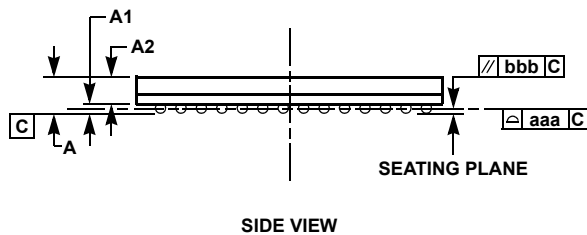
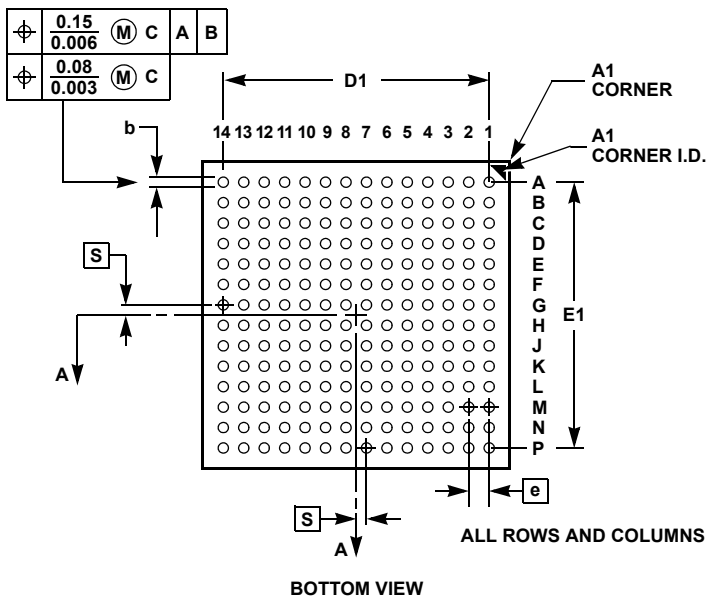
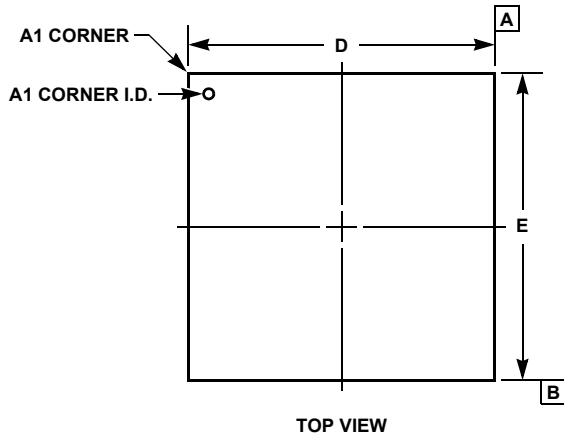


Plastic Packages for Integrated Circuits

Plastic Ball Grid Array Packages (BGA)



V196.12x12

196 BALL PLASTIC BALL GRID ARRAY PACKAGE

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	-	0.059	-	1.50	-
A1	0.012	0.016	0.31	0.41	-
A2	0.037	0.044	0.93	1.11	-
b	0.016	0.020	0.41	0.51	7
D/E	0.468	0.476	11.90	12.10	-
D1/E1	0.405	0.413	10.30	10.50	-
N	196		196		-
e	0.032 BSC		0.80 BSC		-
MD/ME	14 x 14		14 x 14		3
bbb	0.004		0.10		-
aaa	0.005		0.12		-

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NOTES:

- Controlling dimension: MILLIMETER. Converted inch dimensions are not necessarily exact.
- Dimensioning and tolerancing conform to ASME Y14.5M-1994.
- "MD" and "ME" are the maximum ball matrix size for the "D" and "E" dimensions, respectively.
- "N" is the maximum number of balls for the specific array size.
- Primary datum C and seating plane are defined by the spherical crowns of the contact balls.
- Dimension "A" includes standoff height "A1", package body thickness and lid or cap height "A2".
- Dimension "b" is measured at the maximum ball diameter, parallel to the primary datum C.
- Pin "A1" is marked on the top and bottom sides adjacent to A1.
- "S" is measured with respect to datum's A and B and defines the position of the solder balls nearest to package centerlines. When there is an even number of balls in the outer row the value is "S" = e/2.