T00
X600 SED	2TB	M.2 2280	SD9TN8W-2T00

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