

Model VSS-450-300

Vacuum Soldering System for processing of 300 mm x 300 mm substrates - also for contaminating processes



Technical and design changes reserved

- For up to 300 mm x 300 mm substrate size
- Also for use with flux and other contaminating materials
- Temperature up to 450 °C
- Ramp up rate up to 120 K/min
- Ramp down rate 90 K/min
- Horizontal automatical open/close

FEATURES

- Precise ramp up and fast ramp down rates
- Up to 4 internal gas lines
- Data logging
- Water cooled graphite plate
- SPS Controller, Simatic
- Small foot print
- Viewing window (60 mm dia.)

APPLICATIONS

- Reflow Solder Processes without flux
- Operation with inert gas, Oxygen, Hydrogen , Forming gas, Formic Acid
- Lead free soldering
- Resistor paste firing

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- **Vacuum Soldering oven as table top version**
- **Programmable temperature profiles**
- **Record of process data**
- **Process in different gas atmospheres (inert gases)**
- **Perfect lab tool due to small dimensions and weight**

APPLICATION

The **VSS-450-300** Reflow Solder System is an excellent tool for various solder processes up to 300 mm diameter wafer or 300 mm x 300 mm substrate size and 50 mm height (**Option: EH with 120 mm height**).

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

Beside standard process gases, like Nitrogen, Oxygen, Forming Gas the system can also be used with pure Hydrogen (**Option: H2 and H2S**). The chamber is sealed and can easily be cleaned.

FLOW METER

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

VACUUM

The system is vacuum capable of up to 10^{-3} hPa.

TEMPERATURE

The maximal achievable temperature is 450 °C).

TEMPERATURE DISTRIBUTION

The hot plate allows an excellent temperature distribution and homogeneity.

PROGRAMMING

The VSS-450-300 is equipped SIMATIC SPS controller and a 7" touch panel for easy programming directly on the unit and watching the process parameter.

COOLING

The hot plate is active cooled. For chamber housing cooling an external cooling is required (we recommend a chiller (**Accessories: WC-III**)).

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SPECIFICATION

Max. part size	300 mm x 300 mm (heated area: 310 mm x 310 mm)
Chamber material	Aluminium chamber (chamber area: 350 mm x 350 mm)
Chamber height	50 mm (Option: ET up to 120 mm)
Vacuum capability	Up to 10^{-3} hPa
Temperature max.	450 °C
Temp. uniformity	$\leq 1,5$ % of set temperature
Heating	Bottom heating: 2 x 12 IR Lamps crossed aligned (21 kW)
Ramp up rate	Up to 120 K/min
Ramp down rate	T= 450°C > 200°C: 90 K/min, T= 200°C > 100°C: 80 K/min
Flow Controller	Manually adjustable Flow meter with digital display for Nitrogen
Cooling Chamber	By external water cooler
Cooling Hot Plate	By external water cooler
Controller	PID Controller

TECHNICAL DATA

Dimension oven	504 mm x 504 mm x 830 mm (W x D x H)
Weight	100 kg (estimated)
Electrical connection	CEE 3x32 A, 230 V, 3 ~ + N + PE

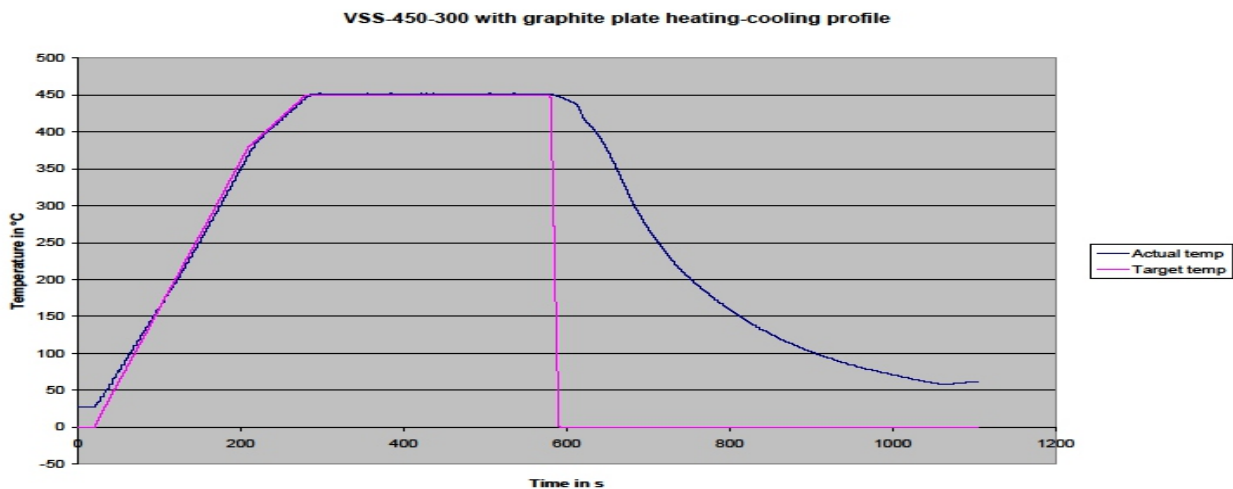
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OPTIONS

VSS-FA	Formic Acid module (Module with Vessel for using Formic acid) with gas line
VSS-FT	Flux trap
VSS-MFC	Additional gas line with Mass Flow controller (total: max 4 gas lines)
VSS-H2	Module for using 100% Hydrogen including one FM-EL (total: max. 4 gas lines)
VSS-H2S	Safety device to prevent uncontrolled emission of hydrogen
VSS-LP	Lift Pins (on request)
VSS-ET	Chamber height 120mm with viewing window (60mm diameter)
VSS-TC	Additional thermocouple to measure on device (plugged in chamber) for external measurement tool (max. 4)
VSS-VM	Vacuum measurement with vacuum sensor (when no pump is ordered)

ACCESSORIES

MP	Membrane Pump for vacuum up to 10 hPa with manometer
MPC	Chemical Resistant vacuum pump with manometer (when option FA is ordered)
RVP	Rotary Vane pump for vacuum up to 10^{-3} hPa with oil filter and vacuum sensor
WCIII	Closed loop water cooling system (stand alone)



4.2014