

# S75PL-N MirrorBit™ ORNAND™ MCPs

Stacked Multi-Chip Product (MCP)

S29PL-N: CMOS 3.0 Volt-only Simultaneous Read/Write,  
Page-mode Flash Memory (NOR Interface)

S30ML-P: ORNAND Flash (NAND Interface)  
3V pSRAM



*Data Sheet (Advance Information)*

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## Stacked Multi-Chip Product (MCP)

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## Features

- **Speed**
  - PL-N: 70 ns (initial access, 30 ns page access)
  - ML-P: 30 ns (page access)
  - pSRAM: 70 ns
- **107-Ball Fine-Pitch Ball Grid Array (FBGA)**
  - 9 x 12 x 1.4mm for ML512P based MCP's
  - 11 x 13 x 1.4mm for ML01GP based MCPs
- **Operating Temperature Range**
  - Temperature Range of -25°C to +85°C

## General Description

This document contains information for the S75PL-N MirrorBit MCP product. The S75PL-N product consists of the following devices:

- S29PL-N
- S30ML-P
- 3 V pSRAM

## Flash/RAM Combinations Table

S29PL127N +	pSRAM Density	
	32 Mb	64 Mb
S30ML512P	S75PL127NBF	
S30ML01GP		

## Product Selector Guide

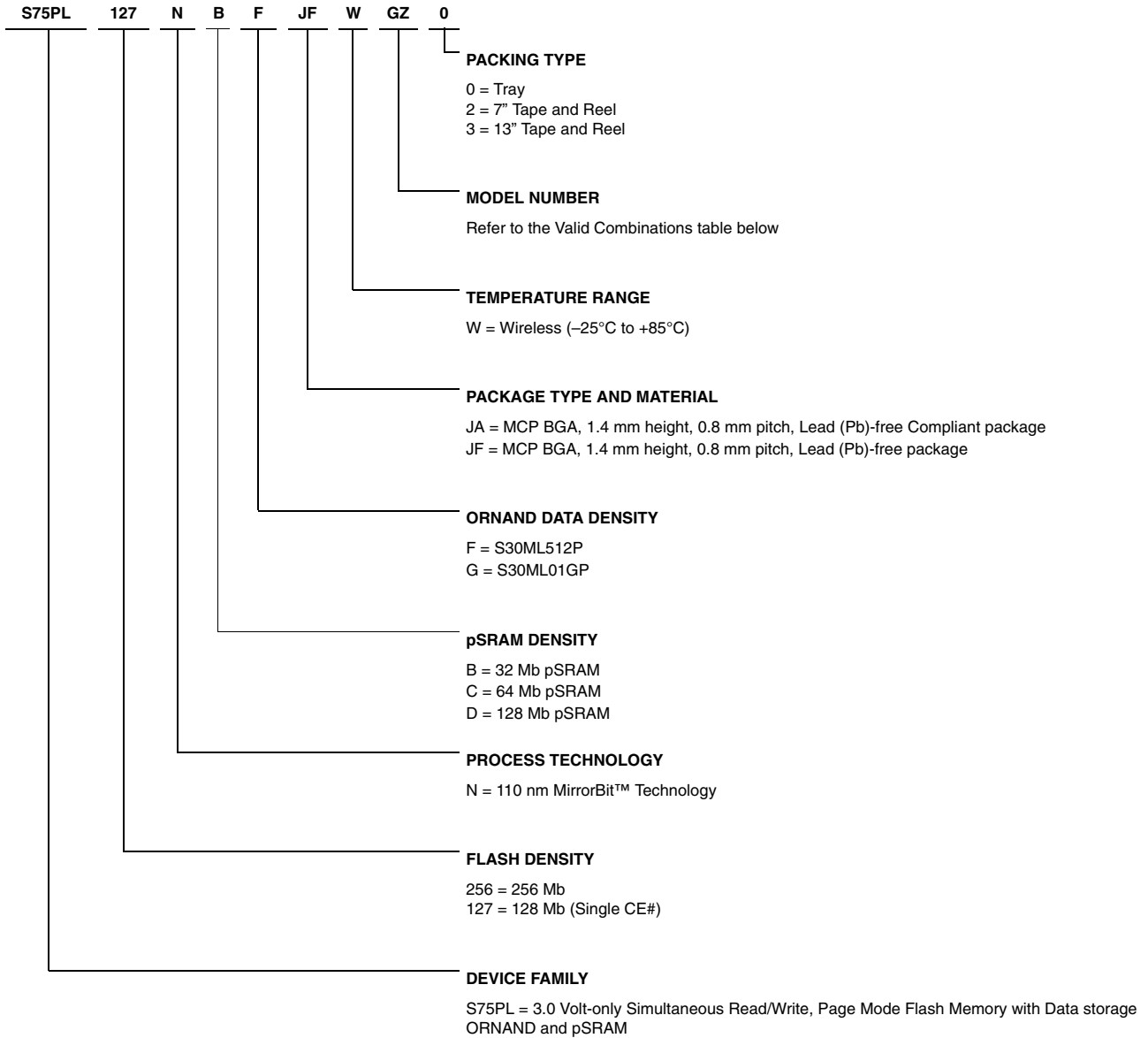
Device	pSRAM Density	pSRAM Type
S75PL127NBF	32 Mb	pSRAM Type 7

For detailed specifications, please refer to the individual data sheets:

Document	Publication Identification Number (PID)
S29PL-N	S29PL-N_M0
S30ML-P	S30ML-GP_00
32M pSRAM Type 7	pSRAM_29

# 1. Ordering Information

The ordering part number is formed by a valid combination of the following:



### 1.1 Valid Combinations

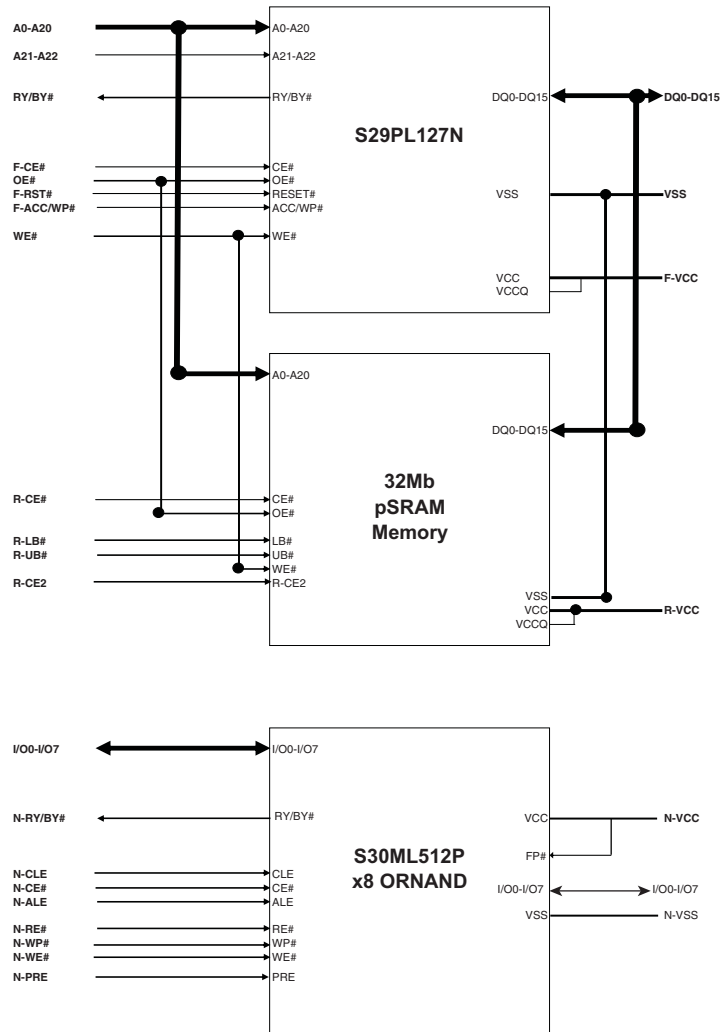
Valid Combinations list configurations planned to be supported in volume for this device. Consult your local sales office to confirm availability of specific valid combinations and to check on newly released combinations.

Valid Combinations								
Base Ordering Part Number (2)	Package & Temperature	Model Number	Packing Type	pSRAM Type	PL-N Linear Mode Access Time	ML-P Page Mode Access Time	pSRAM Linear Mode Access Time	Package Name
S75PL127NBF	JAW, JFW	GZ	0, 2, 3 (1), (2)	Type 7	70 ns	30 ns	70 ns	FMH107 9x12x1.4mm, 107 ball

**Notes:**

1. Type 0 is standard. Specify other options as required.
2. BGA package marking omits leading "S" and packing type designator from ordering part number.
3. Contact factory for availability for any of the OPNs listed since RAM type availability may vary over time.

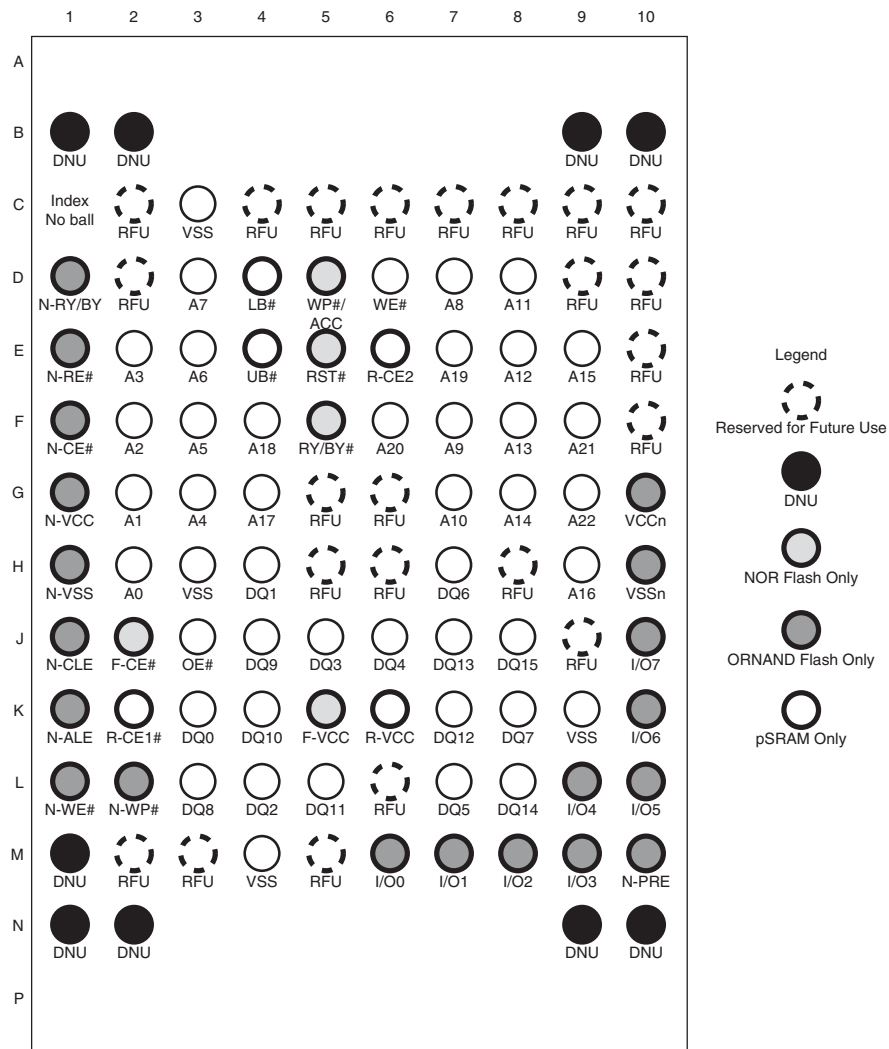
### 2. Block Diagram (S29PL-N and pSRAM on Bus 1, S30ML-P on Bus 2)



### 3. Connection Diagrams

#### 3.1 S75PL-N Pinout

Figure 3.1 107-ball Fine-Pitch Ball Grid Array (S75PL127NBF)



**Note:**  
Top view—balls facing down. The addresses that are shared vary by MCP combination as shown in the table below:

	PL-N Addresses	PL-N/pSRAM Addresses
S75PL127NBF	A22-A21	A20:A0

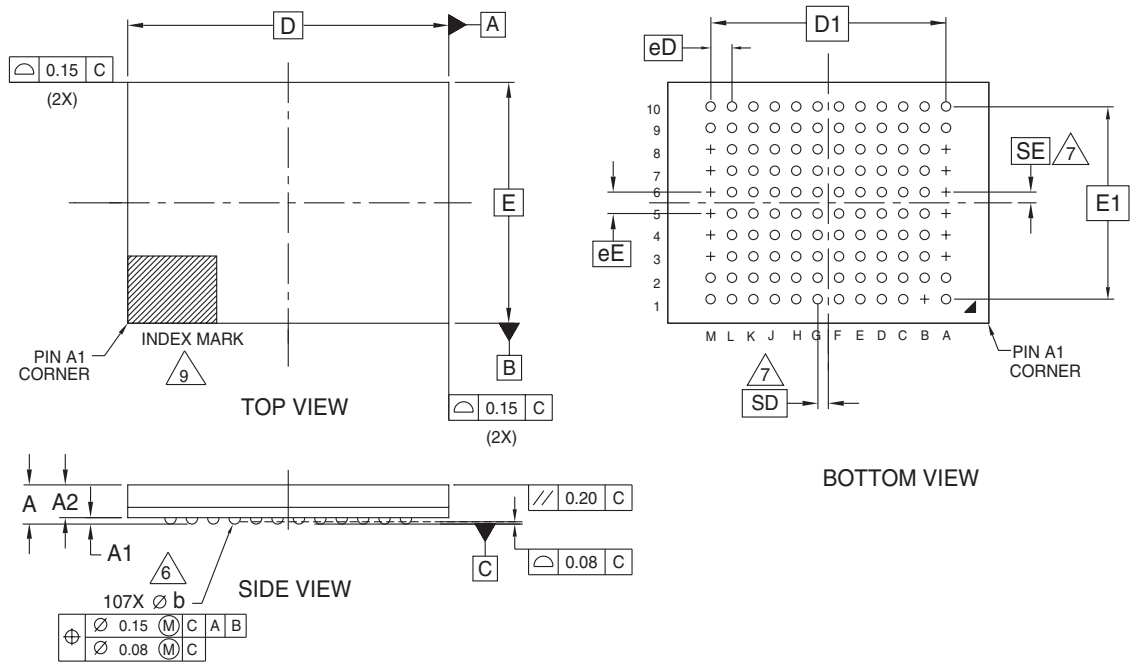
#### Special Handling Instructions for FBGA Package

Special handling is required for Flash Memory products in FBGA packages.

Flash memory devices in FBGA packages may be damaged if exposed to ultrasonic cleaning methods. The package and/or data integrity may be compromised if the package body is exposed to temperatures above 150°C for prolonged periods of time.

### 3.2 FMH107—107-Ball Fine Pitch Ball Grid Array (FBGA) 9 x 12 mm package

Figure 3.2 FMH107



PACKAGE	FMH 107			
JEDEC	N/A			
D x E	12.00 mm x 9.00 mm PACKAGE			
SYMBOL	MIN	NOM	MAX	NOTE
A	---	---	1.40	PROFILE
A1	0.17	---	---	BALL HEIGHT
A2	0.94	---	1.11	BODY THICKNESS
D	12.00 BSC.			BODY SIZE
E	9.00 BSC.			BODY SIZE
D1	8.80 BSC.			MATRIX FOOTPRINT
E1	7.20 BSC.			MATRIX FOOTPRINT
MD	12			MATRIX SIZE D DIRECTION
ME	10			MATRIX SIZE E DIRECTION
n	107			BALL COUNT
$\varnothing b$	0.35	0.40	0.45	BALL DIAMETER
eE	0.80 BSC.			BALL PITCH
eD	0.80 BSC.			BALL PITCH
SD / SE	0.40 BSC.			SOLDER BALL PLACEMENT
	A3,A4,A5,A6,A7,A8, B1,M3,M4,M5,M6,M7,M8			DEPOPULATED SOLDER BALLS

NOTES:

- DIMENSIONING AND TOLERANCING METHODS PER ASME Y14.5M-1994.
- ALL DIMENSIONS ARE IN MILLIMETERS.
- BALL POSITION DESIGNATION PER JEP95, SECTION 4.3, SPP-010.
- eE REPRESENTS THE SOLDER BALL GRID PITCH.
- SYMBOL "MD" IS THE BALL MATRIX SIZE IN THE "D" DIRECTION.  
SYMBOL "ME" IS THE BALL MATRIX SIZE IN THE "E" DIRECTION.  
n IS THE NUMBER OF POPULATED SOLDER BALL POSITIONS FOR MATRIX SIZE MD X ME.
- $\Delta 6$  DIMENSION "b" IS MEASURED AT THE MAXIMUM BALL DIAMETER IN A PLANE PARALLEL TO DATUM C.
- $\Delta 7$  SD AND SE ARE MEASURED WITH RESPECT TO DATUMS A AND B AND DEFINE THE POSITION OF THE CENTER SOLDER BALL IN THE OUTER ROW.  
WHEN THERE IS AN ODD NUMBER OF SOLDER BALLS IN THE OUTER ROW SD OR SE = 0.000.  
WHEN THERE IS AN EVEN NUMBER OF SOLDER BALLS IN THE OUTER ROW, SD OR SE = e/2
- "+" INDICATES THE THEORETICAL CENTER OF DEPOPULATED BALLS.
- $\Delta 9$  A1 CORNER TO BE IDENTIFIED BY CHAMFER, LASER OR INK MARK, METALLIZED MARK INDENTATION OR OTHER MEANS.

3512 \ 16-038.19 \ 8.9.05

## 4. Revision History

### 4.1 Revision A (April 21, 2006)

Initial release.

#### ***Colophon***

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