(→) SANDISK® SN655 U.3 SSD
Enterprise NVMe™ Drive

Unlocking the full potential of enterprise SSDs

SANDISK® NVMe™ solid state drives provide the trusted performance, reliability, and security demanded by enterprise environments. The SANDISK® SN655 NVMe™ SSD offers a dual-port drive, expanded encryption capabilities, added performance, and multiple capacities now up to 61.44TB. SANDISK® NVMe™ SSDs continue to be the ideal solution for cloud and server providers who need performant, high-capacity, cost-optimized, read-intensive performance for their data-intensive applications.

With dual-port redundancy and failover capability, end-to-end data protection and additional enterprise features, the SANDISK® SN655 SSD helps ensure your data is secure and available when needed. With high-capacity, low-latency performance reaching up to 1.1M IOPs, storage providers are efficiently able to increase capacity for modern applications processing large unstructured datasets for analytics, artificial intelligence, or machine learning. With these workloads growing to gigabytes and even petabytes, storage-optimized SANDISK® NVMe™ SSDs are reducing time-to-insights of big data and enabling efficient machine learning.

Product Highlights

- SANDISK® NVMe™ 1.4 Compliant Controller; PCIe® 4.0
- SANDISK® BiCS5 3D TLC NAND
- U.3 interface (U.2 Backplane Compatible)
- 1.0 DWPD[2]
- Enterprise features including:
  - Power Loss Protection
  - End-to-End data Path Protection
  - Variable Sector Sizes
  - NVMe-MI™ 1.1b
- MTBF rating of 2.5 million hours[5] (projected)
- Secure Erase (SE), Instant Secure Erase (ISE), and TCG Ruby
- 5-year Limited Warranty[6]

Applications/Environments

- Cloud datacenters
- Scale-out or Software Defined Solutions
- Big Data
- NoSQL or Distributed databases
- AI/ML Deep Learning
- Data Archiving

Features

The SANDISK® SN655 NVMe™ SSDs includes the next generation SANDISK® NVMe™ 1.4b controller with PCIe Generation 4.0 interface and SANDISK® BiCS5 TLC 3D NAND. NVMe™ provides hosts low-latency access to direct attached NVMe™ SSDs or to NVMe-OF™ storage arrays. BiCS5 TLC 3D NAND is the next generation of 3D NAND driving higher bit densities per mm² for higher capacities than prior generations, up to 61.44TB.[1] Equipped with the latest PCIe Generation 4.0, the SANDISK® SN655 SSD enables performance at scale for increasingly larger application workloads. Designed and built for the standard 2.5" SSD storage infrastructure, the SANDISK® SN655 SSD includes support for U.2 and U.3 backplanes. And with enterprise grade power loss protection, 2.5M MTBF[5] (projected) and 1.0 DWPD[2] with a 5 year limited warranty,[6] cloud and IT managers can deploy and scale their datacenters confidently.

Emerging Workloads

SANDISK® SN655 NVMe™ SSDs are optimized for cloud and scale-out workloads, providing high capacities, higher Qos consistency, and better utilization for cloud as-a-service offerings, virtualization, and object or file storage. Emerging workloads for big data, artificial intelligence, and machine learning are increasing in size and complexity and are typically stored across distributed, tiered, or disaggregated architectures. The SANDISK® SN655 NVMe™ SSDs are optimized for moving these large data sets fast and servicing multiple hosts with performance consistency making them the ideal solution for scaling capacity and maximizing GB/watt.

Product Information

Capacity[1]	3.84TB	7.68TB	15.36TB	30.72TB	61.44TB
Endurance[2]			1 DWPD		
Security			SE, ISE, TCG		
Form Factor			U.3 15mm		
Interface			PCIe Gen4, NVMe 1.4		

Performance[3]

Read Throughput (max MB/s, Seq 128KiB)	6,800MB/s	6,800MB/s	6,800MB/s	6,100MB/s	4,300MB/s
Write Throughput (max MB/s, Seq 128KiB)	2,600MB/s	2,000MB/s	3,700MB/s	3,400MB/s	3,150MB/s
Read IOPS (max, Rnd 4KiB)	1000K	980K	1100K	1052K	890K
Write IOPS (max, Rnd 4KiB)	112K	80K	135K	66K	29K
Read Latency (µs)[4]	80	78	125	110	115
Write Latency (µs)[4]	10	15	10	15	40

Reliability

MTBF[5] (hours, projected)	2.5M
Uncorrectable Bit Error Rate (UBER)	1 in 10^{17}
Annualized Failure Rate[5] (AFR, projected)	0.35%
Limited Warranty[6] (years)	5

Power Management

Requirement (DC, +/- 10%)	+12v
Operating Mode (typical)	16W, 20W(Default)
Idle (Average)	<8W

Physical Size

z-height (mm)	15mm
Dimensions (width × length)	69.85 x 100.45mm

Environmental

Operating Temperature (Ambient)[7]	0°C to 70°C
Non-Operating temperature[8]	-40°C to 85°C

Ordering Information

	Security	3.84TB	7.68TB	15.36TB	30.72TB	61.44TB
OTS Number	SE	OTS2458	OTS2459	OTS2460	OTS2507	OTS2508
Model Number	SE	WUS5EA138ESP7E1	WUS5EA176ESP7E1	WUS5EA1A1ESP7E1	WUS5EC1B1ESP7Y1	WUS5EC1C1ESP7Y1
OTS Number	ISE	OTS2461	OTS2462	OTS2463	OTS2509	OTS2510
Model Number	ISE	WUS5EA138ESP7E3	WUS5EA176ESP7E3	WUS5EA1A1ESP7E3	WUS5EC1B1ESP7Y3	WUS5EC1C1ESP7Y3
OTS Number	TCG-Ruby	OTS2467	OTS2468	OTS2469	OTS2511	OTS2512
Model Number	TCG-Ruby	WUS5EA138ESP7E4	WUS5EA176ESP7E4	WUS5EA1A1ESP7E4	WUS5EC1B1ESP7Y4	WUS5EC1C1ESP7Y4

1. 1GB = 1 billion bytes and 1TB = 1 trillion bytes. Actual user capacity may be less depending on operating environment. Some of the drive capacity is used for formatting and other functions and is not available for data storage.
2. Endurance rating based on DWPD using 4KiB 100% random write and JESD 219 workloads over 5 years.
3. Based on internal testing. Performance will vary by capacity point, or with the changes in useable capacity. Consult product manual for further details. All performance measurements are in full sustained mode and are peak values. Subject to change.
4. Average random read latency at 4KiB, QD-1.
5. MTBF and APR specifications will be based on a sample population and are estimated by statistical measurements and acceleration algorithms under typical operating conditions for this drive model. MTBF and AFR ratings do not predict an individual drive's reliability and do not constitute a warranty.
6. The warranty for the product will expire on the earlier (i) of the date when the flash media has reached one-percent (1%) of its remaining life or (ii) the expiration of 5 years.
7. Composite temperature reading.
8. Values are based on ambient temperature. Avoid non-operational exposure to temperatures in excess of 40°C for periods exceeding three months.