

Migrating between Flash Device Densities

Application Note



July 2003

The following document refers to Spansion memory products that are now offered by both Advanced Micro Devices and Fujitsu. Although the document is marked with the name of the company that originally developed the specification, these products will be offered to customers of both AMD and Fujitsu.

Continuity of Specifications

There is no change to this document as a result of offering the device as a Spansion product. Any changes that have been made are the result of normal documentation improvements and are noted in the document revision summary, where supported. Future routine revisions will occur when appropriate, and changes will be noted in a revision summary.

Continuity of Ordering Part Numbers

AMD and Fujitsu continue to support existing part numbers beginning with "Am" and "MBM". To order these products, please use only the Ordering Part Numbers listed in this document.

For More Information

Please contact your local AMD or Fujitsu sales office for additional information about Spansion memory solutions.

Publication Number **2292I** Revision **C** Amendment **+I** Issue Date **November 30, 2000**





Migrating Between Flash Device Densities

Application Note

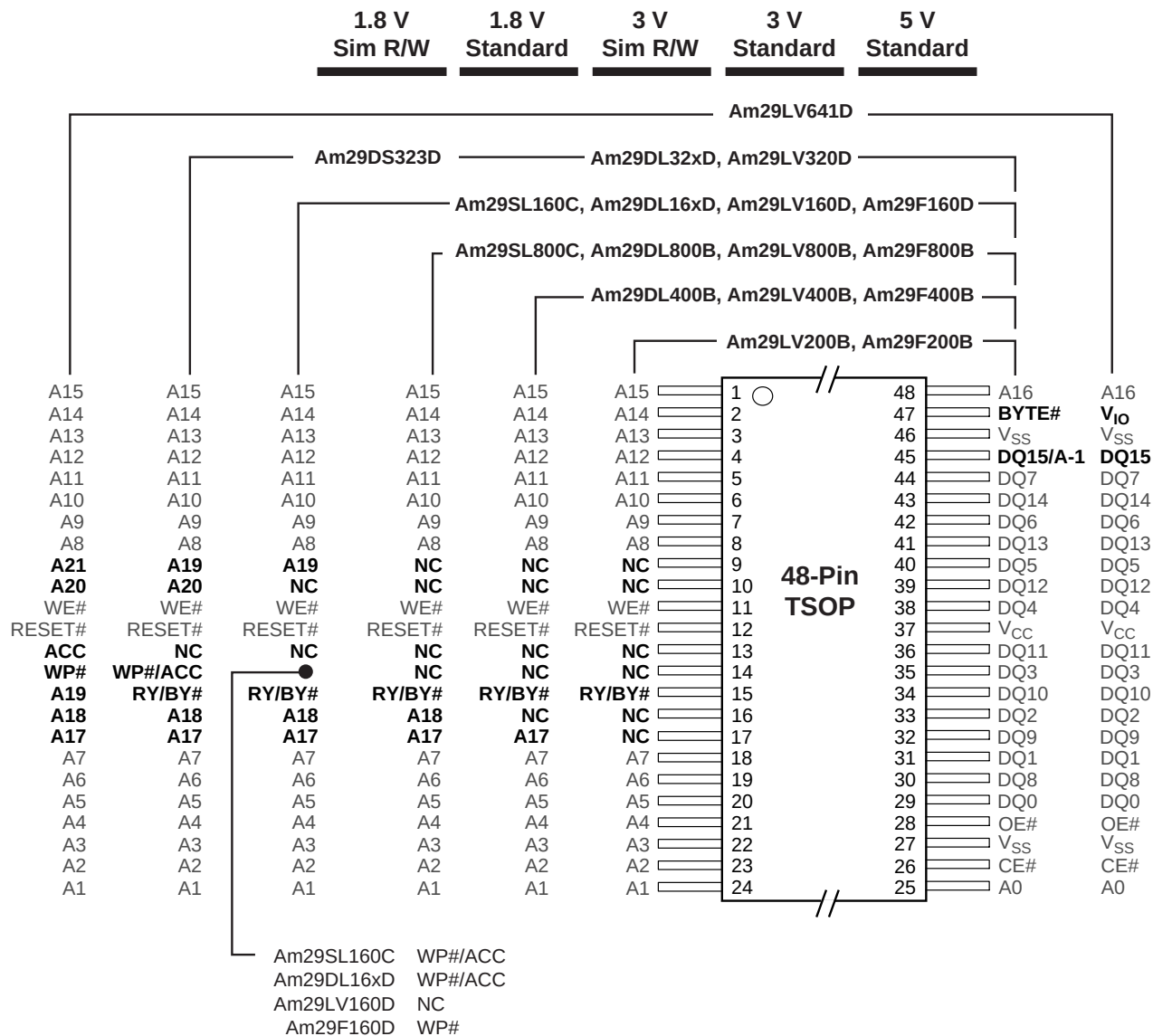
INTRODUCTION

This application note illustrates the pinout differences that occur when migrating between densities of AMD flash memory devices. Each drawing shows at least one migration path. A “migration path” is a logical progression from one density to another within a group of devices sharing a common voltage range, architecture, bus width. For example, the Am29F200/400/800/160 comprise a group of 5 V, standard architecture, x8/x16-bit devices that range in density from 2 to 16 Mbits. All drawings show top view of packages.

The following is a list of drawings in this document:

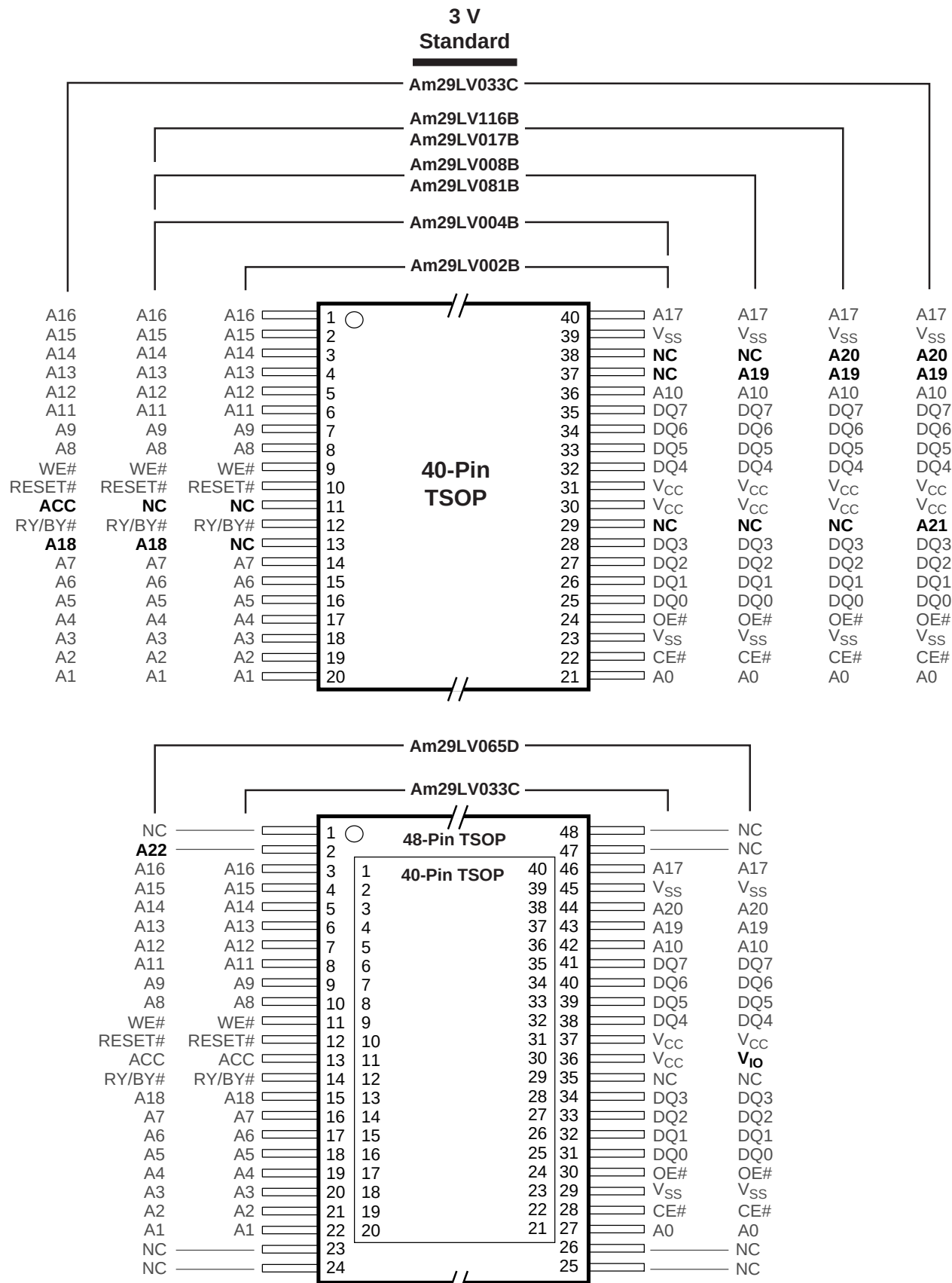
48-Pin TSOP: 1.8 V–5 V x8/x16 or x16-only Devices	2
40-Pin & 40- to 48-Pin TSOP: 3 V x8-only Devices	3
40-Pin TSOP: 5 V x8-only Devices	4
32-Pin TSOP: 3 V/5 V x8-only Devices	5
44-Pin SO: 3 V/5 V x8/x16 Devices	6
44-Pin So to 56-Pin SO: 3 V Devices	7
56-Pin SO: 3 V Burst Mode Devices	8
44-Pin SO: 5 V x8-only Devices	9
32-Pin PLCC: 5 V x8-only Devices	10
32-PIN PLCC: 3 V/5 V x8-only Devices	11
32-Pin PDIP: 5 V x8-only Devices	12
48- or 63-Ball FBGA: 3 V x8/x16 Devices	13
48- or 63-Ball FBGA: 3 V X8-only Devices	14
47- & 48-Ball FBGA, Am29BDS Devices	15
Revision Summary	16

48-PIN TSOP: 1.8 V–5 V X8/X16 OR X16-ONLY DEVICES

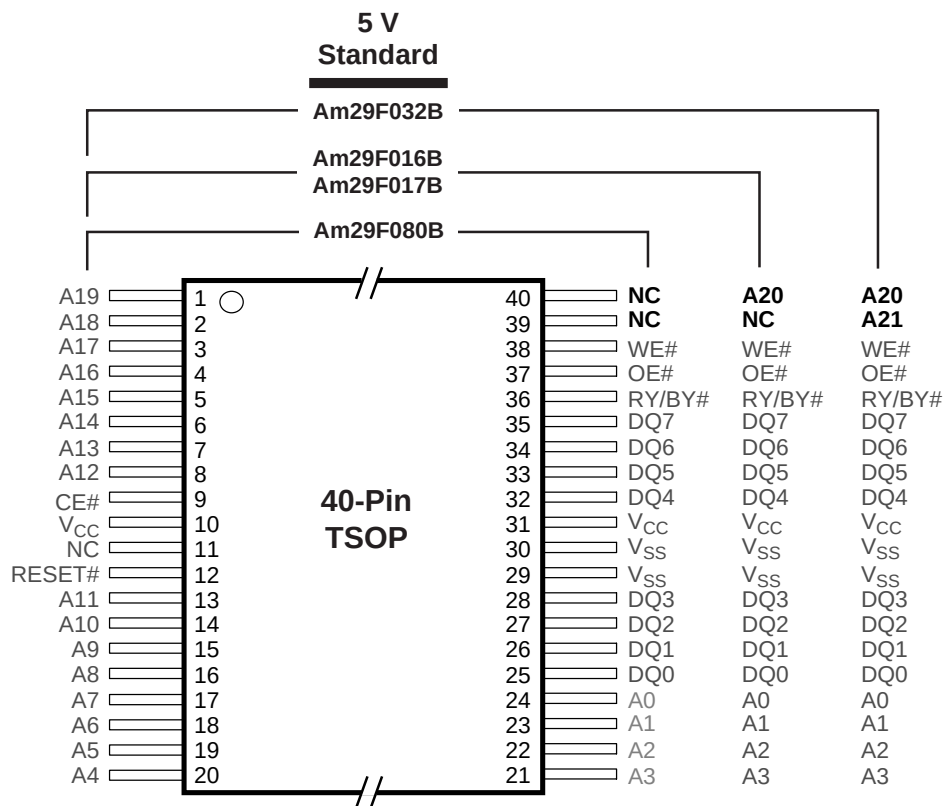


* The Am29LV641 is a x16-only device.

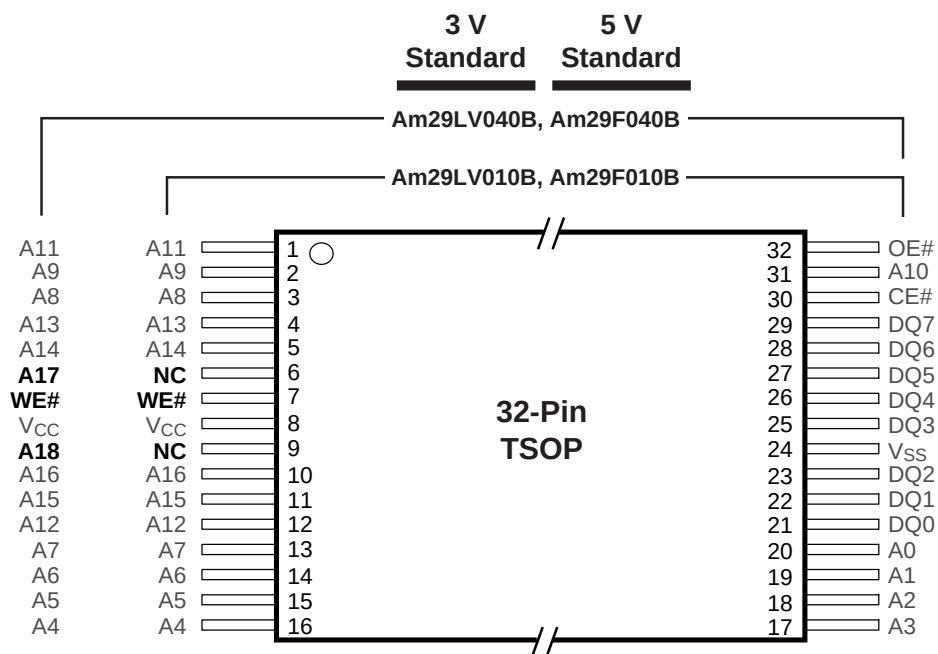
40-PIN & 40- TO 48-PIN TSOP: 3 V X8-ONLY DEVICES



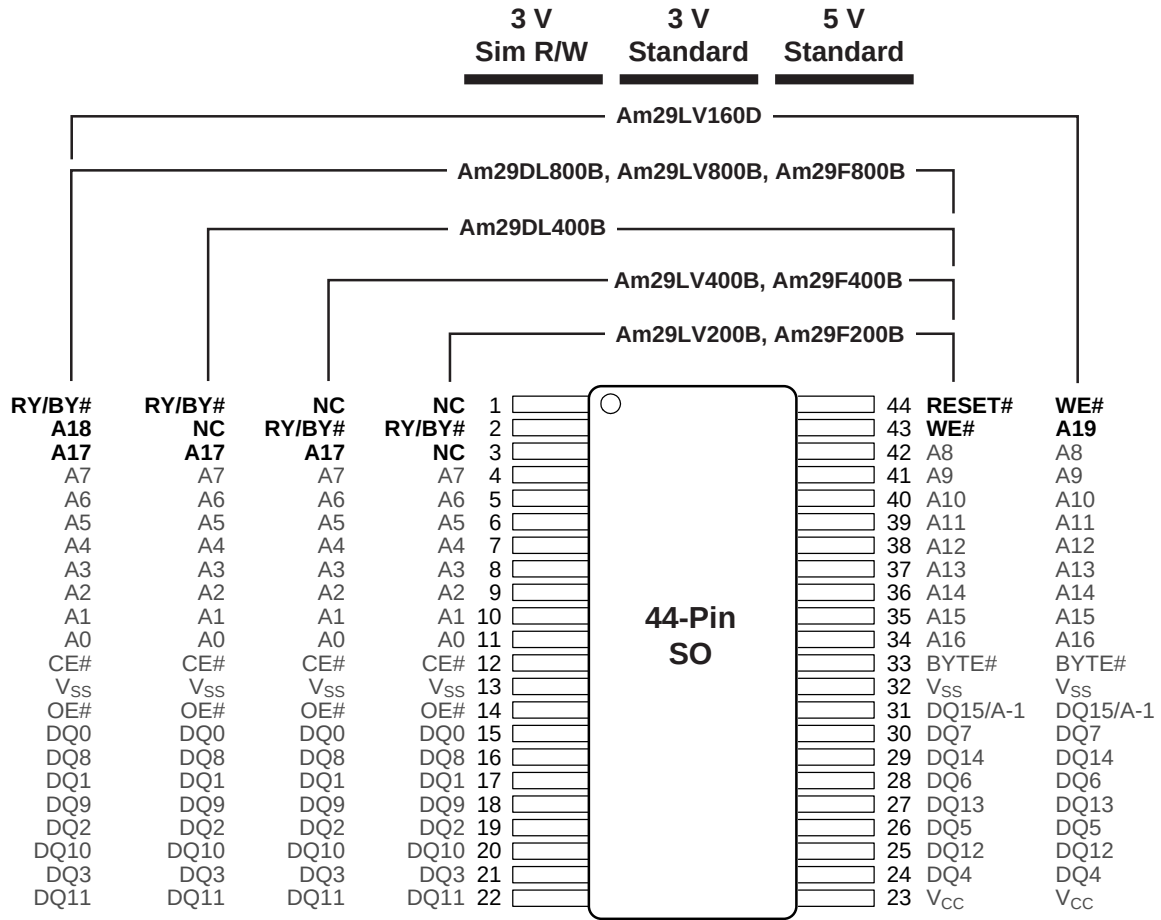
40-PIN TSOP: 5 V X8-ONLY DEVICES

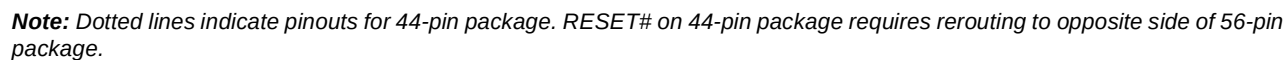


32-PIN TSOP: 3 V/5 V X8-ONLY DEVICES

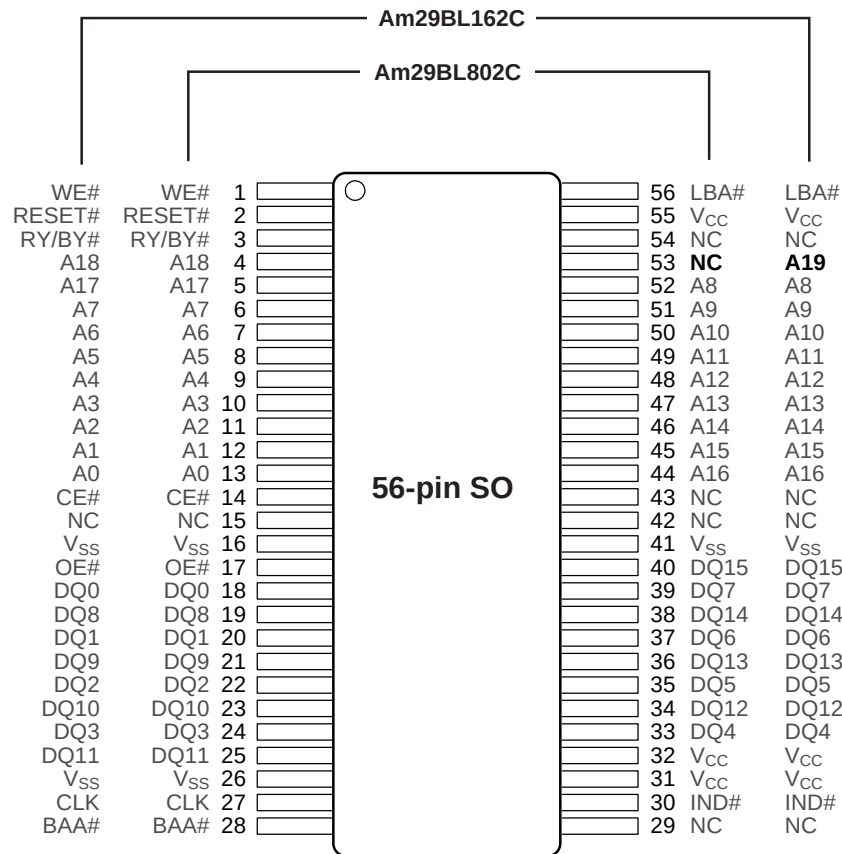


44-PIN SO: 3 V/5 V X8/X16 DEVICES

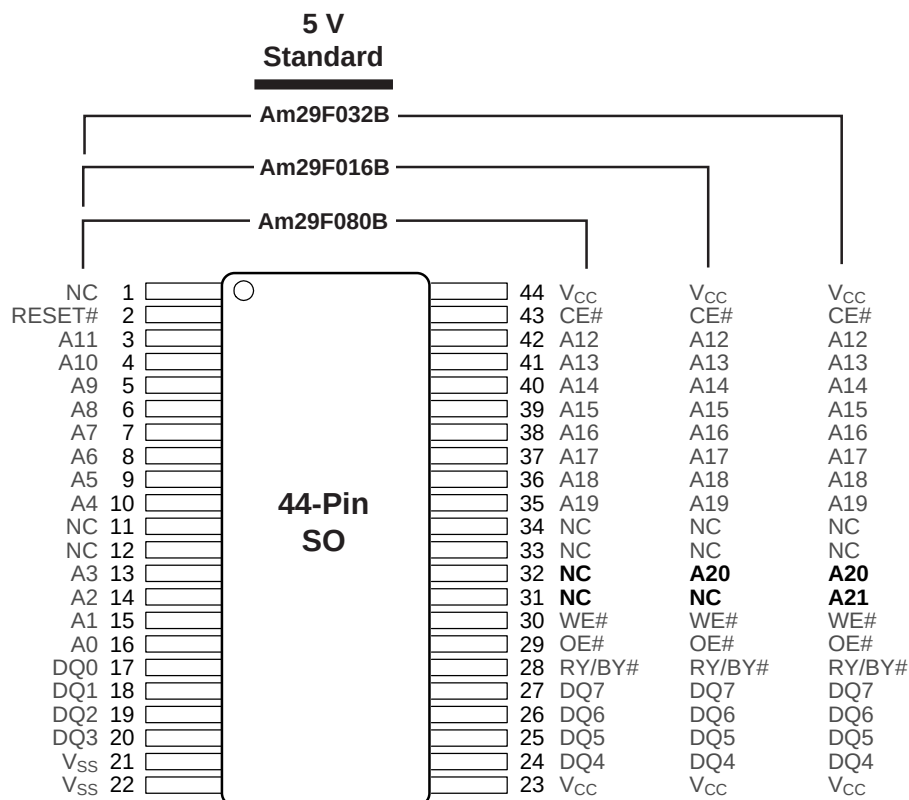




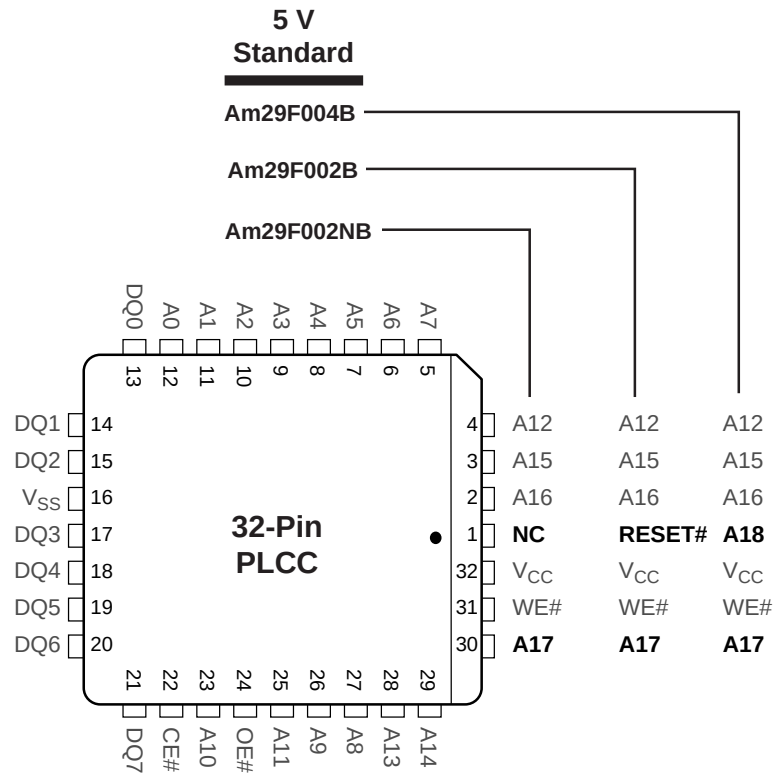
56-PIN SO: 3 V BURST MODE DEVICES



44-PIN SO: 5 V X8-ONLY DEVICES

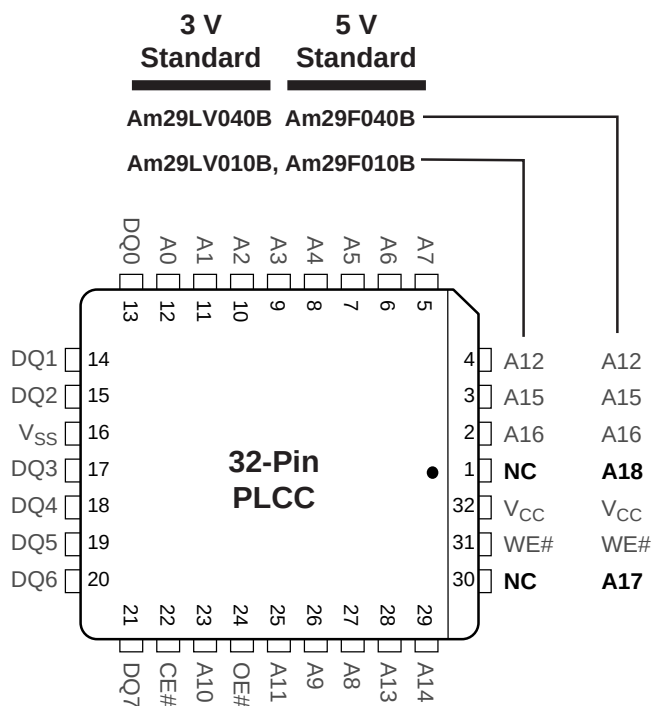


32-PIN PLCC: 5 V X8-ONLY DEVICES



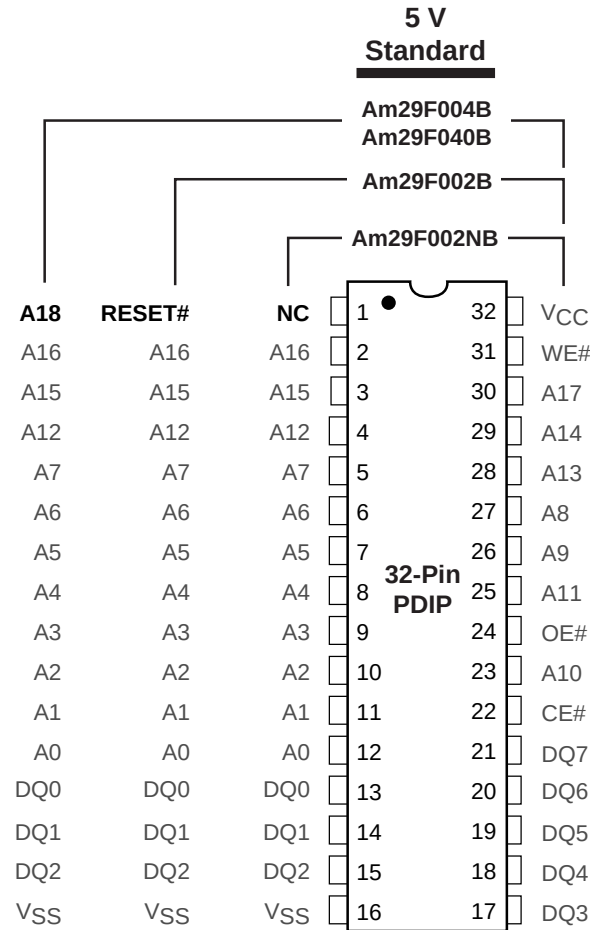
Note: The figure shows boot sector devices.

32-PIN PLCC: 3 V/5 V X8-ONLY DEVICES

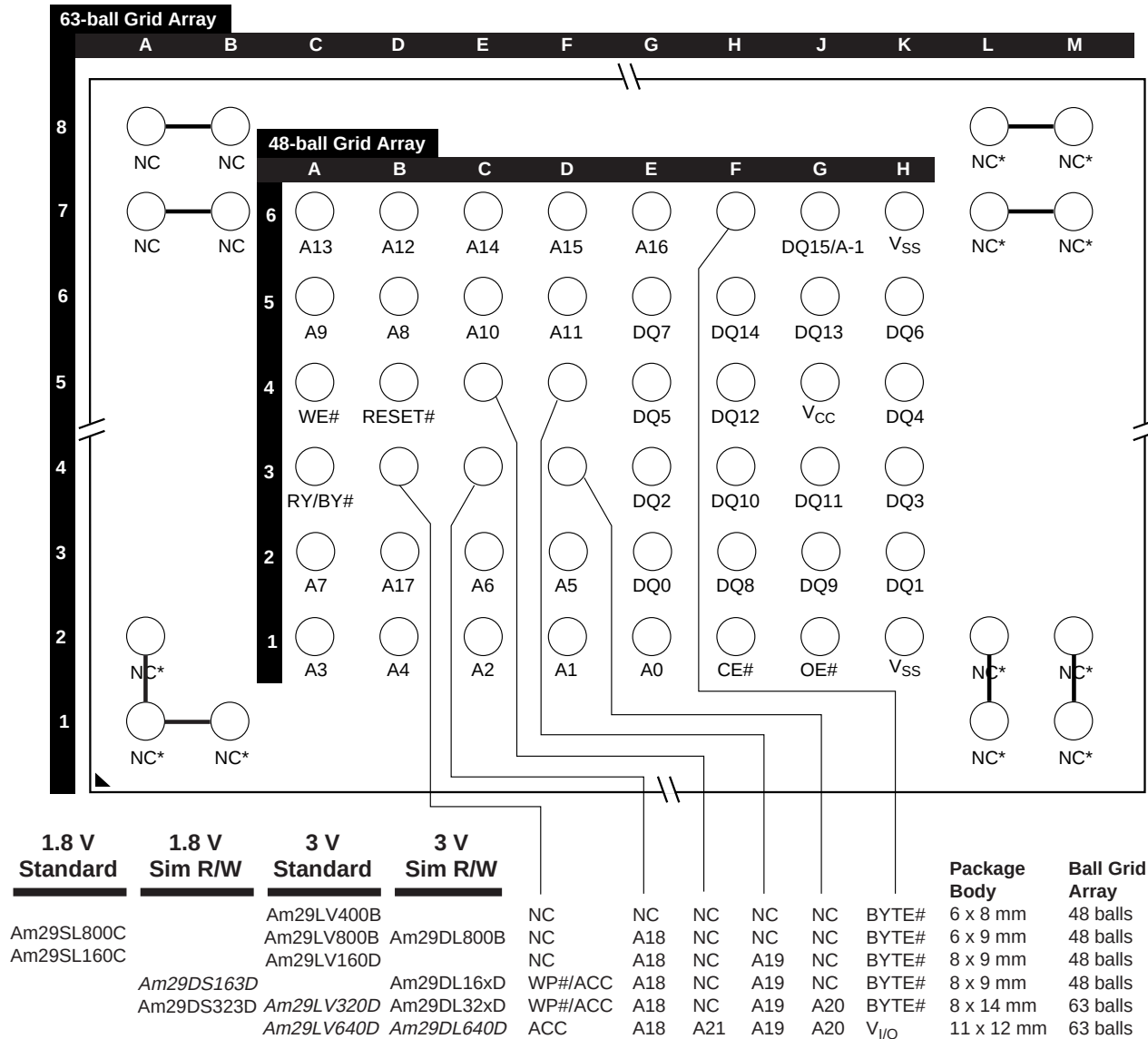


Note: The figure shows uniform sector devices.

32-PIN PDIP: 5 V X8-ONLY DEVICES



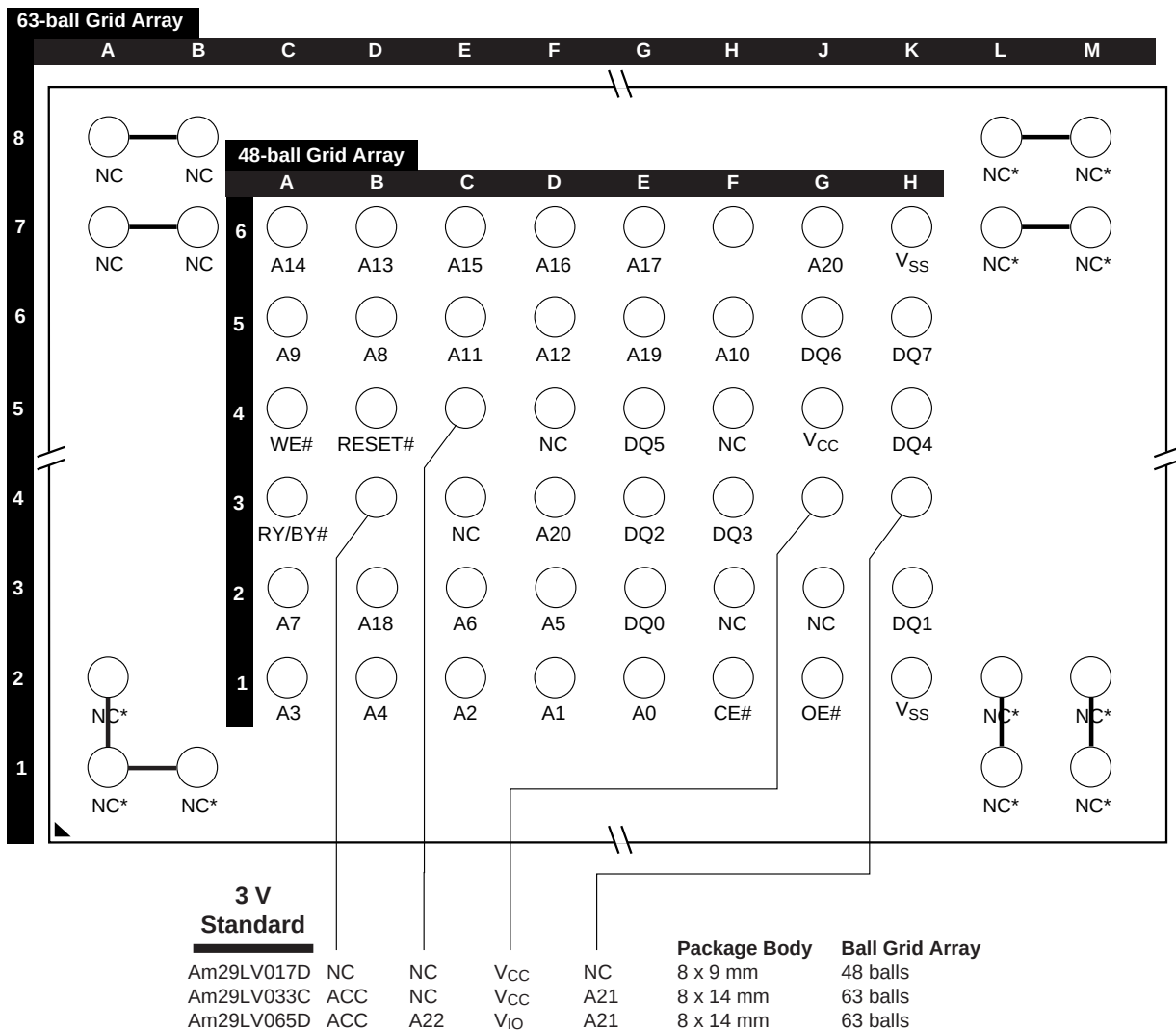
48- OR 63-BALL FBGA: 3 V X8/X16 DEVICES



Top view shown, with balls facing down. All grid arrays have 0.8 mm pitch. Products listed in italics are not yet introduced.

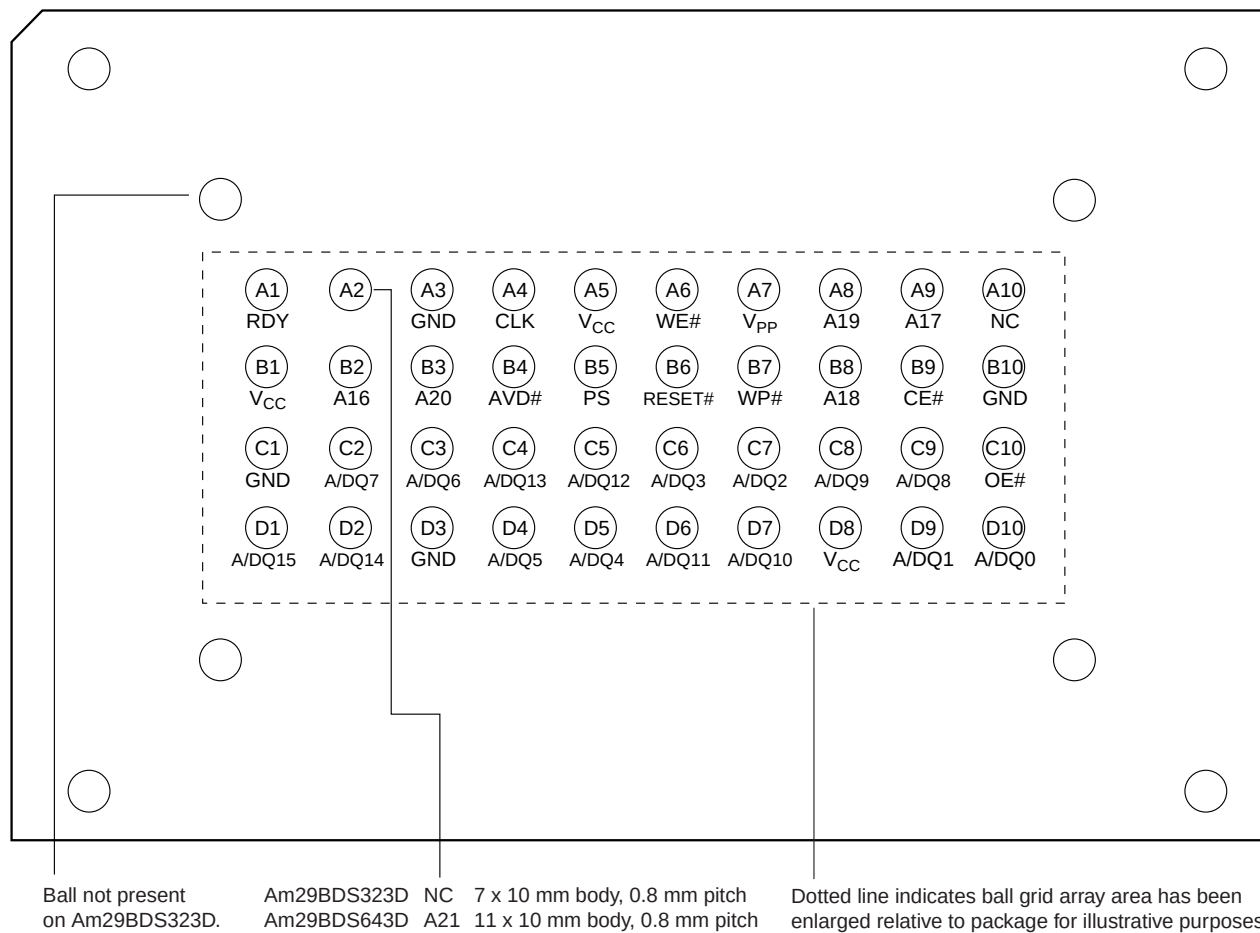
* Balls are shorted together via the substrate but not connected to the die.

48- OR 63-BALL FBGA: 3 V X8-ONLY DEVICES



Top view shown, with balls facing down. All grid arrays have 0.8 mm pitch.
 * Balls are shorted together via the substrate but not connected to the die.

47- & 48-BALL FBGA, AM29BDS DEVICES



REVISION SUMMARY

Revision B (September 10, 1999)

Added the ball grid array column to both FBGA diagrams.

Revision C (October 5, 2000)

Globally changed process technology designators in part number as required to reflect current product offerings.

Added 1.8 V Am29DS simultaneous read/write devices to 48-pin TSOP illustration. Added 40-pin to 48-pin migration to 40-pin TSOP illustration. Added 1.8 V

Am29SL and Am29DS devices to 48-/63-ball FBGA illustration.

Added illustrations for 47- & 48-Ball FBGA, Am29BDS devices, 44-pin SO to 56-pin SO 3 V devices, and 56-pin SO: 3 V burst mode devices.

Revision C+1 (November 30, 2000)

Updated the following two diagrams to include V_{IO} for Am29LV065 devices:

40-Pin & 40- to 48-Pin TSOP: 3 V x8-only Devices
48- or 63-Ball FBGA: 3 V X8-only Devices

Trademarks

Copyright © 2000 Advanced Micro Devices, Inc. All rights reserved.

AMD, the AMD logo, and combinations thereof are registered trademarks of Advanced Micro Devices, Inc.

Product names used in this publication are for identification purposes only and may be trademarks of their respective companies.