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Understanding [Embedded - FPGAs \(Field Programmable Gate Array\)](#)

Embedded - FPGAs, or Field Programmable Gate Arrays, are advanced integrated circuits that offer unparalleled flexibility and performance for digital systems. Unlike traditional fixed-function logic devices, FPGAs can be programmed and reprogrammed to execute a wide array of logical operations, enabling customized functionality tailored to specific applications. This reprogrammability allows developers to iterate designs quickly and implement complex functions without the need for custom hardware.

Applications of Embedded - FPGAs

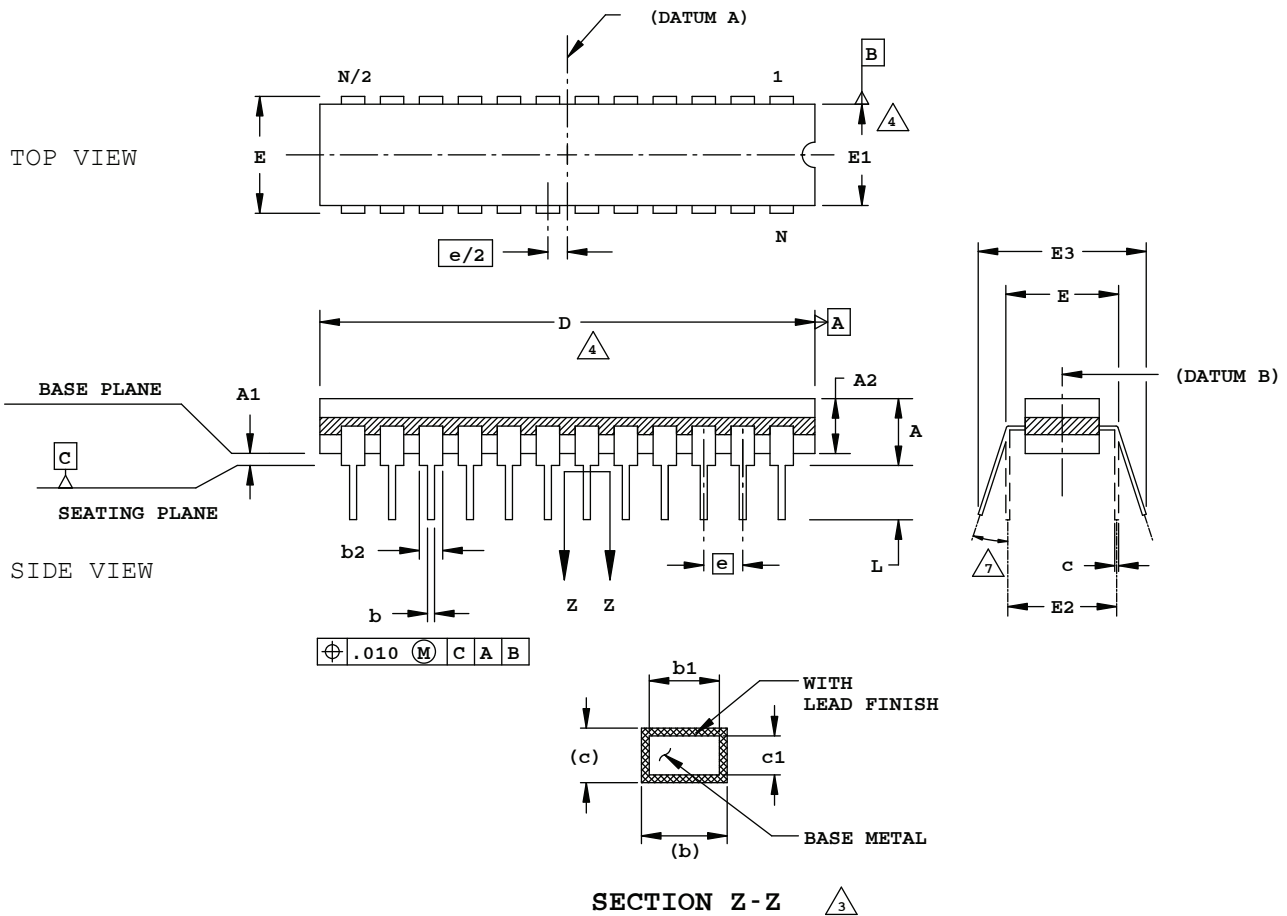
The versatility of Embedded - FPGAs makes them indispensable in numerous fields. In telecommunications.

Details

Product Status	Obsolete
Number of LABs/CLBs	-
Number of Logic Elements/Cells	6100
Total RAM Bits	94208
Number of I/O	97
Number of Gates	-
Voltage - Supply	1.14V ~ 1.26V
Mounting Type	Surface Mount
Operating Temperature	0°C ~ 85°C (TJ)
Package / Case	144-LQFP
Supplier Device Package	144-TQFP (20x20)
Purchase URL	https://www.e-xfl.com/product-detail/lattice-semiconductor/lfec6e-3t144c

24-Pin (300-Mil) Cerdip

Dimensions in Inches



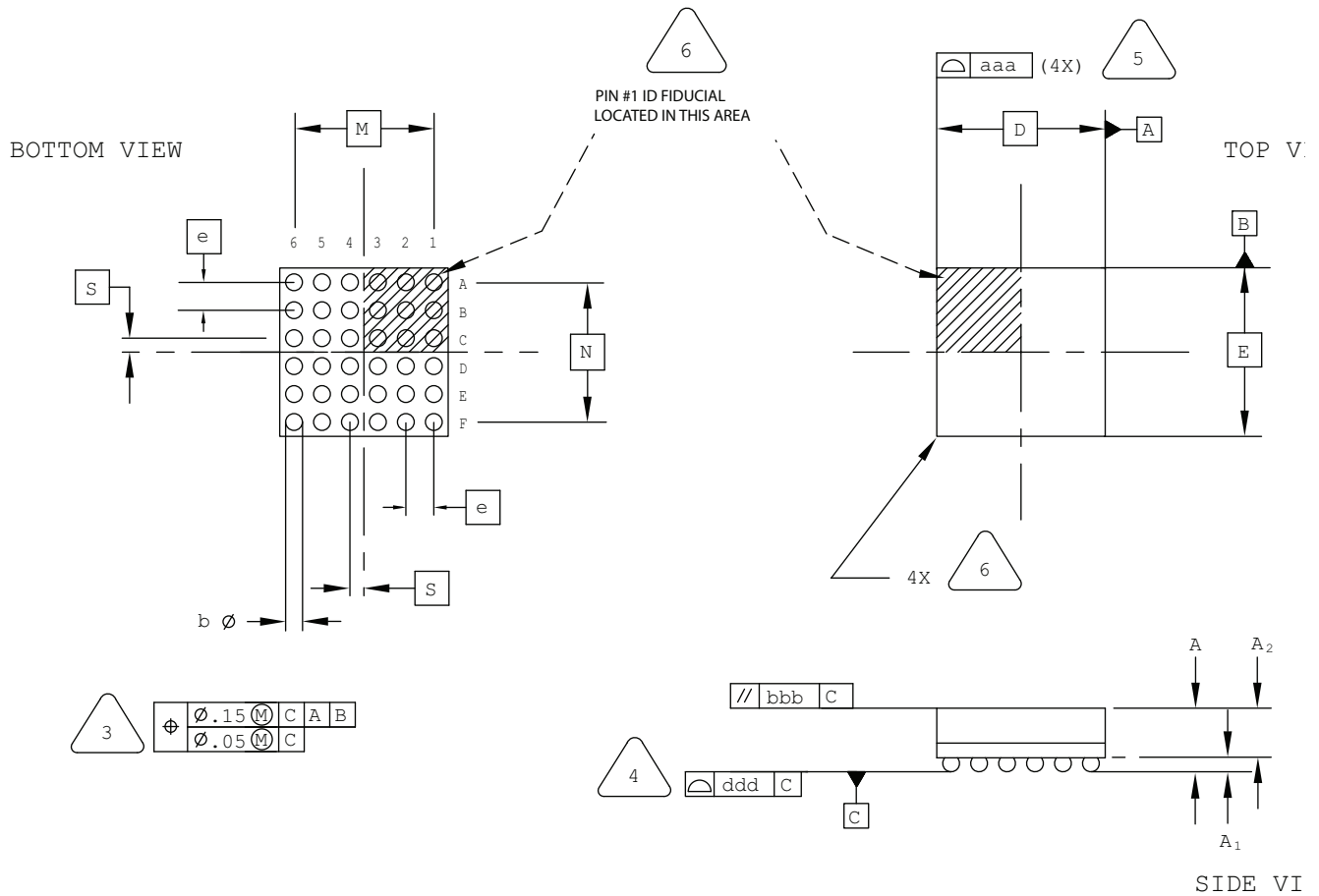
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN INCHES.
3. MEASUREMENTS TO BE TAKEN AT A MINIMUM OF .060 INCHES FROM THE LEAD TIP.
4. DIMENSIONS D AND E1 INCLUDE ALLOWANCE FOR GLASS OVERRUN AND MENISCUS, AND LID TO BASE MISMATCH.
5. DIMENSIONS A, A1 AND L ARE MEASURED WITH THE PACKAGE SEATED IN JEDEC SEATING PLANE GAUGE GS-003.
6. E3 IS TO BE MEASURED AT THE LEAD TIPS.
7. ALLOWED LEAD TIP POSITION RANGE.

	INCHES		
	MIN.	NOM.	MAX.
A	-	-	.200
A1	.015	-	-
A2	.140	-	.175
b	.015	-	.023
b1	.015	.018	.021
b2	.045	-	.065
c	.008	-	.014
c1	.008	.010	.012
D	1.242	1.250	1.270
E	.308	-	.325
E1	.280	.288	.296
E2	.300 REF		
E3	.325	-	.410
e	.100 BSC		
L	.125	-	.200
N	24		

36-Ball ucBGA Package Option 1

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

- DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
- ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]



PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

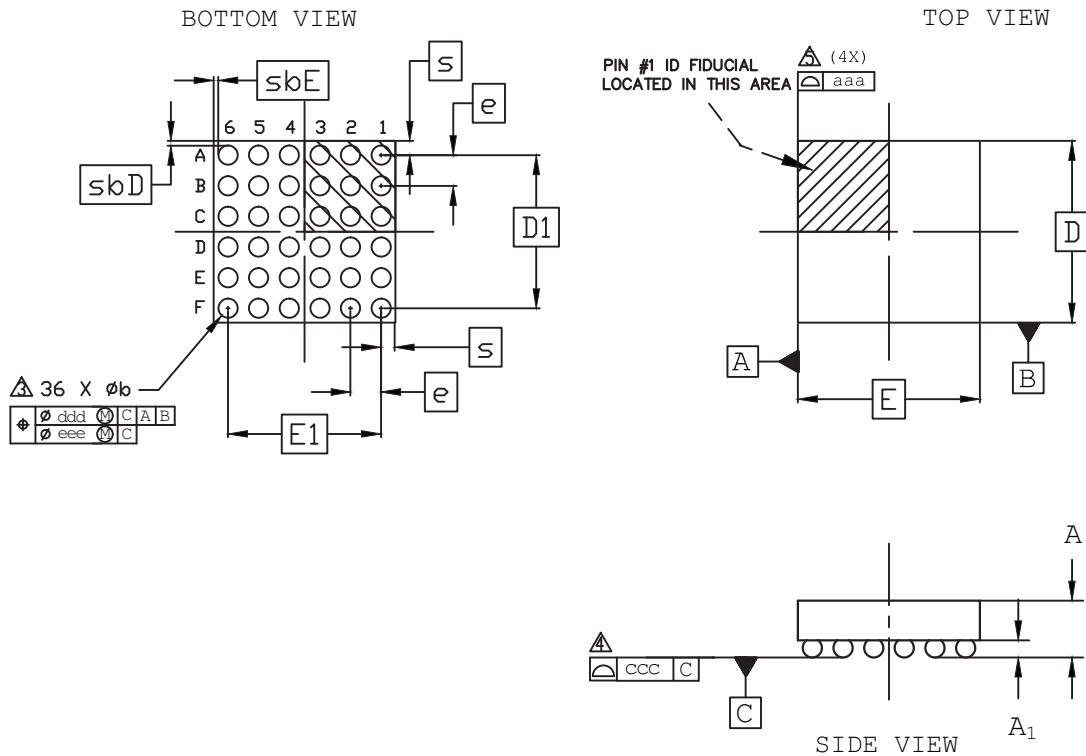


EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	-	-	1.00
A1	0.10	-	-
A2	-	-	0.90
D/E	2.50 BSC		
M/N	2.00 BSC		
S	0.20 BSC		
b	0.20	0.25	0.30
e	0.40 BSC		
aaa	-	-	0.10
bbb	-	-	0.10
ddd	-	-	0.10

36-Ball WLCS Package Option 1: iCE40 Ultra

Dimensions in Millimeters



NOTES:

1. ALL DIMENSIONS AND TOLERANCE PER ASME Y 14.5M - 1994.
2. ALL DIMENSIONS ARE IN MILLIMETERS.

△ DIMENSION "b" IS MEASURES AT THE MAXIMUM BUMP DIAMETER PARALLEL TO PRIMARY DATUM [C].

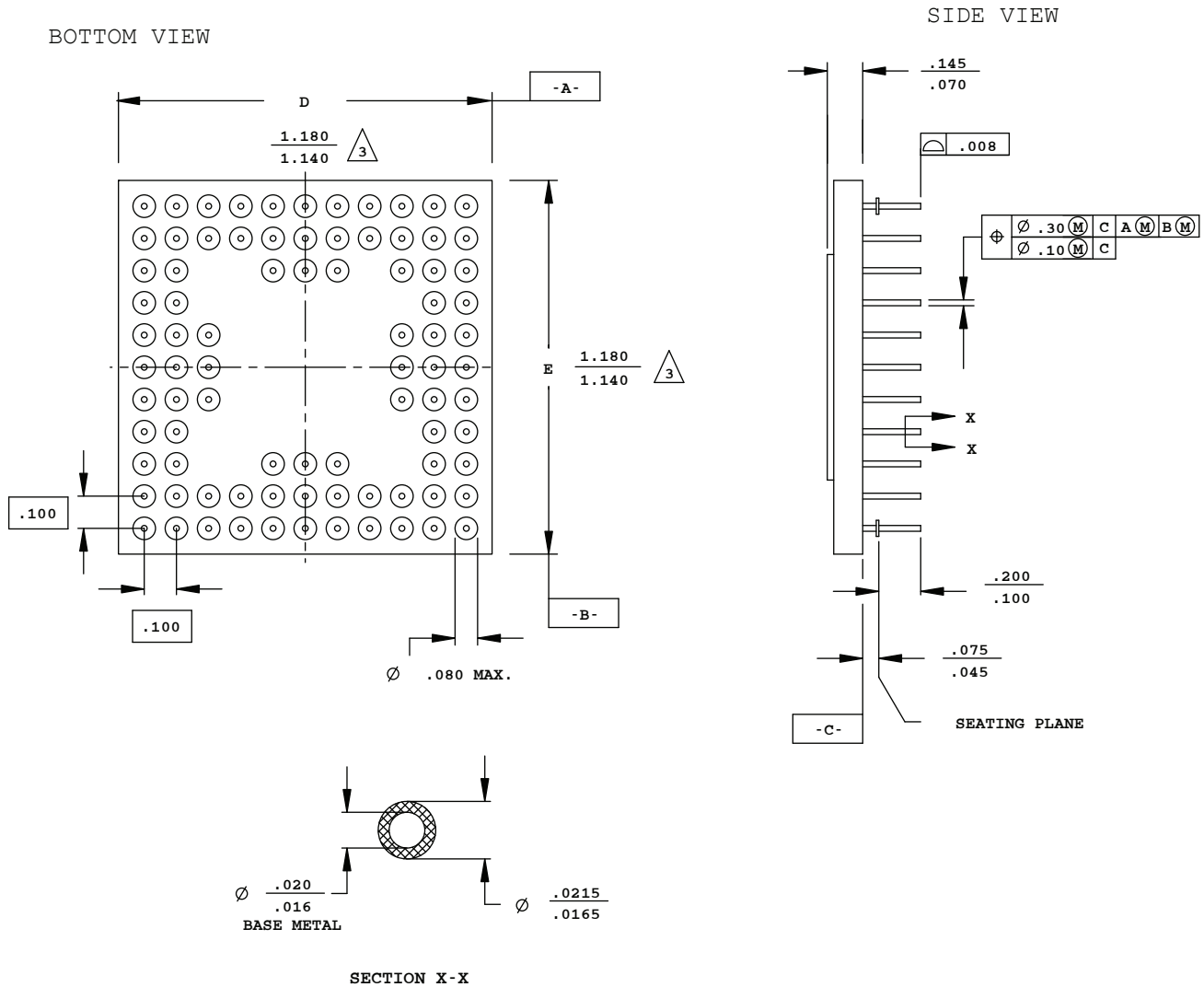
△ PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BUMPS.

△ BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

REF.	Min.	Nom.	Max.
A	0.413	0.452	0.491
A1	0.122	0.152	0.182
b	0.188	0.218	0.248
D	2.078 BSC		
E	2.078 BSC		
D1	1.75 BSC		
E1	1.75 BSC		
e	0.35 BSC		
s	0.157	0.164	0.172
sbD	0.051	0.055	0.056
sbE	0.051	0.055	0.056
aaa	0.030		
ccc	0.030		
ddd	0.015		
eee	0.050		

84-Pin CPGA Package

Dimensions in Inches



NOTES :

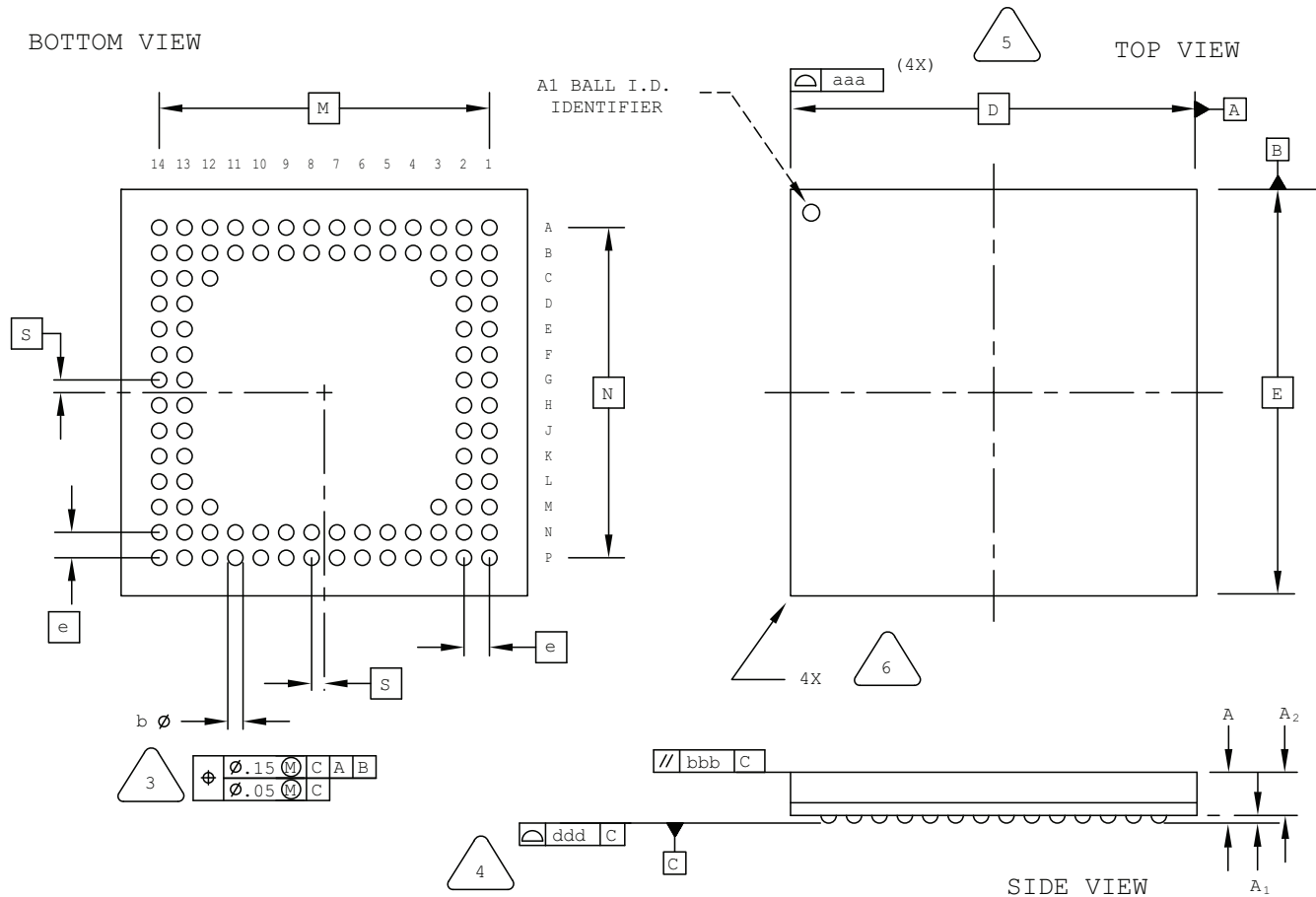
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN INCHES.



DIMENSIONS D AND E MAY HAVE MATERIAL PROTRUSION OF .006 INCHES MAXIMUM ABOVE THE DIMENSION SHOWN NOT TO EXCEED .003 INCHES MAXIMUM PER SIDE.

100-Ball csBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

- DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
- ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]



PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

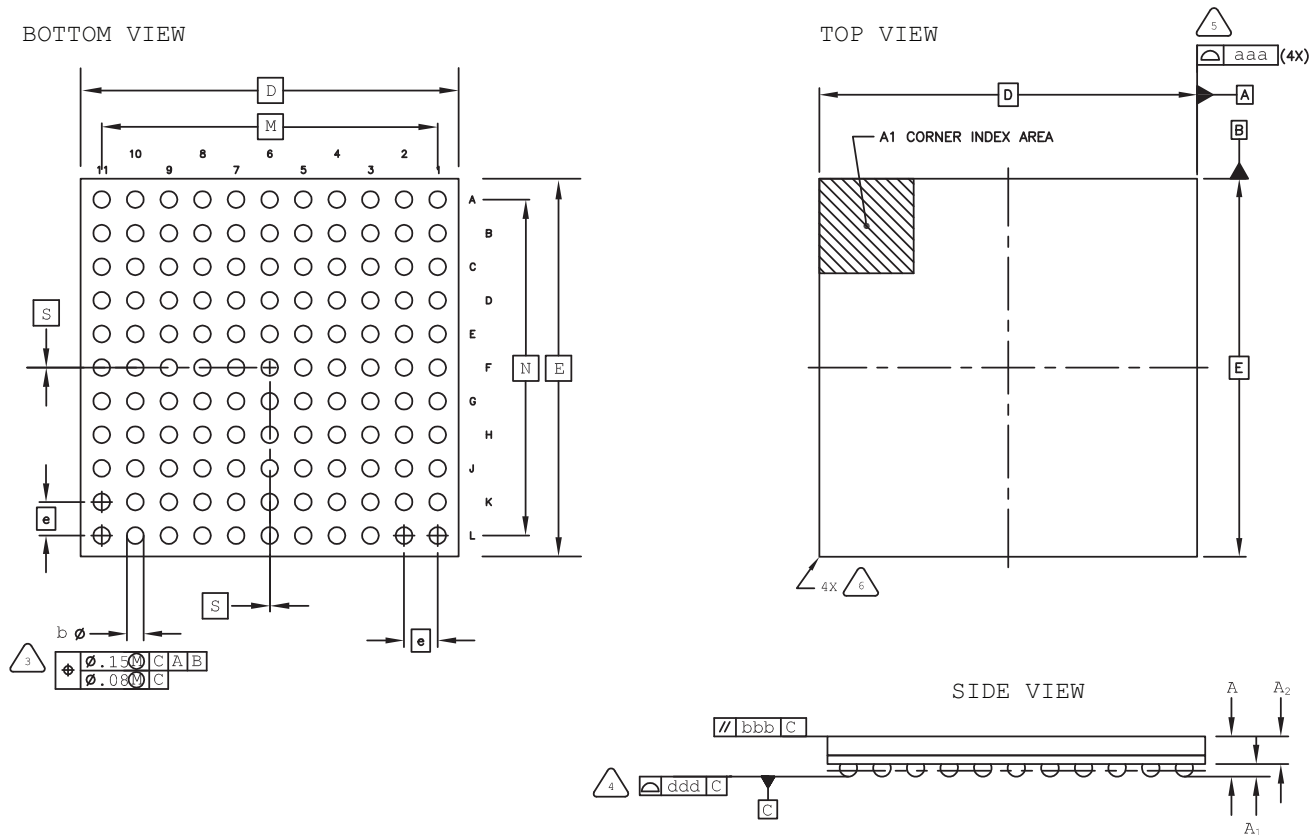


EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	0.90	1.23	1.35
A1	0.15	-	-
A2	-	-	1.10
D/E	8.00 BSC		
M/N	6.50 BSC		
S	0.25 BSC		
b	0.25	0.30	0.35
e	0.50 BSC		
aaa	-	-	0.10
bbb	-	-	0.10
ddd	-	-	0.08

121-Ball caBGA Package (9x9 mm Body)

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM C



PRIMARY DATUM C AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

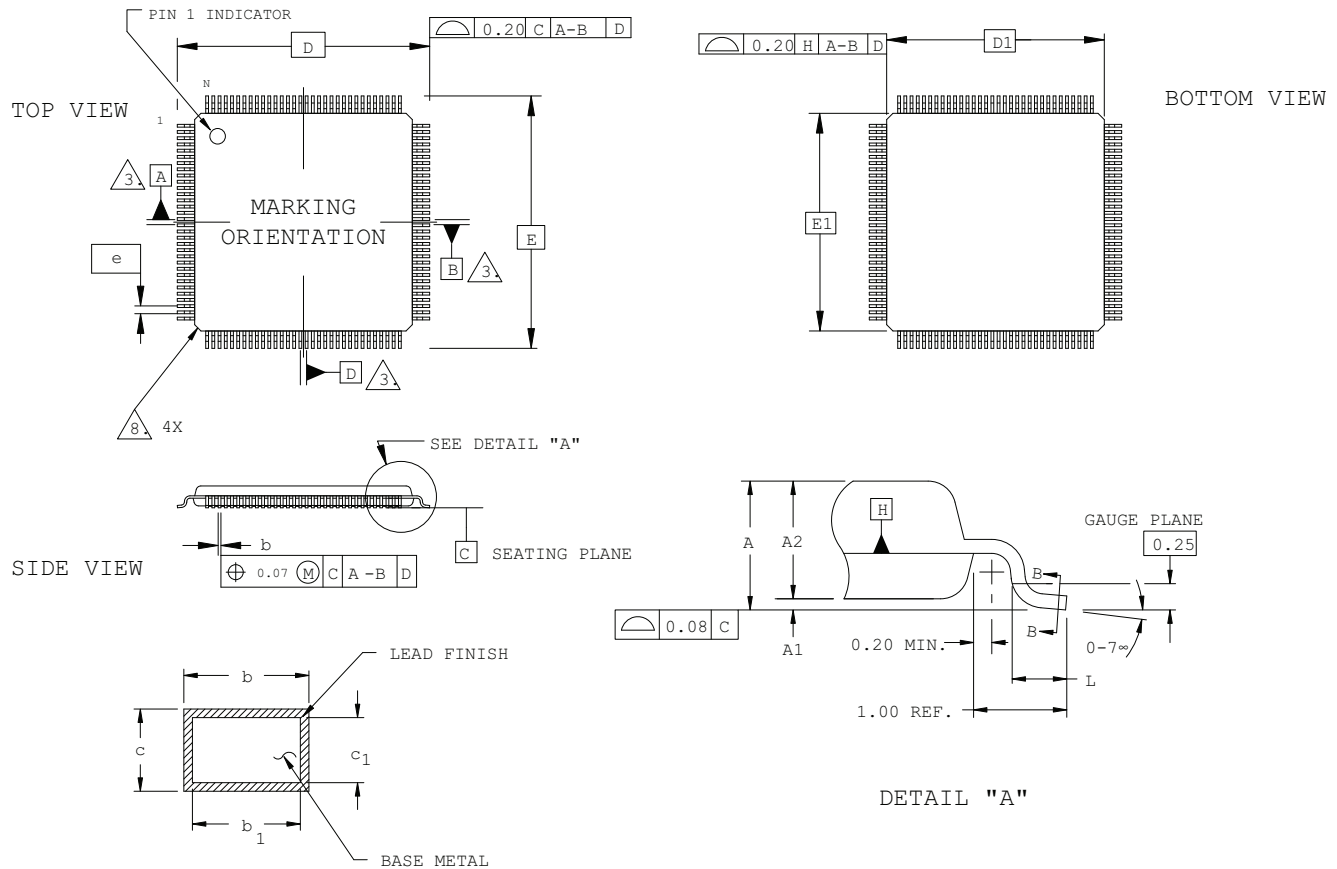


EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	-	-	1.10
A1	0.15	-	-
A2	0.55	-	-
D/E	9.00 BSC		
M/N	8.00 BSC		
S	0.00 BSC		
b	0.30	0.40	0.50
e	0.80 BSC		
aaa	0.15		
bbb	0.20		
ddd	0.10		

128-Pin TQFP Package

Dimensions in Millimeters



SECTION B - B

SIDE VIEW

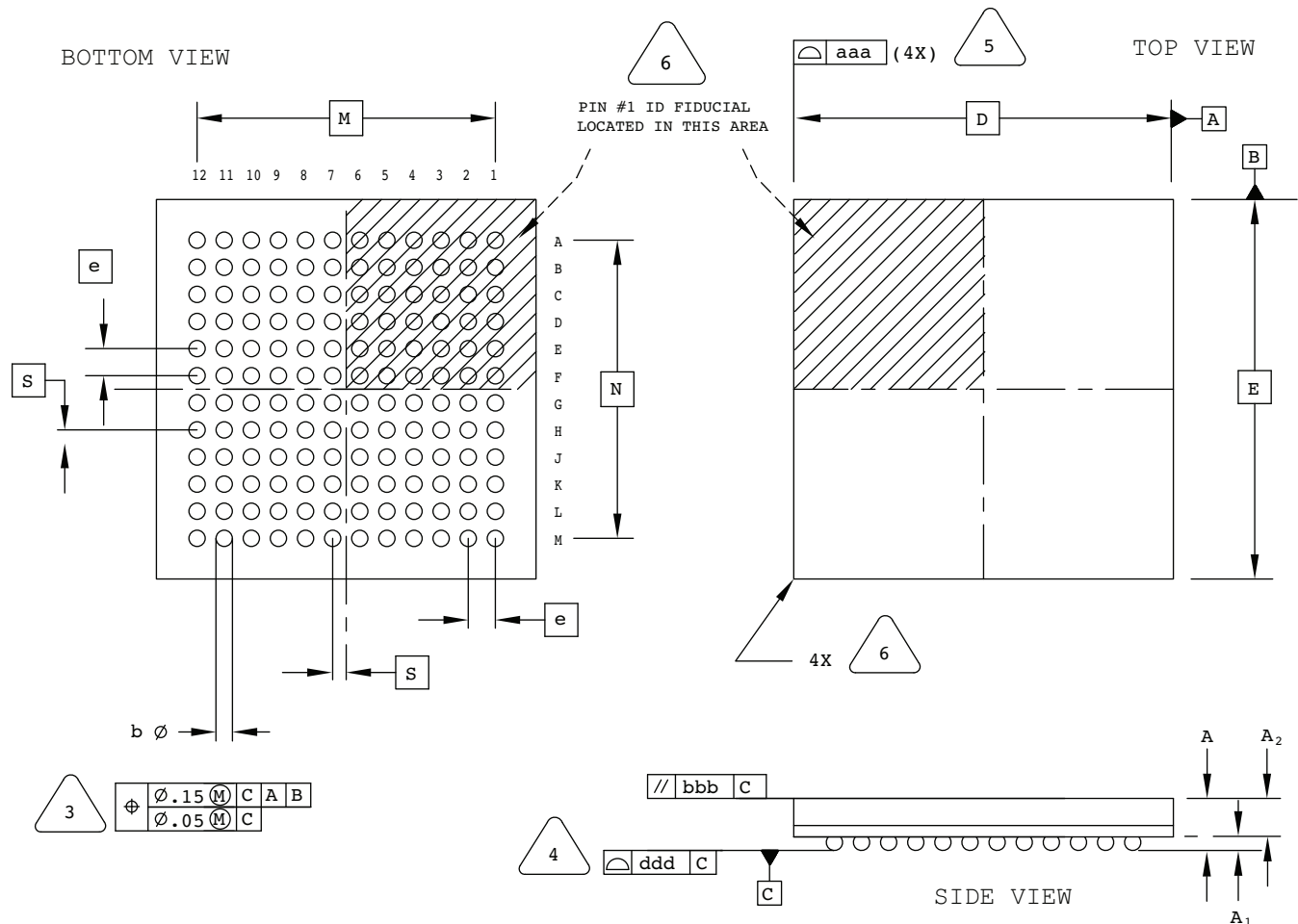
NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1982.
- ALL DIMENSIONS ARE IN MILLIMETERS.
- DATUMS A, B AND D TO BE DETERMINED AT DATUM PLANE H.
- DIMENSIONS D1 AND E1 DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE MOLD PROTRUSION IS 0.254 MM ON D1 AND E1 DIMENSIONS.
- THE TOP OF PACKAGE MAY BE SMALLER THAN THE BOTTOM OF THE PACKAGE BY 0.15 MM.
- SECTION B-B: THESE DIMENSIONS APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.10 AND 0.25 MM FROM THE LEAD TIP.
- A1 IS DEFINED AS THE DISTANCE FROM THE SEATING PLANE TO THE LOWEST POINT ON THE PACKAGE BODY.
- EXACT SHAPE OF EACH CORNER IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	-	-	1.60
A1	0.05	-	0.15
A2	1.35	1.40	1.45
D	16.00 BSC		
D1	14.00 BSC		
E	16.00 BSC		
E1	14.00 BSC		
L	0.45	0.60	0.75
N	128		
e	0.40 BSC		
b	0.13	0.18	0.23
b1	0.13	0.16	0.19
c	0.09	0.15	0.20
c1	0.09	0.13	0.16

144-Ball csBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]



PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.



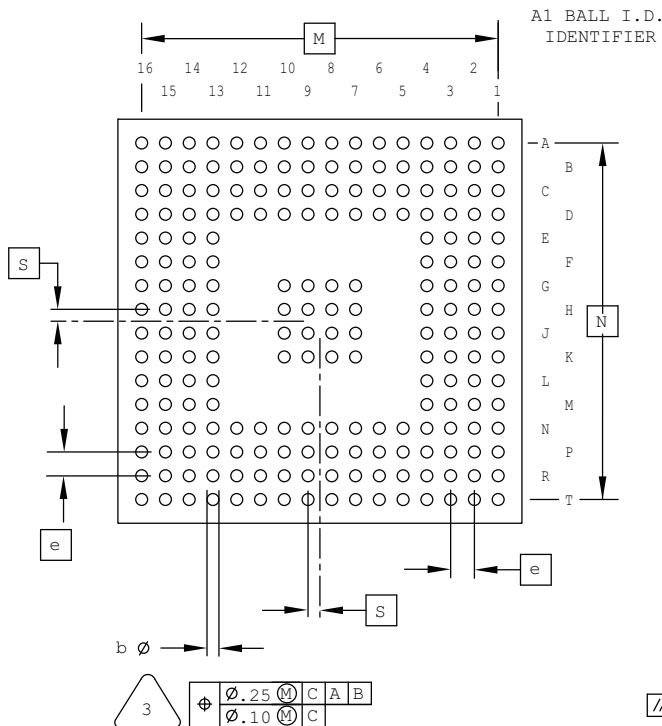
EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
A1	0.15	-	-
A2	-	-	0.85
D/E	7.00 BSC		
M/N	5.50 BSC		
S	0.25 BSC		
b	0.25	0.30	0.35
e	0.50 BSC		
aaa	-	-	0.10
bbb	-	-	0.10
ddd	-	-	0.08

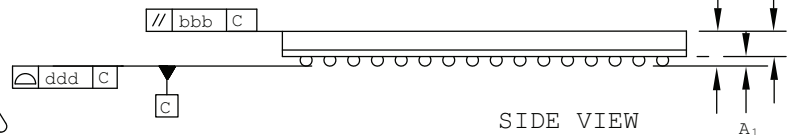
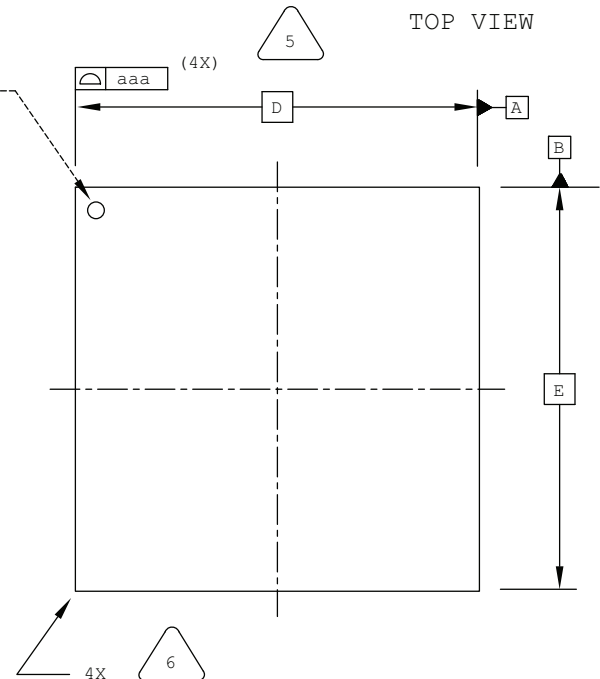
208-Ball ftBGA Package

Dimensions in Millimeters

BOTTOM VIEW



TOP VIEW



SIDE VIEW

NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]



PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

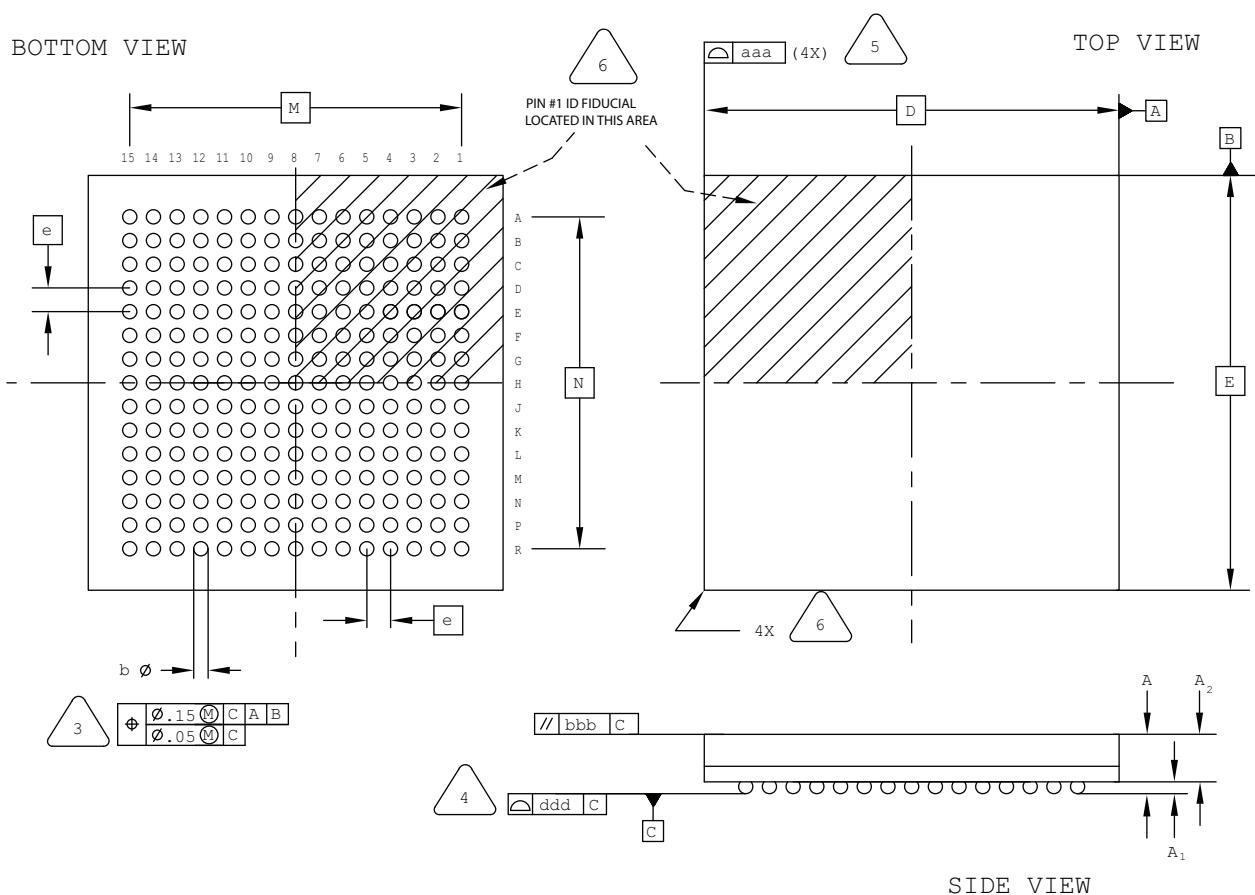


EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	1.25	1.40	1.55
A1	0.30	-	-
A2	-	-	1.25
D/E	17.0 BSC		
M/N	15.0 BSC		
S	0.50 BSC		
b	0.40	0.50	0.60
e	1.0 BSC		
aaa	-	-	0.20
bbb	-	-	0.25
ddd	-	-	0.12

225-Ball ucBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES
PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN MILLIMETERS.

DIMENSION "b" IS MEASURED AT THE
MAXIMUM SOLDER BALL DIAMETER,
PARALLEL TO PRIMARY DATUM C

PRIMARY DATUM C AND SEATING
PLANE ARE DEFINED BY THE SPHERICAL
CROWNS OF THE SOLDER BALLS.

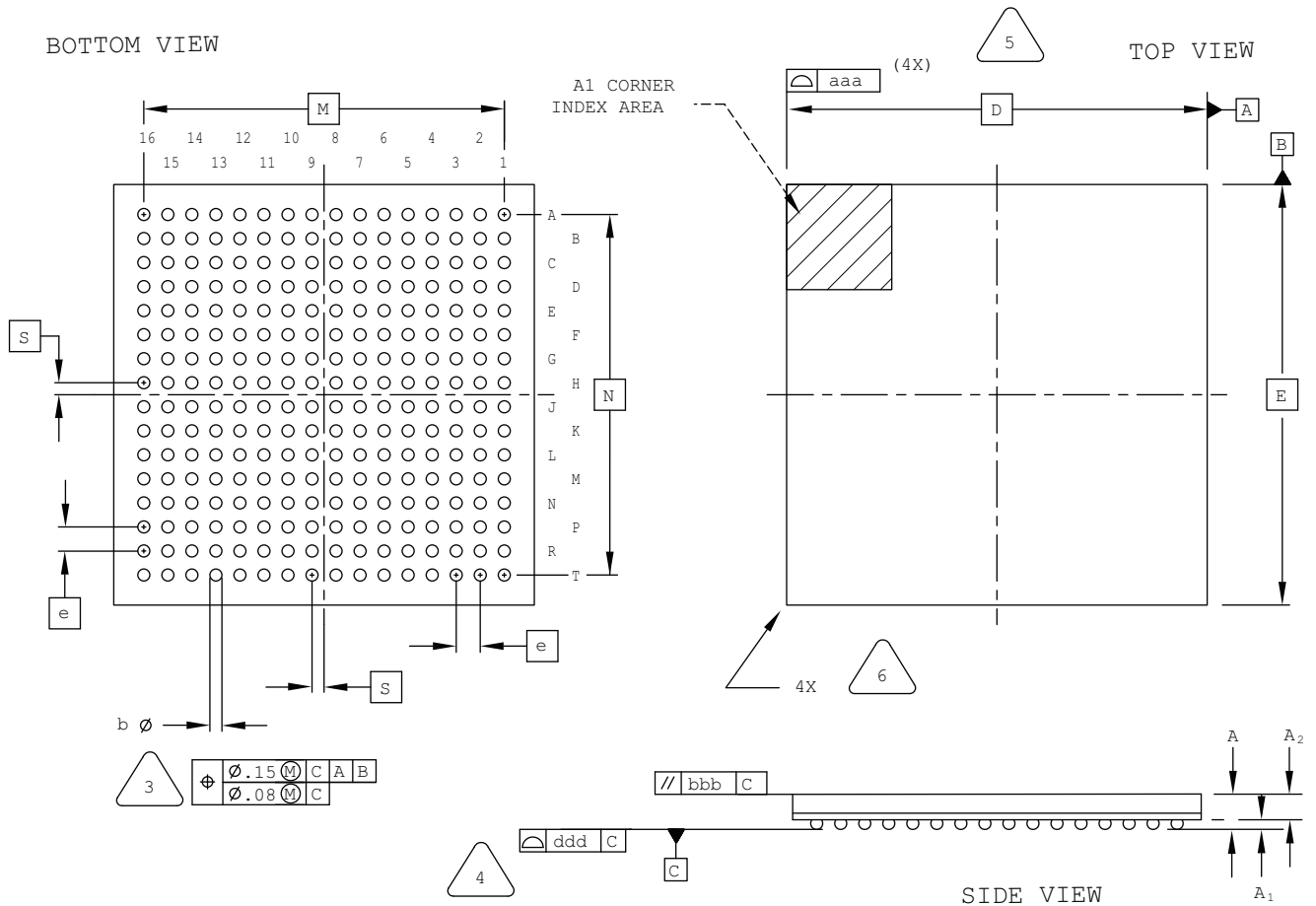
BILATERAL TOLERANCE ZONE IS APPLIED
TO EACH SIDE OF THE PACKAGE BODY.

EXACT SHAPE AND SIZE OF THIS FEATURE
IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	—	—	1.00
A1	0.10	—	—
A2	—	—	0.90
D/E	7.00 BSC		
M/N	5.60 BSC		
b	0.20	0.25	0.30
e	0.40 BSC		
aaa	—	—	0.10
bbb	—	—	0.10
ddd	—	—	0.10

256-Ball caBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN MILLIMETERS.

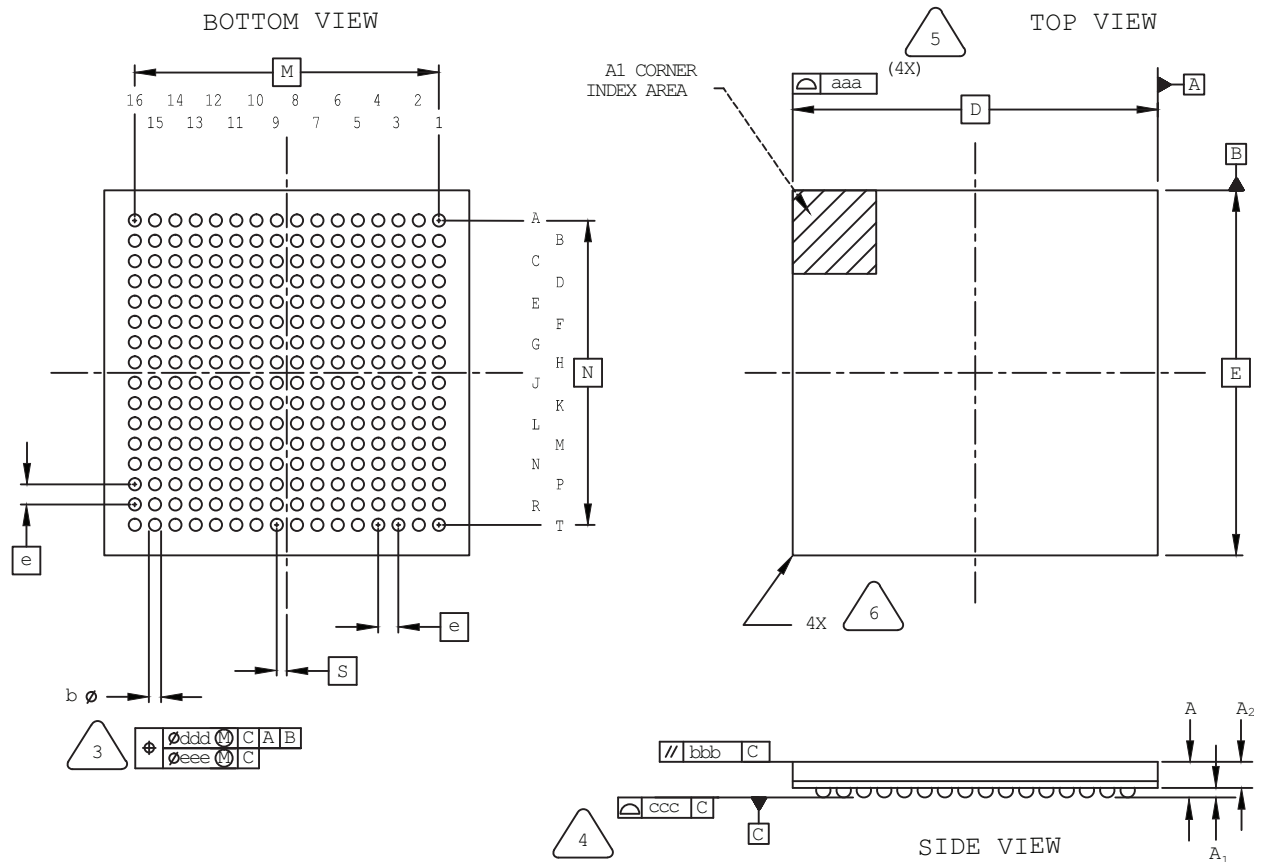
3. DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]
4. PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.
5. BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.
6. EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

7. REFERENCE JEDEC MO-275, VARIATION JJAB-2.

SYMBOL	MIN.	NOM.	MAX.
A	-	-	1.70
A1	0.25	-	-
A2	0.65	-	-
D/E	14.0 BSC		
M/N	12.0 BSC		
S	0.40 BSC		
b	0.40	0.45	0.50
e	0.80 BSC		
aaa	-	-	0.15
bbb	-	-	0.20
ddd	-	-	0.20

256-Ball csfBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

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2. ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C].



PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.



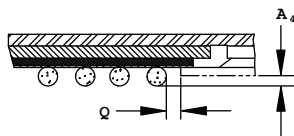
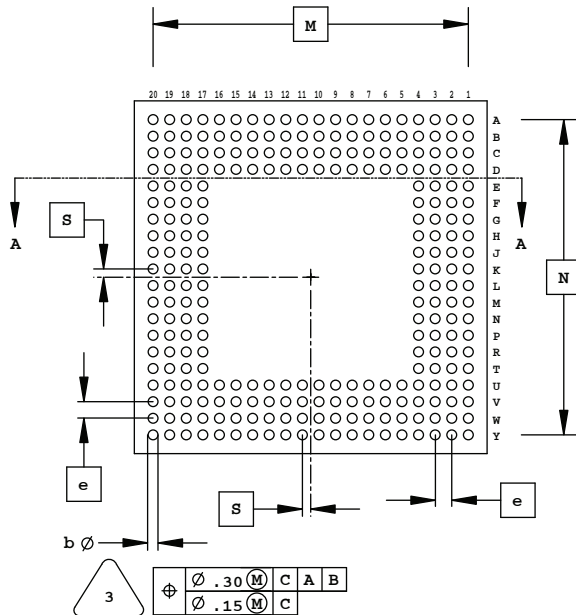
EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	-	-	1.00
A1	0.15	0.24	-
A2	-	0.66	-
D/E	9.00 BSC		
M/N	7.50 BSC		
S	0.25 BSC		
b	0.25	0.30	0.35
e	0.50 BSC		
aaa	0.10		
bbb	0.10		
ccc	0.08		
ddd	0.15		
eee	0.05		

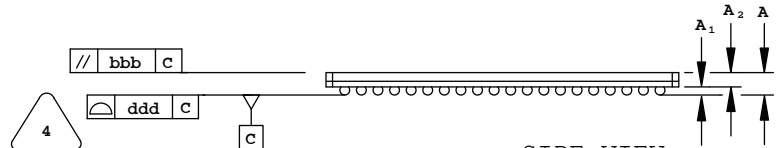
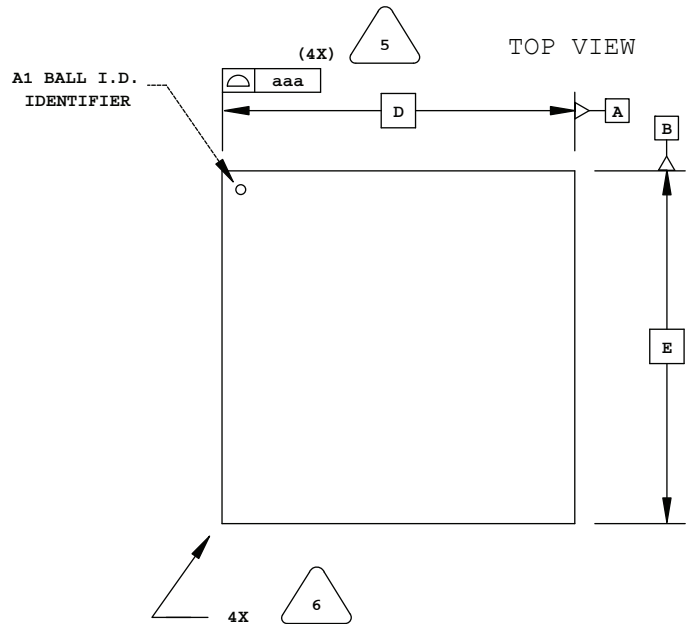
256-Ball SBGA Package

Dimensions in Millimeters

BOTTOM VIEW



A-A SECTION VIEW



SIDE VIEW

NOTES: UNLESS OTHERWISE SPECIFIED

- DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
- ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM **C**



PRIMARY DATUM **C** AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

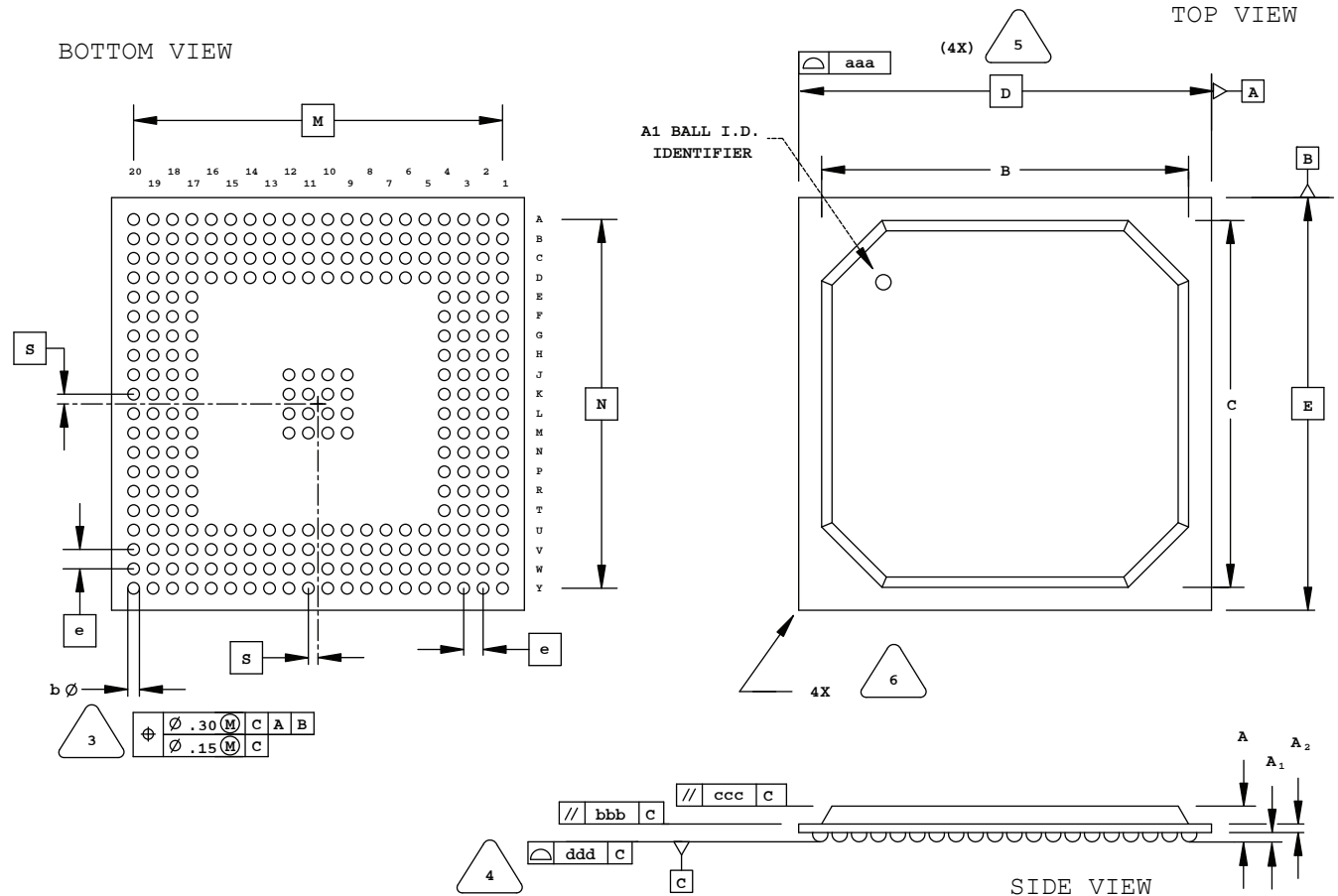


EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	-	-	1.70
A1	0.50	0.65	0.80
A2	0.80	0.90	1.00
D/E	27.00 BSC		
M/N	24.13 BSC		
S	0.635 BSC		
b	0.60	0.75	0.90
e	1.27 BSC		
Q	0.25	-	-
A4	0.10	-	-
aaa	-	-	0.20
bbb	-	-	0.25
ddd	-	-	0.20

272-Ball BGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

- DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
- ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM C



PRIMARY DATUM C AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

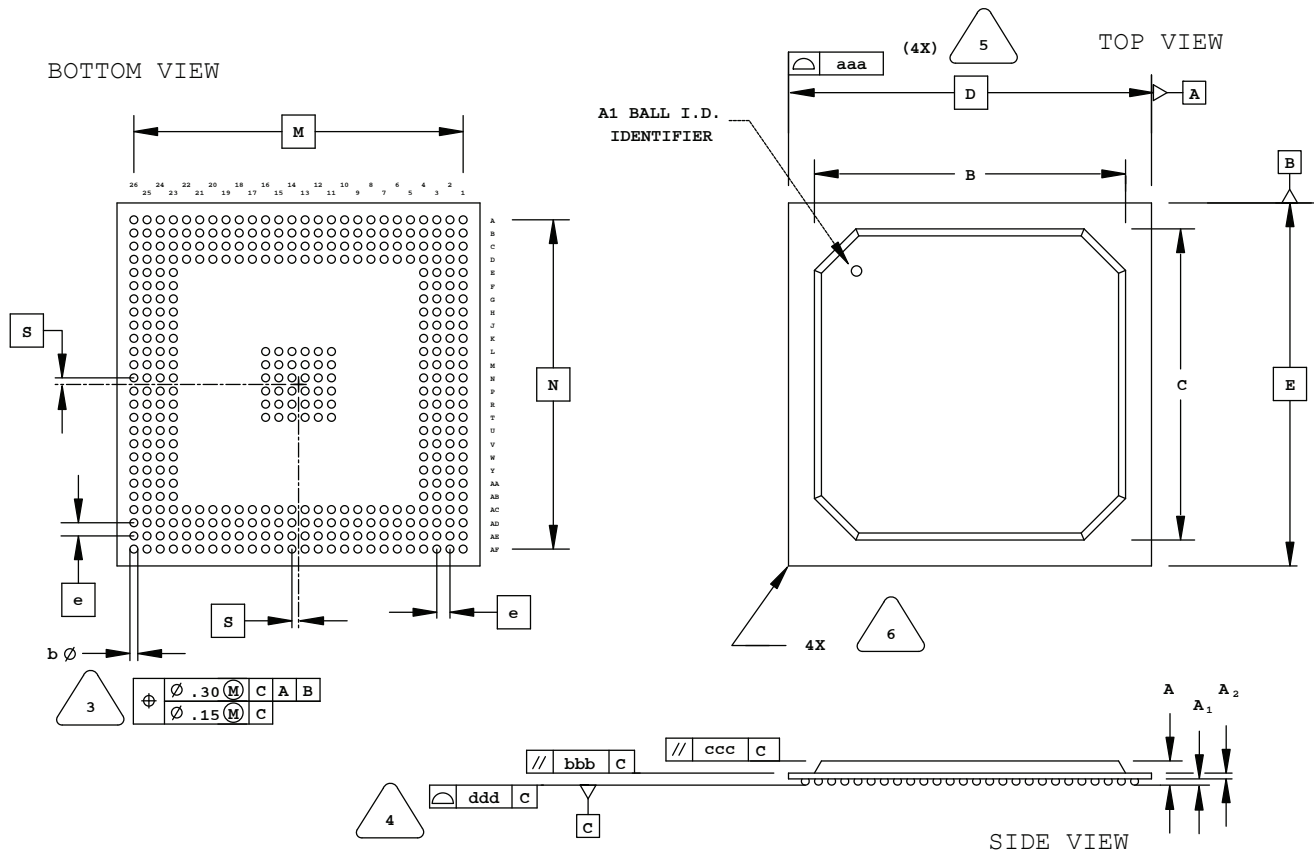


EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	1.90	2.25	2.80
A1	0.50	0.65	0.80
A2	0.28	0.54	0.80
B/C	23.80	24.30	24.80
D/E	27.00 BSC		
M/N	24.13 BSC		
S	0.635 BSC		
b	0.60	0.75	0.90
e	1.27 BSC		
aaa	-	-	0.20
bbb	-	-	0.25
ccc	-	-	0.35
ddd	-	-	0.20

388-Ball BGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM **C**



PRIMARY DATUM **C** AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

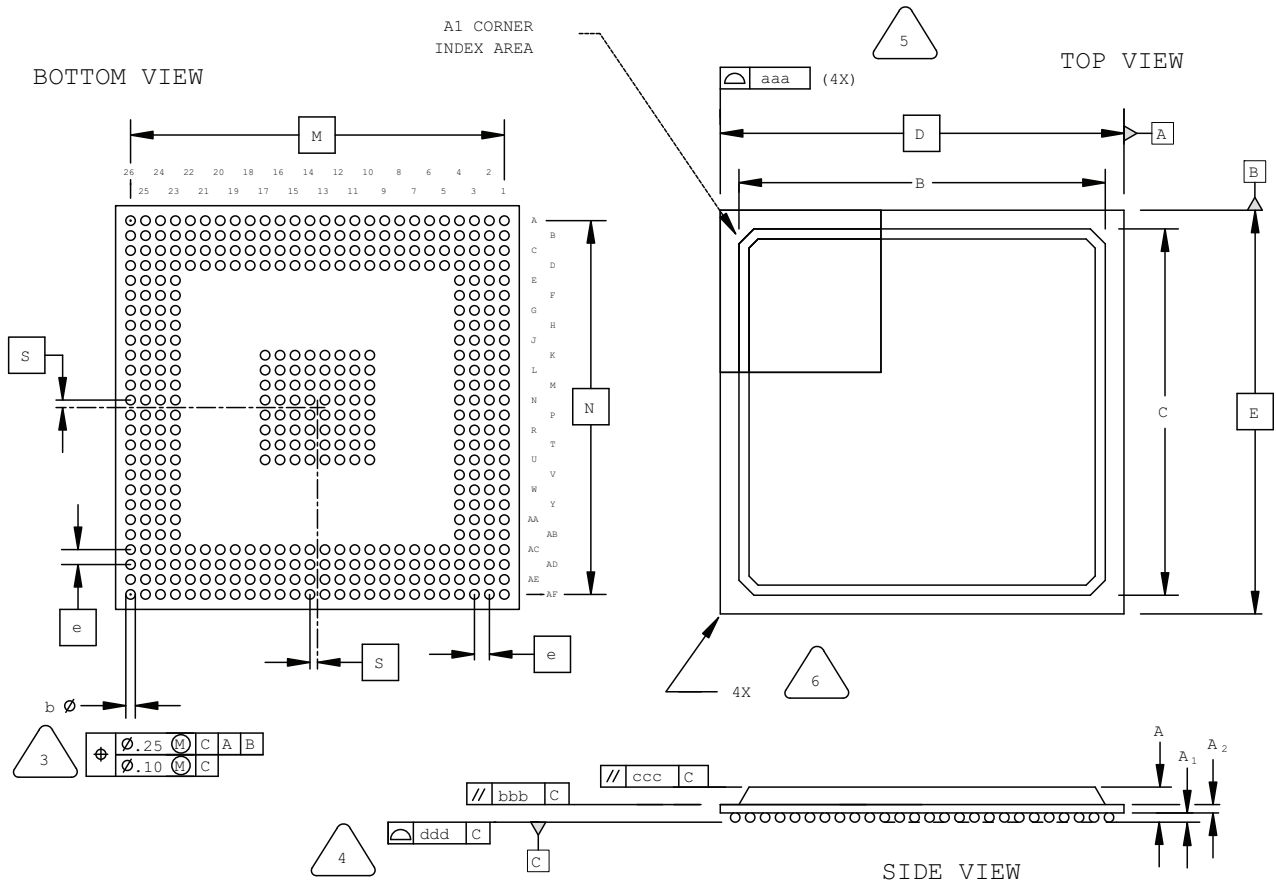


EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	1.90	2.80	3.25
A1	0.50	0.65	0.80
A2	0.28	0.54	0.80
B/C	29.80	31.80	33.80
D/E	35.00 BSC		
M/N	31.75 BSC		
S	0.635 BSC		
b	0.60	0.75	0.90
e	1.27 BSC		
aaa	-	-	0.20
bbb	-	-	0.25
ccc	-	-	0.35
ddd	-	-	0.20

416-Ball fpBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.

2. ALL DIMENSIONS ARE IN MILLIMETERS.

3. DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]

4. PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.

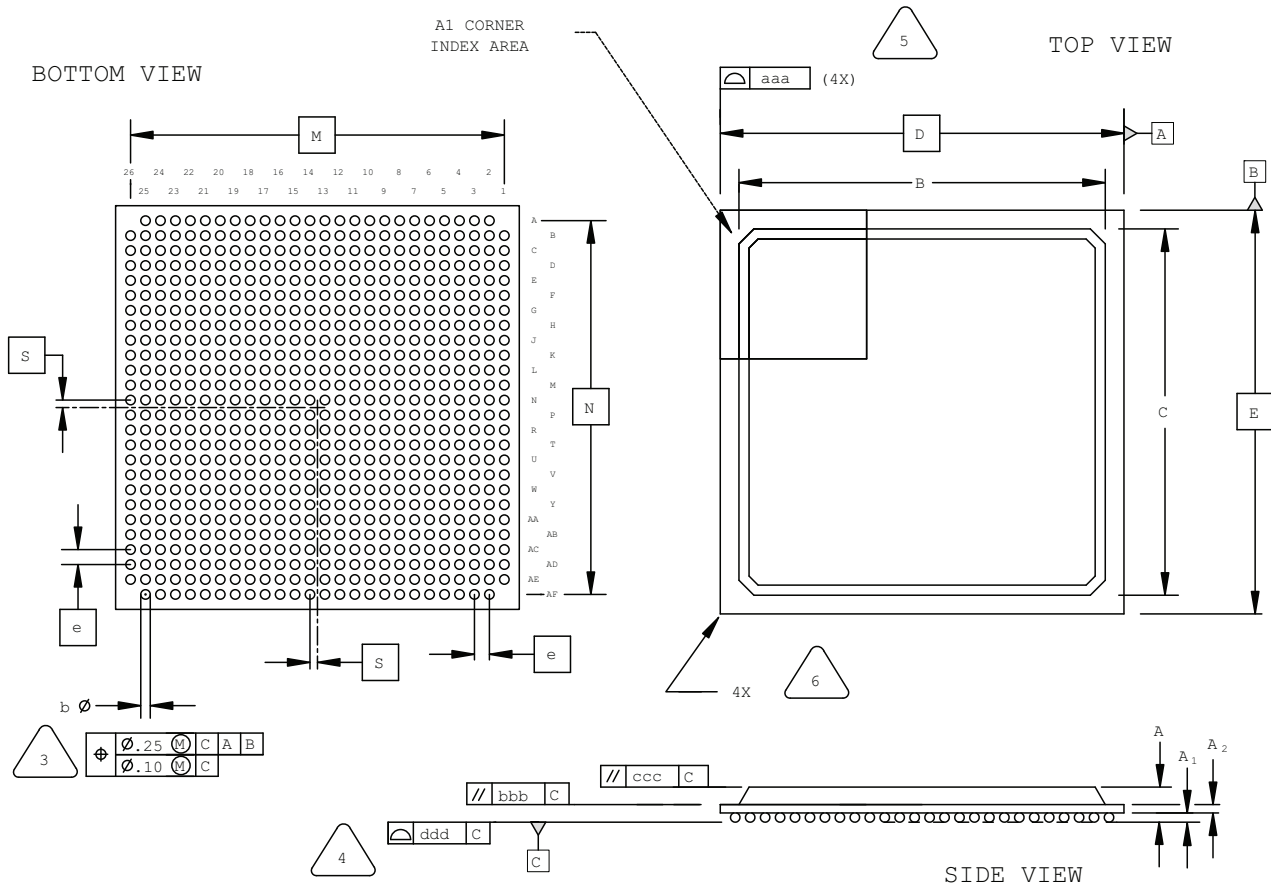
5. BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

6. EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	1.70	2.15	2.60
A1	0.30	0.50	0.70
A2	0.30	0.50	0.70
B/C	23.80	24.80	25.80
D/E	27.00 BSC		
M/N	25.00 BSC		
S	0.50 BSC		
b	0.50	0.60	0.70
e	1.00 BSC		
aaa	-	-	0.20
bbb	-	-	0.25
ccc	-	-	0.35
ddd	-	-	0.20

672-Ball fpBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.

2. ALL DIMENSIONS ARE IN MILLIMETERS.

3. DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]

4. PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.

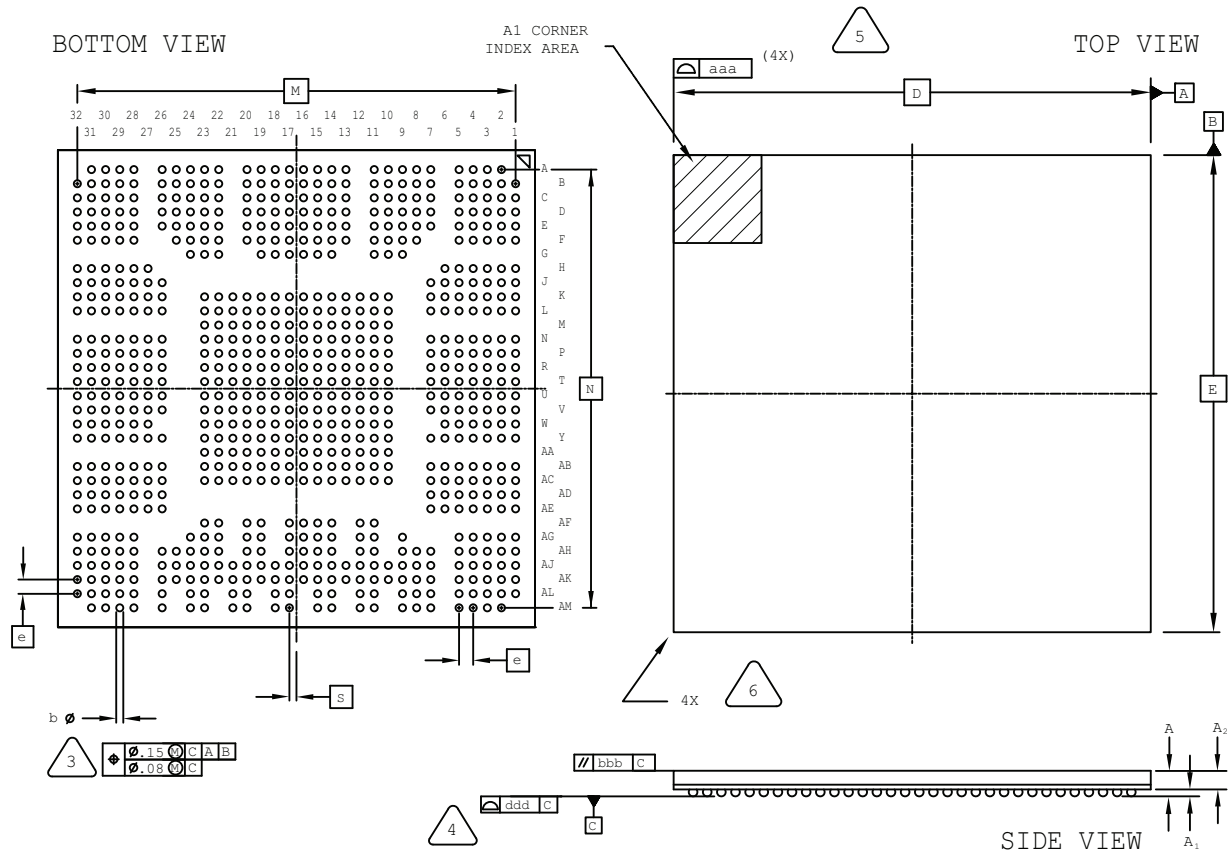
5. BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.

6. EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	1.70	2.15	2.60
A1	0.30	0.50	0.70
A2	0.30	0.50	0.70
B/C	23.80	24.80	25.80
D/E	27.00 BSC		
M/N	25.00 BSC		
S	0.50 BSC		
b	0.50	0.60	0.70
e	1.00 BSC		
aaa	-	-	0.20
bbb	-	-	0.25
ccc	-	-	0.35
ddd	-	-	0.20

756-Ball caBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

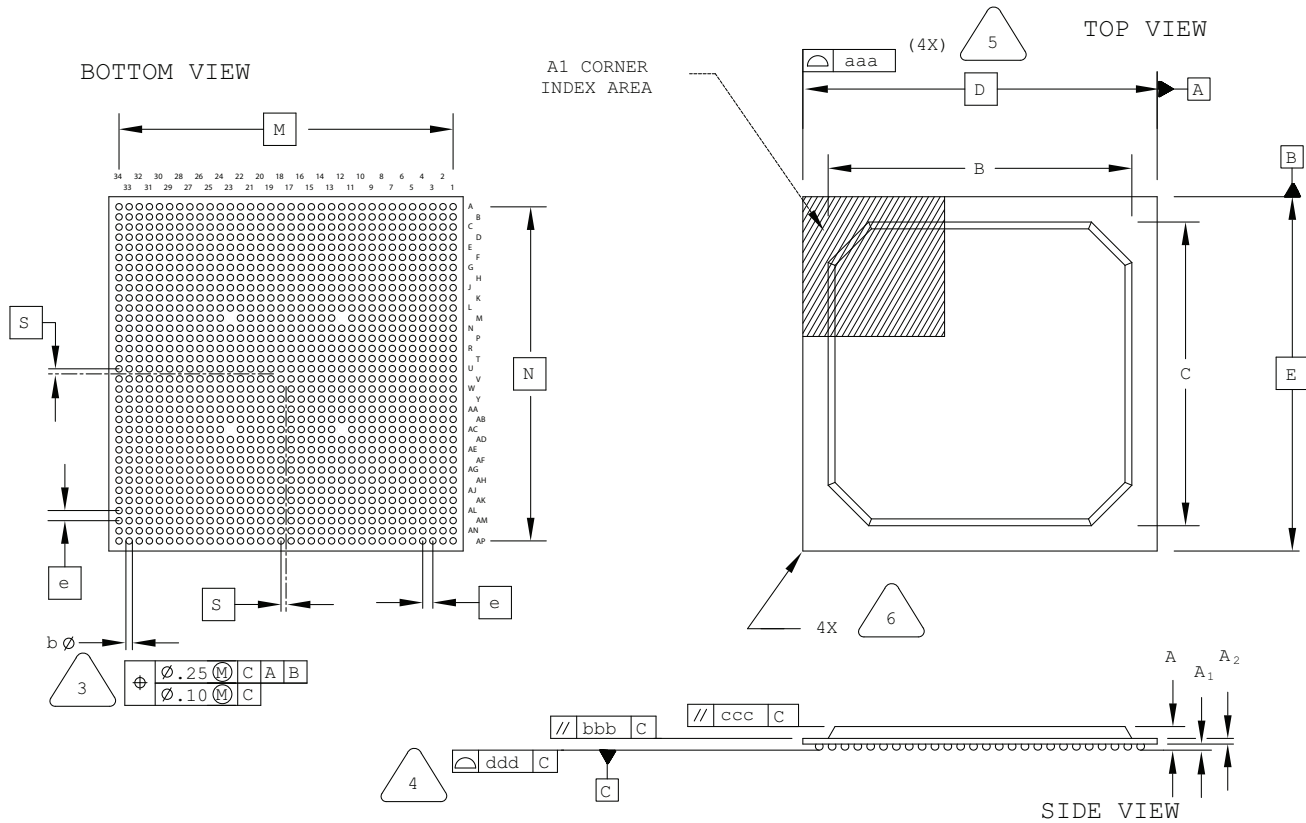
- DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
- ALL DIMENSIONS ARE IN MILLIMETERS.

- 3 DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]
- 4 PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.
- 5 BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.
- 6 EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	-	-	1.76
A1	0.25	0.30	0.35
A2	0.80	-	-
D/E	27.00 BSC		
M/N	24.80 BSC		
S	0.40 BSC		
b	0.35	0.40	0.45
e	0.80 BSC		
aaa	-	-	0.15
bbb	-	-	0.20
ddd	-	-	0.12

1152-Ball fpBGA Package

Dimensions in Millimeters



NOTES: UNLESS OTHERWISE SPECIFIED

- DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
- ALL DIMENSIONS ARE IN MILLIMETERS.



DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C]



PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.



BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.



EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

Note: Depopulated ball locations are M12, M23, AC12, and AC23.

SYMBOL	MIN.	NOM.	MAX.
A	1.90	2.25	2.60
A1	0.30	0.50	0.70
A2	0.40	0.60	0.80
B/C	29.80	30.30	30.80
D/E	35.00 BSC		
M/N	33.00 BSC		
S	0.50 BSC		
b	0.50	0.60	0.70
e	1.00 BSC		
aaa	-	-	0.20
bbb	-	-	0.25
ccc	-	-	0.35
ddd	-	-	0.20

Revision History

Date	Version	Change Summary
March 2017	5.4	Added ispMACH 4000 to 100-Pin TQFP Package Option 1: MachXO2, MachXO™, ispMACH® 4000.
		Added 121-Ball caBGA Package (9x9 mm Body).
December 2016	5.3	Updated “32-Pin QFNS Package” headings to “32-Pin QFN Package”.
		Added 32-Pin QFN Package Option 3: MachXO2 SG32C.
		Added 30-Ball WLSC Package.
		Added iCE40 UltraPlus and MachXO2 to 48-Pin QFN Package Option 2: L-ASC10, iCE40 Ultra, iCE40 UltraPlus, MachXO2.
		Added 484-Ball caBGA Package.
June 2016	5.2	Updated 285-ball csfBGA package outline drawing.
		Added 36-Ball WLCS Package Option 3: LIFMD™.
		Fixed typo in 48-Pin QFN Package Option 2: L-ASC10, iCE40 Ultra, iCE40 UltraPlus, MachXO2.
		Added 64-Ball ucfBGA Package.
		Added 80-Ball ctfBGA Package.
		Added 81-Ball csfBGA Package.
February 2015	5.1	Added 36-Ball ucfBGA Package: iCE40 Ultra.
		Updated 36-Ball ucBGA Package heading to 36-Ball ucBGA Package Option 1.
		Updated 48-Pin QFN Package Option 2: L-ASC10 heading to 48-Pin QFN Package Option 2: L-ASC10, iCE40 Ultra.
January 2015	5.0	Added 16-Ball WLCS Package Option 2: iCE40 UltraLite.
		Updated 16-Ball WLCS Package heading to 16-Ball WLCS Package Option 1: iCE40 LP.
October 2014	4.9	Updated 48-Pin QFN Package heading and moved the section after 48-Pin QFN Package Option 1 (previously Option 2).
	4.8	Removed 20-Ball WLCS Package.
	4.7	Updated 121-Ball csfBGA Package. Revised M/N dimension.
September 2014	4.6	Updated 84-Pin QFN Package. Revised pin numbers from A36 and B27 to A37 and B28.
August 2014	4.5	Updated 16-Ball WLCS Package. Changed second E to e in REF. column.
		Updated 36-Ball WLCS Package Option 1: iCE40 Ultra heading.
		Added 36-Ball WLCS Package Option 2: MachXO3.
		Added 81-Ball WLCS Package.
		Added 121-Ball csfBGA Package.
		Added 256-Ball csfBGA Package.
		Added 324-Ball caBGA Package.
		Added 324-Ball csfBGA Package.
		Added 400-Ball caBGA Package.
		Updated 84-Pin QFN Package. Revised dimension “b” maximum value.
		Updated 256-Ball ftBGA Package Option 1: ispMACH 4000, MachXO, LatticeXP2. Revised dimension “A” values.