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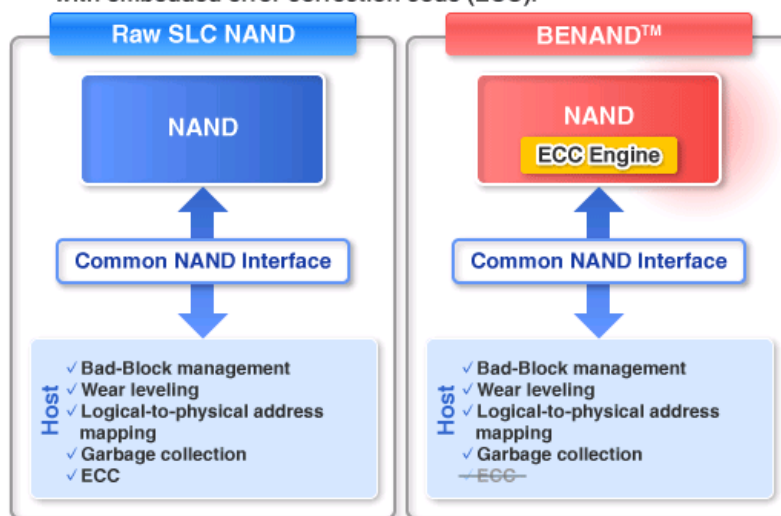
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BENAND™

Small- to medium-capacity single-level-cell (SLC) NAND flash memories are widely used as storage media for diverse applications including cell phones and digital TVs because of their simple interface protocols and ease of use. Shrinking memory process geometries are driving the need for improved error correction that has traditionally been implemented in the host processor.

BENAND™ is an SLC NAND flash solution with embedded error correction code (ECC), which removes the burden of ECC from the host processor. Use of the common NAND interface allows BENAND™ to maintain compatibility with general SLC NAND flash in terms of the command set, device operation, packaging, pin configuration, etc. Therefore, the latest BENAND™ can easily be used as a replacement for a general SLC NAND flash without being concerned about a system's error correction capability.

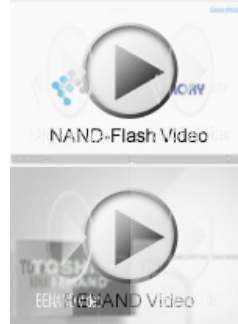
BENAND™ [Built-in ECC NAND] is an SLC NAND flash solution with embedded error correction code (ECC).



Toshiba showcases it's SLC NAND with built-in ECC: BENAND™

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Explanation: There is a problem with the page you are trying to reach and it cannot be displayed.

Try the following:

- **Refresh page:** Search for the page again by clicking the Refresh button. The timeout may have occurred due to Internet congestion.
- **Check spelling:** Check that you typed the Web page address correctly. The address may have been mistyped.
- **Access from a link:** If there is a link to the page you are looking for, try accessing the page from that link.

If you are still not able to view the requested page, try contacting your administrator or Helpdesk.

Technical Information (for support personnel)

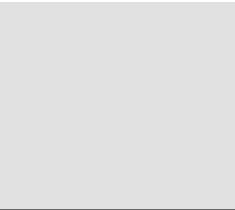
■ BENAND Further Information

- » [BENAND FAQ paper](#) (pdf 39KB) Jan 2014
- » [BENAND Whitepaper "BENAND, the SLC NAND Flash Memory with Built-in Error Correction Code \(ECC\)"](#) (pdf 87KB)
- » [Embedded Memory Cross Reference](#) (pdf 204KB)

■ BENAND™ Product Lineup

Capacity [bit]	Page Size [bit]	Block Size [bit]	Power Supply [V]	Operating Temperature [°C]	I/O	Package	Part Number
1G	(2048 +64) × 8	(128K +8K) × 8	2.7 to 3.6	0 to 70	x8	TSOP I 48-P-1220-0.50	TC58BVG0S3HTA00
				-40 to 85		P-TFBGA63-0911-0.80CZ	TC58BVG0S3HTA0
			P-VFBGA67-0608-0.80-001			TC58BVG0S3HBAI6	
			P-TFBGA63-0911-0.80CZ			TC58BYG0S3HBAI4	
			P-VFBGA67-0608-0.80-001			TC58BYG0S3HBAI6	
			1.70 to 1.95				
2G	(2048 +64) × 8	(128K +8K) × 8	2.7 to 3.6	0 to 70	x8	TSOP I 48-P-1220-0.50	TC58BVG1S3HTA00
				-40 to 85		P-TFBGA63-0911-0.80CZ	TC58BVG1S3HTA0
			P-VFBGA67-0608-0.80-001			TC58BVG1S3HBAI6	
			P-TFBGA63-0911-0.80CZ			TC58BYG1S3HBAI6	
			P-VFBGA67-0608-0.80-001			TC58BYG1S3HBAI4	
			1.70 to 1.95				
4G (2x2G)	(2048 +64) × 8	(128K +8K) × 8	2.7 to 3.6	0 to 70	x8	TSOP I 48-P-1220-0.50	TH58BVG2S3HTA00
				-40 to 85		P-TFBGA63-0911-0.80CZ	TH58BVG2S3HTA0
			P-VFBGA67-0608-0.80-001			TH58BVG2S3HBAI4	
			P-TFBGA63-0911-0.80CZ			TH58BVG2S3HBAI6	
			P-VFBGA67-0608-0.80-001			TH58BYG2S3HBAI6	
			1.70 to 1.95				
4G	(4096 +128) × 8	(256K +8K) × 8	2.7 to 3.6	0 to 70	x8	TSOP I 48-P-1220-0.50	TC58BVG2S0HTA00
				-40 to 85		P-TFBGA63-0911-0.80CZ	TC58BVG2S0HTA0
			P-VFBGA67-0608-0.80-001			TC58BVG2S0HBAI4	
			P-TFBGA63-0911-0.80CZ			TC58BVG2S0HBAI6	
			P-VFBGA67-0608-0.80-001			TC58BYG2S0HBAI6	
			1.70 to 1.95				
8G (2x4G)	(4096 +128) × 8	(256K +8K) × 8	2.7 to 3.6	0 to 70	x8	TSOP I 48-P-1220-0.50	TH58BVG3S0HTA00
				-40 to 85		P-TFBGA63-0911-0.80CZ	TH58BVG3S0HTA0
			P-VFBGA67-0608-0.80-001			TH58BVG3S0HBAI4	
			P-TFBGA63-0911-0.80CZ			TH58BVG3S0HBAI6	
			P-VFBGA67-0608-0.80-001			TH58BYG3S0HBAI6	
			1.70 to 1.95				

Please [contact Toshiba sales](#) to request the latest product information, technical datasheets and further configurations (density, package, I/O voltage etc.).



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