



CS144 - 63/37 Sn/Pb SOLDER BALLS  
CSG144 - Sn/Ag/Cu SOLDER BALLS

SYMBOL	MILLIMETERS		
	MIN.	NOM.	MAX.
A	$\cancel{\text{---}}$	$\cancel{\text{---}}$	1.20
A <sub>1</sub>	0.25	$\cancel{\text{---}}$	$\cancel{\text{---}}$
A <sub>2</sub>	0.55	$\cancel{\text{---}}$	$\cancel{\text{---}}$
D/E	12.00 BSC		
D <sub>1</sub> /E <sub>1</sub>	9.60 BSC		
e	0.80 BSC		
φb	0.35	0.40	0.45
bbb	$\cancel{\text{---}}$	$\cancel{\text{---}}$	0.10
ccc	$\cancel{\text{---}}$	$\cancel{\text{---}}$	0.10
ddd	$\cancel{\text{---}}$	$\cancel{\text{---}}$	0.15
eee	$\cancel{\text{---}}$	$\cancel{\text{---}}$	0.08
M	13		

### NOTES:

- ALL DIMENSIONS AND TOLERANCES CONFORM TO ASME Y14.5M-1994
- SYMBOL "M" IS THE PIN MATRIX SIZE.
- DIMENSION IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM C.
- CONFORMS TO JEDEC MO-216-BAG-2 (DEPOPULATED).

## 144-BALL LAMINATE CHIP SCALE BGA, 0.80MM PITCH (CS144/CSG144)

## Revision History

The following table shows the revision history for this document.

Date	Version	Revision
12/5/05	1.0	Initial Xilinx release.
5/31/06	1.1	Modified the ball diameter to include the MIN, NOM, and MAX dimensions.