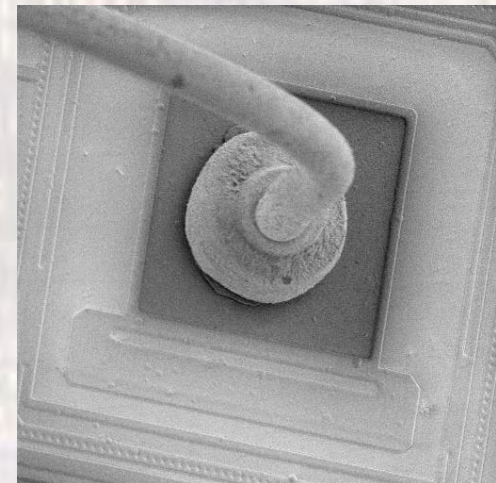
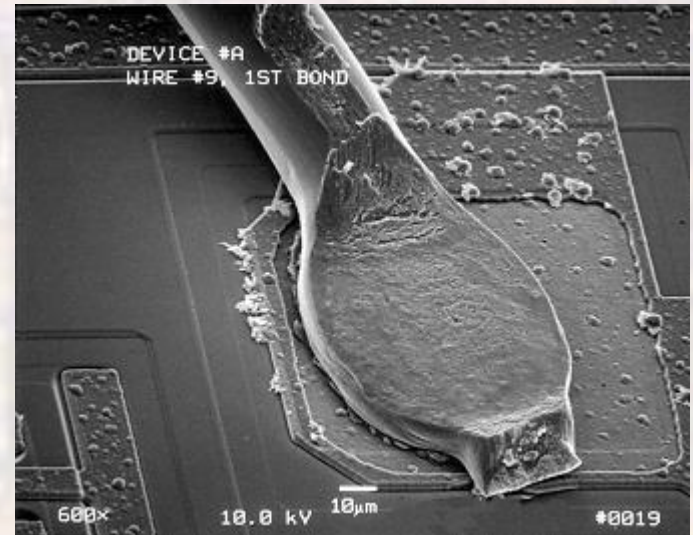
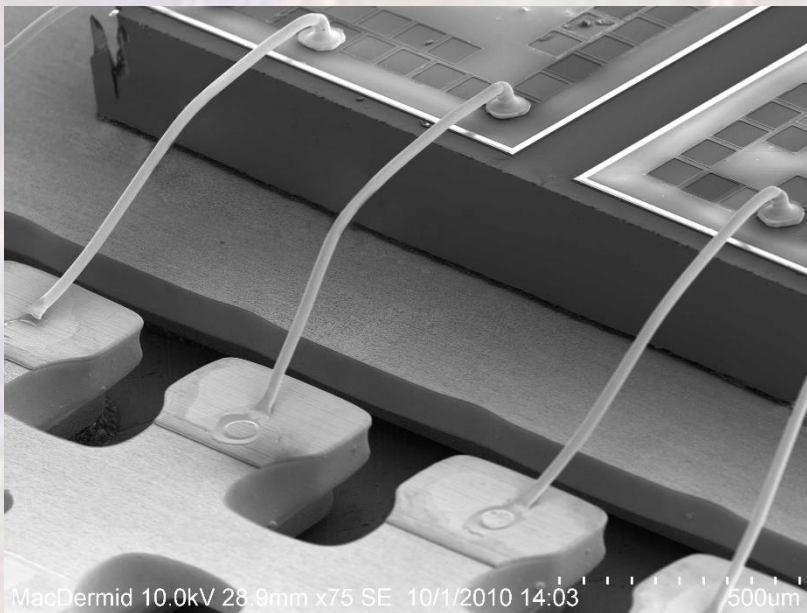


Integrated Circuit Packaging

Last updated 1/10/24

Integrated Circuit Packaging

- Die Bond Pad



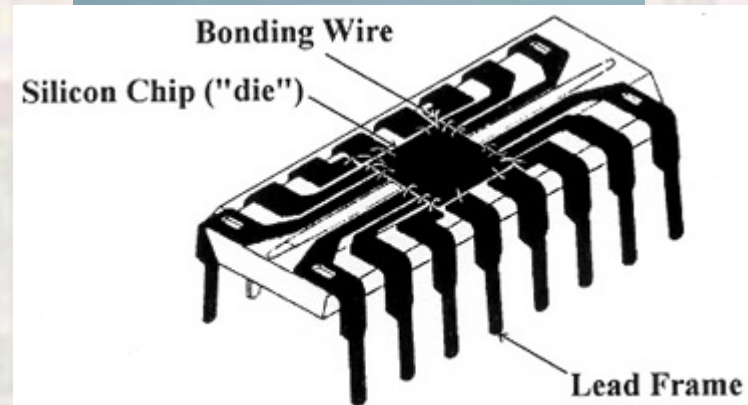
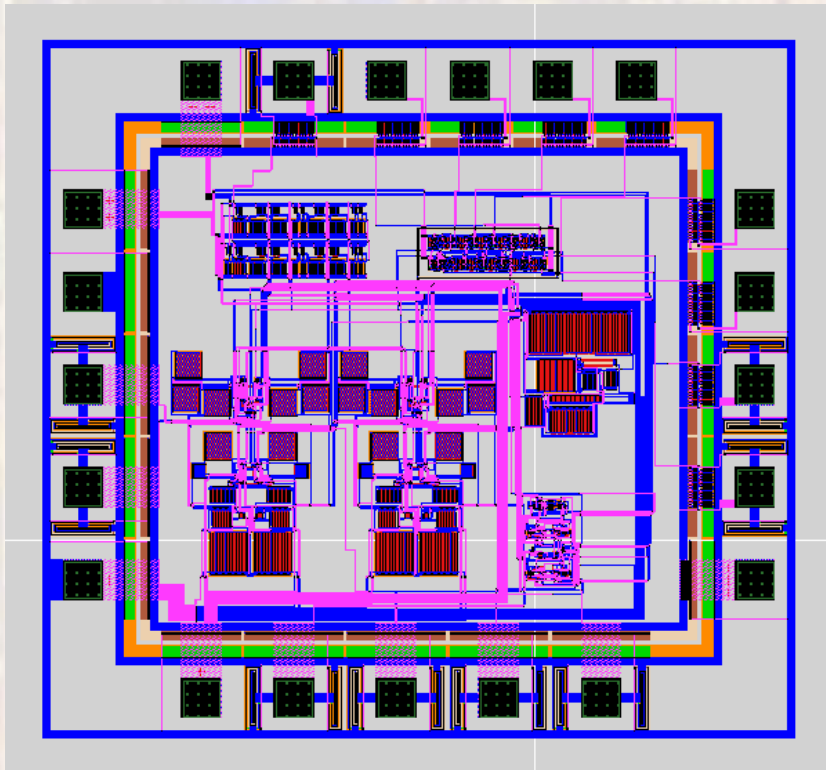
Integrated Circuit Packaging

- Die Bond Pad

[video](#)

Integrated Circuit Packaging

- Die Bond Pad
Lead Frame



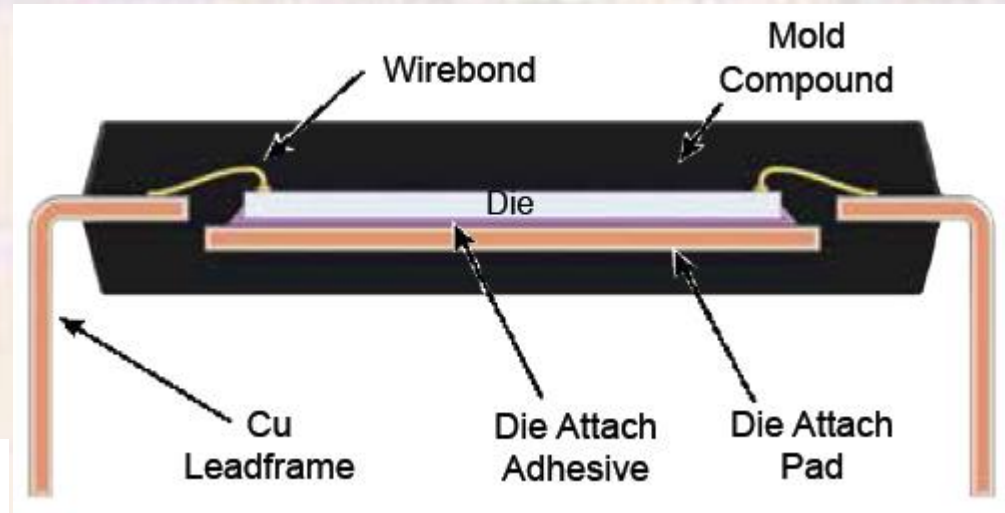
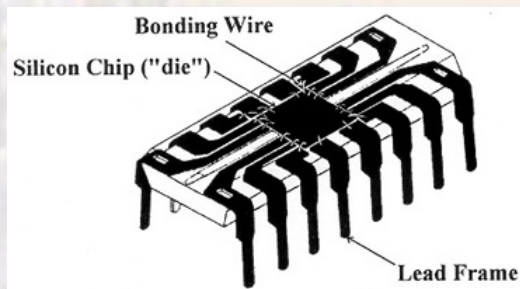
Integrated Circuit Packaging

- TO – Transistor Outline



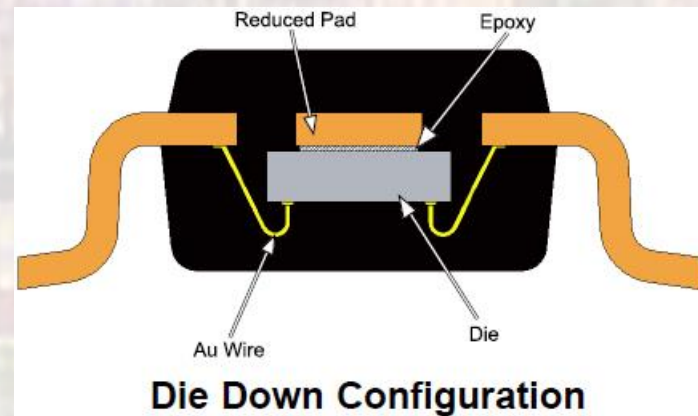
Integrated Circuit Packaging

- PDIP – Plastic Dual Inline Package



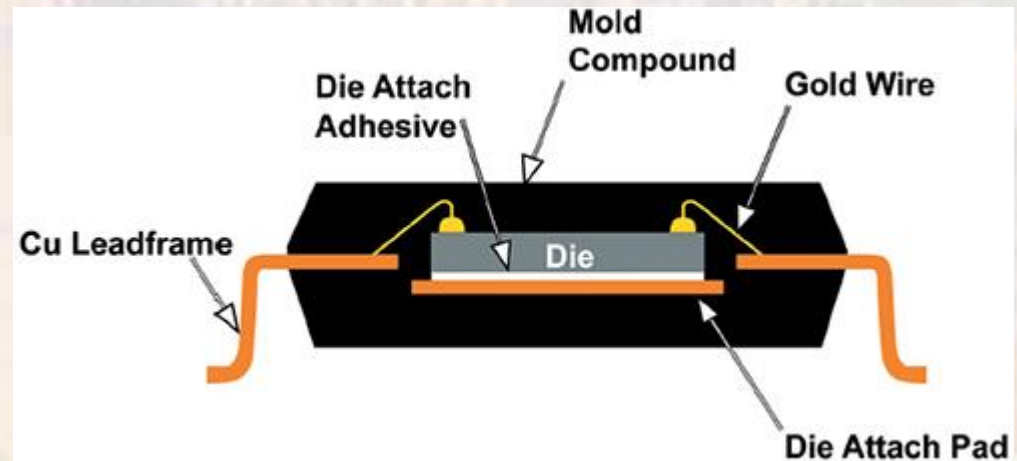
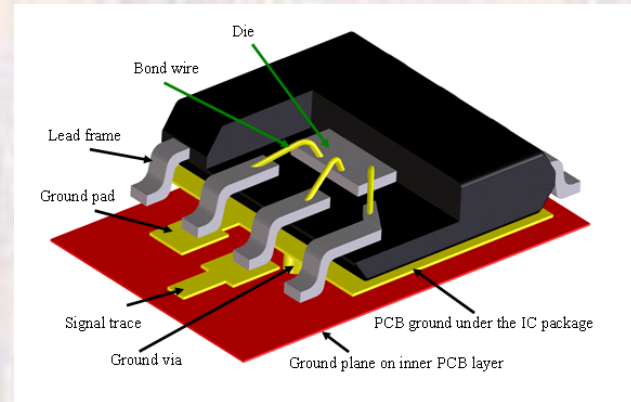
Integrated Circuit Packaging

- SOT – Standard Outline Transistor



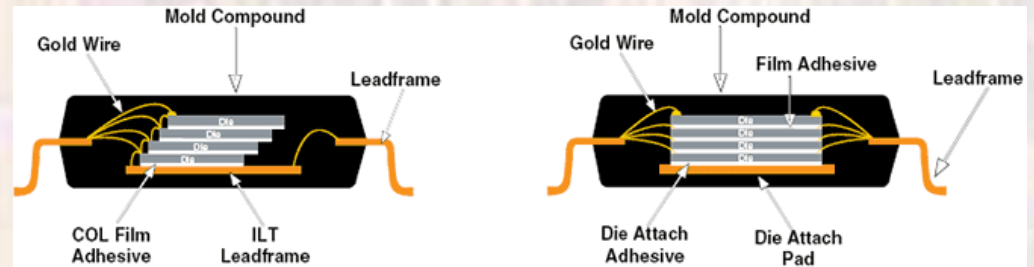
Integrated Circuit Packaging

- SSOP – Shrink Small Outline



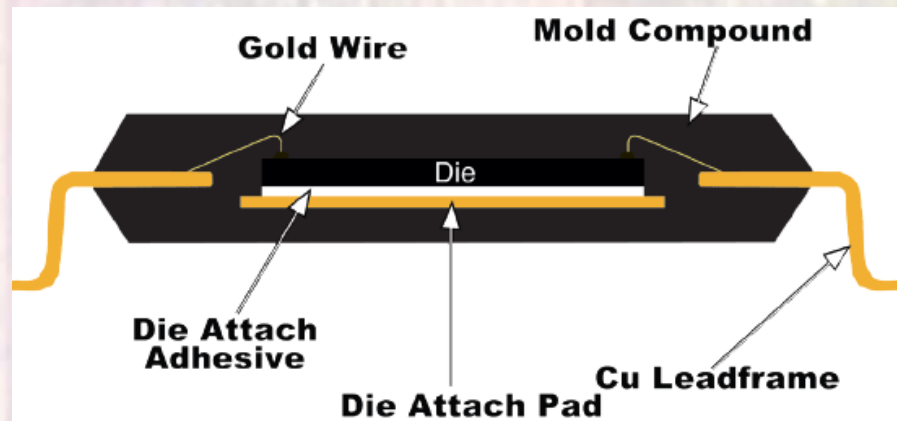
Integrated Circuit Packaging

- TSOP – Thin Small Outline



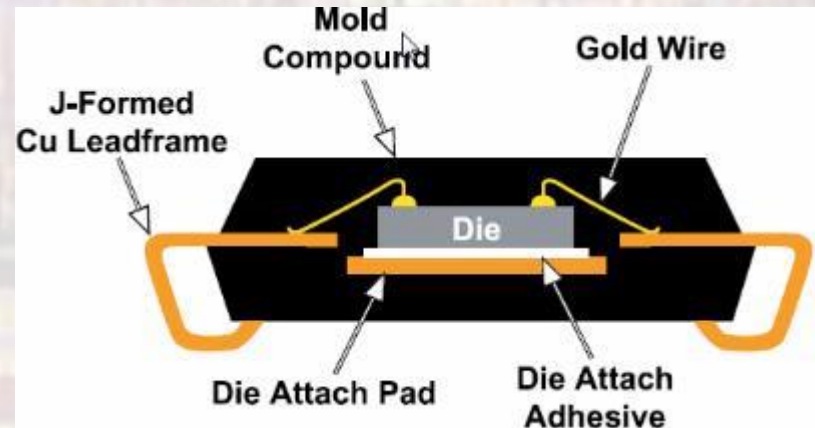
Integrated Circuit Packaging

- TQFP – Thin Quad Flat



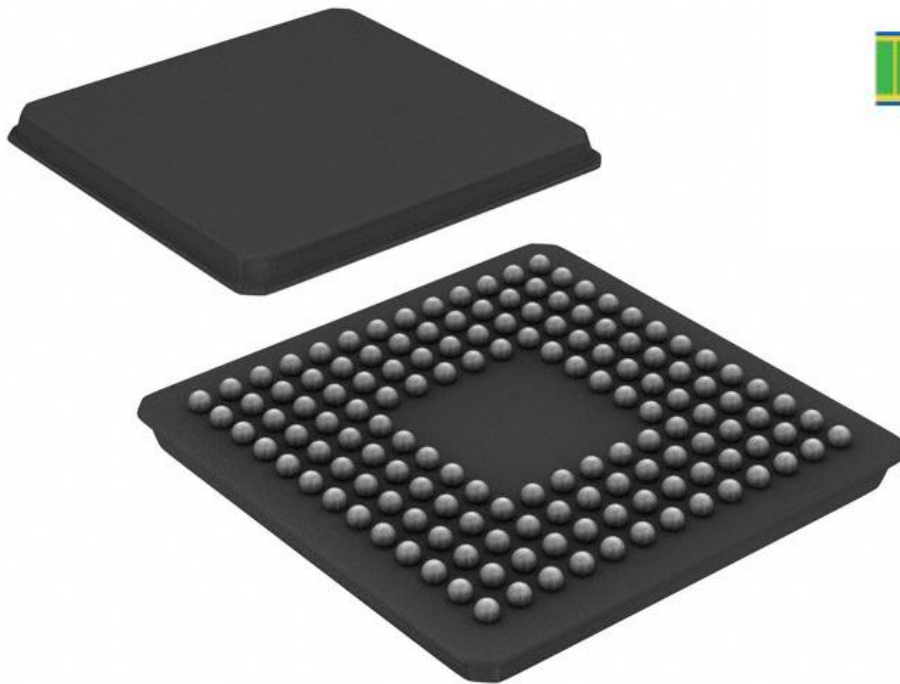
Integrated Circuit Packaging

- PLCC – Plastic Leaded Chip Carrier

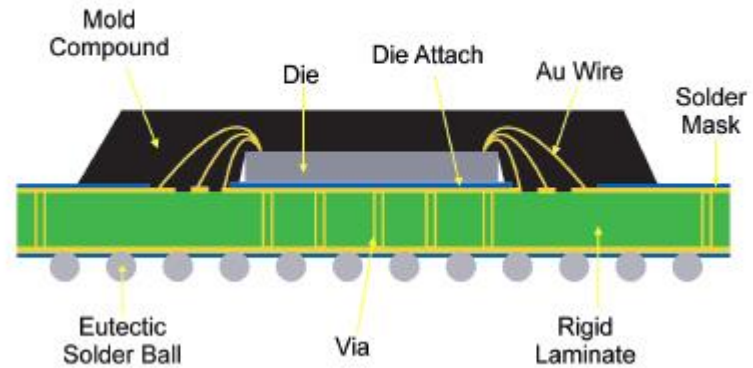


Integrated Circuit Packaging

- Ball Grid Array (BGA)



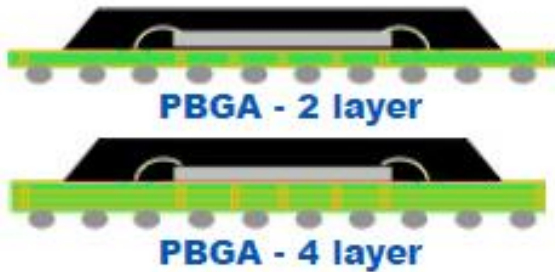
PBGA Cross Section



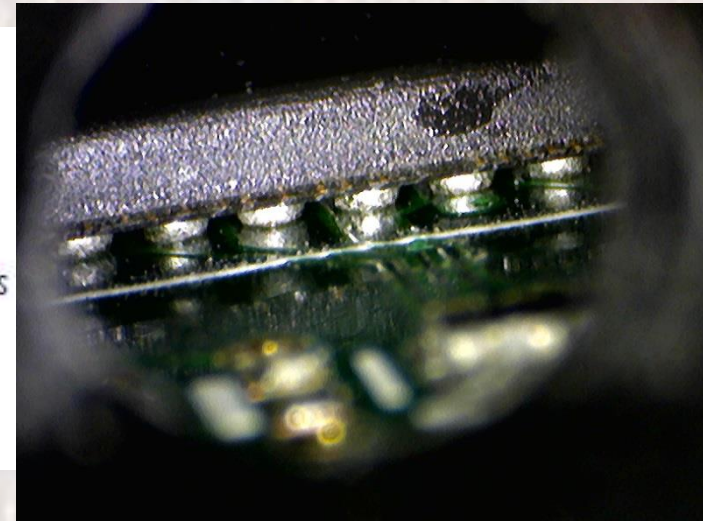
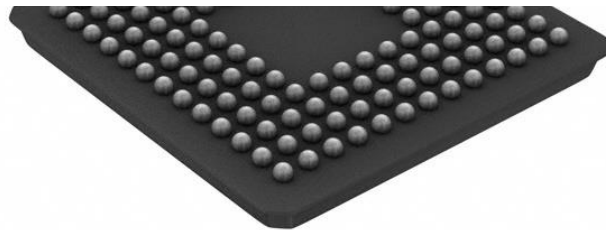
Integrated Circuit Packaging

- Ball Grid Array (BGA)

PBGA Standard Package Offering:

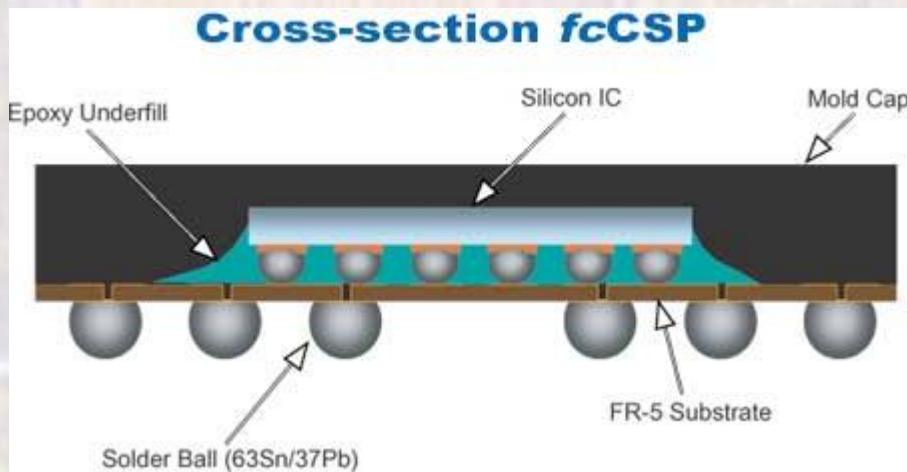


PBGA (Qualified L2AA/260°C)
2 / 4 / 6 Layer
4-Layer with 1oz (35 μ m) Internal Cu Planes
Single or Multi-Die



Integrated Circuit Packaging

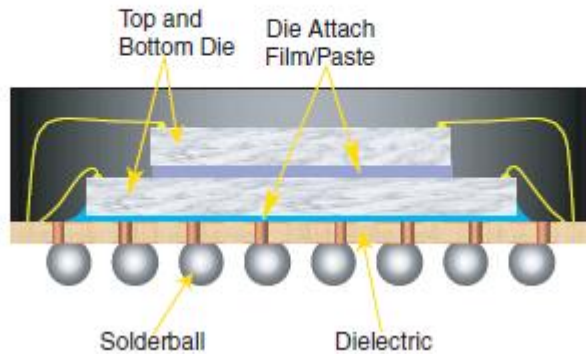
- Flip Chip BGA/CSP (Chip Scale Package)



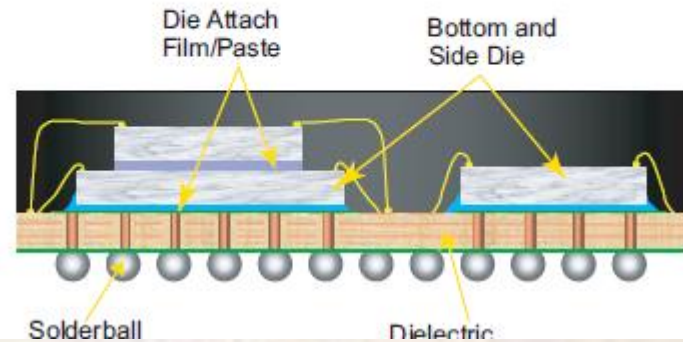
Integrated Circuit Packaging

- Stacked CSP

Stacked CSP Cross Section
2 Die on 2-Layer Laminate Structure

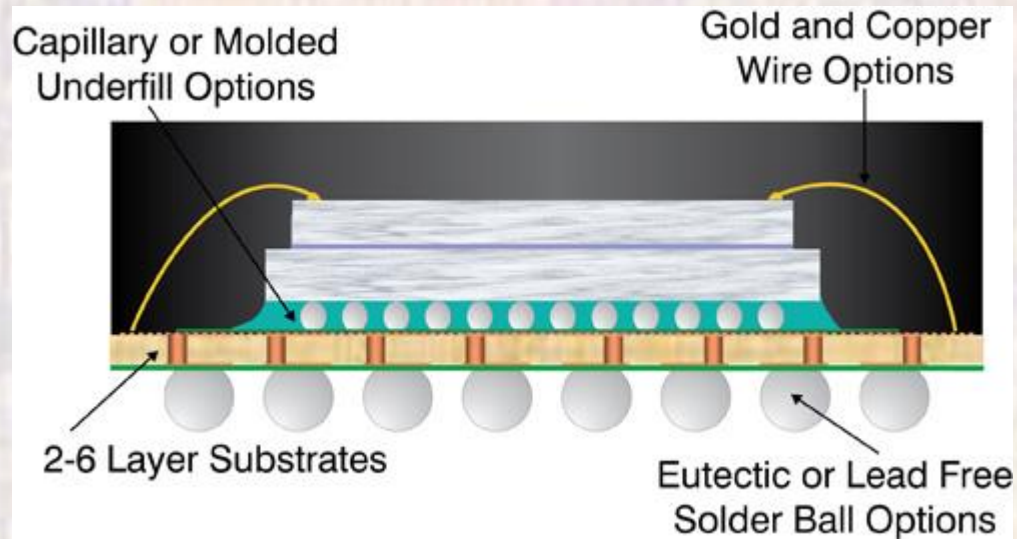


Stacked CSP Cross Section
2+1 Die on 4-Layer Laminate Structure



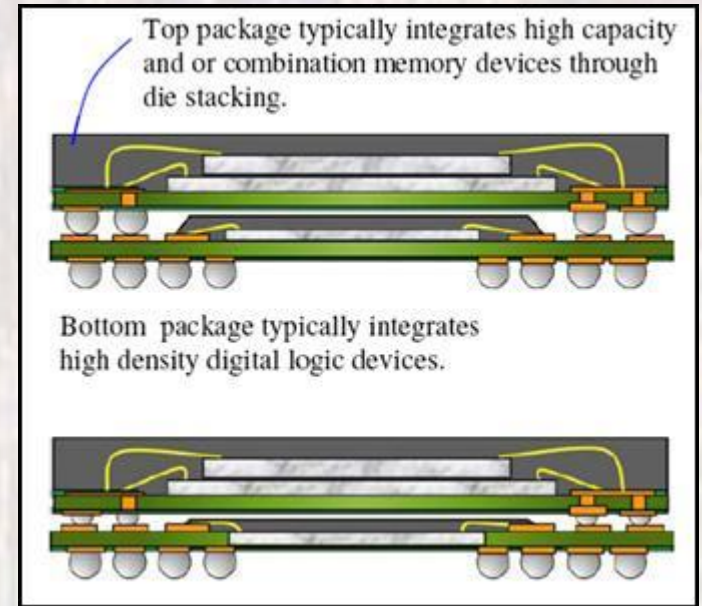
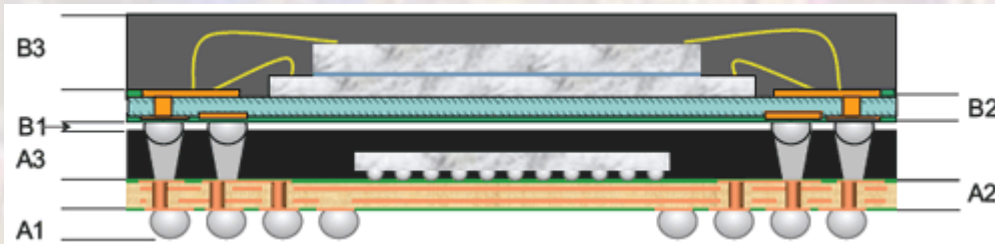
Integrated Circuit Packaging

- Flip Chip Stacked



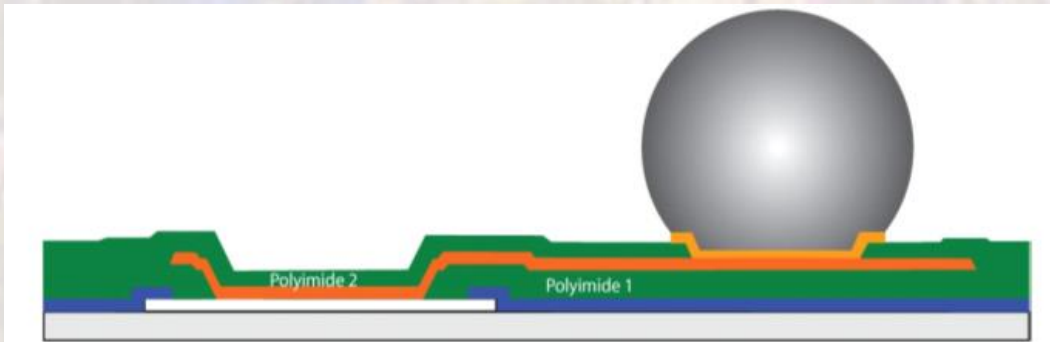
Integrated Circuit Packaging

- Package on Package (PoP)

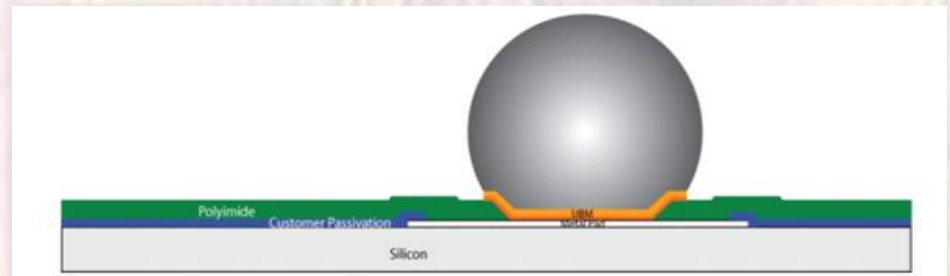


Integrated Circuit Packaging

- Wafer level CSP



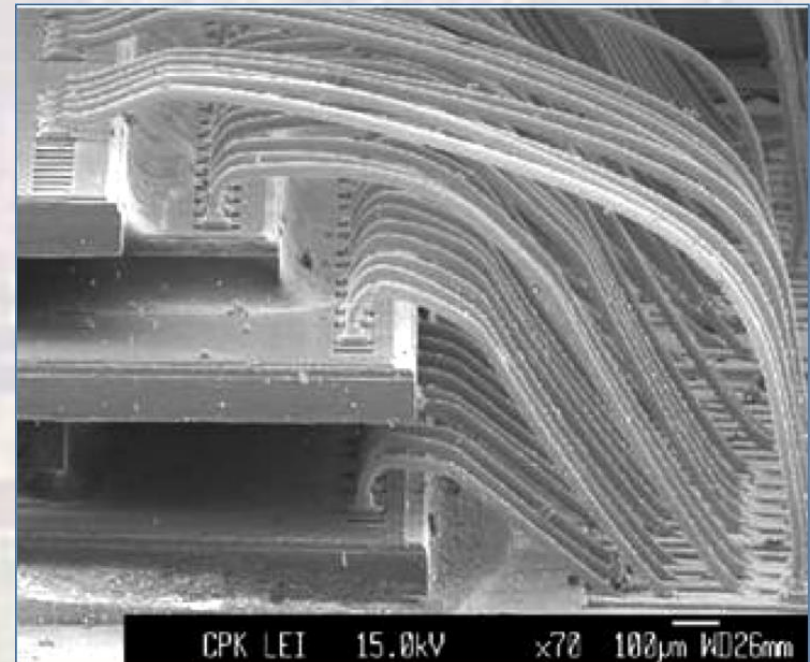
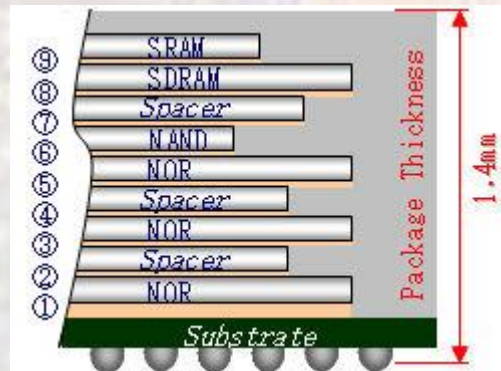
CSPnl – Bump on Redistribution



CSPnl – Bump on Repassivation

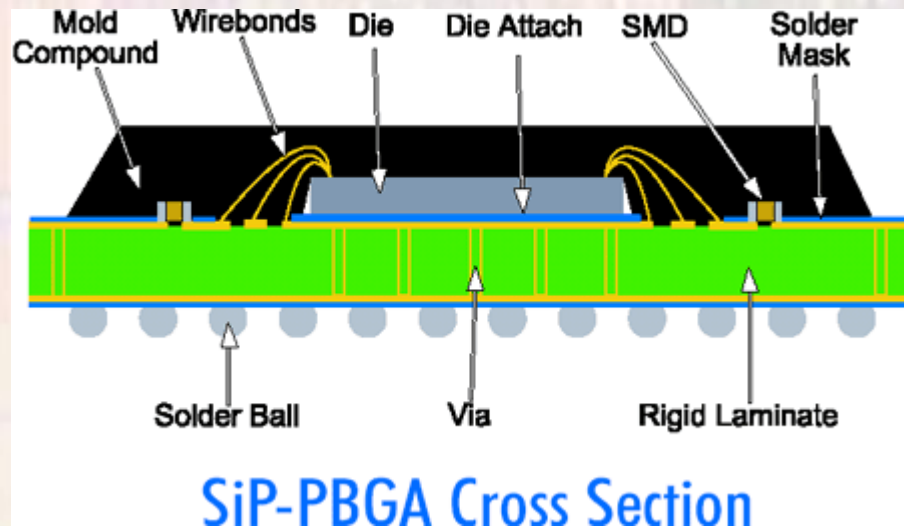
Integrated Circuit Packaging

- Stacked Package



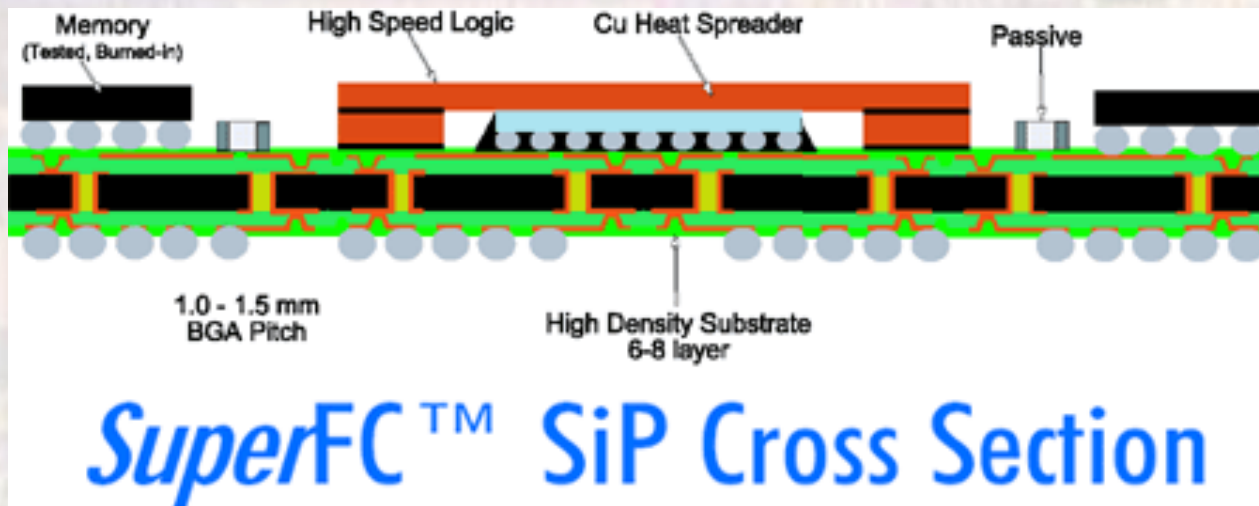
Integrated Circuit Packaging

- SiP – System in Package



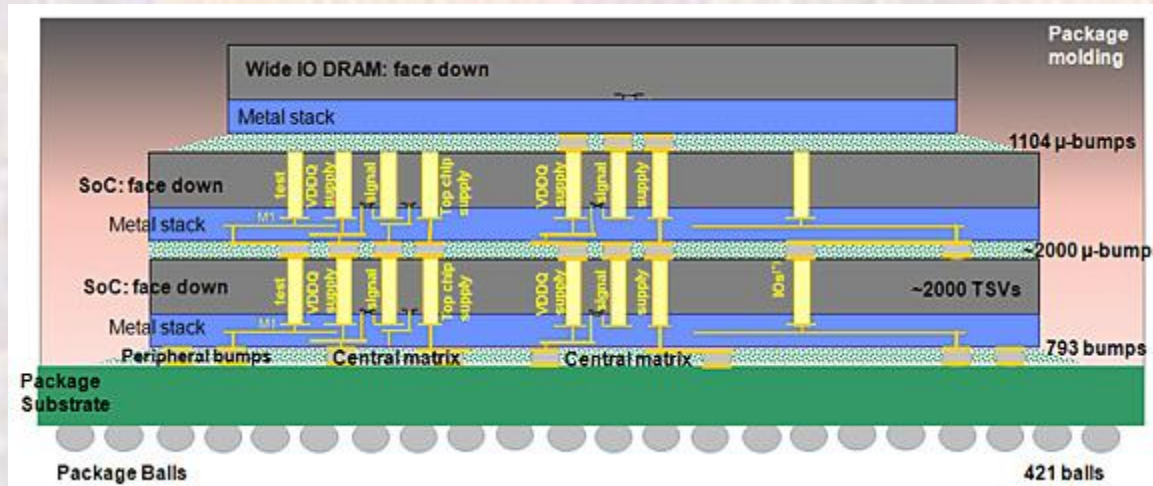
Integrated Circuit Packaging

- SiP – System in Package



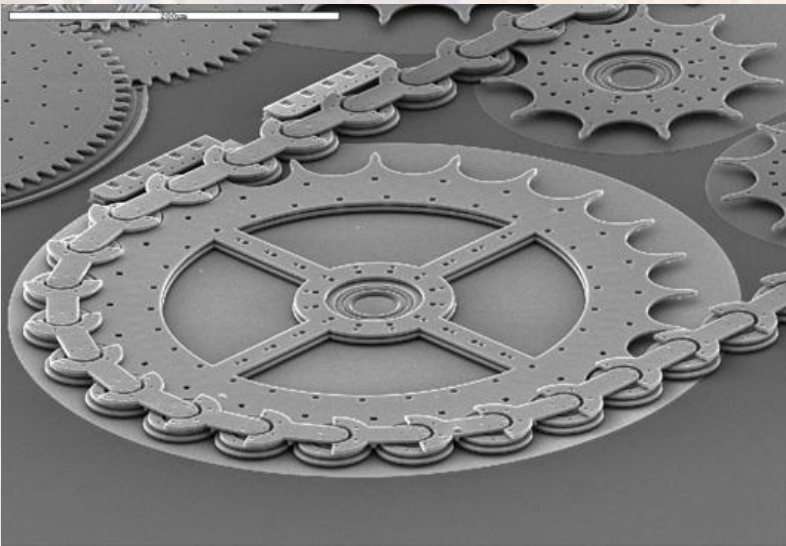
Integrated Circuit Packaging

- Silicon Through Vias



Integrated Circuit Packaging

- Micro-Electro-Mechanical Device



Integrated Circuit Packaging

- SMT Carriers

