04R-00496-00

484-Pin FineLine Ball-Grid Array (FBGA) - Flip Chip - Flat Top Single-Piece Lid - A:3.00

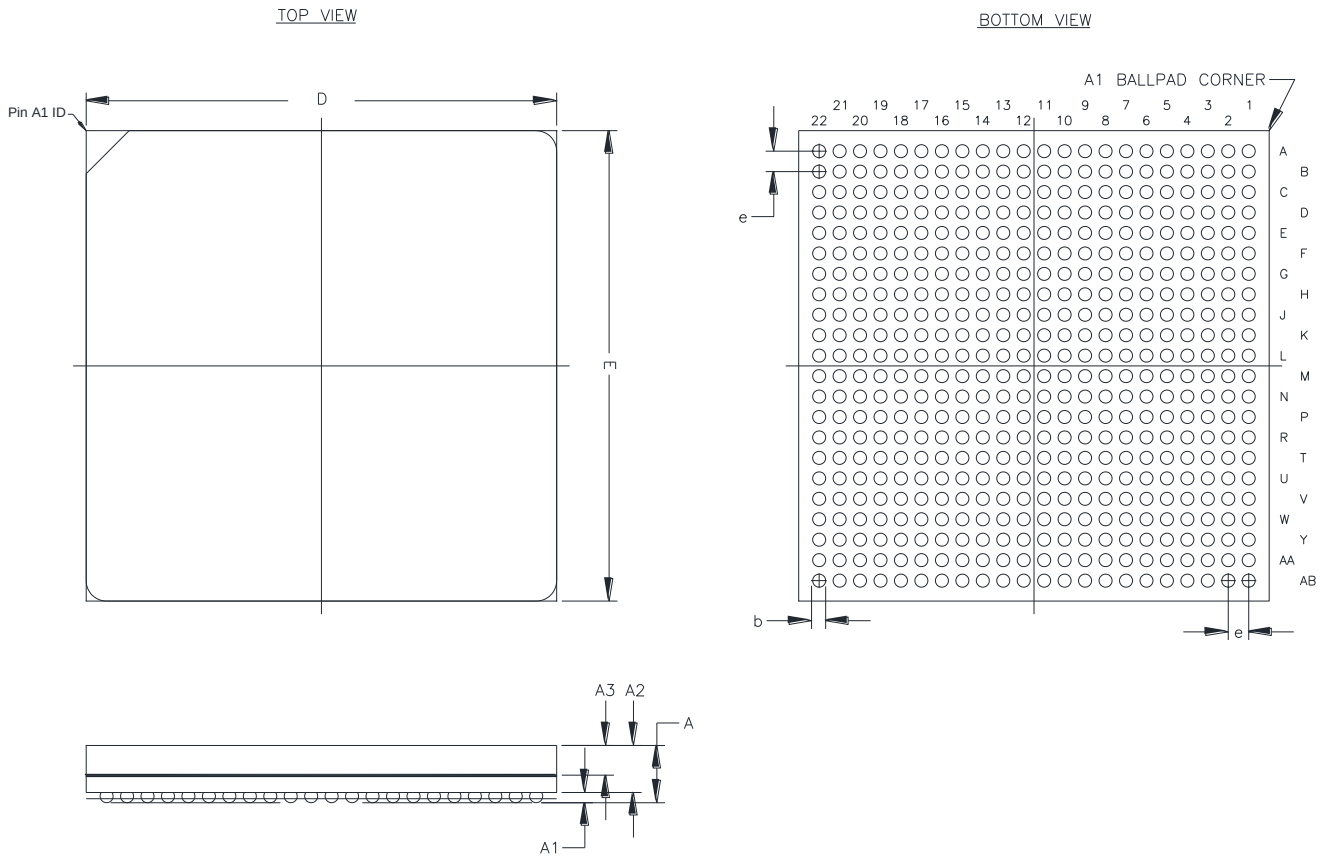
- All dimensions and tolerances conform to ASME Y14.5M – 1994.
- Controlling dimension is in millimeters.
- Pin A1 may be indicated by an ID dot, or a special feature, in its proximity on package surface.

Package Information	
Description	**Specification**
Ordering Code Reference	F
Package Acronym	FBGA
Substrate Material	ABF
Solder ball composition	Pb-free: Sn:3Ag:0.5Cu (Typ.)
JEDEC Outline Reference	MS-034 Variation: AAJ-1
Lead Coplanarity	0.008 inch (0.20 mm)
Weight	6.2 g (Typ.)
Moisture Sensitivity Level	Printed on moisture barrier bag

Package Outline Dimension Table

Symbol	Millimeters		
	Min.	**Nom.**	**Max.**
A	2.60	2.80	3.00
A1	0.40	0.50	0.60
A2	2.00	2.30	2.60
A3	1.40	1.45	1.50
D	23.00 BSC		
E	23.00 BSC		
b	0.50	0.60	0.70
e	1.00 BSC		

Package Outline



Document Revision History

Table 1 shows the revision history for this document.

Table 1. Document Revision History

Date	Version	Changes
October 2016	1.0	Initial Release

now part of Intel

101 Innovation Drive
San Jose, CA 95134
www.altera.com

© 2016 Altera Corporation. All rights reserved. ALTERA, ARRIA, CYCLONE, HARDCOPY, MAX, MEGACORE, NIOS, QUARTUS and STRATIX are Reg. U.S. Pat. & Tm. Off. and/or trademarks of Altera Corporation in the U.S. and other countries. All other trademarks and service marks are the property of their respective holders as described at www.altera.com/common/legal.html. Altera warrants performance of its semiconductor products to current specifications in accordance with Altera's standard warranty, but reserves the right to make changes to any products and services at any time without notice. Altera assumes no responsibility or liability arising out of the application or use of any information, product, or service described herein except as expressly agreed to in writing by Altera. Altera customers are advised to obtain the latest version of device specifications before relying on any published information and before placing orders for products or services.