

eWLCSP

Encapsulated Wafer Level Chip Scale Package

A compelling value proposition over standard WLCSP, this innovative

Highlights

- Innovative FlexLine™ manufacturing approach delivers compelling cost reductions over standard WLCSP
- Seamless conversion between fan-in and fan-out designs with the same basic package platform
- Unique WLP manufacturing approach independent of incoming silicon wafer diameter



Process Highlights

Passivation	1 via size: 20µm (minimum)
RL Line/Space	8µm line/8µm space (minimum)
Bump Pitch	0.50mm, 0.4mm, 0.35mm, 0.3mm
Visual Inspection	Automatic optical inspection with electronic wafer mapping

Test Services

Wafer level testing is an important process for yield enhancement and a final test requirement for eWLCSP. Our best-in-class test services include:

- Product Engineering support
- Probe capability
- Program generation/conversion
- High volume wafer sort

Applications

eWLCSP is a compelling solution for space constrained mobile devices and new applications such as wearable technology and automotive markets. Effective transition to eWLCSP is optimal for the following applications:

- 200mm WLCSP migration to FlexLine for PMIC and MCU applications
- 300mm WLCSP migration to eWLCSP for amplifiers, MCU, PMIC and RFIC applications

Component Level Reliability Testing

Moisture Sensitivity Level	MSL1, (260°C, 3x)
Temperature Cycling after Precon	-55°C/125°C, 1000 cycles
Unbiased HAST after Precon	130°C/85% RH, 192 hrs
High Temperature Storage	150°C, 1000 hrs
Temperature Humidity Bias Test	85°C/85%/5V, 1000 hrs
Ball Shear Test	Post reflow: T0, 5X and 10X; reflow: 260 +0/-5 °C

Thermal Performance

- Thermal performance in the 20-40°C/W range for a 5mm x 5mm die without thermal enhancement
- Application specific thermal characterization available upon request

Electrical Performance

- Dependent on application design, and capable to beyond 10GHz
- Application specific electrical characterization available upon request
- Thick Cu for high current low inductance applications

Cross Sections

(Not to scale)

eWLCSP with sidewall

