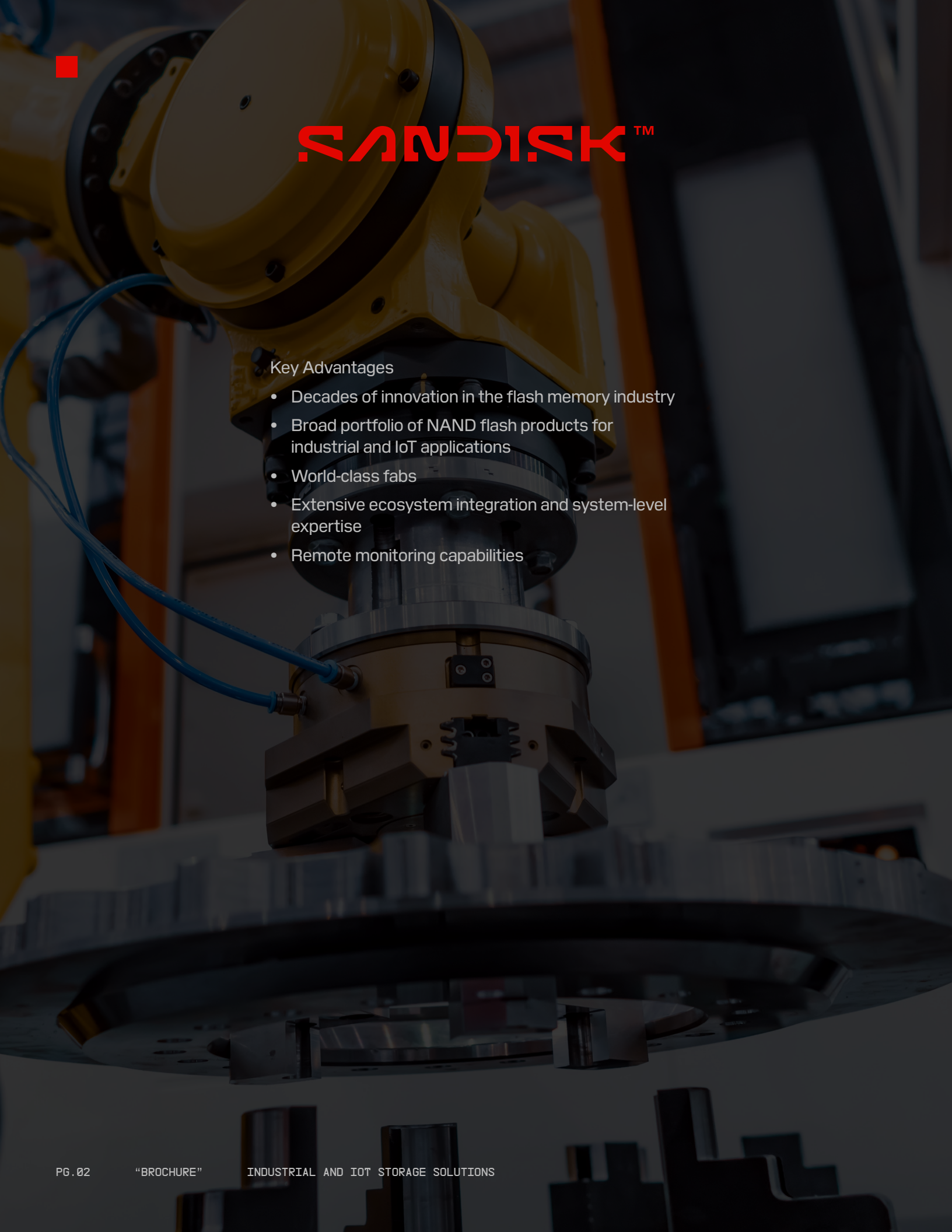
INDUSTRIAL AND IOT (→) STORAGE SOLUTIONS

SANDISK™

"BROCHURE"

SEPTEMBER . 2025



SANDISK™

Key Advantages

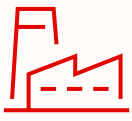
- Decades of innovation in the flash memory industry
- Broad portfolio of NAND flash products for industrial and IoT applications
- World-class fabs
- Extensive ecosystem integration and system-level expertise
- Remote monitoring capabilities

Empowering IoT and Industrial Innovation

The convergence of ubiquitous connectivity and compute capability is driving an exponential growth in connected devices and connected sensors, generating incredible volumes of data and enabling vast new types of transformative applications and business models. Adding to this complicated but exciting picture are the tremendous amounts of data rapidly flowing from artificial intelligence and machine learning. In addition to capturing this data locally as primary or backup storage, edge storage devices, such as Sandisk's embedded storage, Solid State Drives (SSDs) and SD cards, will help maximize network efficiency and enable systems to analyze the data and act on the results in real-time.

Meeting Industrial and IoT Demanding Environmental, Endurance and Reliability Requirements

Leveraging 30 years of expertise in NAND flash memory and storage systems, Sandisk's products deliver edge storage solutions for industrial and IoT applications requiring durability, high reliability, and high-intensity recording across a wide range of operational requirements. Designed and tested to withstand demanding environmental conditions, such as extreme temperatures, humidity and vibration, our portfolio features advanced memory management firmware, which includes power immunity, auto/manual read refresh, error-correcting code (ECC), and wear leveling. Data (write)-intensive applications can rely on Sandisk's Industrial and Video products to capture your critical moments, log important events, and help ensure quality of service to end-users. These high-endurance solutions offer extended product life cycles which can help reduce total cost of ownership (TCO) by eliminating costly redesigns and minimizing unnecessary maintenance calls.



Industrial PC

Networking

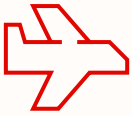
Digital Signage

Factory Automation

Medical and Agriculture

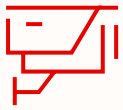
SoM and SBC

POS and Ultra-thin Devices



Transportation

Smart TV



Smart Video Security

Set-top-box

e.MMC Embedded Flash Drives

e.MMC 5.1 storage solutions offer dependable and robust embedded storage options to system designers in the Industrial and IoT market. Sandisk offers various e.MMC products to meet your specific application and use case.

Features and Benefits

- e.MMC 5.1 interface
- 16GB to 256GB[1] in small form factor
- Wide temperature range: –25°C to 85°C (I and MC) and –40°C to 85°C (XI)
- Auto and manual refresh, enhanced health status, smart partitioning

UFS Embedded Flash Drive

Sandisk offers a wide selection of UFS 2.1, UFS 3.1 and UFS4.1 products based on 3D NAND technology, delivering higher capacities andbetter performance compared to e.MMC-based products.

Features and Benefits

- UFS 2.1 interface for high data speeds, 64GB to 512GB[1]
- UFS 3.1 interface for faster data speed, 128GB to 512GB[1]
- UFS4.1 interface for our highest performance, 256GB to 1TB[1]
- Various temperature ranges: –25°C to 85°C (CL, I), –40°C to 85°C (XI) and –40°C to 105°C (AT)
- Fast boot, auto refresh and host manual refresh, enhanced health status

NVMe™ SSD

SANDISK® NVMe™ SSDs are designed to capture massive amounts of sensor, video and transactional data from POS, delivery robots, factory automation, industrial PCs, laptops and gaming devices—some generating terabytes of data per day.

Features and Benefits

- PCIe Gen3x4 NVMe 1.4
  PCIe Gen4x4 NVMe 1.4
  PCIe Gen5x4, NVMe 2.0d
- BGA, M.2 2280 and M.2. 2230 form factors
- TLC and SLC configurations for higher
- endurance of up to 24 PBW (IX SN530)
- High capacities up to 4TB[1]
- Wide temperature range:
  –40°C to 105°C (iNAND AT EN610)
  –40°C to 85°C (IX SN530)
  0°C to 85°C (PC SN7100S)
  0°C to 80°C (PC SN8050S & PC SN5100S)

SATA SSD

SANDISK® PC SA510 SSD delivers high performance and reliability with low power consumption based on 3D-NAND TLC (triple level cell) 3D-NAND flash technology. In capacities of up to 1TB[1], the PC SA510 achieves this while expending less power. The PC SA510 is available in 2.5”/7mm cased or M.2 2280 form factors providing required space savings and design flexibility.

Features and Benefits

- Capacities up to 1TB[1] for a multitude of design options
- Sequential Read / Write up to 560 / 520 MB/s[2]
- Random Read / Write up to 91K / 84K IOPS

SD Cards

Sandisk’s wide selection of SD cards are ideal for Industrial andIoT applications that require a removable storage media like drones, drive recorder, digital signage, aviation, and body/dash cams.

Features and Benefits

- 16GB to 2TB[1]
- Industrial cards support high endurance (3K P/E Cycle), BOM control and extended longevity
- Wide temperature range: –25°C to 85°C (CL, I)
- Commercial cards offer a range of performances to meet application needs

microSD™ Cards

A very popular B2B form factor that offers commercial to industrial-grade extended temperature flexibility to support customers that not only want a removable solution but also a small form factor with extreme endurance. SLC, MLC, and TLC solutions are available.

Features and Benefits

- 16GB to 1.5TB[1]
- Wide temperature range: –25°C to 85°C (CL, VD, I)
- High endurance industrial cards (Up to 3K P/E cycle)
- Video cards designed for continuous video recording applications
- Commercial cards for IoT and other commercial applications
- microSD Express for high performance applications
- Longevity
- Auto/manual refresh, health status, host lock

Industrial & Commercial e.MMC Embedded Flash Drives

	 Industrial **iNAND IX EM132**	 Commercial **iNAND CL EM151**	 Commercial **iNAND CL EM141**	 Commercial **iNAND CL EM132**
Interface	e.MMC 5.1	e.MMC 5.1	e.MMC 5.1	e.MMC 5.1
Capacity[1]	16GB to 256GB	64GB to 256GB	32GB to 256GB	16GB to 256GB
Operating Temperature	–25°C to 85°C (I) –40°C to 85°C (XI) [32GB to 256GB]	–25°C to 85°C	–25°C to 85°C	–25 °C to 85 °C
NAND Flash Technology	3D TLC	3D TLC	3D TLC	3D TLC
Ordering Information				
	SDINBDA6-XXXG-I1/XI1	SDINBDI4-XXXG	SDINBDV4-XXXG-B	SDINBDA6-XXXG

UFS Embedded Flash Drives

	 Automotive/Industrial **iNAND IX EU752**	 Industrial **iNAND IX EU552**	 Industrial **iNAND IX EU312**	 Mobile **iNAND MC EU711**	 Commercial **iNAND CL EU551**
Interface	UFS 4.1	UFS 3.1	UFS 2.1	UFS 4.1	UFS3.1
Capacity[1]	256GB to 1TB	64GB to 512GB	16GB to 256GB	256GB to 1TB	128GB to 512GB
Operating Temperature	–40°C to 85°C	–40°C to 85°C (XI)	–25°C to 85°C (I) –40°C to 85°C (XI)	–25°C to 85°C	–25°C to 85°C
NAND Flash Technology	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC
Ordering Information					
	SDINHDL6-XXXX-XI	SDINFDQ6-XXXG-XI	SDINDDH6-XXXG-I2/XI2	SDINHFT4-XXXX	SDINFDO4-XXXG-B

Industrial and Commercial SD Cards

	 Industrial **IX LD342**	 Commercial **CL LD501**	 Commercial **CL LD301**	 Commercial **CL LD101**
Interface	SD 6.0 UHS-I 104	SD 6.0 UHS-I 104,/DDR200	SD 3.01/5.1/6.0 UHS-I 104	SD 3.01 UHS-I 50
Capacity[1]	16GB to 512GB	32GB to 2TB	16GB to 512GB	8GB to 32GB
Operating Temperature	–25°C to 85°C	–25°C to 85°C	–25°C to 85°C	–25°C to 85°C
NAND Flash Technology	3D TLC	3D TLC	3D TLC	2D TLC / 3D TLC
Speed Class	C10, U1, U3, V10, V30, A1	C10, U3, V30	C10, U1	C4
Performance R/W2	Up to 100/50 MB/s	Up to 170/100 MB/s	Up to 95/10 MB/s	Up to 20/5 MB/s
Ordering Information				
	SDSDAF4-XXXG-I	SDSDAE-XXXG	SDSDAD-XXXG	SDSDAA-XXXG

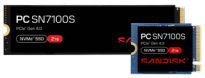
Industrial, Video and Commercial microSD Cards

	 Industrial **IX QD342**	 Video **VD QD111**	 Video **VD QD131**	 Commercial **CL QD501**	 Commercial **CL QD301**	 Commercial **CL QD101**	 Commercial **CL QN701**
Interface	SD 6.0 UHS-I 104	SD 5.1 UHS-I 104	SD 6.0 UHS-I 104	SD 6.0 UHS-I 104, /DDR200	SD 3.01/5.1/6.0 UHS-I 104	SD 3.01 UHS-I 50	SD 7.0, UHS-I 104 /DDR 200
Capacity[1]	16GB to 256GB	32GB to 128GB	256GB to 1.5TB	32GB to 2TB	16GB to ~1.5TB	16GB to 64GB	256GB
Operating Temperature	–25°C to 85°C	–25°C to 85°C	–25°C to 85°C	–25°C to 85°C	–25°C to 85°C	–25°C to 85°C	–25°C to 85°C
NAND Flash Technology	3D TLC	3D TLC	3D QLC	3D TLC	3D TLC	3D TLC	3D TLC
Speed Class	C10, U1, U3	C10, U1	C10, U1, V10	C10, U3, V30	C10, U1	C4	C10, U3
Performance R/W[2]	Up to 100/50 MB/s	Up to 100/20 MB/s	Up to 160/10 MB/s	Up to 170/100 MB/s	Up to 95/10 MB/s	Up to 20/5 MB/s	Up to 880/650 MB/s
Ordering Information							
	SDSDQAF4-XXXG-I	SDSDQAS4-XXXG	SDSDQAS5-XXXG	SDSDQAE-XXXG	SDSDQAD-XXXG	SDSDQAB-XXXG	SDSDQXAA-XXXG

SATA Drives for Industrial and IoT Applications

	 Industrial **PC SA510**
Interface	SATA 6Gb/s
Form Factor	2.5”/7mm cased, M.2 2280
Capacity[1]	250GB to 4TB
Operating Temperature	0°C to 70°C
NAND Flash Technology	3D TLC
Performance R/W[2]	560/520 MB/s
Endurance[3]	Up to 400 TBW
Ordering Information	
2.5”/7mm	SDBSBXD-####
M.2 2280	SDBSNXD-####

Solid State Drives (PCIe/NVMe)

			
	Commercial **PC SN8050S**	Commercial **PC SN7100S**	Commercial **PC SN5100S**
Interface	PCIe Gen5x4 NVMe 2.0	PCIe Gen4x4 NVMe 2.0	PCIe Gen4x4 NVMe 2.0
Form Factor	M.2 2280	M.2 2280 and M.2 2230	M.2 2280 and M.2 2230
Capacity[1]	512GB to 4TB	256GB to 2TB	512GB to 2TB
Operating Temperature	0°C to 85°C	0°C to 85°C	0°C to 85°C
NAND Flash Technology	3D TLC	3D TLC	3D QLC
Performance R/W[2]	Up to 14,900/14,100 MB/s	Up to 7,250/6,900 MB/s	Up to 7,300/6,700 MB/s
Endurance[3]	Up to 2,400 TBW	Up to 1,200 TBW	Up to 600 TBW
Ordering Information			
256GB	—	**M.2 2230:** SDFPTSK-256G (non-SED) SDFQTSK-256G (SED) **M.2 2280:** SDFPNSK-256G (non-SED) SDFQNSK-256G (SED)	—
512GB	SDFPNJK-512G (non-SED) SDFQNJK-512G (SED)	**M.2 2230:** SDFPTSK-1T00 (non-SED) SDFQTSK-1T00 (SED) **M.2 2280:** SDFPNSK-1T00 (non-SED) SDFQNSK-1T00 (SED)	**M.2 2230:** SDFPTSM-512G (non-SED) SDFQTSM-512GB (SED) **M.2 2280:** SDFPNSM-512G (non-SED) SDFQNSM-512G (SED)
1TB	SDFPNJK -1T00 (non-SED) SDFQNJK -1T00 (SED)	**M.2 2230:** SDFPTSK-1T00 (non-SED) SDFQTSK-1T00 (SED) **M.2 2280:** SDFPNSK-1T00 (non-SED) SDFQNSK-1T00 (SED)	**M.2 2230:** SDFPTSM-1T00 (non-SED) SDFQTSM-1T00 (SED) **M.2 2280:** SDFPNSM-1T00 (non-SED) SDFQNSM-1T00 (SED)
2TB	SDFPNJK -2T00 (non-SED) SDFQNJK -2T00 (SED)	**M.2 2230:** SDFPTSK-2T00 (non-SED) SDFQTSK-2T00 (SED) **M.2 2280:** SDFPNSK-2T00 (non-SED) SDFQNSK-2T00 (SED)	**M.2 2230:** SDFPTSM-2T00 (non-SED) SDFQTSM-2T00 (SED) **M.2 2280:** SDFPNSM-2T00 (non-SED) SDFQNSM-2T00 (SED)
4TB	SDFPNJK-4T00 (non-SED) SDFQNJK-4T00 (SED)	—	

Industrial Solid State Drives (PCIe/NVMe)

				
	Industrial-grade **IX SN530**	Industrial-grade **IX SN530**	Industrial-grade **IX SN530**	Industrial-grade **IX SN530**
Interface	PCIe Gen3x4 NVMe 1.4	PCIe Gen3x4 NVMe 1.4	PCIe Gen3x4 NVMe 1.4	PCIe Gen3x4 NVMe 1.4
Form Factor	M.2 2280	M.2 2280	M.2 2230	M.2 2230
Capacity[1]	256GB to 2TB	85GB to 340GB	256GB to 1TB	85GB to 340GB
Operating Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
NAND Flash Technology	3D TLC	3D SLC	3D TLC	3D SLC
Performance R/W[2]	Up to 2500/1800 MB/s	Up to 2400/1950 MB/s	Up to 2400/1950 MB/s	Up to 2400/1950 MB/s
Performance Sustain W[2]	Up to 540 MB/s	Up to 1950 MB/s	Up to 540 MB/s	Up to 1950 MB/s
Endurance[3]	Up to 5200 TBW	Up to 24 PBW	Up to 2600 TBW	Up to 24 PBW
Ordering Information				
256GB / 85GB	SDBPNPZ-256G-XI	SDBPNPZ-085G-XI	SDBPTPZ-256G-XI	SDBPTPZ-085G-XI
512GB / 170GB	SDBPNPZ-512G-XI	SDBPNPZ-170G-XI	SDBPTPZ-512G-XI	SDBPTPZ-170G-XI
1TB / 340GB	SDBPNPZ-1T00-XI	SDBPNPZ-340G-XI	SDBPTPZ-1T00-XI	SDBPTPZ-340G-XI
2TB	SDBPNPZ-2T00-XI	—	—	—

1. 1GB = 1 billion bytes, 1TB = 1 trillion bytes and 1PB= 1 quadrillion bytes. Actual user capacity may be less depending on operating environment.
2. 1 MB/s = 1 million bytes per second. Based on internal testing; performance may vary depending upon host device, usage conditions, drive capacity, and other factors.
3. TBW (terabytes written) and PBW (petabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.

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