SPANSION™

GL064A90FAIR1
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S29GL064A MirrorBit™ Flash Memory
64 Megabit (4 M x 16-Bit / 8 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 S29GL064A devices, manufactured using 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
- Networking/Telecom
- DVD-RW
- Industrial
- 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 200nm MirrorBit technology
- Single 3.3V power supply
- Boot and uniform sector architectures available
- 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
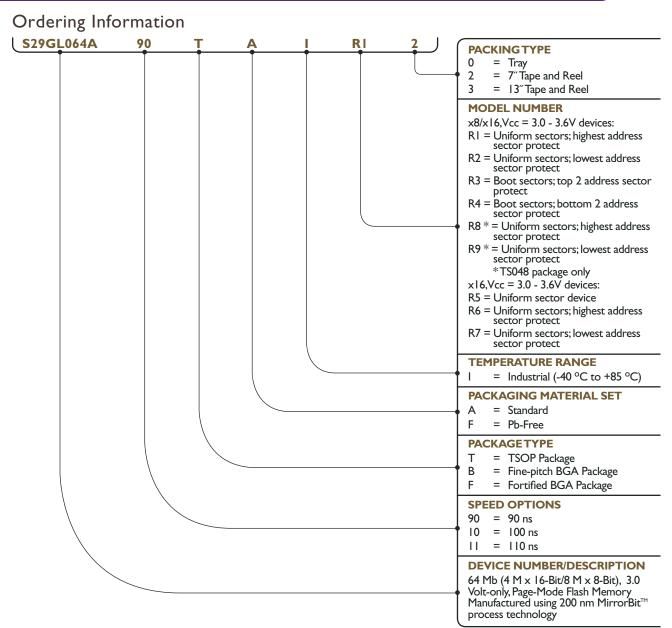- 128-word/256-byte one-time programmable Secured Silicon Sector

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

For more information about Spansion Flash memory solutions, please visit www.spansion.com.

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Ordering Information

S29GL064A — 90 — T — A — I — R1 — 2

PACKING TYPE
0 = Tray
2 = 7″ Tape and Reel
3 = 13″ Tape and Reel

MODEL NUMBER
x8/x16, Vcc = 3.0 - 3.6V devices:
R1 = Uniform sectors; highest address sector protect
R2 = Uniform sectors; lowest address sector protect
R3 = Boot sectors; top 2 address sector protect
R4 = Boot sectors; bottom 2 address sector protect
R8 * = Uniform sectors; highest address sector protect
R9 * = Uniform sectors; lowest address sector protect
 *TS048 package only
x16, Vcc = 3.0 - 3.6V devices:
R5 = Uniform sector device
R6 = Uniform sectors; highest address sector protect
R7 = Uniform sectors; lowest address sector protect

TEMPERATURE RANGE
I = Industrial (-40 °C to +85 °C)

PACKAGING MATERIAL SET
A = Standard
F = Pb-Free

PACKAGE TYPE
T = TSOP Package
B = Fine-pitch BGA Package
F = Fortified BGA Package

SPEED OPTIONS
90 = 90 ns
10 = 100 ns
11 = 110 ns

DEVICE NUMBER/DESCRIPTION
64 Mb (4 M x 16-Bit/8 M x 8-Bit), 3.0 Volt-only, Page-Mode Flash Memory Manufactured using 200 nm MirrorBit™ process technology

AVAILABLE ORDERING PART NUMBERS FOR S29GL064A FLASH MEMORY

Device Number	Speed Option	Package & Material Temperature	Model Number	Packing Type	Package Description
S29GL064A	90, 10, 11	TAI, TFI	R3, R4, R6, R7, R8, R9	0, 2, 3[1]	TS048 (TSOP)[2]
			R1, R2		TS056 (TSOP)[2]
		BAI, BFI	R3, R4, R5		VBN048 (Fine-pitch BGA)[3]
		FAI, FFI	R1, R2, R3, R4, R5		LAA064 (Fortified BGA)[3]

PRODUCT SELECTION GUIDE[4]

Part Number for New Designs	Legacy Part Numbers
S29GL064A	S29GL064M
	Am29LV065MU Am29LV640MH/L Am29LV640MT/B Am29LV640MU Am29LV641MH/L
	MBM29PL64LM MBM29PL65LM

Notes:
1. Type 0 is standard. Specify others as required: TSOPs can be packed in Types 0 and 3; BGAs can be packed in Types 0, 2, or 3.
2. TSOP package marking omits packing type designator from ordering part numbers
3. BGA package marking omits leading "S29" and packing type designator from ordering number. For example, the package marking for Part Number S29GL064A10FA1010 is GL064A10FAI01.
4. Refer to related Spansion OPN map for feature mapping.