

Summary of package features

Substrate size = 17 mm x 17 mm

Total thickness = 2.97 mm

BGA balls 20 x 20 matrix
 0.8 mm pitch, 0.5 mm ball diameter
 composition SAC305

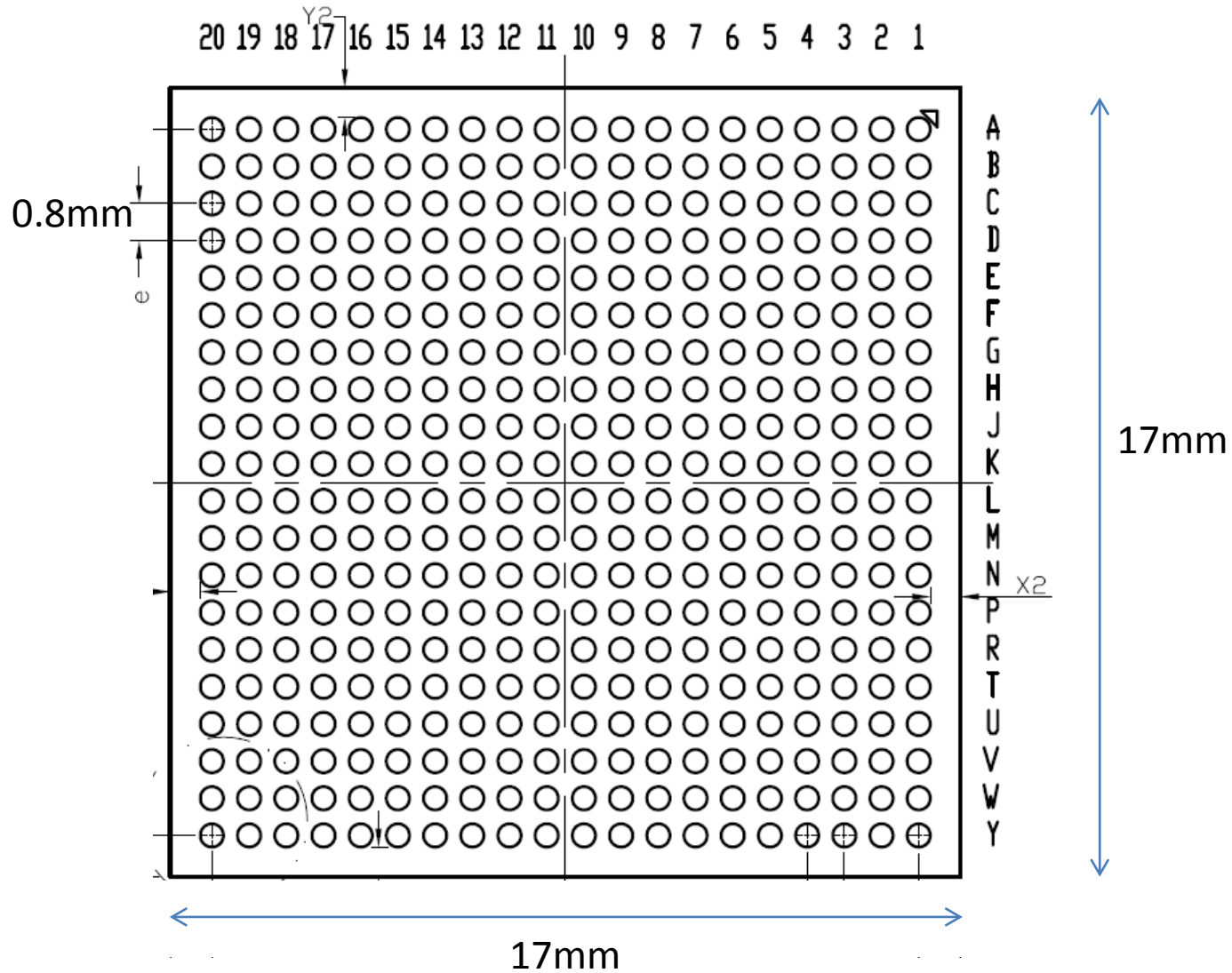
Six decoupling capacitors (2.2nF, SMD 0402) and crystal oscillator are included in the package assembly.

The production packages have a Cu heat-sink, 0.5 mm thick, glued with thermal-interface-material to the surface of the GBTX die.

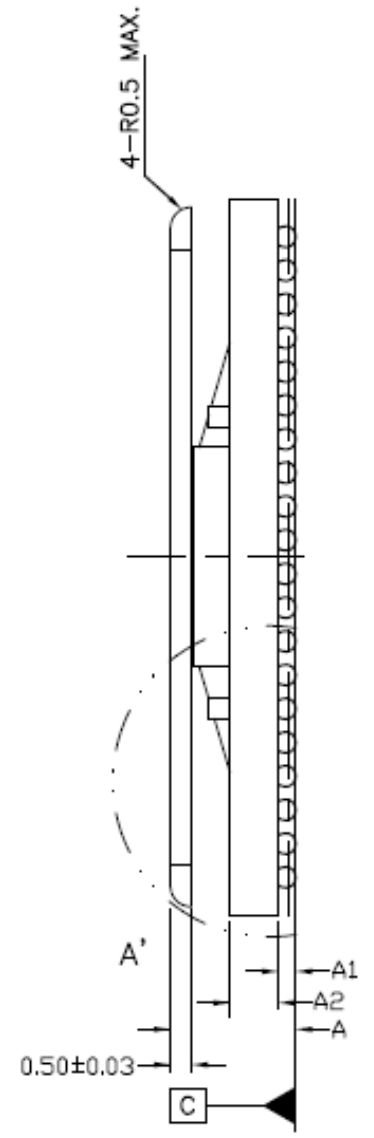
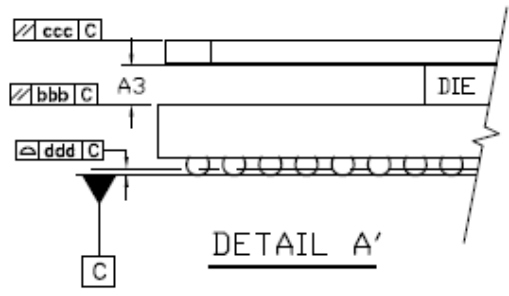
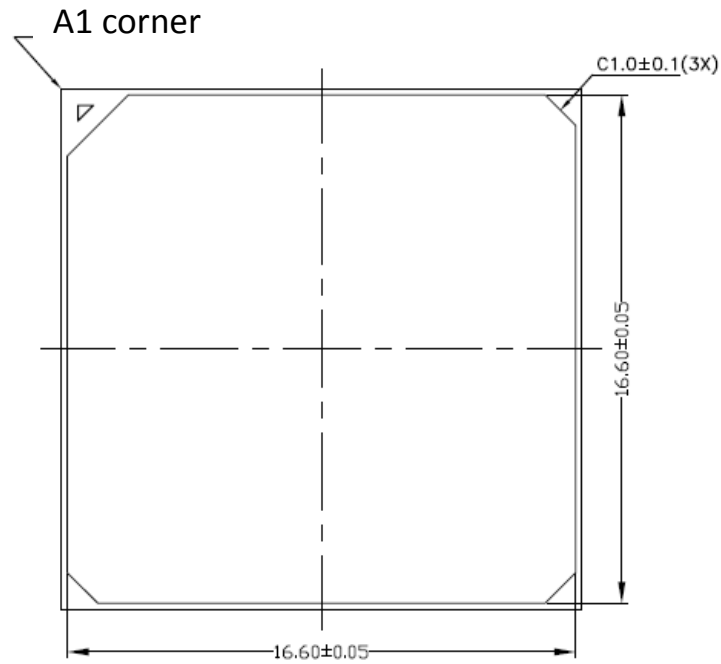
When surface-mounting the package on a PCB, the temperature profile must satisfy the strict reflow soldering requirements of the crystal:

http://www.microcrystal.com/images/PDF/6_AT-Cut_Crystals/appmanual/CC6.pdf

Bottom View, looking at BGA balls



Top View



| | SYMBOL | COMMON DIMENSIONS | | |
|--|--------|-------------------|--------|-------|
| | | MIN. | NOM. | MAX. |
| TOTAL THICKNESS | A | 2.720 | 2.970 | 3.220 |
| STAND OFF | A1 | 0.360 | | 0.460 |
| SUBSTRATE THICKNESS | A2 | | 1.150 | REF |
| THICKNESS FROM SUBSTRATE SURFACE TO DIE BACKSIDE | A3 | | 0.860 | REF |
| BODY SIZE | D | | 17.000 | BSC |
| | E | | 17.000 | BSC |
| BALL DIAMETER | | | 0.500 | |
| BALL WIDTH | b | 0.440 | | 0.640 |
| BALL PITCH | e | | 0.800 | BSC |
| BALL COUNT | n | | 400 | |
| EDGE BALL CENTER TO CENTER | D1 | | 15.200 | BSC |
| | E1 | | 15.200 | BSC |

Top View layout.

On the production packages the heat-sink will be mounted on this side, so obscuring these components.

A1 corner

