

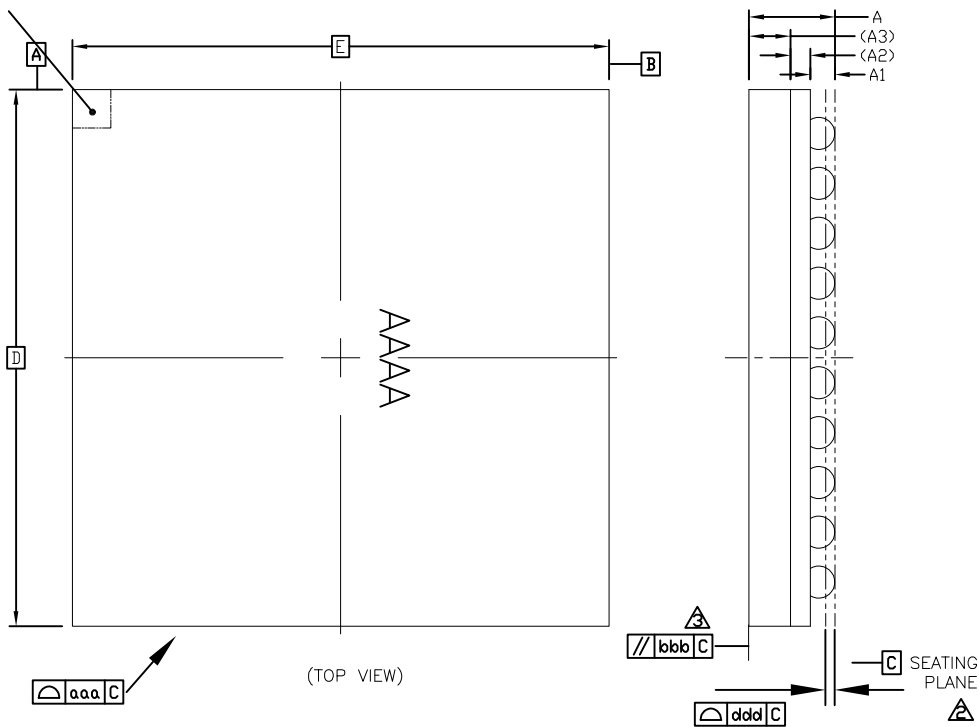


**DOCUMENT TYPE:** POD  
**DOCUMENT ID #:** 21-100423  
**REVISION:** C-000  
**DOCUMENT TITLE:** PACKAGE OUTLINE, 169 BALLS CTBGA 9X9X1.2  
**EFFECTIVE DATE:** 11/30/2023  
**EXPIRATION DATE:**  
**CHANGE NUMBER:** 1200368  
**ORIGINATOR:** Aurelio Giron Jr.

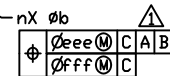
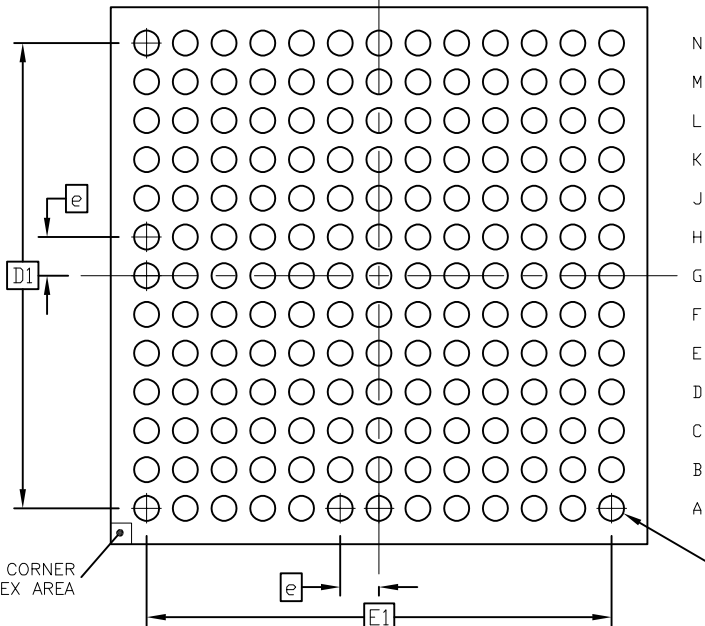
**REASON FOR CHANGE:**

Add pkg. code. New X16999+4C and added copper wire version of existing +1 which is X16999+1C.

A1 CORNER INDEX AREA



1 2 3 4 5 6 7 8 9 10 11 12 13



	SYMBOL	COMMON DIMENSIONS		
		MIN.	NDR.	MAX.
TOTAL THICKNESS	A	---	---	1.2
STAND OFF	A1	0.27	---	0.37
SUBSTRATE THICKNESS	A2	0.26		REF
MOLD THICKNESS	A3	0.54		REF
BODY SIZE	D	9		BSC
	E	9		BSC
BALL DIAMETER		0.4		
BALL OPENING		0.3		
BALL WIDTH	b	0.37	---	0.47
BALL PITCH	e	0.65		BSC
BALL COUNT	n	169		
EDGE BALL CENTER TO CENTER	D1	7.8		BSC
	E1	7.8		BSC
BODY CENTER TO CONTACT BALL	SD	---		BSC
	SE	---		BSC
PACKAGE EDGE TOLERANCE	aaa	0.1		
MOLD FLATNESS	bbb	0.2		
COPLANARITY	ddd	0.12		
BALL OFFSET (PACKAGE)	eee	0.15		
BALL OFFSET (BALL)	fff	0.08		

NOTES:

- ▲ DIMENSION b IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO DATUM PLANE C.
- ▲ DATUM C (SEATING PLANE) IS DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.
- ▲ PARALLELISM MEASUREMENT SHALL EXCLUDE ANY EFFECT OF MARK ON TOP SURFACE OF PACKAGE.
- 4 PACKAGE CODE: X16999+1, X16999+1C, X16999+2C, X16999+4C



TITLE:  
PACKAGE OUTLINE, 169 BALLS CTBGA  
9X9X1.2 mm

APPROVAL  
CHINTANKUMAR PATEL

DOCUMENT CONTROL NO.  
21-100423

REV. 1/1  
C

-DRAWING NOT TO SCALE-

## REVISION HISTORY

REV	CHANGES MADE	DATE	INIT.
A	CN 1062315. INITIAL RELEASE	07/09/19	BG
B	CN 1137703. Add X16999+2C, add "AAAA"	08/30/21	BG
C	CN 1200368. Add pkg. code. New X16999+4C and added copper wire version of existing +1 which is X16999+1C.	11/30/23	AG

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**DOCUMENT I.D.**  
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**REVISION**  
C

**PAGE**  
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