

Features

Innovative designs and expanding package offerings provide a platform from prototype-to-production.

- ▶ Custom ball counts up to 814
- ▶ 0.80-1.27 mm ball pitch
- ▶ 21-35 mm body sizes
- ▶ Thin Au wire and Cu wire available
- ▶ Chip-on-Chip (CoC)
- ▶ Large mold cap for quality enhancement
- ▶ Low profile and lightweight
- ▶ Improved thermal properties and electrical enhancement
- ▶ Highly flexible internal routing of signal, power and ground for device performance and system compatibility
- ▶ HDI designs possible
- ▶ Suitable substrate for multi-die (MCM) and integrated SMT structures
- ▶ Mature high yielding strip based manufacturing process
- ▶ Perimeter, staggered rows and full ball array options
- ▶ Multi-layer, ground/power
- ▶ Excellent reliability
- ▶ Pb-free solder balls

PBGA

J-Devices' Plastic Ball Grid Array (PBGA) package is designed for cost/performance applications with flexibility and efficiency in substrate utilization. PBGA design incorporates low inductance, improved thermal operation, enhanced SMT ability and significant improvement in electrical responses due to increase in I/O capability and more direct routing of power, ground and signal traces.

Thermally Enhanced PBGA (TEPBGA)

This PBGA option with built-in heat slug is available for applications requiring increased heat dissipation.

Applications

- ▶ TV, gaming, PC, network, automotive and industrial applications
- ▶ Applications where high pin count, high density, high heat dissipation and higher electrical performances are required

Thermal Performance

Body Sizes (mm)	θ_{JA} at 1.0W 0 Airflow ($^{\circ}C/W$)	
	PBGA	TEPBGA
23	18.6	14.2
27	16.9	13.7
31	16.0	12.4
35	15.5	11.9

*Additional thermal data available

*Die size 8.0 x 8.0 mm

*Die thickness 0.29 mm

*Ta 25°C

Reliability Qualification

- ▶ Moisture Sensitivity: Pre-condition of: 30°C/60% RH, 192 hours, IR reflow 260°C 3X
- ▶ uHAST: 130°C/85% RH, 96 hours
- ▶ Temp Cycle: -55°C/+125°C, 1000 cycles
- ▶ High Temp Storage: 150°C, 1000 hours

Process Highlights

- ▶ Die thickness: 0.29 mm
- ▶ Bond pad pitch: 40 μ m
- ▶ Au wire diameter: 15-23 μ m
- ▶ Cu wire diameter: 18-23 μ m
- ▶ Marking: Laser mark
- ▶ Wafer backgrinding: Available

PBGA

Standard Materials

- ▶ Package substrate
 - ▷ Conductor: Cu
 - ▷ Dielectric: Epoxy resin glass reinforced
- ▶ Die attach: Conductive epoxy
- ▶ Mold compound: Epoxy mold compound
- ▶ Solder ball: Pb-free

Test Services

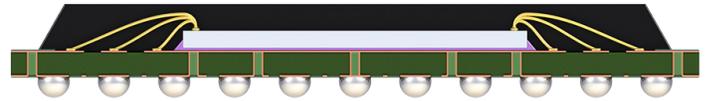
- ▶ Program conversion
- ▶ Product engineering
- ▶ Wafer sort
- ▶ 256 pin x 20 MHz test system available
- ▶ -55°C to +125°C test available
- ▶ Burn-in capabilities
- ▶ Tape and reel services

Shipping

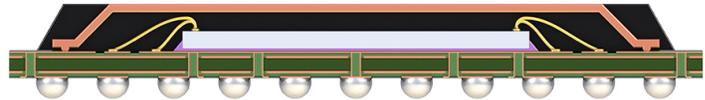
- ▶ JEDEC outline trays

Cross-section

PBGA

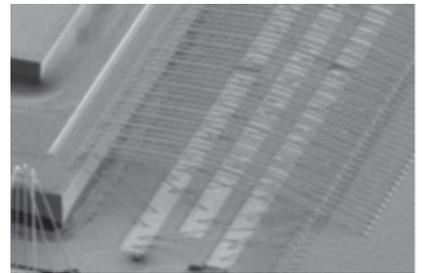
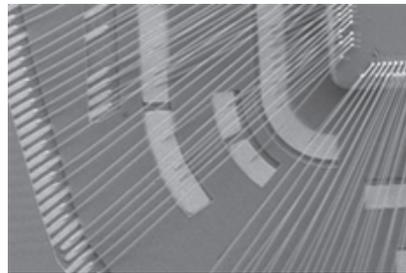
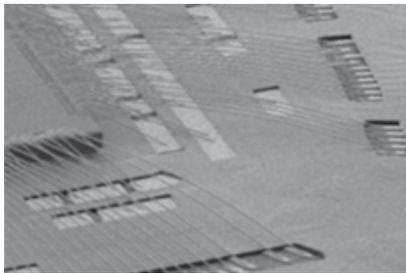


TEPBGA



J-Devices' TEPBGA is able to convey the heat from the chip directly to the heat slug. This spreads the heat in the package, resulting in efficient dissipation.

Wire Images



Visit amkor.com or email sales@amkor.com for more information.

With respect to the information in this document, Amkor makes no guarantee or warranty of its accuracy or that the use of such information will not infringe upon the intellectual rights of third parties. Amkor shall not be responsible for any loss or damage of whatever nature resulting from the use of, or reliance upon it and no patent or other license is implied hereby. This document does not in any way extend or modify Amkor's warranty on any product beyond that set forth in its standard terms and conditions of sale. Amkor reserves the right to make changes in its product and specifications at any time and without notice. The Amkor name and logo are registered trademarks of Amkor Technology, Inc. All other trademarks mentioned are property of their respective companies. © 2018 Amkor Technology Incorporated. All Rights Reserved. DSJD401C Rev Date: 10/18

