

# The SanDisk® G3 SSD Family

Enhancing Satisfaction of PC Users



## Highlights

### High Endurance

Up to 80 TBW LDE<sup>1</sup>

### High Reliability

MTBF<sup>2</sup> of 2,000,000 hours

### Wide Variety

60 GB<sup>5</sup>, 120 GB in 1.8" and 2.5" form factors

A great way of improving the user's PC experience and satisfaction is **within reach**. Including SanDisk MLC, 3rd generation solid state drives in PCs, SanDisk® G3 SSD, can make a world of difference.

By boosting the PC's performance and increasing its reliability, SanDisk G3 SSD will improve the end users' overall computing experience. This results in greater satisfaction on the user's part and carries through all the way to the PC manufactures that are able to offer more robust, high performing SSD enabled PCs.

With its extensive IP portfolio along with ExtremeFFS™ page-based flash-management technology and All Bit Line (ABL) architecture, SanDisk G3 SSD enhances the performance and reliability of mainstream notebooks, ultra light PCs, desktops and performance machines.

# SanDisk®

# SanDisk G3 SSD Means...

## SanDisk G3 SSD Means Greater Speed

PC users will notice a significant performance enhancement when they power up their machines with SanDisk G3 SSD:

- **Boot up and shut down** — a system with SanDisk G3 SSD will boot up and shut down the operating system faster than a 7200 RPM HDD<sup>4,7</sup>
- **Launching and running applications** — a system with SanDisk G3 SSD will launch and run applications much faster than a 7200 RPM HDD<sup>4,7</sup>
- **TRIM Support** — SanDisk G3 SSD supports the ATA-8 standard, which is designed to support the Data Set Management command. This command is the key in enabler to the TRIM feature. TRIM contributes to a substantial gain in the product performance, by informing SanDisk G3 SSD of the unused media space and allowing it to continuously manage its resources and retain optimized performance throughout its lifespan.

## SanDisk G3 SSD Means Improved Reliability

In the area of notebooks reliability, hard drive failure is the most common and, potentially, the most serious of all problems as not only do the users lose immediate function of their computer, but often also lose irreplaceable, unbacked data.

With this in mind, SanDisk G3 SSD is the ideal storage solution for mobile end users and others who rely heavily on the data they keep in their notebooks:

- **Endurance:** SanDisk G3 SSD will offer up to 80 TBW of LDE (Long-term Data Endurance)<sup>1</sup>.

- **Reliability:** SanDisk G3 SSD will offer a mean time between failures (MTBF) value of up to 2M hours<sup>2</sup>.
- **Shock:** With no moving parts, SanDisk G3 SSD is rated to perform at up to 1,500 G<sup>6</sup>.
- **Environment:** SanDisk G3 SSD will be able to withstand wider temperature ranges, outdoor environments and transit conditions.

## SanDisk G3 SSD Means Low Power Consumption

SanDisk's G3 SSD delivers improved power efficiency hence, increasing battery life and enabling laptop users to work longer when they are away from their desks. With no moving parts, SanDisk G3 SSD will remain cool and quiet while in operation, which results in even greater power efficiency.

## SanDisk G3 SSD Means Lighter, Thinner Notebooks

Any PC customer who values the thinnest, lightest system configurations will appreciate SanDisk G3 SSD's compact designs. At almost half the weight of a 7200 RPM HDD, as little as 65 grams, a 2.5" SanDisk G3 SSD will enable up to 5% reduction in the weight of the system.

# SanDisk G3 SSD is all about Innovation and Experience

## Legacy and Expertise

SanDisk, a trusted leader in flash memory, has over 20 years of experience in innovating industries by creating powerful new technologies that have revolutionized the world of storage and computing.

SanDisk offerings empower thousands of products by hundreds of global manufacturers to deliver better end-user experiences.

## An Innovation Leader

Through a rich IP portfolio and a constant investment in innovation, SanDisk is committed to rapidly expand the NAND flash memory market, which has become the storage technology of choice in a growing number of consumer and computing devices.

- **ExtremeFFS™ Technology<sup>8</sup>** — ExtremeFFS™ technology, SanDisk's page-based flash management algorithm, has the potential to accelerate random write performance thus extend the endurance of SanDisk® G3 SSDs inside PCs that use operating systems such as Windows XP and Windows 7.
- **All-Bit Line NAND Architecture** — SanDisk's patented All-Bit-line (ABL) NAND architecture, with efficient programming algorithms, enhances SanDisk G3 SSD performance by improving write performance significantly. Furthermore, ABL technology reduces power consumption

due to its efficient all-bit-line voltage sensing.

- **LDE (Long-term Data Endurance)** — LDE is SanDisk's newly introduced industry metric to evaluate the endurance of SSDs. LDE is the first industry metric that expresses simply and useably "How long will this SSD last in my system?" By rating the SSD in the total amount of writes that can occur, terabytes written (TBW), users can ensure they choose the right SSD for their needs. LDE is under consideration for standardization in JEDEC<sup>1</sup>.

Read more about SanDisk technology at [www.sandisk.com/ssd/](http://www.sandisk.com/ssd/).

## Leading SSD Education

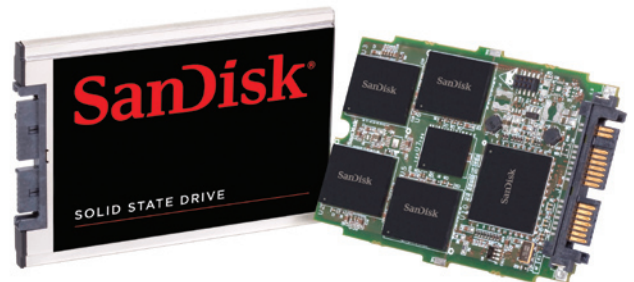
### SanDisk SSD Academy

SanDisk shares its extensive SSD and flash knowledge in the SanDisk SSD Academy. In the SSD Academy, available on [www.sandisk.com/ssd](http://www.sandisk.com/ssd), you can learn about the innovative flash technology enabling SSDs and about the relevant market trends and shifts.

Watch movies online or download podcasts, as the industry knowledge is at your finger tips from the basics to more advanced topics, such as: Flash Technology Tutorials, SSD Markets channel, SSD Usage & User Experience and more.

## SanDisk G3 SSD Family of Products

Categories	Subcategories <sup>3</sup>	C25-G3	C18-G3
<b>General</b>	Interface	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ
	Form Factor	2.5"	1.8"
	Capacity <sup>5</sup>	60, 120 GB	60, 120 GB
<b>Performance</b>	Read Sequential	Up to 220 MB/s <sup>3</sup>	Up to 220 MB/s <sup>3</sup>
	Write Sequential	Up to 120 MB/s <sup>3</sup>	Up to 120 MB/s <sup>3</sup>
	Trim Support	Yes	Yes
<b>Reliability</b>	MTBF <sup>2</sup>	2,000,000 hrs	2,000,000 hrs
	LDE <sup>1</sup> @ 60, 120 GB	40, 80 TBW	40, 80 TBW
<b>Electrical</b>	Voltage	5 Vdc	3.3 Vdc
	Power Active <sup>6</sup>	0.4 W	0.4 W
	Idle Power	0.3 W	0.3 W
<b>Temperature</b>	Operating	0°C to 70°C	0°C to 70°C
	Non-Operating	-55°C to 95°C	-55°C to 95°C
<b>Shock</b>	Operating and Non-Operating	1,500 G @ 0.5 msec	1,000 G @ 0.5 msec
<b>Vibration</b>	Operating and Non-Operating	20 G @ 10-2000 Hz	20 G @ 10-2000 Hz
<b>Acoustic Noise</b>	Active	None	None
<b>Mechanical Dimensions</b>	Height (typical)	9.5 mm	5.0 mm
	Length (typical)	100.5 mm	78.5 mm
	Width (typical)	69.85 mm	54 mm
	Weight (typical)	65 g	30 g



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- <sup>1</sup> LDE (Long-term Data Endurance) - 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 LDE exhaustion. Based on SanDisk internal measurements, a typical client PC user writes 4 GB/day.
- <sup>2</sup> MTBF - Mean time Between Failures based on part stress analysis.
- <sup>3</sup> SanDisk G3 SSD product specifications are based on SanDisk internal measurements with Intel's iometer test application. Based on SanDisk internal testing; performance may vary depending upon host device. 1 megabyte (MB) = 1 million bytes.
- <sup>4</sup> ST9250410AS, 7200 RPM SATA 2.5" based on published specifications and SanDisk internal benchmarking tests.
- <sup>5</sup> 1 gigabyte (GB) = 1 billion bytes. Some capacity not available for data storage.
- <sup>6</sup> Based on internal power testing during user workload operation (Typical).
- <sup>7</sup> Based on SanDisk internal testing using Microsoft Windows Performance Tool Kit. Performance varies depending upon OS and application. Platform: Dell Optiplex 760, Intel Core 2 Processor E8400, 2 GB DDR2; OS: Microsoft Windows 7 Ultimate unless specifically stated otherwise; HDD: Seagate 7200 RPM SATA 250 GB; SSD: SanDisk G3 SATA 60 GB.
- <sup>8</sup> ExtremeFFS is a SanDisk page-based flash management algorithm, optimized for popular operating systems, has the potential to greatly increase SSD random write speeds and efficiency thus accelerating the performance and extending the endurance of SSDs inside PCs.