

Explore Pages – Which Memory Card is Right for Me?

By Alfredo Troche 3/20

Which Memory Card is Right for Me?

Determining which memory card is right for you can be a bit daunting considering how many choices one has. Many devices use memory cards – like your smartphone, pro and consumer cameras, drones, tablets, gaming consoles, electronic instruments, and video surveillance to name a few.

SanDisk, a Western Digital company, and one of the world’s largest memory card manufacturers – makes a wide variety memory cards for all sorts of everyday applications. This guide can help you understand flash memory, it’s different form factors, speeds, classes and uses, and how you can choose the right product to serve your specific needs.

What is a Memory Card?

Memory cards (often referred to as Flash Storage) are compact electronic data storage devices used for storing digital information, like computer files, folders, music, photos, and more. Not to be confused with USB Flash drives, there cards have no USB interface, but rather, require a dedicated slotted SD port. SD cards and microSD cards are commonly used in portable electronic devices. Think of them as little ‘cartridges’ that can fill up with data, are removable in most cases, and can transfer data between supported devices.

Memory card technology is based on flash memory - invented by Toshiba in 1980. Early uses were limited to the internal workings of computers; and today they are used for a wide variety of purposes in millions of devices worldwide. While dozens of form factors have existed over the years, these are currently the three most popular:

Form Factor	Year Introduced	Capacities	Speed	
SD Card (Secure Digital Card)	1999	16GB – 1TB	2MB/s – 90MB/s	
microSD Card	2005	16GB – 1TB	2MB/s – 90MB/s	

Compact Flash	1994	32GB – 512GB	Up to 90/MB/s	
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Which Memory Card is Best for My Needs?

Choosing the right memory card depends on the device you're using it for – most memory cards are removable, and can be replaced with a similar, compatible unit.

- **Smartphones** – Most smartphones on the market today use a **microSD Card**, however, some devices (like the Apple iPhone) do not have a slot for a Micro SD card – their memory is instead built into the phone and cannot be expanded.
- **Gaming** – The [Nintendo Switch](#) is one of the only consoles currently on the market to utilize a **microSD Card** to store downloaded games and game data. Other gaming consoles like PlayStation and Xbox can be expanded by using an external USB drive like WD_Black Gaming HDDs and SSDs.
- **Cameras and Drones** – Today's large format videos and photos - like UHD and 4K - demand a speedy card that is resilient and dependable. Most can accept either an **SD Card** or a **microSD card** that can range in size up to 1TB.
- **Surveillance** – Capacity is crucial when capturing long stretches of 24/7 surveillance footage – choose a high-capacity HDD or SSD for your NVR system. Use a **microSD card** designed for outdoor use when it comes to adding interchangeable on-board storage to a compatible surveillance camera – and choose a high capacity to minimize rewrite cycles.

SD Cards vs. microSD Cards

People often ask what is the difference between an SD card and a microSD card? The answer is basically size – SD cards came first and were made to be used in early digital cameras. In fact, most laptops and PCs today include an SD card slot for easy uploading of photos and content from camera to PC.

As devices got more compact (especially smartphones), the microSD card was introduced. In a form factor about one-quarter the size of an SD card, the microSD cards could hold just as much data as it's predecessors but could fit in a much smaller slot. Most microSD cards come with an SD card adapter, so that they can be used in older devices that only have an SD card slot; which

makes microSD cards more versatile, since they become backward-compatible with the adapter.

Durable and Reliable

SanDisk's family of SD™ and microSD™ memory cards are thoroughly tested under harsh real-life conditions:

- **Water Proof** - Tested to withstand submersion up to 72 hours in 1m salt or fresh water.
- **Temperature Proof** - Capable of tolerating extreme operating temperatures from -13°F (-25°C) or 185°F (85°C) for up to 28 hours
- **Shock and Vibration Proof** - Capable of withstanding up to 500Gs of shock.
- **X-ray Proof** – Manufactured to be immune to airport x-rays.
- **Magnet Proof** - Capable of withstanding up to 5000 Gauss of static magnetic field.
- **Impact Proof** - Able to withstand drops up to 5 meters (16.4 feet).

Video Quality and Speed

Video and photos can vary in file size and quality – here are the two most popular resolutions:

- **SD Video** - Standard-definition video (or SD Video) refers to videos of standard quality and resolution. The resolution of 720 x 480 pixels is typical for SD HD video.
- **HD Video** - High-definition video (or HD Video) refers to videos of higher quality and resolution than standard-definition video. The resolution of 1,920 x 1,080 pixels is typical for 1080p HD video.
- **4K Ultra HD Video** - 4K resolution is Ultra High Definition (UHD), a term that means better resolution, color, and frame rates than HD. 4K resolution has a horizontal resolution of 4,000 pixels. 4K resolution can be broken down into True 4K and 4K UHD. True 4K (4K x 2K) has a resolution of 4,096 x 2,160 pixels. 4K UHD must have a minimum resolution of 3,840 pixels wide and 2,160 pixels high.

Video Speed Class

There are three kinds of video speed classifications that indicate the minimum sustained write speed necessary for photography and video recording – choose the class that corresponds to your needs:

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<https://shop.westerndigital.com/solutions/memory-cards/resiliency>

- **Speed Class** - Speed Class is designated as Class 2, 4, 6 and 10. This is best for photographers who need to capture images in rapid succession on **DSLR camera**.
- **UHS Speed Class** - UHS Speed Class is designated UHS Speed Class 1 or UHS Speed Class 3 and is designed for SDHC and SDXC memory cards and requires a compatible device like a **camcorder or surveillance camera**.
- **Video Speed Class** - created to enable higher video resolution and recording features such as multiple video streams, VR content, or 4K, 8K, and higher resolution video. High-speed, **professional-grade video cameras** support these cards with write speeds up to 90/MBs

Speed Class	UHS Speed Class	Video Speed Class	Sustained Write Speed	Video Recording Quality
-	-	V90	90MB/s ¹	8K+ Video
-	-	V60	60MB/s ¹	8K+ Video
-	U3	V30	30MB/s ¹	4K UHD Video
CLASS 10	U1	V10	10MB/s ¹	Full HD Video
CLASS 6	-	V6	6MB/s ¹	Full HD Video
CLASS 4	-	-	-	HD Video
CLASS 2	-	-	-	SD Video