SanDisk® X100 SSD (Solid State Drive)

Introducing SATA 6Gb/s high performance and reliability, low power for an enhanced user experience.

SanDisk® X100 SSD, based on 24nm MLC NAND flash, brings all the benefits of high performance SSDs to ultrabooks, notebooks and desktops at a competitive price.

SanDisk X100 SSD can be used as either a standalone storage device, or as a caching solution, in a dual drive configuration. In both situations X100 SSD provides superior performance over the stand alone hard disk drive, meeting Intel® Ultrabook™ performance requirements.

The SanDisk X100 SSD is offered in a 2.5", mSATA and customized form factors taking full advantage of the SATA 6Gb/s high performance interface.

High performance. Enhanced user experience.

SanDisk X100 SSD has high read/write performance to support daily computing usages that require enhanced multitasking capabilities. Lacking such capabilities may significantly impact the user experience. Applications such as email, Web browsing, music and virus scans utilize a high mixture of sequential and random read/write patterns, which require advanced multi-tasking capabilities from the storage device.

SanDisk X100 SSD addresses these issues by implementing a tiered caching technology, a hierarchical three storage layer architecture that directs data pattern streams to one of the 3 most suitable layers: volatile cache, nCache™ [1] or mass storage. The data pattern streams are then being monitored and rearranged by a proprietary innovative multi-streaming feature that reduces fragmentation and improves locality of data. This enables fast user response, no stuttering, better multitasking capabilities and significantly improves the drive's long-term data endurance[6], ensuring an enhanced user experience.

Extreme reliability. Long lasting SSDs.

SanDisk X100 SSD is built to provide long lasting high quality usage, to exceed the duration of your computing device. From the selection of quality NAND components together with extensive validation tests and advanced flash management (AFM), X100 SSD brings high reliability to support your computing needs:

- SanDisk X100 SSD utilizes a patrol read error prevention mechanism.

SanDisk X100 SSD Benefits:

- Superior performance for standalone and dual drive storage solutions
- Up to 500/420 MB/s Sequential Read/Write[3] for compressed and uncompressed data
- Extreme endurance of 80 TBW in a 128GB Workload (Windows® 7 typical)
- 2.5" SATA, mSATA and customized form factors
- Low power consumption: as low as 75mW (Typical standby Mode)[2]
- Wide capacity offering: 32GB - 512GB[4]
- Enhance user experience
  - Fast boot and application launch time
  - Enhance multi tasking capabilities

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1. nCache™ acceleration technology is a large Non Volatile Write Cache, a unique feature in SanDisk SSD that improves random write performance to ensures an improved user experience.Studies show that modern operating systems mostly access the storage device using 4k access blocks. The cache is filled during these small write commands and emptied during idle time when the host is not accessing the drive, with no risk of data loss. For a typical everyday use, the write performance that the users see is the nCache™ (burst) high performance, and not steady state (sustained) SanDisk X100 SSD performance. Based on IOmeter 4K random write test.

2. With Slumber (SATA PHY state) power mode and DIPM enabled.

3. Based on SanDisk internal testing; performance may be lower depending upon host device, OS and application. Technical specifications are preliminary and subject to change. performance numbers indicated are applicable to 256GB and up.

4. 1 gigabyte (GB) = 1 billion bytes. 1 terabyte (TB) = 1 trillion bytes. Some capacity not available for data storage.

5. MTBF – Mean Time Between Failures based on part stress analysis.

6. Approximations based on an industry metric, introduced by SanDisk, that quantifies how much data can be written to a SSD in its lifespan expressed in terabytes written (TBW). Data is written using typical PC transfer size, written at a constant rate over the life of the SSD and data is retained for at least 1 year upon TBW exhaustion. Based on SanDisk internal measurements, a typical client PC user writes 4 GB/day.

7. Applies to SanDisk X100 SSD 128 GB. Dimensions and weight vary based on form factor and capacity.

8. MobileMark® 2007 Workload

SanDisk®

This mechanism checks and corrects errors that occur over time in the background without impacting performance.

- SanDisk X100 SSD utilizes advanced NAND recovery techniques coupled with powerful EDC/ECC capability that can reliably read data under severe conditions.

These mechanisms reduce the errors probability thus significantly improving the drive's reliability.

Low power consumption. Longer battery life.

Power budgets are paramount in mobile computing applications due to the need for long battery life. SanDisk® X100 SSD consumes less power than a typical hard disk drive hence enabling mobile PC users to work longer when they are away from their desk.

Moreover, SanDisk® X100 SSD supports Power Classes, which provide the ability to limit the SSD performance and in turn, reduce peak power consumption. This allows for optimized flexibility between power and performance to enable OEMs to take advantage of numerous SanDisk® X100 SSD benefits even when maximum performance is not required.

SanDisk® SSD – A Trusted Partner:

Supported by vertical integration and over 20 years of experience in the flash memory business, SanDisk continues to deliver ground breaking solutions that repeatedly revolutionize the world of computing and beyond. SanDisk storage solutions empower global manufactures to deliver products that are aligned with market needs. SanDisk is a leader in flash memory innovation and a trusted partner that you can count on to guide you into the future.

SanDisk® X100 SSD product features and specifications	
Device	SanDisk X100 SSD
Form Factor	Cased 2.5" 7mm and 9.5mm, mSATA, customized
Interface	SATA 6Gb/s
Capacity (GB)[4]	32, 64, 128, 256, 512
Performance[3] Sequential Read/Write 4K random Read/Write	 Up to 500 MB/s 420 MB/s Up to 38,000/22,000 IOPS
MTBF[5]	Up to 2,000,000 hours
Endurance[6]	80 TBW
Size	Cased 2.5": 69.85 mm x 100.5 mm x 7 mm and 9.5mm mSATA: 51 mm x 30 mm x 3.6 mm
Weight[7]	Cased 2.5": 66 g mSATA: 7 g
Low Power Consumption	
DC Supply	Cased 2.5": +5.0V, ±5% mSATA: +3.3V ±5%
Standby Mode (Typical)[2]	75mW (@ 3.3V)
Active Power (Typical)[8]	150mW (@ 3.3V)
Environmental Specifications	
Operating Temperatures	0°C to +70°C
Storage Temperatures	-55°C to +85°C
Acoustic Noise	0dB
Other Features	
NCQ (QD=32), Paged Based Architecture, nCache[1], TRIM Support	