

BIG-SONIC

EMC Deaeration Curing oven

-PO-600

Powerful deaeration curing oven for all types of thermocuring resins
with curing temperature below 200°C beside EMC.



Original Thermal curing process with
Vacuum-pressurization deaeration-cycle technologies.



Ultra-high deaeration
ratio > 98%



- Saving curing process duration time
- Flexibly curing thermoprofile setting



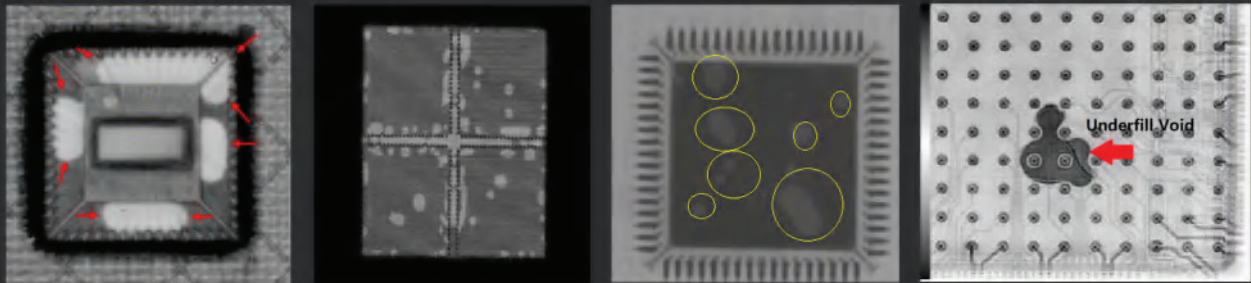
Qualified reliable curing
equipment approved widely
by global high-end users



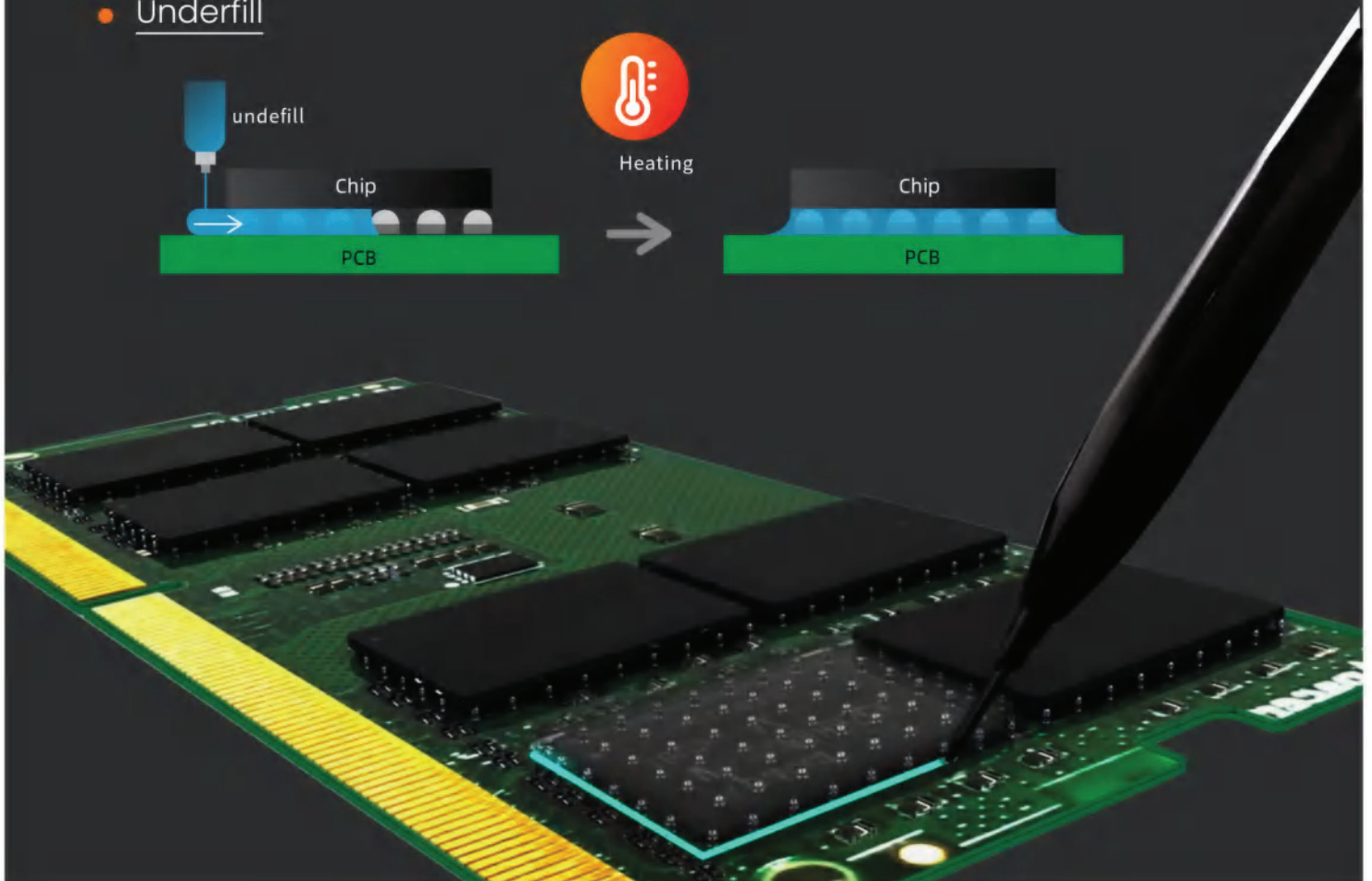
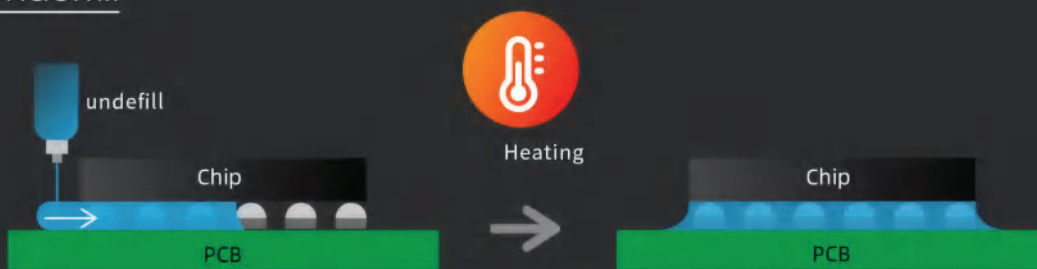
For a long time, the under fill curing process of the Flip chip components and BGA components have been suffered with internal defect issues such as the voids, blow holes and cracks. These defects are caused by the expansion of residual gas in the under fill materials. The similar issues also happen in other processes such as components sealing resin's thermocuring on SMT circuit boards.

These internal defects will seriously reduce the reliability of the under-fill structures. The internal air bubbles in the under-fill structures will make the electronic product unable to withstand the stresses such as impact, vibration and thermal expansion during the service process, and induce functional failure. Therefore, efficient implementation of deaeration during the curing process of the under-fill resin is of great significance for ensuring the reliability of electronic products.

- Internal void and blowhole defect



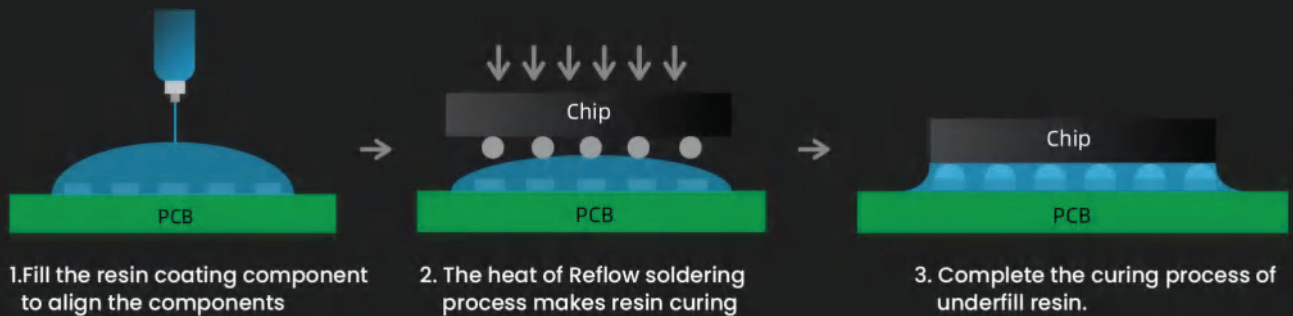
- Underfill



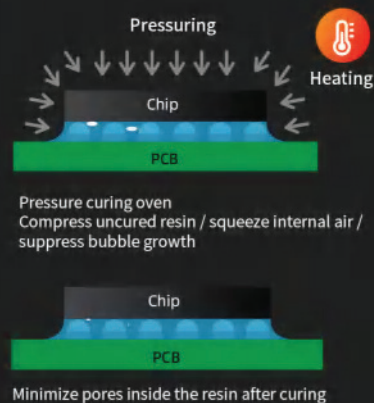
BIG-SONIC products are testified and approved by the world's largest smartphone manufacturer

- The first stage reduces defects by optimizing the resin filling process

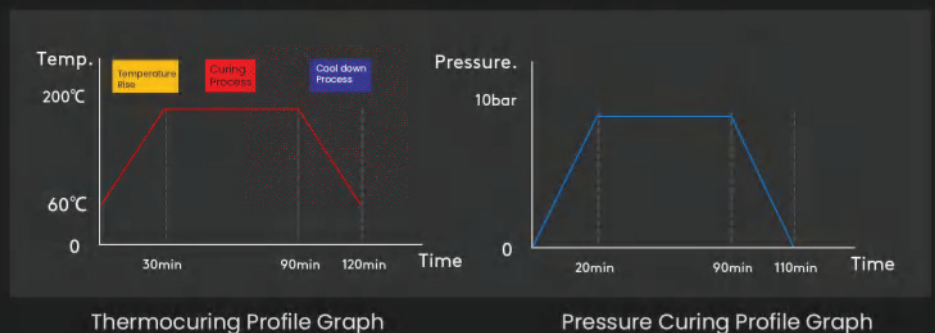
Non-flowable resin filling



- The second stage: pressurized heating and curing to suppress bubble growth



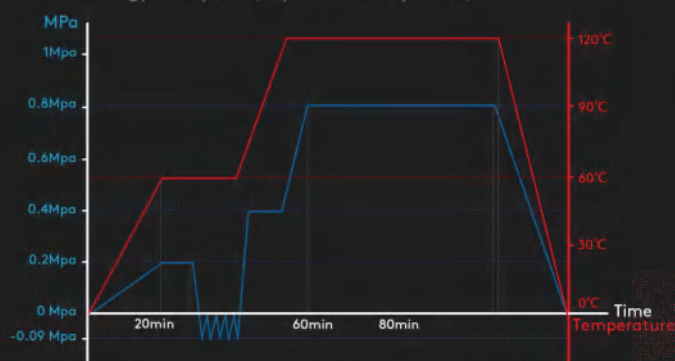
Process profiles of pressurized heating curing furnace



- The third stage [Vacuum-Pressurization]

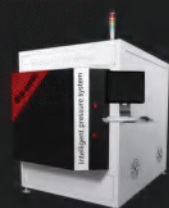
Pressure-regulating circulating deaeration thermocuring

Pressure-regulating circulating deaeration thermocuring process profile (air pressure VS temperature)



Built-in cooling system perform efficient and rapid cooling

- Pressure-regulating circulating deaeration thermocuring method is the best underfill curing technology. It continuous the process cycles of pressurization-deaeration-pressurization until the quality requirements are fulfilled.



BIG-SONIC EMC Deaeration Curing oven

BIG-SONIC Pressure-regulating circulating deaeration thermocuring oven, wisely uses the process control of [low viscosity breathing method] to induce the gas inside the resin to escape to the outside of the resin.



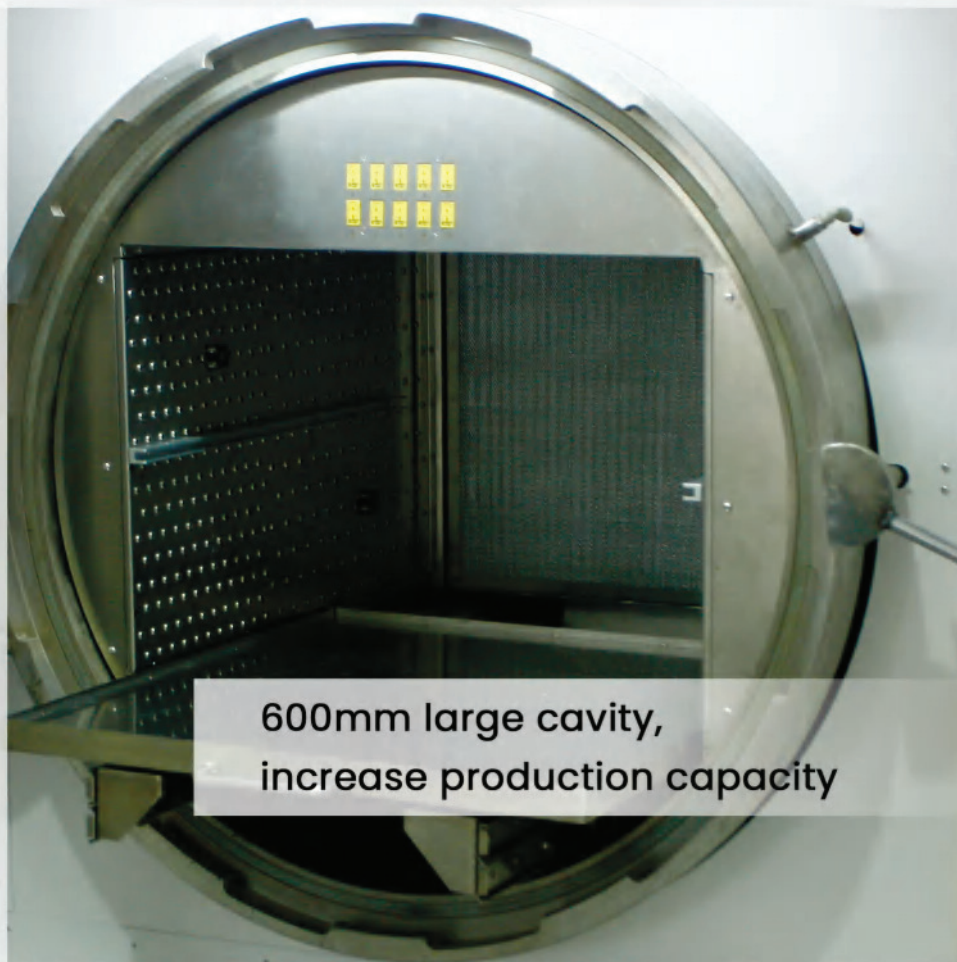
Ultra-high deaeration
ratio > 98%



Saving curing process
duration time



Effectively improve
product quality





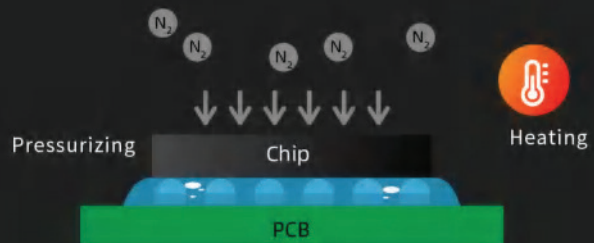
Low Viscosity Breathing Method

induce the gas inside the resin to escape to the outside of the resin.

1 Pressurized resin softening

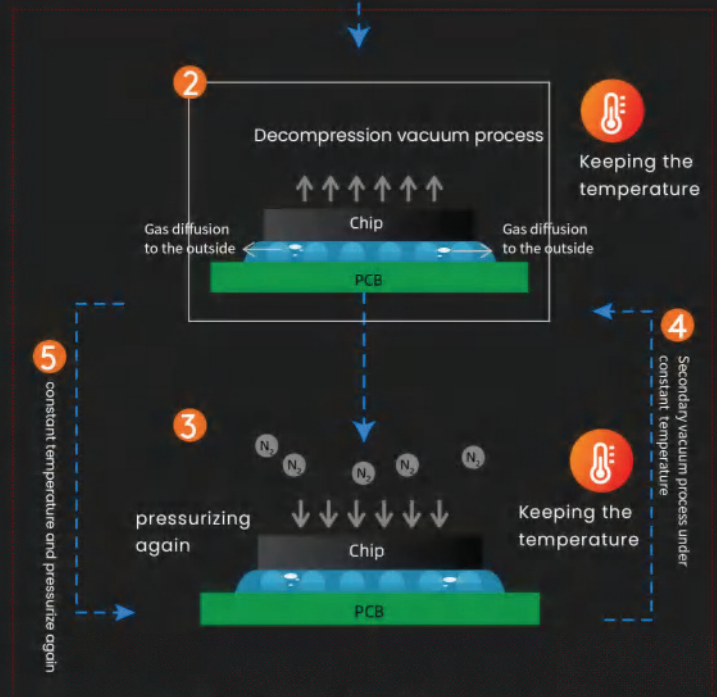
The oxygen-containing air is evacuated, nitrogen is injected, and the pressure is maintained to be heated to [near the resin curing point] to increase the popularity of the resin.

The resin gathers and shrinks inward under the influence of high pressure, causing small bubbles to gather to form bubbles with higher internal pressure.



2 Decompression vacuum process under constant softening temperature

Maintain the temperature, keep the resin flow-able, and lower the pressure to vacuum, the bubbles inside the resin with higher pressure will diffuse and move to the outside of the resin with lower pressure to induce the gas to escape.



3 Maintain constant pressure boost

Keeping the temperature, pressurizing again, compressing the more fluid resin, the resin gathers and shrinks inward, expelling the residual gas so that the very few small bubbles remaining are compressed to a harmless size.

4 Secondary vacuum process under constant softening temperature

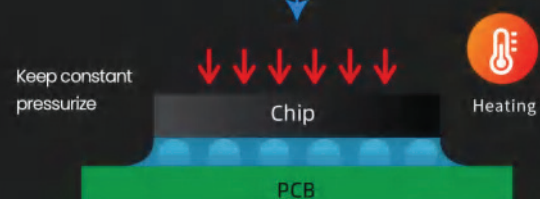
In the first cycle can not completely remove the gas in the resin, the second constant temperature decompression exhaust (according to the process level and quality requirements to adjust the number of cycles)

5 Keep constant temperature and pressurize

Circulating internal pressure under constant softening temperature, compress the residual bubbles

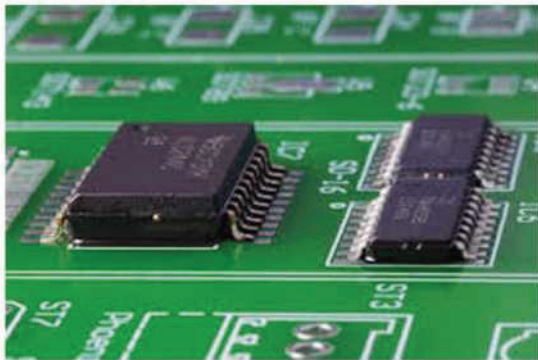
6 Thermocuring process under constant internal pressure

Maintain the air pressure, implement heating to raise the temperature, heat over [resin curing temperature], and continuously maintain high pressure to compress the gradually curing resin so that the resin will gather and shrink inward to form a good finished product.



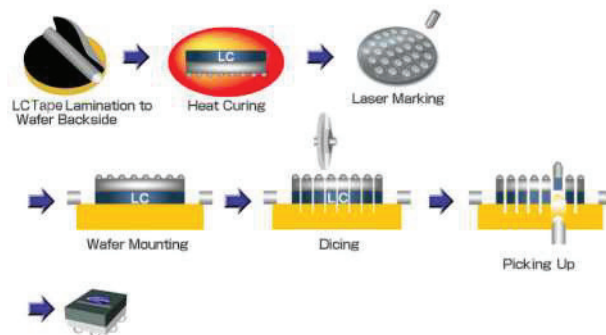
Application of pressure/vacuum curing equipment

- Electronic Devices
internal protection
resin filling and curing



- Die bonding
adhesive curing

- Wafer lamination
thermo-compression
bonding



- Flip chip underfill curing