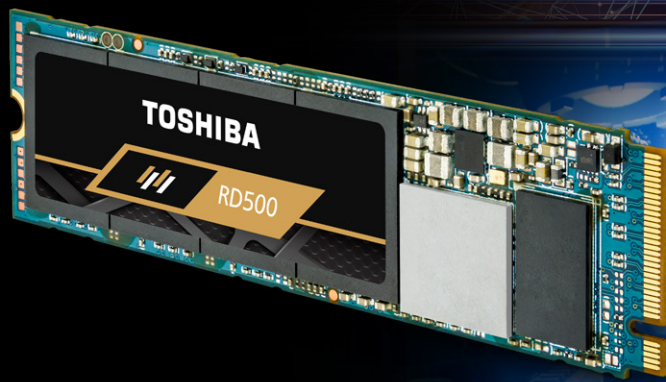


# TOSHIBA

RD500 Series

NVMe™ Solid State Drive (SSD)



GAME ON

## Enthusiast-Grade SSD for Gaming Systems

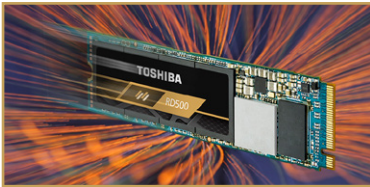
November 2019

 **BiCS FLASH™**

# Overview

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Your high-performance gaming system needs high-performance storage. TOSHIBA RD500 NVMe™ SSD Series is built to deliver top-of-class PCIe® performance thanks to a newly designed 8-channel controller that brings out the full potential of its 96-layer 3D flash memory (BiCS FLASH™). This new enthusiast-class SSD series offers up to 1TB of capacity and a 5-year warranty in a M.2 2280 form factor suitable for both desktops and mobile systems.



## Game-Changing Storage

Don't let your storage be outclassed. TOSHIBA RD500 SSD redefines high performance storage for enthusiasts and hardcore gamers that feel held back by commodity storage hardware. With over 3GB/s sequential reads\* available to you, your system won't be deprived of the storage bandwidth it needs to excel.



## NVMe™ Technology

Why keep using an interface that was designed for hard drives? Utilizing the latest NVMe 1.3c technology, the RD500 reduces latency in your system's I/O path between your SSD and your CPU, resulting in smooth and responsive performance.



## Small and Compact

Featuring a thin and light M.2 2280 form factor, the RD500 series plugs directly into the motherboard, reducing additional cable clutter for a sleeker system.



## State-of-the-Art 3D Flash Memory

Each RD500 SSD is built with KIOXIA's advanced BiCS FLASH™ and a vertically stacked cell structure, delivering a state-of-the-art storage experience.



## SSD Utility SSD Management Software

The SSD Utility management software was designed to help your TOSHIBA drive thrive and lets you be in control of maintenance, monitoring, SSD tuning and more!

\*Sequential speeds are measured with CrystalDiskMark 6.0.2 x64, Q=32, T=1

# Specifications

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## Performance

500 GB

1000 GB

**Sequential Read/Write Speed<sup>1</sup>** Up to 3,400/2,500 MB/s Up to 3,400/3,200 MB/s

**Random Read/Write<sup>2</sup>** Up to 420,000/570,000 IOPS Up to 640,000/600,000 IOPS

<sup>1</sup> Sequential speeds are measured with CrystalDiskMark 6.0.2 x64, Q=32, T=1

<sup>2</sup> 4KiB random performance is measured with CrystalDiskMark 6.0.2 x64, Q=32, T=8

## Endurance

500 GB

1000 GB

**TBW (Total Bytes Written)<sup>3</sup>** 200 TB 400 TB

<sup>3</sup> Definition and conditions of TBW (Terabytes Written) are based on JEDEC standard; JESD219A Solid-State Drive (SSD) Endurance Workloads, July 2012, and defined for the service life.

## Physical

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**Capacites** 500 GB, 1000 GB

**Flash Memory Type** 96 Layer 3D BiCS FLASH™ TLC

PCI Express® Base Specification Revision 3.1a (PCIe®)

**Interface**  
**Maximum Speed**  
32 GT/s (PCIe® Gen3x4L)

**Command**  
NVM Express™ Revision 1.3c command set

**Form Factor** 500GB: M.2 Type 2280-S3-M 1000GB: M.2 Type 2280-D3-M

**Dimension (L x W x H)**  
500GB: 80.00 ± 0.15 mm x 22.00 ± 0.15 mm x 2.38 mm Max  
1000GB: 80.00 ± 0.15 mm x 22.00 ± 0.15 mm x 3.73 mm Max

**Drive Weight**  
500GB: 8.0 g (typ.)  
1000GB: 10.0 g (typ.)

## Power Requirements

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**Supply Voltage** 3.3 V ±5 %

**Power Consumption (Active)** 500GB: 5.1 W (typ.) 1000GB: 6.5 W (typ.)

**Power Consumption**  
(PS3) 50 mW (typ.)  
(PS4) 5 mW (typ.)

## Environmental

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<b>Operating Temperature</b>	0°C (Ta) to 85°C (Tc)
<b>Storage Temperature</b>	-40°C to 85°C
<b>Shock Resistance</b>	9.806 km/s <sup>2</sup> {1,000 G} 0.5 ms half sine wave
<b>Vibration</b>	196 m/s <sup>2</sup> {20 G} Peak, 10~2000 Hz, (20 min / Axis) x 3 Axis

## Reliability / Security

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<b>MTTF</b>	1.5 Mhours
<b>Product Health Monitoring</b>	SSD Utility version 3.4 and above

## Compatibility

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<b>PCI Express</b>	Compatible with PCI Express® Base Specification Revision 3.1a and NVMe Express™ Revision 1.3c command set
<b>Operating System<sup>5</sup></b>	Windows® 10 x64
<b>Connector Type</b>	M.2 M key Socket
<b>Targeted Applications</b>	Client desktops and laptops

<sup>5</sup> Compatible operating system for SSD is not the same as compatible operating system for SSD Utility

## Additional Features

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<b>Performance Optimization</b>	TRIM, Idle Time Garbage Collection
<b>Services and Support</b>	5-Year Standard Warranty Program, Online Tech Support
<b>Software</b>	SSD management software: SSD Utility v3.4 and above.

Ordering Information	Model	Part Number	UPC
<b>RD500</b>	500 GB	THN-RD50Z5000G8(CS)	811375030116
<b>RD500</b>	1000 GB	THN-RD50Z0013G8(CS)	811375030123

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PCIe and PCI Express are registered trademarks of PCI-SIG.

All other company names, product names, and service names mentioned herein may be trademarks of their respective companies.

Definition of capacity: KIOXIA defines a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes and a terabyte (TB) as 1,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB =  $2^{30}$  = 1,073,741,824 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

A kibibyte (KiB) means  $2^{10}$ , or 1,024 bytes, a mebibyte (MiB) means  $2^{20}$ , or 1,048,576 bytes, and a gibibyte (GiB) means  $2^{30}$ , or 1,073,741,824 bytes.

IOPS: Input Output Per Second (or the number of I/O operations per second)

MTTF (Mean Time to Failure) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may be different from the MTTF.

Read and write speed may vary depending on the host device, read and write conditions, and file size.

Subject to Change: While KIOXIA has made every effort at the time of publication to ensure the accuracy of the information provided herein, product specifications, configurations, prices, system/component/options availability are all subject to change without notice.

Product image may represent design model.