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TOSHIBA EXPANDS ENTERPRISE SOLID STATE DRIVE FAMILY WITH THREE DRIVES TARGETING BROAD RANGE OF APPLICATIONS

Optimized Mix of NAND Flash, Interfaces and Capacities

IRVINE, Calif., August 20, 2012 – Toshiba's Storage Products Business Unit of Toshiba America Electronic Components, Inc., a committed technology leader, today announced it is expanding its enterprise Solid State Drives (eSSD) family with the PX-Series, featuring three models targeted for various enterprise applications: boot, read-intensive, entry level servers; entry-to-mid-range application servers; and high-performance enterprise application servers. The PX-Series reflects Toshiba's continued storage innovation and coincides with the company's celebration of its 25th anniversary as the inventor of NAND flash technology. Each model is optimized for its target segment with NAND flash processes, capacity, and interface support.

High-Performance: Targeted at applications requiring the highest levels of eSSD performance, the PX02SM series is Toshiba's first eSSD to utilize 24nm eMLC (enterprise multi-level cell) NAND technology, with capacities of 200/400/800GB[1] and 1.6TB[2], and is Toshiba's first offering with a dual-port 12Gb/sec SAS interface with a form-factor equivalent to industry-standard 2.5inch HDDs.

Value Line: Optimized for entry-to-mid-level server and storage applications requiring balance, reliability, capacity and endurance, the PX02AM series also features 24nm eMLC NAND flash in capacities of 100, 200 and 400GB, all with a 6Gb/s SATA (Serial ATA) interface. Featuring a slim 7mm 2.5inch industry-standard form-factor, all capacities offer power-loss protection.

Read-Intensive/Boot Server: Targeted at entry-level server applications, the PX03AN series is Toshiba's first eSSD family using 19nm cMLC (consumer multi-level cell) NAND flash,

in capacities of 55, 120, 240 and 480 GB. Utilizing the 7mm 2.5inch form-factor, the PX03AN series drives also offer power-loss protection.

These three new products further underscore the breadth of Toshiba's storage products, both SSDs and hard disk drives (HDDs) for mobile and enterprise markets, giving customers a "one-stop shop" capability for their storage design needs.

Toshiba's unique integrated SSD design and manufacturing capability ensures that key components of the SSD, including NAND flash, are designed by Toshiba leveraging Toshiba's vertical integration and leadership strengths in the growing SSD market. Component and design commonality also reduces qualification time for Toshiba customers and reflects Toshiba's partner-driven approach to SSD design and manufacturing.

"As SSDs continue to broaden their reach into enterprise applications, from web servers to data centers, our customers are looking for a broad set of SSD solutions," said Joel Hagberg, vice president of marketing at Toshiba's Storage Products Business Unit. "Today's announcement further demonstrates how Toshiba is providing our partners with the ability to deliver the best storage solutions for every enterprise need."

The PX02SM 200/400/800GB and 1.6TB models will start shipping in the fourth quarter of 2012. The PX02AM series of value-line eSSDs and the PX03AN series of entry-level eSSDs will both commence shipments in the fourth quarter of 2012.

TOSHIBA ANNOUNCES EXPANSION OF ENTERPRISE SOLID STATE DRIVE LINE-UP

Product Specifications:

		PX02SM Series				PX02AM Series			PX03AN Series			
User Capacity	GB*	200	400	800	1600	100	200	400	55	120	240	480
NAND		24nm eMLC (64Gb/die)				24nm eMLC (64Gb/die)			19nm cMLC (64Gb/die)			
Interface		SAS 6Gb/s / 12Gb/s				SATA 6Gb/s			SATA 6Gb/s			
Form Factor (Height)	2.5" SFF	7mm			15mm	7mm			7mm			
Performance (@ QD = 32, Aligned, Sustained, Entropy=100%)												
Sequential Read 64KiB	MB/s	900				500	500	500	300	500	500	500
Sequential Write 64KiB	MB/s	400				130	240	240	65	130	240	240
Random Read 4KiB	KIOPS	120				20	36	36	12	20	36	36
Random Write 4KiB	KIOPS	30				5	5	5	1	1.5	1.5	1.5
Latency (@ QD=1, Aligned, Random 4KiB)												
Read	us (typ)	100				250			250			
Write	us (typ)	100				200			100			
Endurance (per life, w/ 4KiB aligned Ran. W)	PBW	3.7	7.3	14.6	29.2	0.5	1	2	0.008	0.015	0.03	0.06
Data Retention (@ EOL, Power removed)		3 months @ < 40 deg C				3 months @ < 40 deg C			3 months @ < 40 deg C			
MTTF	MPOH	2.0 (AFR: 0.44%)				2.0 (AFR: 0.44%)			1.2 (AFR: 0.73%)			
Product Life	Years	5				3			3			
Temperature												
Operating (Ambient)	Ta C	0 to 55				0 to 55			0 to 55			
Operating (Case)	Tc C	0 to 60				0 to 60			0 to 60			
Non-Operating	Ta C	-40 to 70				-40 to 70			-40 to 70			

For more information on Toshiba's line of industry-leading SSDs and HDDs, visit www.toshibastorage.com. To connect with Toshiba Storage, follow @ToshibaStorage on Twitter and visit the corporate blog at http://storage.toshiba.com/corporateblog/.

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About Toshiba Storage Products
Toshiba Corporation and its affiliates offer one-of-a-kind global storage solutions, offering hard disk drives (HDDs), solid state drives (SSDs) and NAND flash memories – technologies that drive a wide range of

consumer electronics, computer and automotive applications, as well as enterprise solutions for the global marketplace. Toshiba is a leader in the development, design and manufacture of mobile, consumer and enterprise hard disk drives and solid state drives. In North America, the Storage Products Business Unit of Toshiba America Electronic Components, Inc. markets high-quality storage peripherals to original equipment manufacturers, original design manufacturers, value-added resellers, value-added dealers, systems integrators and distributors worldwide. Inherent in the Toshiba storage family are the high-quality engineering and manufacturing capabilities that have established Toshiba products as innovation leaders worldwide. For more information, visit www.toshibastorage.com

About Toshiba Corp. and Toshiba America Electronic Components, Inc. (TAEC)
Through proven commitment, lasting relationships and advanced, reliable electronic components, Toshiba enables its customers to create market-leading designs. Toshiba is the heartbeat within product breakthroughs from OEMs, ODMs, CMs, VARs, distributors and fabless chip companies worldwide. A committed electronic components leader, Toshiba designs and manufactures high-quality flash memory-based storage solutions, solid state drives (SSDs), hard disk drives (HDDs), discrete devices, advanced materials, medical tubes, custom SoCs/ASICs, imaging products, microcontrollers and wireless components that make possible today's leading smartphones, tablets, MP3 players, cameras, medical devices, automotive electronics, enterprise solutions and more.

Toshiba America Electronic Components, Inc. is an independent operating company owned by Toshiba America, Inc., a subsidiary of Toshiba Corporation, Japan's largest semiconductor manufacturer and the world's third largest semiconductor manufacturer (Gartner, 2011 Worldwide Semiconductor Revenue, March, 2012). Toshiba Corporation was founded in 1875 and today has over 554 subsidiaries and affiliates, with 210,000 employees worldwide. Visit Toshiba's web site at www.toshiba.co.jp/index.htm.

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1. One Gigabyte (1GB) means 10^9 = 1,000,000,000 bytes using powers of 10. 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.

2. One Terabyte (1TB) means 10^{12}= 1,000,000,000,000 bytes using powers of 10. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1TB = 2^{40} = 1,099,511,627,776 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.