

Die Processing:

Amkor's Die Processing operation offers a wide range of services for the WLCSP, flip chip and bare die industry. All processes are conducted in a Class 10K clean room environment using state-of-the-art equipment. Services include backgrind, die prep, inspection, and pick and place into tape or trays. Die inspection capabilities include commercial and military Mil-Std-883 Condition B. Flip chip bump inspection is also available for gold and solder bumped product. In addition, special processing and shipping services are available upon request.

Production Facility:

Amkor's primary Die Processing operation is located at the P1 factory in the Philippines. Amkor also has die processing operations dedicated to support WLCSP in Taiwan.

Markets Served:

Amkor serves a wide range of semiconductor manufacturers and producers of portable and wireless communications products, multi-media and entertainment systems, network computing and automotive electronics. The die are used in multi-chip modules (MCM), flip chip, and chip-on-board applications.

Amkor's Die Processing Advantage:

Amkor's Die Processing service offers several advantages to the customer.

- Provides an efficient turnkey solution to supply inspected, packaged die for use in flip chip or chip-on-board applications
- Avoids the need for the chip supplier to invest in the manufacturing infrastructure for handling and packaging bare die
- Provides the confidence in working with the leading supplier of semiconductor subcontract assembly and test services with extensive experience in die processing and component packaging



Details of Services:

- Class 10K clean room environment
- Up to 12" wafer capability
- Backgrinding
- Inkless processing
- Wide range of die sizes (0.4 mm to 26 mm square)
- Full die preparation (wafer mount, saw, clean)
- Wide range of markets served
 - Wireless, portable communications
 - Network / computing
 - Automotive
- Wide selection of carrier options
 - Pocket tape (8.0 mm, 12.0 mm, 16.0 mm, custom configurations)
 - Waffle pack (50.80 mm, 101.60 mm)
 - Gel pack (50.80 mm, 101.60 mm)
 - Film frame
- Automated pick & place
- Wafer map process integration on pick and place equipment
- Die inspection
 - Commercial 100X, 100% visual
 - Mil-Std-883 Condition B
 - Bump inspection: Au, Sn/Pb, and Lead-Free
- Quality packing & shipment services
 - Vacuum sealed, N2 purged shipping bags
 - ESD & moisture sensitive packing materials
 - Drop shipment to end customer is available
- Full factory quality certification
 - ISO 9000, QS 9000, PQA, ISO 14001

Process Highlights:

Wafer thickness (max)	35 mils
Wafer thinning	to 9 mils minimum
Die inspection	Commercial, Mil-Std-883 Condition B
Wafer mapping	ALPS format compatible
Taping standards	IEC 60286-3, EIA-747, EIA-481, EIA-726
Final visual gate	LTPD 5/0
Shipping options	Pocket tape, Waffle pack, Gel Pack
Standard shipping reel diameters	7" (2.25" hub), 13" (4" hub)

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