



DIMENSIONAL REFERENCES			
REF.	MIN.	NOM.	MAX.
A	1.20	1.40	1.50
A1	0.25	0.33	---
A2	0.65	0.70	0.75
A3	0.36 REF		
D	10.90	11.00	11.10
D1	9.60 BSC		
E	10.90	11.00	11.10
E1	9.60 BSC		
b	0.40	0.50	0.55
aaa	--	--	0.12
bbb	--	--	0.20
ccc	--	--	0.10
e	0.80 BSC		
f	0.60	0.70	0.80
M	13		
N	169		
Pkg. Code: X16911-1			

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS.
- 'e' REPRESENTS THE BASIC SOLDER BALL GRID PITCH.
- 'M' REPRESENTS THE BASIC SOLDER BALL MATRIX SIZE AND SYMBOL 'N' IS THE NUMBER OF BALLS AFTER DEPOPULATING.
- $\triangle 4$  'b' IS MEASURABLE AT THE MAXIMUM SOLDER BALL DIAMETER AFTER REFLOW PARALLEL TO PRIMARY DATUM  $\boxed{-C-}$ .
- $\triangle 5$  DIMENSION 'aaa' IS MEASURED PARALLEL TO PRIMARY DATUM  $\boxed{-C-}$ .
- $\triangle 6$  PRIMARY DATUM  $\boxed{-C-}$  AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.
- PACKAGE SURFACE SHALL BE MATTE FINISH.
- SUBSTRATE MATERIAL BASE IS BT RESIN.
- MARKING SHOWN IS FOR PKG. ORIENTATION ONLY.
- ALL DIMENSIONS APPLY TO BOTH LEADED (-) AND PbfREE (+) PKG. CODES.

-DRAWING NOT TO SCALE-

TITLE:  
PACKAGE OUTLINE,  
169L CSBGA, 11x11x1.4mm

APPROVAL	DOCUMENT CONTROL NO. 21-0165	REV. D	1/1
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