

# Samsung SSD 840 Series

Data Sheet



## Highlights

- 2.5" SATA 6Gb/s SSD for Desktop PC & Laptop PC
- Samsung 3-core MDX controller
- Samsung 2x nm Toggle DDR 2.0 NAND Flash memory
- Up to 512MB Samsung DDR2 SDRAM cache memory
- Magician software for SSD management
- Samsung Data Migration software for data migration
- 7mm profile

## The Single Best Upgrade for Your PC

With its simple 3-Step migration solution and industry-leading IOPS performance, the Samsung SSD 840 Series is the single best upgrade you can make for your PC. Samsung's new data migration software takes

the guesswork and headache out moving your operating system and precious data to your new SSD. And, once you're up and running, the 840 Series' amazing IOPS speeds empower you to multitask like never before possible.

Upgrading to an SSD is the easiest and most economical way to breathe new life into an aging PC. Today, most PC performance woes are the result of slow read and write speeds on behalf of the main storage device, not a lack of CPU performance. Upgrading to a Samsung SSD 840 Series can breathe new life into your old PC by enhancing boot-up speed, application loading, and multi-tasking performance.

## Superior Reliability

As the world's #1 DRAM, NAND Flash, and SSD supplier, Samsung has unique, industry-leading engineering resources, technologies, and manufacturing processes as well as more stringent quality and testing standards. All Samsung SSDs are designed and built completely in-house, rather than sourcing generic parts from the market. The Samsung SSD 840 Series is optimized for exceptional,

sustained performance and unrivaled reliability through its specially-engineered wear-leveling and garbage collection algorithms and is backed by a 3-year limited warranty.

## Magician Software

Samsung's Magician software has been completely redesigned with an extreme focus on usability. Magician eliminates the confusion and uncertainties of SSD management, making it simple for users to maximize the performance and lifetime of their Samsung SSD. In addition to its performance maintenance features, Magician also provides system information and facilitates performance benchmarking, performance optimization, OS optimization, firmware updates, secure erasing,

and over provisioning. Newly introduced Drive Health Status, Total Bytes Written (TBW), and Disk Scan & Error Reporting functionality make Magician one of the most useful storage utilities available.

## A complete, user-friendly solution

The Samsung SSD 840 series is available with a simple, all-in-one installation kit. The kit comes with SATA data and power cables, screws, a 2.5" to 3.5" adapter bracket, a SATA to USB adapter cable to facilitate easy data migration, and a mounting spacer so that laptops with traditional 9.5mm drive bays can accommodate the Samsung SSD 840 Series' slim 7mm profile.

## Technical Specifications

Samsung SSD 840 Series	
Capacity	120GB, 250GB, 500GB
Dimensions (L* W* H)	100 x 69.85 x 7 (mm)
Interface	SATA 6Gb/s (compatible with SATA 3Gb/s and SATA 1.5Gb/s)
Form Factor	2.5-inch
NAND Flash Memory	2x nm Samsung Toggle DDR 2.0 NAND Flash Memory (400Mbps)
DRAM Cache Memory	256MB (120GB model) or 512MB(250GB & 500GB models) LPDDR2
Performance*	Sequential Read: Max. 540 MB/s (250GB/500GB) Max 530MB/s (120GB)
	Sequential Write: Max. 330 MB/s (500GB) Max. 250 MB/s (250GB) Max. 130 MB/s (120GB)
	4KB Random Read (QD32): Max. 98,000 IOPS (500GB) Max. 96,000 IOPS (250GB) Max. 86,000 IOPS (120GB)
	4KB Random Write(QD32): Max. 70,000 IOPS (500GB) Max. 62,000 IOPS (250GB) Max. 32,000 IOPS (120GB)
	4KB Random Read (QD1): Max. 7,900 (120GB/250GB/500GB)
	4KB Random Write(QD1): Max. 29,000 (120GB/250GB/500GB)
TRIM Support	Yes (Requires OS Support)
Garbage Collection	Yes
S.M.A.R.T	Yes
Encryption	AES 256-bit Full Disk Encryption (FDE)
Weight	Max. 62.5g (256GB/512GB) Max. 61g (64GB/128GB)
Reliability	MTBF: 1.5 million hours
Power Consumption	Average : 0.071W ** (Typical)      Idle : 0.046W*** (Typical)
Temperature	Operating: 0°C to 60°C Non-Operating: -55°C to 95°C
Humidity	5% to 95%, non-condensing
Vibration	Operating: Random: 2.17Grms (7~800Hz) Non-Operating: Random: 3.08Grms (7~800Hz) Swept sine: 20G peak @ 10~2KHz
Shock	1500G & 0.5ms (Half sine)
Warranty	3 years limited

\* Sequential Performance measurements based on CrystalDiskMark. Random performance measurements based on Iometer. Performance may vary based on firmware version.

\*\* Active power measured during execution of MobileMark 2007 in Windows 7. Values calculated using laptop computer and represent system-level power consumption.

\*\*\* DIPM enabled value

## Product Lineup

Density	Model Name	Box Contents	Model Name
120 GB	MZ-7TD120	Drive only	MZ-7TD120BW
		Installation Kit	MZ-7TD120KW
250 GB	MZ-7TD250	Drive only	MZ-7TD250BW
		Installation Kit	MZ-7TD250KW
500 GB	MZ-7TD500	Drive only	MZ-7TD500BW
		Installation Kit	MZ-7TD500KW

## Accessories

Accessory	Drive Only	Installation Kit
Samsung software & manual CD	✓	✓
3.5" bracket with screws	N/A	✓
SATA data and power cables	N/A	✓
Mounting spacer	N/A	✓
SATA to USB adapter cable	N/A	✓
SSD Installation Guide	✓	✓

For more information, please visit

[www.samsung.com/ssd](http://www.samsung.com/ssd)

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