



QUALITEK®

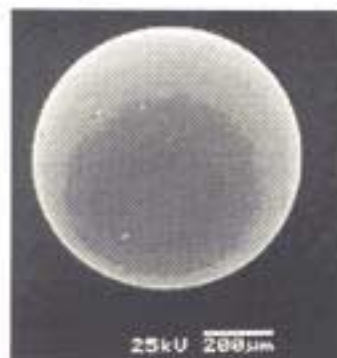
Q-Pearl

BGA Solder Spheres

DESCRIPTION

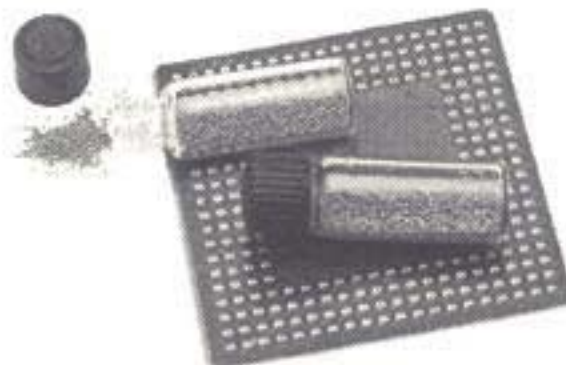
Qualitek International, Inc. manufactures Q-Pearls using a new technology that assures exact alloy composition, consistent and accurate diameters and highly spherical shapes of the spheres.

All spheres are made from pure metals combined to provide required alloy composition according to QQ-S-571 Rev. F specification or customer Specific.



After forming the spheres are classified for size by a precise and non abrasive sorting process. The diameters of the spheres are monitored and controlled within +/- 0.001" tolerance. Sphere size distribution is measured precisely by a sophisticated image analysis system connected to Scanning Electron Microscope (SEM).

To determine sphericity, sphere diameter is measured in 16 directions in a fraction of a second.



SPHERE SIZE AND COMPOSITION

Choosing the correct alloy and sphere size is based on the type of BGA package and the processing temperature of your assembly.

Solder Spheres in Ball Grid Array packages are used to provide the electrical and mechanical connection between the component and the board assembly.

Type Of BGA	Alloy	Ball Diameter
PBGA	63Sn/37Pb 62Sn/36Pb/Ag2 LF88	0.030"
CBGA	10Sn/90Pb 10Sn/88Pb/2Ag	0.025"
TBGA	10Sn/90Pb	0.035"

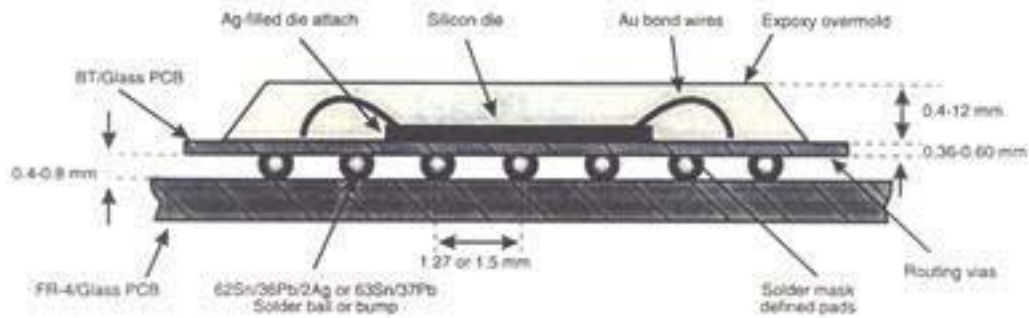
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Consult the MSDS for Health and Safety information.



The cross-section of a PBGA (source: Motorola)

CERAMIC BALL GRID ARRAYS

Spheres used in C-BGAs are made out of alloys with a high melting point such as 10Sn/90Pb (liquidus at 302°C)

The spheres are attached to the package using eutectic 63/37 solder paste (liquidus at 183°C).

The same paste is used to attach the spheres to the board. The sphere do not melt during reflow.

PLASTIC BALL GRID ARRAYS

Spheres used in P-BGAs are typically made out of eutectic alloys such as 63Sn/37Pb or 62Sn/36Pb/2Ag.

They are attached using paste or flux.

The spheres collapse during reflow.

Q-Pearls PACKAGING

Qualitek offers two types of packaging for Q-Pearls:

- * One alloy - One Size of the sphere.
- * Rework sets.

Unless otherwise specified spheres of a particular alloy/diameter are packed in glass containers. The typical container contains 25,000 spheres.

Other alloys & diameters may be available upon request.

REWORK SETS

Rework sets provide materials for the repair of BGA packages. They consist of four different types of BGA spheres as well as two types of fluxes.

The most common rework set contains:
(* may change)

BGA SPHERES

Alloy Composition	Size	# of spheres
63Sn/37Pb	0.030"	2,500
62Sn/36Pb/2Ag	0.030"	2,500
LF 88	0.030"	2,500
10/90	0.025"	2,500

Flux

No Clean Flux	PF600
Water Soluble Flux	PF700

PASTE FLUXES

Qualitek International, Inc. supplies paste fluxes, which are high viscosity fluxes to hold spheres in place during the attachment process. All flux types provide excellent tack and activity. Available in RMA, RA, No-Clean and Water-Soluble.

Paste Flux PACKAGING

- 8 gram/35cc syringe
- 24 gram/100cc syringe
- 50 - 200 gram jars