



DIMENSIONAL REFERENCES			
REF.	MIN.	NOM.	MAX.
A	1.08	1.20	1.32
A1	0.36	---	0.46
A2	0.53 REF		
A3	0.26 REF		
D	9.90	10.00	10.10
D1	8.00 BSC		
E	9.90	10.00	10.10
E1	8.00 BSC		
b	0.44	0.54	0.64
e	1.00 BSC		
f	0.90	1.00	1.10
aaa	--	--	0.20
bbb	--	--	0.35
ddd	--	--	0.10
eee	--	--	0.25
fff	--	--	0.10
M	9		
N	81		
Pkg. Code	X8100-2, X8100-3		

- 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.
  - 'b' IS MEASURABLE AT THE MAXIMUM SOLDER BALL DIAMETER AFTER REFLOW PARALLEL TO PRIMARY DATUM [C].
  - DIMENSION 'ddd' IS MEASURED PARALLEL TO PRIMARY DATUM [C].
  - PRIMARY DATUM [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.
  - MATERIAL MUST COMPLY WITH BANNED AND RESTRICTED SUBSTANCES SPEC #10-0131.
  - ALL DIMENSIONS APPLY TO BOTH LEADED (-) AND PbfREE (+) PKG. CODES.

-DRAWING NOT TO SCALE-

**TITLE:**  
PACKAGE OUTLINE,  
81 BALLS CSBGA, 10x10x1.2mm

APPROVAL EDEN CHEN 10/26/11	DOCUMENT CONTROL NO. 21-0394	REV. D	1/1
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