The most common types of SSD hard drives and how to distinguish them

SSD hard drive is a familiar term if you regularly use computers. Join TipsMake to learn about the most popular types of SSD hard drives today.

While using computers, you have probably heard the term SSD hard drive many times. However, do you understand the details of SSD hard drives and tips on how to distinguish them? If the answer is no, don't rush through the article, the information in the article will help you clearly understand SSD hard drives. Let's find out with TipsMake now.

What is an SSD?

SSD hard drive stands for **Solid State Drive** , a type of drive that exists in solid state and has similar functions to an HDD hard drive. The biggest difference between SSD and HDD is that it has better read, write and data processing speeds, giving superior computer performance. SSD hard drives use semiconductor memory such as SRAM, DRAM, FLASH to store data instead of mechanical devices such as HDD drives.

Picture 1 of The most common types of SSD hard drives and how to distinguish them

How fast is an SSD hard drive?

Among the current types of hard drives, SDD is considered a hard drive with quite fast processing and data retrieval speed. If the laptop is equipped with an SSD, it only takes about 10 seconds to boot the computer.

Picture 2 of The most common types of SSD hard drives and how to distinguish them

There are two most common types of SSD in the market: SSD using NAND SLC flash (contains 1 bit of data/1 memory cell) and SSD using NAND MLC flash (contains 2 or more bits of data/1 memory cell). . Flash SLC provides good durability and superior access speed. They are especially used in high-end SSDs. Meanwhile, MLC flash is often equipped in popular SSD categories.

Along with that, SSD hard drives also support TRIM technology. This technology places special emphasis on the processing speed of data recording tasks. Thanks to that, the reading speed of the SSD hard drive after a period of use will not decrease.

According to records, the fastest processing and data retrieval speed that an SSD hard drive can meet is 550MB/s. The performance of reading random data is in the range of 80,000/65,000 data input/output/1 second.

Types of SSDs on the market

Currently there are many types of SSDs on the market. Among them, the most popular types of SSD today include:

SSD SATA 3

SATA 3 SSD has been widely used in the market. The outstanding advantage of this SSD line is that it is compatible with most previous generation laptops and PCs. Connecting a SATA 3 SSD hard drive gives you extremely fast data processing speed. Processing speed of more than 600Mb/s, many times faster than SATA 2.

Picture 3 of The most common types of SSD hard drives and how to distinguish them

3.5 inch SATA SSD

3.5 inch SATA SSD hard drives are often equipped on desktop computers. However, this type of hard drive has been around for a long time so it is no longer very popular and is being gradually replaced by 2.5 inch SSDs. Therefore, if you want to find this hard drive on the market, you will encounter many difficulties.

2.5 inch SATA III SSD

Among the types of SSD hard drives, **2.5 inch SATA III SSD** is the most widely used product line on the market. The data reading and writing speed of this product line reaches a maximum of 6Gbps - about 550MB/s. Besides, it also has the great advantage that the selling price is quite cheap, so it is often integrated on popular segment laptops.

Some manufacturers are currently also launching 2.5 inch SATA III NAND SSD versions that integrate advanced memory chip technology. This helps the hard drive have a longer lifespan and comes with a slightly higher selling price compared to other hard drives.

Picture 4 of The most common types of SSD hard drives and how to distinguish them

1.8 inch micro SATA SSD

1.8 inch SSD is known as a hard drive line that uses the Micro SATA interface standard. The shape of the hard drive model does not have too many differences. However, in terms of size, a 1.8-inch SSD is larger than a regular RAM stick but much smaller than a 2.5-inch SSD. Therefore, this type of hard drive is often integrated in many small and light laptops.

mSATA SSD

mSATA SSD is considered a miniature version of the 2.5 inch SSD. In terms of size, the mSATA SSD is similar to the Wifi Card with a length and width of 50x30mm. However, you will also come across some half size mSATA hard drive models that are only about 20x30mm. In terms of speed, this type of SSD has the ability to read and write 550MB/s like a 2.5 inch SSD.

Picture 5 of The most common types of SSD hard drives and how to distinguish them

SSD M.2 SATA

This hard drive model has similarities with the 2.5 inch SATA III SSD when using the SATA III data interface standard. Therefore, its data reading and writing speed is within the limit of 6Gbps (550MB/s).

The size of this **M.2 SATA SSD** line is quite small, smaller than the 2.5 inch SATA III SSD and shaped like a stick of RAM. Therefore, people often integrate this hard drive model into thin and light computers.

The special thing is that the M2 SATA SSD uses 3 different standards, respectively 2242, 2260 and 2280 standards. The surface of the hard drive keeps the default width of 22m and has a length that varies from 42, 60 to 80mm. . However, the most popular is still the 2280 standard with a moderate price. The other two standards have fewer manufacturers so their prices are higher and they are harder to find.

In the current market, M.2 SATA NAND SSD hard drives are most commonly used. Because it has good data storage capabilities and faster transmission speeds. This hard drive model uses NAND flash hard drives such as:

1. **Single-level flash (SLC):** Allows storage of 1 bit of data per hard drive cell. Therefore, this hard drive provides fast and durable transfer speeds. The only downside is that it can't store much data.
2. **Multilayer Flash (MLC)** : Allows users to store 2 bits of data on each hard drive cell. Therefore, the data storage capacity compared to single-level flash is better but the speed is slower and the price is also cheaper.
3. **Three-level flash (TLC)** : Allows storage of 3 bits of data in each hard drive cell. The advantage is affordable price, larger storage capacity compared to MLC. The downside is slow speed but can be improved by using caching.
4. **Quad-Layer Flash (QLC)** : It allows users to store data at higher density. The price of QLC is quite cheap, but the set is not durable so it is only used in low-cost blood lines.

SSD M.2 PCIe

M.2 PCIe SSDs are currently using the PCL Express communication standard. The read and write speed of this type of memory drive reaches 32Gbps (4 GB/s). This speed is much superior to M2 SATA SSD and other types of hard drives.

The similarity between M.2 PCIe SSD and M2 SATA SSD lies in the M2 slot. Therefore, this type of SSD also has the same 3 standards as the previous M.2 SATA SSD. The common size of this type of SSD is 22mm (width) and 80mm (length). Other types (22×42 mm, 22×60 mm) are less common.

How to quickly distinguish popular types of SSD hard drives

The fastest way to differentiate **SSD hard drives** is to look at their unique characteristics. As follows:

mSATA SSD hard drive

1. This type of hard drive is shaped like a wifi card found on a laptop. Their structure is in miniature form exactly like a traditional SSD hard drive.
2. The read-write speed of this type of hard drive reaches a maximum of 550 Mbps/500 Mbps.

3. This hard drive slot is often integrated on some popular laptop lines, B75 mainboards, etc.

M2 standard SSD hard drive

This is considered a new generation hard drive model. The appearance of the M2 standard SSD hard drive is exactly like the RAM bar of a laptop. At present, it is divided into two main types: M2 SATA and M2 PCIe.

1. M2 SATA SSD has a socket structure with 2 slots on both sides and usually has dimensions of 22×42 and 22×80 mm. Read and write speeds are within the threshold of 550 Mbps/550 Mbps.
2. M2 PCIe has a socket shape with a slot on the right and usually has dimensions of 22×80 mm. Its read-write speed reaches about 3.5 Gbps/2.5 Gbps.

Picture 6 of The most common types of SSD hard drives and how to distinguish them

Micro SATA standard SSD hard drive

This type of hard drive is not really popular on the market. They are known by another name: uSATA. Remember, its name starts with the letter u and not mSATA. The average size of this type of drive is 1.8 inches and is usually manufactured by Samsung and Intel. It is structured with 2 blocks of 7 Pin data and 9 Pin (7+2) power.

How to check hard drive speed

You can **check the read and write speed** of your hard drive through CrystalDiskMark software. Type this software name in the search bar of your browser and download it to your computer. After that, you need to turn off all software your computer is running to start CrystalDiskMark.

Specific steps to test hard drive speed are as follows:

Step 1 : After starting the software you will see a parameter table as shown.

Picture 7 of The most common types of SSD hard drives and how to distinguish them

Step 2 : Click on drive **C: (%)** , now a list of drives in the computer will appear. You can reinstall the drive you want to test. Next click on **All** .

Picture 8 of The most common types of SSD hard drives and how to distinguish them

Step 3: Let the software run for a short period of time and you will see the results displayed right on the screen. The parameters you need to pay most attention to right now are:

1. **SEQ1M and SEQ8M:** This is a number that clearly displays the read-write speed continuously and sequentially to areas of the drive.
2. **RND4K** is the speed of reading and writing random 4Kb data, moving continuously in memory.

Picture 9 of The most common types of SSD hard drives and how to distinguish them

Most of the time, you only need to rely on the SEQ1M index to accurately evaluate the read and write speed of the hard drive.

Epilogue

Do you know the types of SSD hard drives yet? Basically, SSD hard drives are used quite a lot on the market and they always promote their great effects. If you are not knowledgeable about hard drives but want to buy a hard drive suitable for your computer, go to reputable stores for detailed advice before buying.

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