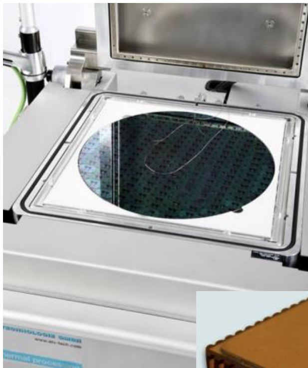
TECHNOLOGIE GMBH

thermal processing

SRO-71x
IR Vacuum Reflow/Brazing/RTA



Features

- Temperature: up to 1100°C
- Heated plates, up to 450 x 450 mm
- Fast heated plate ramping
  - Ramping up > 3.5°C/second
  - Ramping down > 2°C/second
- Rapid single wafer processing > 50°C/second
- 100 steps per program
- Oxygen < 0,1 ppm
- Hydrogen up to 100%
- 40 kHz/2,45 GHz plasma
- Formic acid activated nitrogen
- Ultimate Vacuum: ~ 7 x 10^{-7}mbar
- High pressure atmosphere: up to 3 bar (abs)
- Flux less, with flux and solder paste
- Automation: cassette to cassette or in-line

General

The perfect soldering systems, solder reflow ovens (SRO) with rapid thermal annealing and brazing capability are IR lamp heated multi-purpose “cold wall” process ovens. The SRO is ideal for R&D, process development as well for low to high volume production.

Applications

Die attachment, IGBT/DBC, high vacuum encapsulation, MEMS package sealing, IR sensor/Crystal package sealing, wafer level packaging, thermo electric cooler/Peltier, low moisture package sealing, high power LED, laser bar, Getter activation, alloying, wafer bump/solder ball reflow, pin fin heat sink, backing, flip chip, 3 D-CSP, diffusion bonding, CPV, thermo compression bonding, pin fins, Hybrid assembly, MMIC die attachment, power modules, electric vehicle controls, power solar cells

Additional performance, developments, features and options:

Latest PLC architecture
MFC for precision gas flow control
Additional gas lines
CO atmosphere management
Oxygen and moisture monitoring
Controlled Formic Acid concentration
Pressure capability > 3 bar (abs)
- Steady state for higher process gas reactivity
- Steady state during cooling for lower flux pressure to minimize voids
- Pulsing pressure for better wetting

Direct substrate IR heating/N2 cooling
- For pin fin heat sinks
- Warped heat sinks
- Faster processing
- Single wafer processing

Surface temperature sensing/touch TC
- When swapping pre populated heater plates/tooling/fixtures
- When swapping directly IR heated/N2 cooled substrates/heat sinks

IR temperature measurement
Multiple monitoring TCs
100mm and more clearance above heated area
Spring pin array in chamber lid
- To flatten DBCs on heater plate without tooling
- For diffusion bonding

Low mass 3 pin wafer carriers
No warpage heater plates
Fully and semi-automatic lid open/close
In-line integration/Cluster integration
SPC monitoring system
User administration

Integration into die bonders
Activated hydrogen/gas pre-heating
Ultra sonic/Vibration assisted reflow soldering
Nitrogen saving by recycled cooling gas
Water cooled fume traps
Microscope mount on swivel arm
Laptop shelf on swivel arm
Audible and visible status indication/light tree
IR lamp array in chamber lid/top side heater
- For much faster ramping
- For uniform heating of tall substrates/fixtures

Electrical and mechanical feed through
Lift pins
Closed-loop water chiller/heater
NRTL, SEMI or other standards
Bar code reader
Custom tailored tooling/fixtures with spring clamps
Spring clamps on heater plate
- For keeping parts in place
- For diffusion bonding

Thermo compression bonding
Process development

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