7600 SSD Series Technical Product Specification

For additional technical and warranty information, contact your Micron Sales Representative

Features

- Micron® G9 TLC NAND
- PCI Express Gen5
  - U.2 15mm, E1.S, and E3.S 1T: single port (x4)
- NVM Express:
  - NVMe 2.0d Base Specification
  - NVMe-MI 1.2d Specification
  - NVMe 1.0d NVM Command Set Specification
  - Number of name spaces supported: 128
  - Weighted round robin with urgent arbitration supported
- OCP 2.5 Datacenter NVME SSD Specification
- TCG Storage Security Subsystem Class: Opal Rev 2.02
- Capacity (unformatted)
  - 7600 PRO: 1920GB, 3840GB, 7680GB, 15,360GB
  - 7600 MAX: 1600GB, 3200GB, 6400GB, 12,800GB
- Endurance: Total bytes written (TBW)
  - 7600 PRO: Up to 28,032TB at 1 DWPD
  - 7600 MAX: Up to 70,080TB at 3 DWPD
- Enterprise sector size support = 512, 4096-byte sector size (configurable)
- Security
  - Digitally signed firmware (186-5)
  - FIPS 140-3 L2 certifiable
  - Self-encrypting drive (SED) SKUs
- Surprise insertion/surprise removal (SISR) and hot-plug capable
- Self-monitoring, analysis, and reporting technology (SMART)
- Field-upgradeable firmware with support for activate without reset
- Performance[1]
  - Sequential 128KB READ: Up to 12,000 MB/s
  - Sequential 128KB WRITE: Up to 7000 MB/s
  - Random 4KB READ: Up to 2100 KIOPS
  - Random 4KB WRITE: Up to 675 KIOPS
- Latency[2, 3]
  - READ (TYP): 55µs
  - WRITE (TYP): 15µs
- Reliability
  - MTTF: 2.0M hours @ 0–55°C and 2.5M hours @ 0–50°C[4]
  - Static and dynamic wear leveling
  - Uncorrectable bit error rate (UBER): <1 sector per 10^{17} bits read
  - OCP 2.5-compliant end-to-end data protection
  - Enterprise power-loss protection
- Operating temperature[5]
  - Commercial (0°C to +70°C)
- Form factor
  - U.2 15mm: 69.85 x 100.45 x 15.00mm
  - E1.S 9.5mm: 33.75 x 118.75 x 9.5mm
  - E1.S 15mm: 33.75 x 118.75 x 15.00mm
  - E3.S 1T 7.5mm: 76.00 x 112.75 x 7.58mm
- Electrical specification
  - Power supply: 12V ±10%
  - AUX supply: 3.3V +10%/–15%

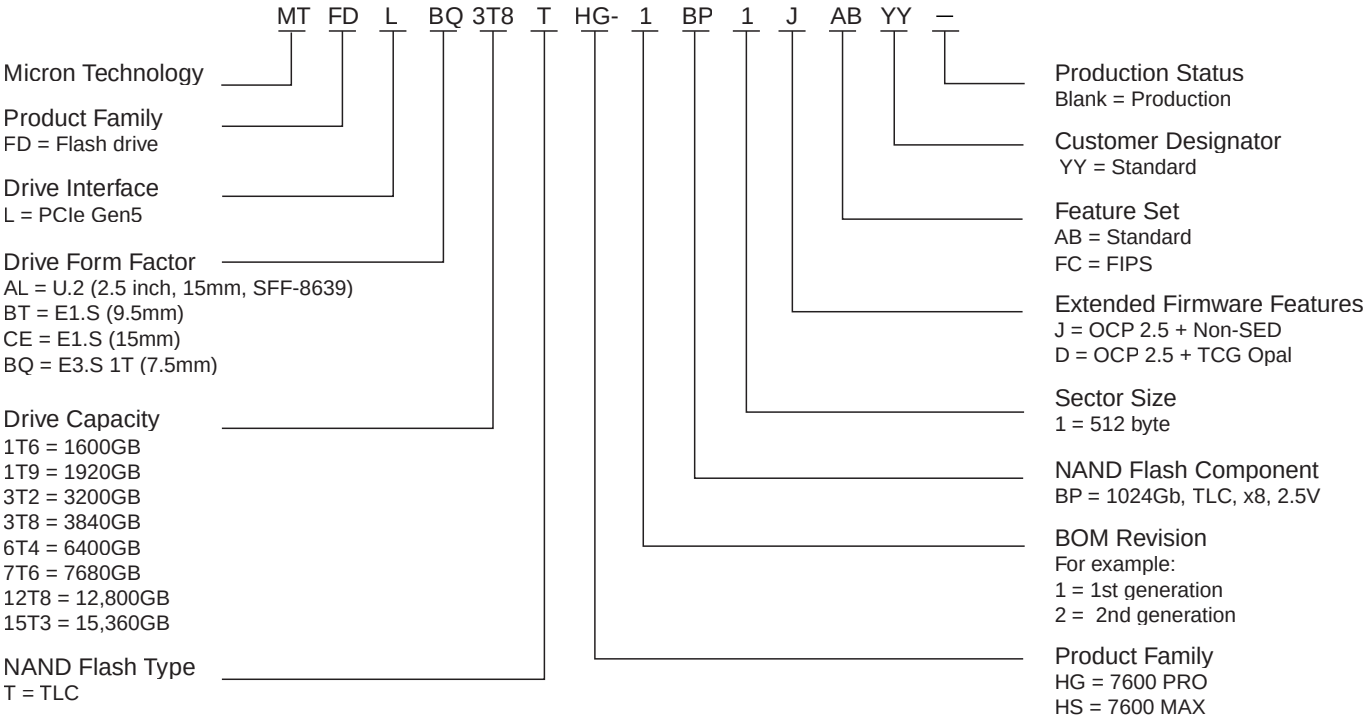
Notes: 1. Steady state as defined by SNIA Solid State Storage Performance Test Specification Enterprise v1.1.
2. 4KB, queue depth 1 transfers used for READ/WRITE latency values.
3. TYP: Median, 50th percentile
4. Product achieves MTTF based on population statistics not relevant to individual units.
5. Temperature measured by SMART.

Warranty: Contact your Micron sales representative for further information regarding the product, including product warranties.

Part Numbering Information

Micron 7600 SSDs are available in different configurations and capacities. The chart below is a comprehensive list of options; not all options listed can be combined to define an offered product. Visit www.micron.com for a list of valid part numbers.

Figure 1: Part Number Chart



Important Notes and Warnings

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Critical Applications. Products are not authorized for use in applications in which failure of the Micron component could result, directly or indirectly in death, personal injury, or severe property or environmental damage ("Critical Applications"). Customer must protect against death, personal injury, and severe property and environmental damage by incorporating safety design measures into customer's applications to ensure that failure of the Micron component will not result in such harms. Should customer or distributor purchase, use, or sell any Micron component for any critical application, customer and distributor shall indemnify and hold harmless Micron and its subsidiaries, subcontractors, and affiliates and the directors, officers, and employees of each against all claims, costs, damages, and expenses and reasonable attorneys' fees arising out of, directly or indirectly, any claim of product liability, personal injury, or death arising in any way out of such critical application, whether or not Micron or its subsidiaries, subcontractors, or affiliates were negligent in the design, manufacture, or warning of the Micron product.

Customer Responsibility. Customers are responsible for the design, manufacture, and operation of their systems, applications, and products using Micron products. ALL SEMICONDUCTOR PRODUCTS HAVE INHERENT FAILURE RATES AND LIMITED USEFUL LIVES. IT IS THE CUSTOMER'S SOLE RESPONSIBILITY TO DETERMINE WHETHER THE MICRON PRODUCT IS SUITABLE AND FIT FOR THE CUSTOMER'S SYSTEM, APPLICATION, OR PRODUCT. Customers must ensure that adequate design, manufacturing, and operating safeguards are included in customer's applications and products to eliminate the risk that personal injury, death, or severe property or environmental damages will result from failure of any semiconductor component.

Limited Warranty. In no event shall Micron be liable for any indirect, incidental, punitive, special or consequential damages (including without limitation lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort, warranty, breach of contract or other legal theory, unless explicitly stated in a written agreement executed by Micron's duly authorized representative.

Performance

Measured performance can vary for a number of reasons. The major factors affecting drive performance are the capacity of the drive and the interface of the host. Additionally, overall system performance can affect the measured drive performance. When comparing drives, it is recommended that all system variables are the same, and only the drive being tested varies. Performance numbers will vary depending on the host system configuration.

Table 1: Drive Performance – PRO

Performance Estimates Across All SKUs		Capacity (GB)				Unit
		1920	3840	7680	15,360	
Sequential (128KB transfer)	Read	12,000	12,000	12,000	12,000	MB/s
	Write	3300	6500	7000	7000	
Random (4KB transfer)	Read	1800	2100	2100	2100	KIOPS
	Write	180	300	400	400	
	70/30 Read/Write	320	480	700	700	
Latency	READ (TYP)	55	55	55	55	µs
	WRITE (TYP)	15	15	15	15	
	READ (99%)	75	75	75	75	
	WRITE (99%)	15	15	15	15	

Notes: 1. Performance values measured under the following conditions:

- Steady state as defined by SNIA Solid State Storage Performance Test Specification Enterprise v1.1
- 4K sector size
- NVMe power state 0
- Sequential workloads measured using FIO with a queue depth of 32
- Random READ workloads measured using FIO with a queue depth of 512
- Random WRITE workloads measured using FIO with a queue depth of 512

2. Performance values measured with the following system configuration:

- Z690 Motherboard
- 12th Gen Intel® Core™ i7-12700K
- 2–16GB DIMM = 32GB DDR5 @ 4800

3. Latency values measured under the following configuration:

- Random workloads using FIO with 4KB transfers and a queue depth of 1
- TYP = median, 50th percentile

4. System variations will affect measured results.

- 128KB sequential read performance is dependent on system configuration and test conditions

Table 2: Drive Performance – MAX

Performance Estimates Across All SKUs		Capacity (GB)				Unit
		1600	3200	6400	12,800	
Sequential (128KB transfer)	Read	12,000	12,000	12,000	12,000	MB/s
	Write	3300	6500	7000	7000	
Random (4KB transfer)	Read	1800	2100	2100	2100	KIOPS
	Write	300	560	675	675	
	70/30 Read/Write	450	700	1000	1100	
Latency	READ (TYP)	55	55	55	55	µs
	WRITE (TYP)	15	15	15	15	
	READ (99%)	75	75	75	75	
	WRITE (99%)	15	15	15	15	

Notes: 1. Performance values measured under the following conditions:
- Steady state as defined by SNIA Solid State Storage Performance Test Specification Enterprise v1.1
- 4K sector size
- NVMe power state 0
- Sequential workloads measured using FIO with a queue depth of 32
- Random READ workloads measured using FIO with a queue depth of 512
- Random WRITE workloads measured using FIO with a queue depth of 512

2. Performance values measured with the following system configuration:
- Z690 Motherboard
- 12th Gen Intel® Core™ i7-12700K
- 2–16GB DIMM = 32GB DDR5 @ 4800

3. Latency values measured under the following configuration:
- Random workloads using FIO with 4KB transfers and a queue depth of 1
- TYP = median, 50th percentile

4. System variations will affect measured results.
- 128KB sequential read performance is dependent on system configuration and test conditions

Endurance

SSD endurance is dependent on many factors, including: usage conditions applied to the drive, drive performance and capacity, formatted sector size.

Lifetime estimates for the device are shown in the following tables in total bytes written.

Table 3: Total Bytes Written

Model	Capacity (GB)	4K Random Total Bytes Written (TB)	128K Sequential Total Bytes Written (TB)
PRO	1920	3500	14,000
	3840	7000	29,400
	7680	14,000	58,300
	15,360	28,000	104,500
MAX	1600	8700	18,000
	3200	17,500	37,200
	6400	35,000	74,200
	12,800	70,000	143,100

Notes: 1. Values represent the theoretical maximum endurance for the given transfer size and type. Actual lifetime will vary by workload. Refer to Percentage Used in the SMART/Health Information (Log Identifier 02h) to check the device life used.
2. Total bytes written calculated assuming drive is 100% full (user capacity) with workload of 100% random aligned 4KB writes.

Electrical Characteristics

Environmental conditions beyond those listed may cause permanent damage to the device. This is a stress rating only, and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

Table 4: Power Consumption – PRO

	Capacity (GB)				
User Capacity	**1920**	**3840**	**7680**	**15,360**	**Unit**
Active read (maximum)	18	18	19	23	W
Active write (maximum)	19	19	20	23	W
128K sequential read (average)	11	11	11	11	W
128K sequential write (average)	10	13	14	14	W
4K random read (average)	12	12	14	14	W
4K random write (average)	11	14	15	15	W
4K 70/30 random read/write (average)	10	12	15	15	W
Idle (average)	5	5	5	5	W

Notes: 1. Power limiting is configured through Set/Get Features Power Management.
2. Power consumption measurements are for reference only; actual workload power consumption will vary.

Table 5: Power Consumption – MAX

	Capacity (GB)				
User Capacity	**1600**	**3200**	**6400**	**12,800**	**Unit**
Active read (maximum)	18	18	19	23	W
Active write (maximum)	19	19	20	23	W
128K sequential read (average)	11	11	11	11	W
128K sequential write (average)	10	13	14	14	W
4K random read (average)	12	12	14	14	W
4K random write (average)	11	14	15	15	W
4K 70/30 random read/write (average)	10	12	15	15	W
Idle (average)	5	5	5	5	W

Notes: 1. Power limiting is configured through Set/Get Features Power Management.
2. Power consumption measurements are for reference only; actual workload power consumption will vary.

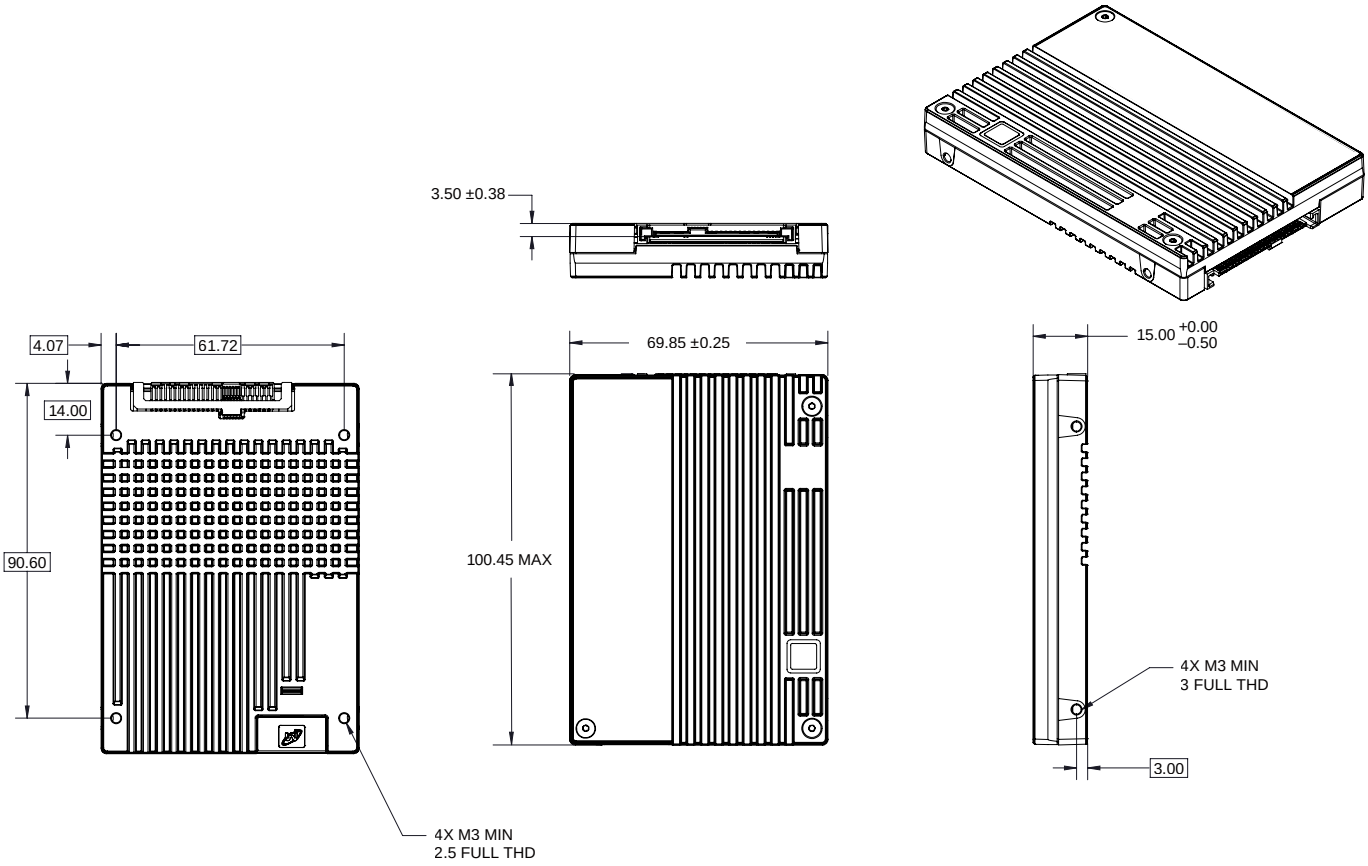
Table 6: Operating Voltage – U.2, E1.S, E3.S 1T

Power Rail	Electrical Parameter	Value	Unit
12V	Operating voltage	12	Vdc (±10%)
	MIN/MAX rise time	0.1/100	ms
	Fall time	<5	s
	MIN power-off time	50	ms
	Inrush current (typical peak)	1.2	A
	MAX average current (RMS): U.2 E1.S and E3.S 1T	 4.5 3.15	A
	Over current limit	6	A
	Over voltage limit	15	V
3.3 V_{AUX}	Operating voltage	3.3	Vdc (+10%/–15%)
	MIN/MAX rise time	1/50	ms
	MIN/MAX fall time	1/5000	ms
	MAX average current	4	mA

Physical Configuration

U.2 Enterprise PCIe (SFF-8201 and SFF-8639)

Figure 2: U.2 15mm Nominal Dimensions



Notes: 1. All dimensions are in millimeters.
2. M3 Torque: Maximum of 5 lbf-in at 100 rpm with an actuation style lever.

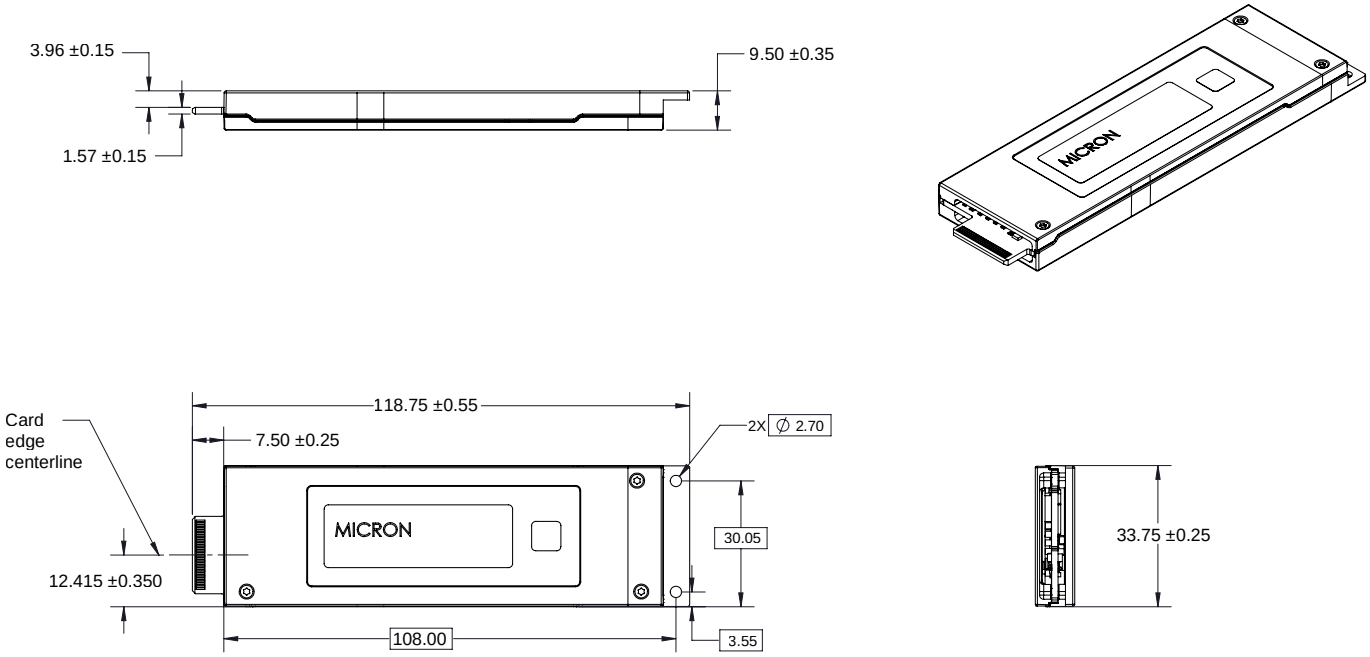
Table 7: U.2 Enterprise PCIe Dimensions

Form Factor	Width	Length	Height	Unit
U.2 15mm	69.85	100.45	15.00	mm

Note: 1. Dimension values per SFF-8201 Revision 3.4 and SFF-8639 Revision 2.1.

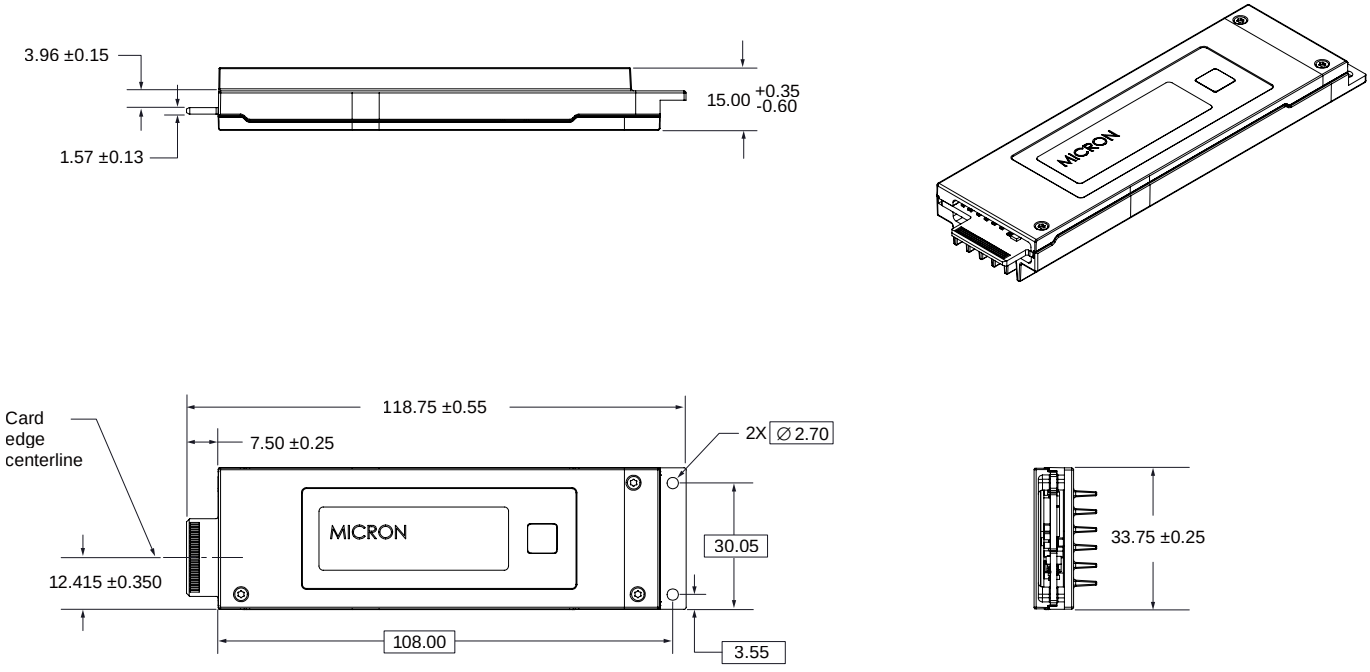
E1.S Enterprise PCIe x4 – SFF-TA-1006

Figure 3: E1.S 9.5mm Nominal Dimensions



Note: 1. All dimensions are in millimeters.

Figure 4: E1.S 15mm Nominal Dimensions



Note: 1. All dimensions are in millimeters.

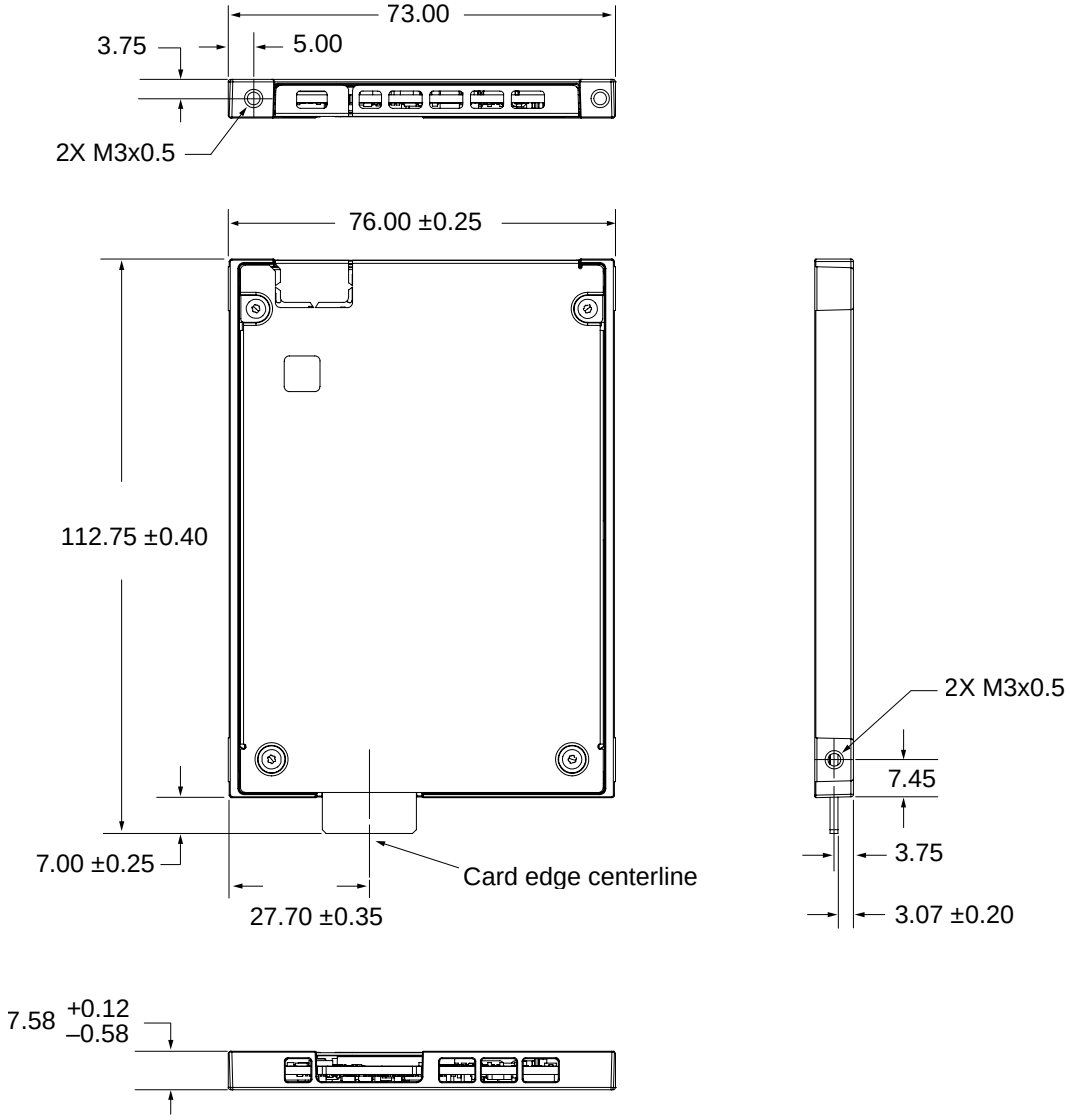
Table 8: E1.S Enterprise PCIe x4 Dimensions

Form Factor	Width	Length	Height	Unit
E1.S 9.5mm	33.75	118.75	9.5	mm
E1.S 15mm	33.75	118.75	15.00	mm

Note: 1. Dimension values per SFF-TA-1006 Revision 1.5.

E3.S Enterprise PCIe x4 – SFF-TA-1008

Figure 5: E3.S 1T 7.5mm Nominal Dimensions



Notes: 1. All dimensions are in millimeters.
2. M3 Torque: Maximum of 5 lbf-in at 100 rpm with an actuation style lever.

Table 9: E3.S 1T Enterprise PCIe x4 Dimensions

Form Factor	Width	Length	Height	Unit
E3.S 1T 7.5mm	76.00	112.75	7.58	mm

Note: 1. Dimension values per SFF-TA-1008 Revision 2.0.

Compliance

Micron SSDs comply with the following:

- Micron Green Standard
- Built with sulfur-resistant resistors
- CE (Europe): EN55032, EN55035 Class A, RoHS
- FCC: CFR Title 47, Part 15, Class A
- UL/cUL: approval to UL 62368-1
- BSMI (Taiwan): approval to CNS 15936-2016, CNS 15663-2013
- RCM (Australia, New Zealand): AS/NZS CISPR32 Class A
- KC RRL (Korea): approval to KS C 9832 Class A, KS C 9835 Class A
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- W.E.E.E.: Compliance with EU WEEE directive 2012/19/EC. Additional obligations may apply to customers who place these products in the markets where WEEE is enforced.
- TUV (Germany): approval to EN62368
- V_{CCI} (Japan): CISPR 32 Class A
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  VCCIーA
- IC (Canada): ICES-003 Class A
  - This Class A digital apparatus complies with Canadian ICES-003.
  - Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.
- Morocco: EN55032, EN55035 Class A
- UkrSEPRO (Ukraine): EN55032, EN55035 Class A, EN62368, RoHS (Resolution 2017 No. 139)

- UKCA (UK): SI 2016/1091 Class A and SI 2012/3032 RoHS

FCC Rules

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Revision History

Rev. A – 12/2025

- Initial release

8000 S. Federal Way, P.O. Box 6, Boise, ID 83707-0006
208-368-4000, micron.com/support

This data sheet contains minimum and maximum limits specified over the power supply and temperature range set forth herein. Although considered final, these specifications are subject to change, as further product development and data characterization sometimes occur.