

PEO-604

MULTIPURPOSE
FAST RAMPING FURNACE



**THERMAL
PROCESSING**

TECHNOLOGY.
INNOVATION.
MADE WITH PASSION.



PEO-604 at customers site

PEO-604

Since 1982 ATV is manufacturing the multipurpose fast ramping furnaces PEOs series with single quartz tube. It was initially developed for thick film paste firing. Since that a large variety of new and different processes and applications was and is still being added. ATV applies its PEO series successfully in semiconductor market segment.

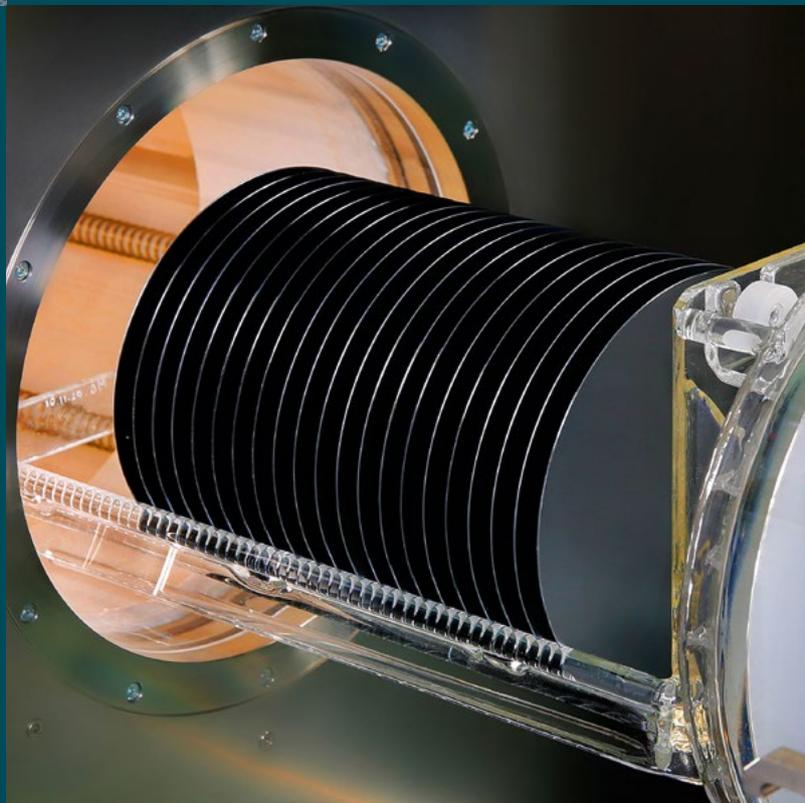
The PEO series is ideal tool for R&D purposes. It can be applied easily for new unique and sophisticated process development as well low to medium volume production applications. This multipurpose furnace has several key aspects integrated and can handle wafers up to 200mm.

Next to floor space saving advantages the PEO also has close to zero energy usage in ambient stand-by. Another unique aspect of the system is the multi process capability when using our easy exchangeable Liners.

To reach the optimal temperature uniformity ATV uses 14 Kanthal heating elements which are positioned around, at the front and at the back side the process tube and are PID controlled

Finally, ATV's enormous experience and process know-how underlines our philosophy offering premium services to the semiconductor and microelectronics industry. Our scientists and support team are dedicated to help our users getting the best return from investment of the ATV equipment.

It is ATV's goal always achieving best process results using its worldwide proven concepts as its core competence from nearly 40 years of experience.





PEO-604 at customers site

OPTIONS subject to application/configuration

FLOOR SPACE SAVING BY SMALL FOOT PRINT

ENERGY SAVING BY CLOSE TO ZERO ENERGY CONSUMPTION AT AMBIENT STANDBY

MAX 50 WAFERS/PROCESS RUN

UP TO 200 MM Ø WAFERS

MULTIPLE PROCESSES BY EASILY EXCHANGEABLE QUARTZ IN LINERS

TEMPERATURE RAMPING:

- UP TO 1.000° C WITHIN 25 MINUTES (EMPTY CHAMBER)
- DOWN TO < 100° C IN LESS THAN 60 MINUTES
- 1K PER 100 MINUTES (SLOWEST RAMPING SPEED UP/DOWN)

LOW TEMPERATURE PROCESSING WITH GAS PREHEATING

HIGH VACUUM: DOWN TO 5×10^{-6} mbar

He LEAK RATE: $< 5 \times 10^{-9}$ mbar l/s

O₂ = N₂ SUPPLY QUALITY

100 STEPS/PROGRAM

Technical Data

PEO-604

- ▷ Dimensions: 1.780 x 834 x 2.345 mm (LxWxH)
- ▷ Weight: 475 kg
- ▷ Inner Quartz tube Ø: 230 mm (9")
- ▷ Maximum Product Temperature:
 - 1.000° C continuously
 - 1.100° C continuously, optional configuration
- ▷ Flat Zone:
 - Flat Zone 25 wafers
 - 50 wafers half Pitch
- ▷ Power connection:
 - 3 x 230 V AC, 32 A, 50/60 Hz + N + PE

Various additional options for extensions available depending on application and final configuration.

Common Applications

(depending on final configuration)

- ▷ LPCVD, MOCVD: Si₃N₄, Poly Si
 - Si Epitaxy
 - TEOS, LTO
- ▷ Carbon Nanotubes, Si Nanowires, Graphene
- ▷ Gas/Solid Source Diffusion
- ▷ Wet/Dry Oxidation
- ▷ Al Oxidation for VECSEL
- ▷ SiAl/SiAu/SiMo alloying
- ▷ Annealing: Inert/Atmosphere
 - Hydrogen
 - High vacuum
- ▷ Post Implant Annealing
- ▷ Polyimide, Curing/Baking
- ▷ LTCC Sintering, Thick film paste sintering



ATV Headquarter Europe

Germany, Vaterstetten/Munich

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**THERMAL
PROCESSING**

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