

# K9G8G08U0A

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**Document Title**

**SAMSUNG 8Gb(1G x8 Bit) NAND FLASH A-DIE**

**Revision History**

<b><u>Revision No</u></b>	<b><u>History</u></b>	<b><u>Date</u></b>	<b><u>Remark</u></b>
0.0	Initial Draft	Jau. 18, 2006	Advanced
0.1	Logo lacion is marked	Feb. 9th 2007	Advanced

**1.0 Product Introduction**

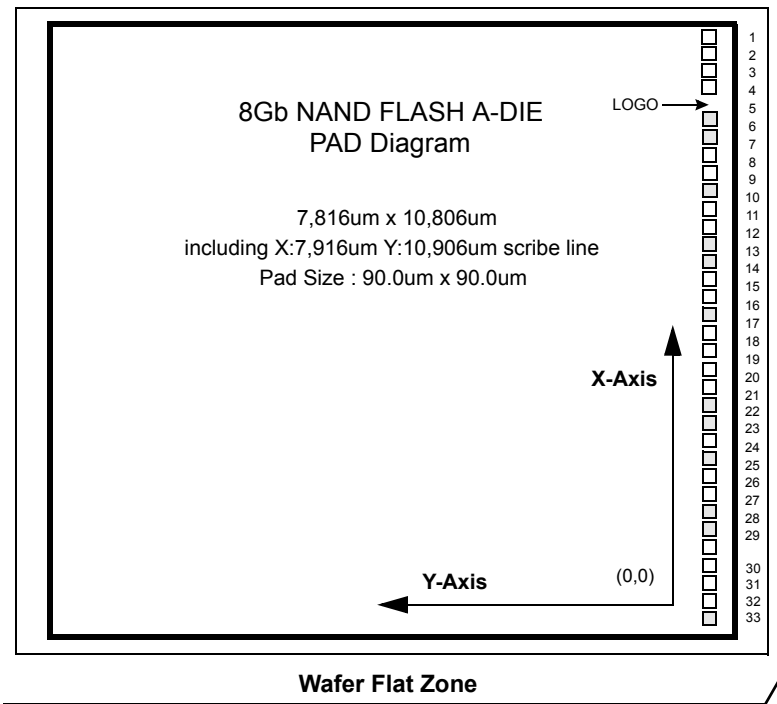
**1.1 Features**

- Power Supply Voltage : 2.7V ~ 3.6V
- Organization : (1G+32M) x 8bit
- May contain up to 100 invalid blocks
- Functionally Tested Only
- 256KB Block Erase operation
- 2KB Page Program/ Read Operation
- Tray Packing for Chip or Jar Packing for Wafer

**1.2 General Physical Specifications**

- Backside die surface of polished bare silicon
- Die Thickness = 725±10um(Bare Wafer) or 200um (Back Lap)
- Typical top-level metalization
- Single barrier metal :
  - 6.0K Angstroms Al
  - 0.2% Si + 0.5% Cu composition
- Top side passivation :
  - 1.0K Angstroms PEOX
  - 7K Angstroms HDP OX
  - 3K Angstroms SiN
  - 6.5um PSPI/ 10um Polyimide
- Typical Pad Size : 90.0um x 90.0um
- Die Size : 7916um x 10906um including scribe line  
(X : 7816um Y : 10806um scribe line)

**DIE OUTLINE (Top View)**



**Figure 1. Pad Diagram**

**1.3 Functional Specifications**

A bare die is tested for only DC parameters and functional items. Please refer to the packaged product data sheet for functional and parametric specifications. For bare die, these specifications are provided for reference only and SAMSUNG makes no guarantees or warranties on bare die.

**1.4 Standard Probe Testing**

Wafer probe consists of various functional and parametric tests of each die. Test patterns, timing, voltage margins, limits, and test sequence are determined by individual product yields and reliability data.

SAMSUNG retains a wafer map of each wafer as part of the probe records along with a lot summary of wafer yields for each lot probed. SAMSUNG reserves the right to change the probe program at any time to improve the reliability, packaged device yield, or performance of the product.

**1.5 Bonding Instructions**

The 8Gb NAND Flash A-die has total 33pads. Refer to the bond pad location and identification table for a complete list of bond pads and X, Y coordinates. SAMSUNG recommends using a bond wire on each Vcc and Vss bond pad for improved noise immunity.

**Table 1. Bond Pad Location and Identification**

PAD	FUNCTION	X	Y	PAD	FUNCTION	X	Y
1	IO0	7596.5	118.68	18	V <sub>DD</sub>	3746.3	118.68
2	IO1	7292.9	118.68	19	NC	3442.7	118.68
3	IO2	6989.3	118.68	20	NC	3139.1	118.68
4	IO3	6685.7	118.68	21	NC	3019.5	118.68
5	NC	6230.3	118.68	22	NC	2899.9	118.68
6	NC	6078.5	118.68	23	$\overline{CE}$	2690.1	118.68
7	$\overline{WP}$	5926.7	118.68	24	NC	2538.3	118.68
8	$\overline{WE}$	5623.1	118.68	25	$\overline{RE}$	2386.5	118.68
9	NC	5471.3	118.68	26	R/ $\overline{B}$	2082.9	118.68
10	ALE	5319.5	118.68	27	NC	1931.1	118.68
11	CLE	5015.9	118.68	28	NC	1779.3	118.68
12	NC	4896.3	118.68	29	IO4	1323.9	118.68
13	NC	4776.7	118.68	30	IO5	1020.3	118.68
14	Vss	4657.1	118.68	31	IO6	716.7	118.68
15	Vss	4353.5	118.68	32	IO7	413.1	118.68
16	NC	4201.7	118.68	33	NC	189.6	118.68
17	V <sub>DD</sub>	4049.9	118.68				

**NOTE:**

1. Referenced to the center of each pad from the corner of left bottom.
2. All units are in um
3. NC stands for No Connection.

## 1.6 Packing

### • Tray Packing for Chip

A 2-inch square waffle style carrier for die with separate compartments for each die. Each tray has a cavity size selected for the device that allows for easy loading and unloading and prevents rotation. The tray itself is made of conductive material to reduce the danger of damage to the die from electrostatic discharge.

**The chip carriers will be labeled with the following information :**

- SAMSUNG wafer lot number
- SAMSUNG part number
- Quantity

### • Jar Packing for Wafer

Jar Packing is made by Samsung Electronics and used by many customers that we deliver the requested die as wafer. The pack consists of clean paper to wrap the wafer, high cushioned sponge between wafer and hardly fragile plastic box with sponge. Each pack has typically 25 wafers and then several packs are put into larger box depending on amounts of wafers.

## 1.7 Storage and Handling

SAMSUNG recommends the die should be stored in a controlled environment with filtered nitrogen. The carrier must be opened at ESD safe environment at inspection and assembly.