

## Model RTP-100

### 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  $10^{-3}$  hPa  
(for high vacuum see RTP-100-HV)

## FEATURES

- Precise fast ramp up and fast ramp down rates
- Up to 4 gas lines
- Heated by 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

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- **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** Reflow Solder System is an excellent tool for various semiconductor processes up to 100 mm diameter wafer or 100 mm x 100 mm substrate size.

Some examples for applications: Semiconductor manufacturing including dopant activation, thermal oxidation and metal reflow.

### PROCESS GASES

The RTP-100 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 gaslines (**Option: MFC**) are possible.

The system is vacuum capable up to  $10^{-3}$  hPa. For higher vacuum we offer the model **RTP-100-HV** (see separate data sheet).

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 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 is equipped with a 7" touch panel which allows easy and comfortable programming directly on the unit.

chamber is realized by Nitrogen gas which will be led through the chamber. For chamber housing cooling and external cooling we recommend a closed loop water cooling system. (**Accessories: WC-III**)

### OTHERS

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

### SPECIAL

This oven can also be orderd 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 $10^{-3}$ hPa
Process chamber size	110 mm x 110 mm x 11 mm (W x D x H)
Temperature max.	1200 °C
Temp. uniformity	≤ 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= 1200°C > 400°C: 200 K/min, T= 400°C > 100°C: 30 K/min
Flow Controller	Mas Flow Controller (Nitrogen 5 slm)
Controller	SPS Controller, SIMATIC
Chamber cooling	Water cooled
Substrate Cooling	By Nitrogen Gas

### TECHNICAL DATA

Dimension oven	503 mm x 525 mm x 570 mm (W x D x H)
Weight	70 kg (estimated)
Electrical connection	CEE 3x32 A, 230 V, 3 ~ + N + PE,

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### OPTIONS

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

### ACCESSORIES

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

