

Model RTP-100-HV

Rapid Thermal Process Oven with Vacuum
up to 4" (100 mm diameter) or 100 mm x 100 mm substrate size



Technical and design changes reserved

- Touch Panel for easy program control
- Easy loading/unloading of chamber
- Max. Temperature: 1200 °C
- Ramp up rate up to 150 K/sec
- Mass Flow Controller
- Vacuum up to 10^{-6} hPa

FEATURES

- Precise ramp up and fast ramp down rates
- Up to 4 gas lines
- Heated by 18 IR Lamps (20 kW)
- SPS Controller, SIMATIC
- Integrated data logging
- High temperature uniformity

APPLICATIONS

- Implantation/Contact Annealing
- RTP, RTA, RTO, RTN
- Operation with inert gases, Oxygen, Hydrogen, Forming gas
- SiAu, SiAl, SiMo Alloying
- Low-k dielectrics
- Crystallization & densification
- Si-Solar Wafer Cells on glass by Si-Wafer bonding

Model RTP-100-HV

- **Rapid Thermal Annealing Process Oven with vacuum**
- **Touch Panel Svivel**
- **Programmable temperature profiles**
- **Record of process data**
- **Process in different gas atmospheres**



APPLICATION

The **RTP-100-HV** Rapid Thermal Process Oven is an excellent tool for various semiconductor up to 100 mm diameter wafer or 100 mm x 100 mm substrate size.

Some examples for applications: Laboratory furnace for all kind of developers implementing and researching new processes, prototype research, environmental research purposes and for small pre-series or series.

PROCESS GASES

The RTP-100-HV can be used with standard process gases, like Nitrogen, Oxygen, Forming Gas. The chamber is sealed and can easily be cleaned.

FLOW METER

One gas line with Mass Flow Controller (MFC) for Nitrogen (5 nlm = norm liter per minute) is default, three more gas lines (**Option: MFC**) are possible.

VACUUM

The system is vacuum capable of up to 10^{-6} hPa. The RTP-100-HV includes a turbomolecular pump, a Pirani vacuum measurement with data logging of the vacuum value and all necessary connectors and valves.

The maximal achievable temperature is 1200 °C. Key features are precisely controlled fast ramp-up (150 K/sec) and excellent ramp-down rates (depend on temperature and loading).

TEMPERATURE DISTRIBUTION

The RTP-100-HV allows an excellent temperature distribution and homogeneity. Optionally a graphite susceptor can be inserted into the quartz chamber (**Option: GP Graphite Plate or Susceptor**).

PROGRAMMING

The RTP-100-HV is equipped with a 7" touch panel which allows easy and comfortable programming directly on the unit.

COOLING

The cooling of the parts in the quartz chamber is realized by Nitrogen gas which will be led through the chamber. For chamber and external cooling we recommend a closed loop water chiller)

(**Accessories: WC-III**)

OTHERS

An interlock function as well as an Emergency-OFF-Button (EMO) are default.

SPECIAL

This oven can also be ordered as „double chamber oven“. By adding a second process chamber (**Option: PC-100**) the oven does have 2 process chambers and one controller unit. This saves money when 2 different processes are needed and the chambers shall not be cleaned due to contamination or other reasons.

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SPECIFICATION

Max. part size	100 mm dia. or 100 mm x 100 mm
Chamber material	Quartz glass chamber
Chamber height	10 mm
Vacuum capability	Up to 10^{-6} hPa (Turbomolecular pump included))
Process chamber size	110 mm x 110 mm x 11 mm (W x D x H)
Temperature max.	1200 °C
Temp. unifomity	≤ 1,5% of set temperature
Heating	Top and bottom heating with 18 IR Lamps (20 kW)
Ramp up rate	Up to 150 K/sec
Ramp down rate	T= 1000°C > 400°C: 200 K/min, T= 400°C > 100°C: 30 K/min
Flow Controller	Mass Flow Controller (Nitrogen 5 slm) (max. 4 pieces)
Controller	SPS Controller, Simatic
Cooling	Water cooled
Substrate Cooling	By Nitrogen Gas

TECHNICAL DATA

Dimension oven	503 mm x 525 mm x 690 mm (W x D x H)
Weight	78 kg (estimated)
Electrical connection	CEE 3x32 A, 230 V, 3 ~ + N + PE

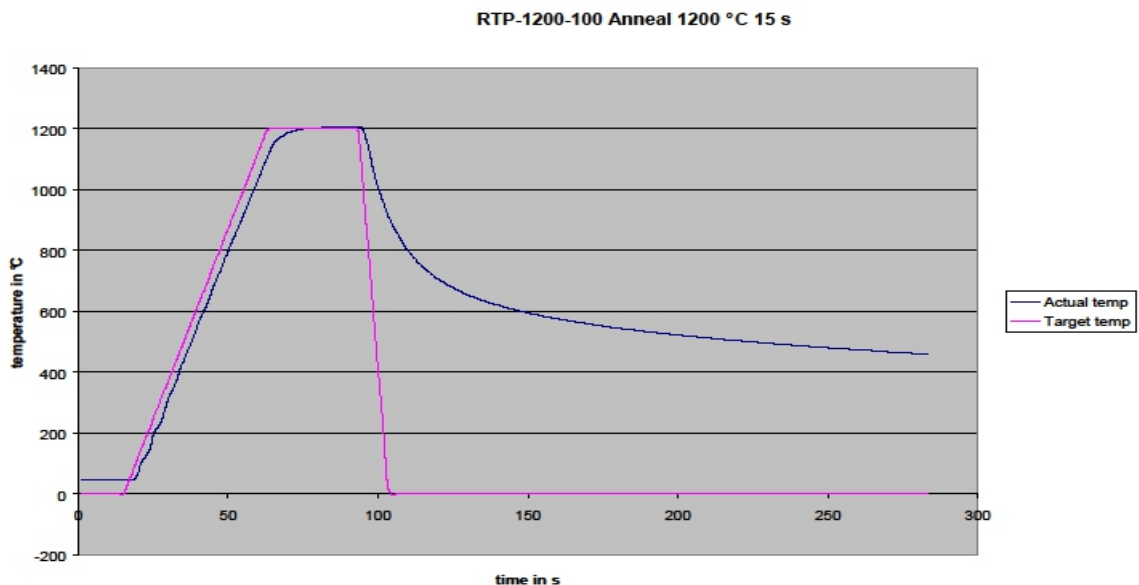
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OPTIONS

RTP-GP-100	Graphite Plate or susceptor for RTP-100 (optional: SiC coated on request)
RTP-PC-100	add. 100 mm Oven chamber ("double-chamber") for usage of 2 chambers
RTP-IR-100	IR lamps for RTP-100
RTP-QT-100	Quartz tubes for RTP-IR-100
RTP-QC-100-B	Spare quartz chamber 100 mm - lower part
RTP-QC-100-C	Spare quartz chamber 100 mm - cover
RTP-QR-50	Adapter (quartz ring) for 50 mm wafer
RTP-QR-75	Adapter (quartz ring) for 75 mm wafer

ACCESSORIES

MP	Membrane Pump for vacuum up to 10 hPa with manometer
RVP	Rotary Vane pump for vacuum up to 10^{-3} hPa with oil filter and sensor
WC	Closed loop water cooling system (stand alone)



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