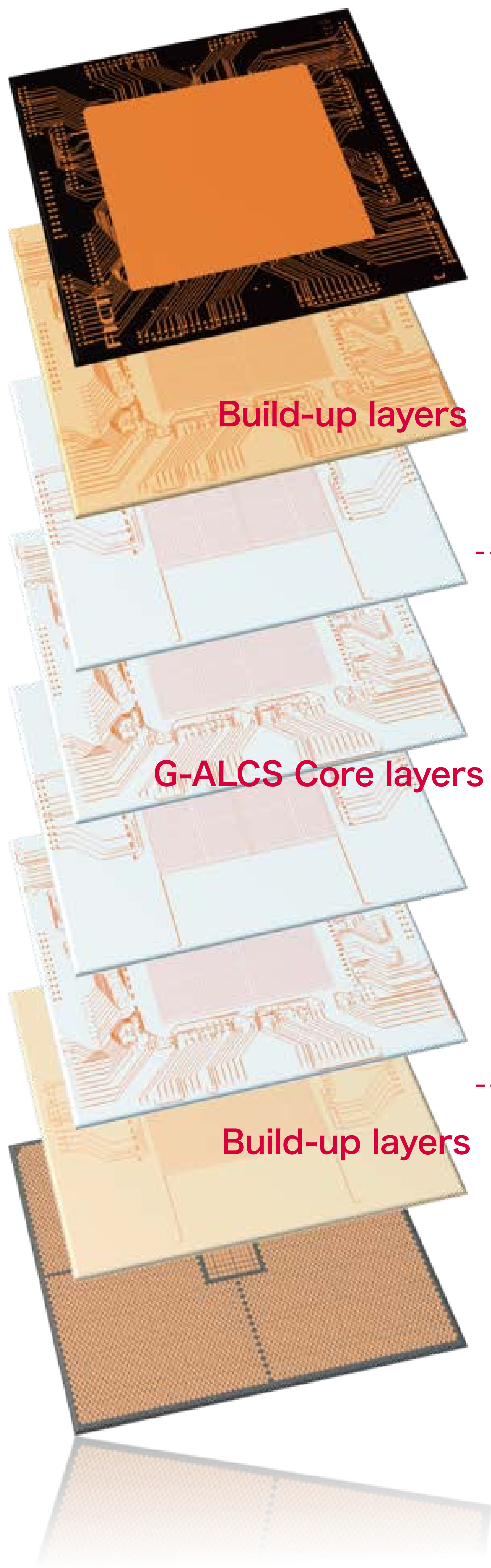
New Concept of Package Substrate Technologies:

Glass Core Package Substate

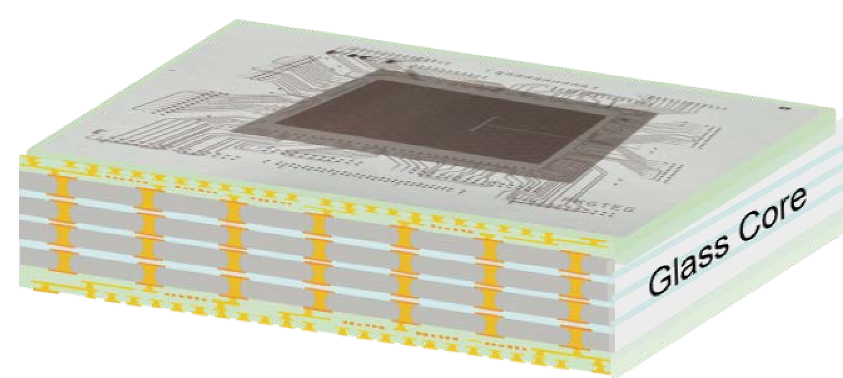
New concept : Glass All Layer Z-Connection Structure (G-ALCS) Core with build-up layers for **chiplet** integration architecture

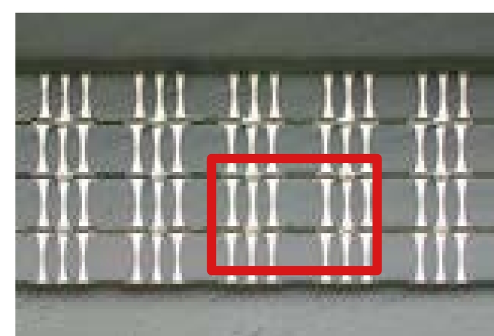
High density package substrate with better mechanical reliability

"G-ALCS" Core Package Substrate

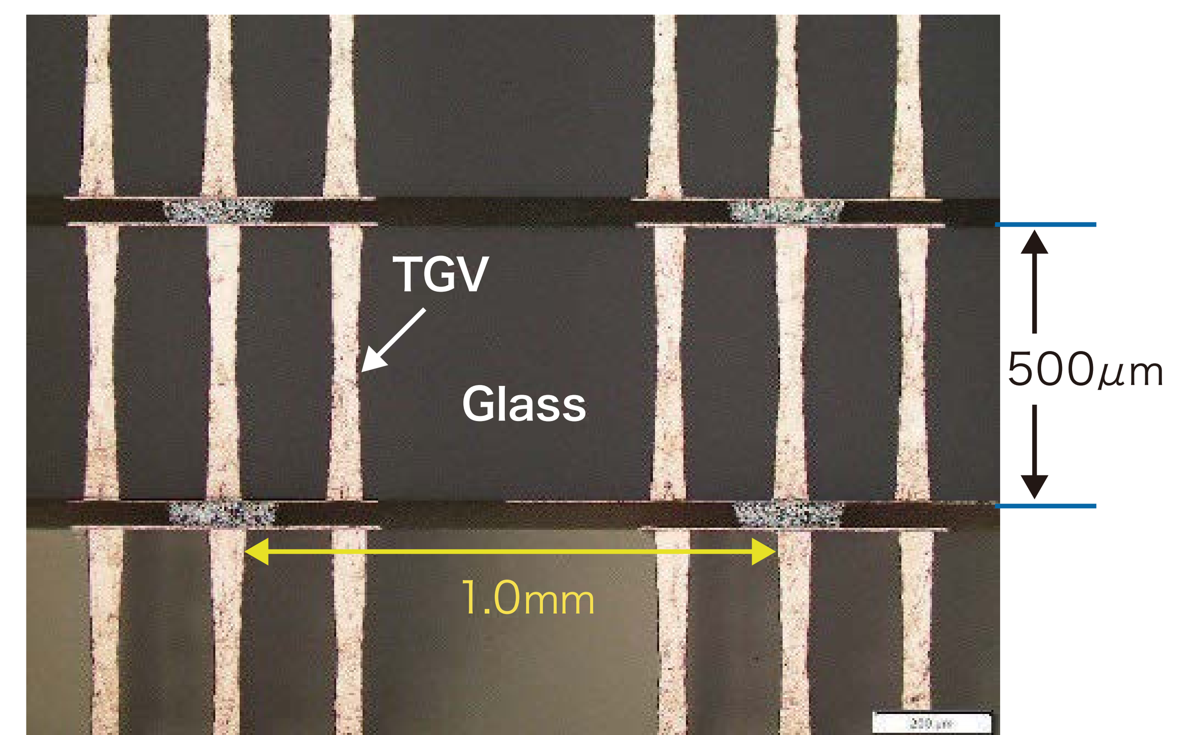


Inside of G-ALCS Core





Cross section (4 layers)

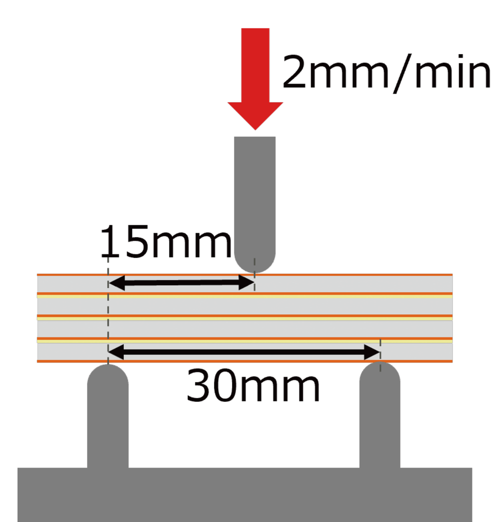


Enlarged view

Advantages of G-ALCS Core

	Single Glass Core (conventional)	G-ALCS Core FICT
Simulation model	Glass 300 µm; Insulating film: 10 µm, Cu: 5 µm	Glass 100 µm; Insulating film: 10 µm, Cu: 5 µm
Stress (by sim.)		Internal stress can be reduced (<1/5)
Effect of outer stress	Crack propagates easily	Resin layer acts as buffering layer

3 Points Bending Test



Measurement Condition