

GaSonics VHP



VHP — the Vertical High Pressure thermal reactor by GaSonics — is designed for oxidation, reflow and similar thermal processing, using a variety of gasses while offering substantial cost savings. VHP means fewer steps, lower material consumption and a smaller footprint.

Applications

- High Pressure Dry O₂ Field Oxidation
- High Pressure N₂O/NO Gate Oxidation
- High Pressure Steam Oxidation



Performance Specifications

Process Characterization

Uniformity	≤ 2% 1s, within the wafer, wafer to wafer, run to run on oxides from 2K – 200K A
Particles	≤ 0.11 adders/cm, 0.3µm or greater

Reliability

MTBF	> 300 hrs
MTTR	< 6 hrs
Uptime	> 92%

Cost of Ownership

* % COO reduction	> 50% when compared to Shallow Trench Isolation (STI) cost per wafer
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* Based on Sematech COO model. Certain COO model assumptions such as labor costs, utilities costs, waste disposal costs, etc. may affect your particular cost savings.



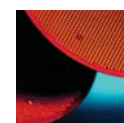
General System Information

Hardware Configuration

Dimensions / Weight	128.5" L, 48.0" W, 107.0" H; 8000 lbs.
Installation	Flush Mount
Process Vessel	Designed and tested to 37atm Type 316 stainless steel Certified to ASME Pressure Vessel Code
Heater	Independently controlled 4-zone main heater and 2-zone plug heater
Wafer Handling	Dual batch, continuous processing Class 1 environment Automated flat finder / wafer scanning
Power	480V, 3 phase delta, 50/60Hz, 80A
System Exhaust	Cabinet Vent: 300cfm GPW: 200cfm Tube clean: 100cfm
Cooling Water	12 gpm @ 60 – 100 psig
Gas Supply	High Pressure Dewar/bottles, booster pumps not required
Safety	Self-contained clean module with HCl detectors

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Process Parameters

Wafer Size	100mm – 200mm
Load Size	50 wafers + 11 test / buffer wafers
Pressure	1 – 25 atm, ± 2% accuracy to set point but no less than ± 3 psi Differential 5.5 psi ± 2 psi
Temperature	Operating range 600 - 1100°C ± 0.5°C accuracy to set point 9.75" flat zone ± 1°C
Ramp Rates	Temperature Up: 1 - 30°C/min Down: 10°C/min Pressure Up and Down: 0.5 – 50 psi/min
Process Gasses	Dry: N ₂ , O ₂ , plus one optional gas stick Wet: Optional steam configuration
Tube Clean	DCE (optional HCl) at 1 atm



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