

# The SanDisk® G3 SSD Family

Strengthening Your Customers' Satisfaction



#### SanDisk G3 SSD Highlights

Capacities: 60GB, 120GB, 240GB

Form Factor: 2.5", 1.8"

40,000 vRPM<sup>1</sup>

Up to 160TBW LDE<sup>2</sup>

A great way of improving your customers' satisfaction is within reach. Just recommend that they include SanDisk's third generation of solid state drives (SSDs) in their notebook computers.

By boosting the notebooks' performance and increasing their reliability, SanDisk G3 SSDs help to improve the end users' overall computing experiences.

This results in greater satisfaction on their part—and on the part of your customers.

SanDisk, the industry leader in flash storage, is in a unique position to lead the shift to SSDs in mobile computing.

Using flash enhanced by its extensive IP portfolio along with ExtremeFFS™ flash-management technology and All Bit Line (ABL) architecture, SanDisk G3 SSDs can maximize the performance and reliability of your customers' notebooks, desktops and performance machines.

## SanDisk®

### SanDisk G3 SSDs Mean Greater Speed

Both your customers and their end users will notice a difference when they power up notebooks with SanDisk G3 SSDs: faster system performance.

- Reading and writing data — A SanDisk G3 SSD runs at up to 40,000 virtualRPM (vRPM)<sup>1</sup>. That's 8 times as fast as a standard hard disk drive (HDD).
- Booting up — A system with a SanDisk G3 SSD boots its operating system up to twice as fast as one with a traditional HDD<sup>3</sup>.
- Launching applications — A system with a SanDisk G3 SSD could launch applications up to 10 times as fast as one with a traditional HDD<sup>3</sup>.

### SanDisk G3 SSDs Mean Improved Reliability

In the area of laptop and notebook reliability, hard drive failure is the most common and, potentially, the most serious of all problems.

With this in mind, SanDisk G3 SSDs are ideal storage solutions for mobile end users and others who rely heavily on the data they keep in their notebooks because:

- SanDisk G3 SSDs offer up to 160 TBW of LDE, sufficient for over 100 years of typical client PC usage<sup>2</sup>.

- SanDisk G3 SSDs offer mean time to failure (MTTF) rates of up to 2M hours — 6x higher than those of traditional HDDs<sup>4,7</sup>.
- With no moving parts, SanDisk G3 SSDs are rated to perform at up to 1,000 G/0.5 msec of shock—or 40 times the shock levels of HDDs<sup>7</sup>.
- SanDisk G3 SSDs are able to withstand extreme temperature ranges, outdoor environments and transit conditions.

Exceptional reliability like this results in fewer system repairs, better data security and a return on investment (ROI) as little as 12 months<sup>9</sup>.

### SanDisk G3 SSDs Mean Lighter, Thinner Notebooks

Any of your customers who value the thinnest, lightest system configurations will want to know about SanDisk G3 SSDs .

- At less than half the weight of a standard HDD—as little as 44 grams—a SanDisk G3 SSD represents a up to 5% reduction in the weight of a subnotebook system.

This makes SanDisk G3 SSDs the best choice when you want to keep the system weight low and the profile of a notebook as slim and sleek as possible.

In both the short and long term, SanDisk G3 SSDs are helping to change the landscape of mobile computing for the better.

Summary of Major SanDisk® G3 SSD Benefits vs. HDD				
Major Benefits		SanDisk G3 SSD <sup>6</sup>	HDD <sup>7</sup>	SSD vs. HDD
<b>Performance</b>	vRPM <sup>1</sup>	40,000	7200	~ 5x faster
	Average access time [FN]	0.11ms	11ms	~ 100x faster
	Sequential Read [FN]	200MB/s	59MB/s	3x Faster
	Sequential Write [FN]	140MB/s	59MB/s	2x Faster
<b>Reliability</b>	MTTF <sup>4</sup>	2,000,000	300,000	~ 6x better
	Shock (Operation)	1500G	300G	5x More Rugged
<b>Noise</b>	Acoustics (Active)	None	29dB	No noise
<b>Weight</b>		44g	115g	Lighter

**SanDisk G3 SSDs: Backed by a Legacy of Global Innovation**

SanDisk has a 20-year legacy of transforming industries by creating powerful new technologies that have revolutionized the world of portable computing.

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

SanDisk is a trusted leader in flash memory. Through a joint venture with Toshiba, SanDisk is committed to rapidly expanding the market for NAND flash memory, which has become the storage technology of choice in a growing number of consumer and computing devices.



SanDisk® G3 SSD Family of Products		C25-G3	C18-G3
<b>Interface</b>		SATA II	SATA II
<b>Form Factor</b>		2.5"	1.8"
<b>Capacity (GB)<sup>5</sup></b>		60, 120, 240	60, 120, 240
<b>Mechanical Dimensions</b>	Height	9.5mm	5mm
	Weight	44gr	44gr
<b>Performance</b>	Sequential Read <sup>6</sup>	200MB/s	200MB/s
	Sequential Write <sup>6</sup>	140MB/s	140MB/s
	Average access time <sup>6</sup>	0.11ms	0.11ms
<b>Reliability</b>	MTTF <sup>4</sup>	2,000,000 hrs	2,000,000 hrs
<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	1,500G/0.5msec	1,500G/0.5msec
<b>Acoustic Noise</b>	Active	None	None
<b>vRPM<sup>1</sup></b>		40,000	40,000
<b>LDE<sup>2</sup></b>		40/80/160	40/80/160

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- <sup>1</sup> vRPM (virtual Revolutions Per Minute) - a metric to compare SSD performance in client PCs with the HDD and with other SSDs. vRPM answers the question how fast would a HDD have to spin in order to deliver the same performance as a SSD in a client PC.  $vRPM = 50 / ((0.5 / 4kB \text{ random read IOPS}) + 0.5 / 4kB \text{ random write IOPS})$
- <sup>2</sup> LDE (Long-term Data Endurance) - an industry metric, introduced by SanDisk, that quantified how much data can be written to an SSD in its lifespan expressed in terabytes written (TBW). Data is written using typical PC transfer size distribution of writes, written at a constant rate over the life of the SSD and data is retained for at least 1 year upon LDE exhaustion. Typical client PC user writes 4GB/day, Based on SanDisk internal measurements.
- <sup>3</sup> Boot up and application launch speed approximations based on SanDisk stopwatch tests of a Dell Latitude D620 (Intel Core Due processor T7200, 2.0GHz, 1GB of RAM running Microsoft Vista). Results may vary with different systems.
- <sup>4</sup> MTTF - Mean time to failure based on ongoing SanDisk reliability tests.
- <sup>5</sup> 1 gigabyte (GB) = 1 billion bytes, 1 megabyte (MB) = 1 million bytes;
- <sup>6</sup> SanDisk C25-G3 and C18-G3 SSD Performance: anticipated performance based on SanDisk internal estimates and projections. 1 megabyte (MB) = 1 million bytes; 1 gigabyte (GB) = 1 billion bytes
- i. Performance is characterized using some or all of the following tools
- ii. H2BENCH 3.6; average access time = average seek time + average latency time
- iii. IOMETER 2003.12.16
- <sup>7</sup> HDD ST9120823AS, 7200 RPM SATA 2.5" based on published specifications and SanDisk internal characterization.
- <sup>8</sup> H2BENCHW 3.6 results, comparison on average results, source: SanDisk corporation 2008
- <sup>9</sup> Based on TCO calculator on [www.sandisk.com/ssd](http://www.sandisk.com/ssd)

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