



SPANSION™  
GL032M90FAIR3  
XXBYY H  
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# S29GL032M MirrorBit™ Flash Memory

32 Megabit (2 M x 16-Bit / 4 M x 8-Bit)

## Spansion™ Overview

Spansion™, the Flash memory subsidiary of AMD and Fujitsu, is the world's leading manufacturer of NOR Flash Memory. Spansion is committed to delivering outstanding customer service and expert technical support, as well as providing the highest level of quality and reliability in its products. All Spansion production fabs are certified to the demanding ISO/TS16949:2002 global technical specification, ISO9001:2000 quality standards, and the ISO14001 environmental standard.

## General Description

Spansion S29GL032M devices, manufactured using 230-nanometer, high-volume production MirrorBit™ (two-bit-per-cell) technology, are drop-in replacements to standard floating gate products and offer a compelling solution for lowering your bill of materials. Several packages are available, offering the widest variety for all applications.

## Target Applications

- Set-top Boxes
- DVD / DVD-RW
- Printers
- MP3 Players
- Modems
- Mobile Devices

## PERFORMANCE CHARACTERISTICS

### ACCESS SPEED

Max. Access Time (ns)	90	100	110
Max. CE# Access Time (ns)	90	100	110
Max. Page Access Time (ns)	25	30	30
Max. OE# Access Time (ns)	25	30	30

### CURRENT CONSUMPTION

Active Read (@ 10 MHz) (mA)	35
Intra-Page Read (@ 10MHz) (mA)	5
Program (mA)	50
Erase (mA)	50
Standby Mode (µA)	1

Note: Typical values shown.

### PROGRAM & ERASE PERFORMANCE

Effective Word Program Time, (16-word buffer) (µs)	15
Effective Word Program Time, Accel (16-word buffer) (µs)	12.5
Typical Sector Erase (sec)	0.5

Note: Typical values shown.

## FEATURES AND BENEFITS

- Based on Proven, High-Volume Production MirrorBit™ Technology
- Lower Cost Alternative
- Drop-in Replacement for Standard Floating Gate Products
- High Quality and Reliability

## DISTINCTIVE CHARACTERISTICS

### ARCHITECTURAL

- Established 230nm MirrorBit technology
- Single 3.3V power supply
- Boot and uniform sector architecture options
- 16-word/32-byte write buffer
- 4-word/8-byte page read buffer
- Industrial operating temperature range -40 °C to +85 °C
- JEDEC pinout and software standards compliant

### SOFTWARE AND HARDWARE

- Program and Erase Suspend and Resume
- CFI (Common Flash Interface) compliant
- ACC pin accelerates factory programming

### SECURITY

- Sector Protection/Unprotection
- WP# protects top/bottom boot sectors or highest/lowest address sectors
- 128-word/256-byte one-time programmable Secured Silicon Sector

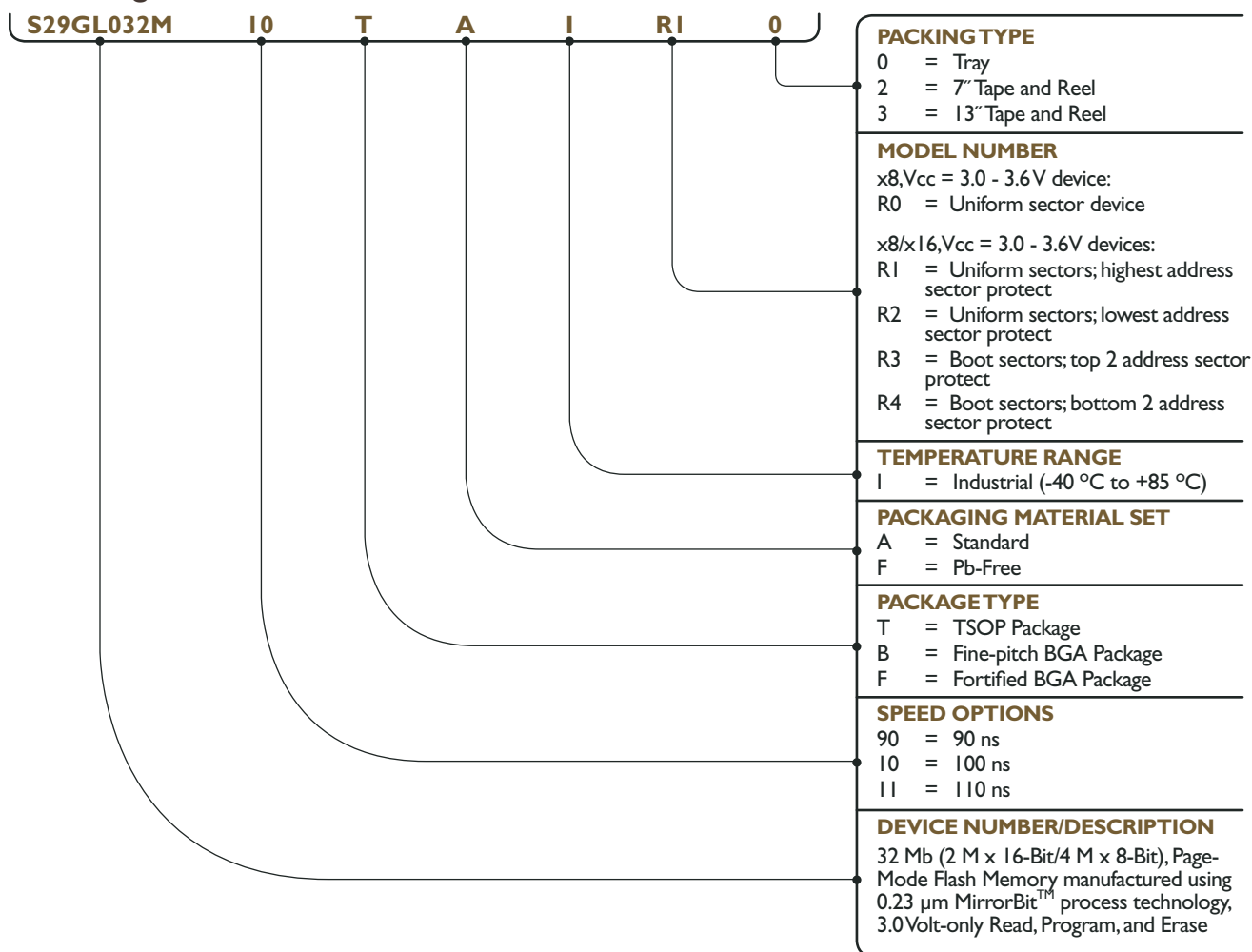
### QUALITY AND RELIABILITY

- Cycling endurance: 100,000 cycles per sector typical
- Data retention: 20 years typical

### PACKAGING

- 48-pin TSOP Package
- 56-pin TSOP Package
- 48-ball Fine-pitch BGA Package
- 64-ball Fortified BGA Package
- Standard and Pb-Free packages available

## Ordering Information



## AVAILABLE ORDERING PART NUMBERS FOR S29GL032M FLASH MEMORY

Device Number	Speed Option	Package & Material Temperature	Model Number	Packing Type	Package Description
S29GL032M	90, 10, 11	TAI,TFI	R0	0, 2, 3 <sup>1</sup>	TS040 (TSOP) <sup>2</sup>
		BAI,BFI			FBC048 (Fine-Pitch BGA) <sup>3</sup>
		TAI,TFI	R1, R2		TS056 (TSOP) <sup>2</sup>
		FAI,FFI			LAA064 (Fortified BGA) <sup>3</sup>
		TAI,TFI	R3, R4		TS048 (TSOP) <sup>2</sup>
		BAI,BFI			FBC048 (Fine-Pitch BGA) <sup>3</sup>
		FAI,FFI			LAA064 (Fortified BGA) <sup>3</sup>

PRODUCT SELECTION GUIDE<sup>4</sup>

Part Number for New Designs	Legacy Part Numbers
S29GL032M	Am29LV033MU
	Am29LV320MH/L
	Am29LV320MT/B
	MBM29PL32T/BM

## Notes:

- Type 0 is standard. Specify others as required: TSOPs can be packed in Types 0 and 3; BGAs in Types 0, 2, or 3.
- TSOP package marking omits packing type designator from ordering part numbers
- BGA package marking omits leading "S29" and packing type designator from ordering number. For example, the package marking for Part Number S29GL032M10FA1010 is GL032M10FA101.