

WHY DEHUMIDIFICATION?

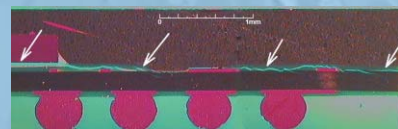
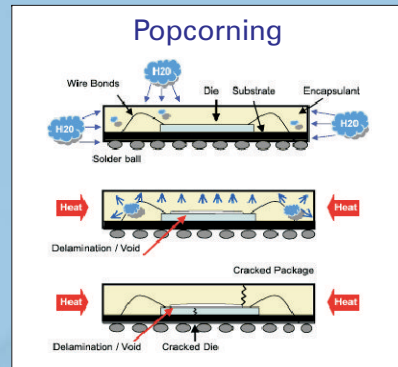
Moisture is absorbed by plastics, penetrates by diffusion into plastic packages and in this way accumulates in the component. This generally results in changes to the mechanical properties of the molding compounds, adhesives and other organic materials that are exposed to moisture. In the component, the main changes are to strength of the interfaces to structural elements such as leadframe or chip.



Moisture distribution in P-TQFP-176 after Level 3 soak
Red: high moisture absorption
Blue: low moisture absorption

The heating of a component during the solder process then leads to a multilink chain of damage mechanisms:

- Thermomechanical generation/enlargement of a delamination
- Diffusion of the absorbed water vapor from the molding compound into the crack
- Bulging/deformation of the encapsulating molding compound
- Fracturing of the deformed package parts (popcorning)

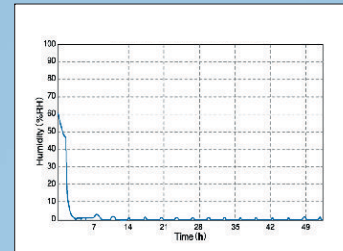


Popcorn-Damage in LFBGA

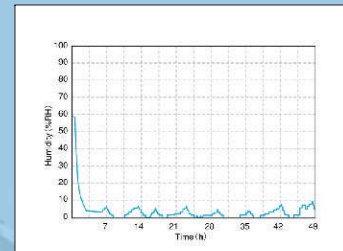
Thus, the route to reliable mastery of the solder process leads through a precise observation of the moisture content of the components. The penetration of moisture into the package molding compound is generally caused through exposure to the ambient air over the course of a few days. Hence the necessity to dry moisture-sensitive components.

DEHUMIDIFICATION

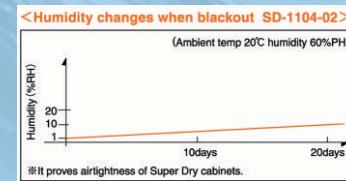
HSD-1104



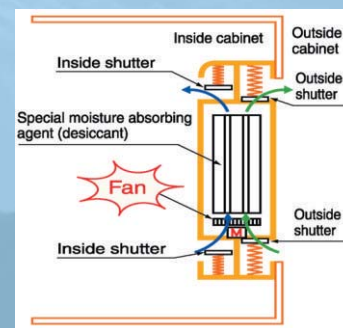
SD-1104



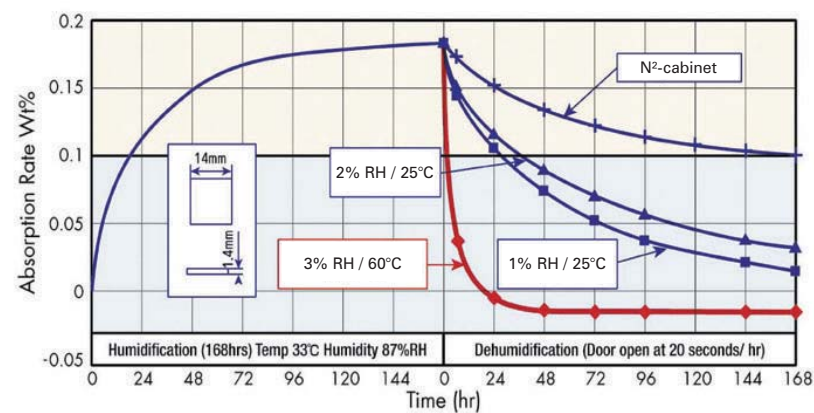
Blackout



OPERATION



DRYING



DISTRIBUTION

Totech EU
SUPER DRY®



U-2000 dry unit

Silent and maintenance-free operating is guaranteed, with automatic recycling and permanent monitoring of the cabinets environment.

Automatic function

Every door is controlled by a switch. When all doors are closed, the air circulation fan inside the dry unit is turned on to accelerate the dehumidification of the cabinet's atmosphere.

Digital Panel

A capacitive sensor enables a scrupulous display of the internal humidity. The temperature will be shown by pressing the H/T pushbutton, and a humidity alarm will warn in due time to forestall unwanted conditions.

ESD-safe

All surfaces, including the windows, are ESD-safe. 1M-Ohm ground wire help protect your components from harmful electro static discharge.

Reduction of expenses

- No need to apply N2
- Minimum energy consumption

Stainless Steel Shelves

A very tough surface and high bearing capacity up to 100 kg guarantee a long lifetime.

SD & HSD series

Easy Control Cabinet for drying electronic components and PCBs

SD/HSD SERIES



SD-1106 / HSD-1106
Art. No. 20011062 / 20011061



SD-1104 / HSD-1104
Art. No. 20011042 / 200110401



SD-702
Art. No. 20070202



SD-302
Art. No. 20030202



SD-502
Art. No. 20050202



SD-252
Art. No. 20025202



SD-151
Art. No. 20015102

Model	SD/HSD-1106	SD/HSD-1104	SD-702	SD-302	SD-502	SD-252	SD-151
External Dimensions (WxHxD cm)	120 x 184 x 67	120 x 184 x 67	62 x 184 x 78	50 x 123 x 64	88 x 90 x 74	88 x 90 x 38	50 x 63 x 58
Internal Dimensions (WxHxD cm)	119x156x62	119 x 156 x 62	61 x 156 x 73	49 x 116 x 59	87 x 83 x 69	87 x 83 x 33	49 x 56 x 53
Effective Capacity (l)	1160	1160	680	340	510	252	145
Weight (kg)	160 / 167	155 / 162	110	60	60	39	29
Loading capacity cabinet (kg)	200 kg on castors	200 kg on castors	260 kg on castors	350 kg	150 kg	150 kg	150 kg
Shelves/max. load (kg)	5 stainless steel / 100	5 stainless steel / 100	5 stainless steel / 100	7 stainless steel / 50	3 stainless steel / 50	3 stainless steel / 50	3 stainless steel / 50
Mean Power Consumption	28 W/h / 56 W/h	28 W/h / 56 W/h	28 W/h	28 W/h	28 W/h	28 W/h	21 W/h

External Dimensions (WxHxD cm)	120 x 184 x 67
Internal Dimensions (WxHxD cm)	119x156x62
Effective Capacity (l)	1160
Weight (kg)	160 / 167
Loading capacity cabinet (kg)	200 kg on castors
Shelves/max. load (kg)	5 stainless steel / 100
Mean Power Consumption	28 W/h / 56 W/h

External Dimensions (WxHxD cm)	120 x 184 x 67
Internal Dimensions (WxHxD cm)	119 x 156 x 62
Effective Capacity (l)	1160
Weight (kg)	155 / 162
Loading capacity cabinet (kg)	200 kg on castors
Shelves/max. load (kg)	5 stainless steel / 100
Mean Power Consumption	28 W/h / 56 W/h

External Dimensions (WxHxD cm)	62 x 184 x 78
Internal Dimensions (WxHxD cm)	61 x 156 x 73
Effective Capacity (l)	680
Weight (kg)	110
Loading capacity cabinet (kg)	260 kg on castors
Shelves/max. load (kg)	5 stainless steel / 100
Mean Power Consumption	28 W/h

External Dimensions (WxHxD cm)	50 x 123 x 64
Internal Dimensions (WxHxD cm)	49 x 116 x 59
Effective Capacity (l)	340
Weight (kg)	60
Loading capacity cabinet (kg)	350 kg
Shelves/max. load (kg)	7 stainless steel / 50
Mean Power Consumption	28 W/h

External Dimensions (WxHxD cm)	88 x 90 x 74
Internal Dimensions (WxHxD cm)	87 x 83 x 69
Effective Capacity (l)	510
Weight (kg)	60
Loading capacity cabinet (kg)	150 kg
Shelves/max. load (kg)	3 stainless steel / 50
Mean Power Consumption	28 W/h

External Dimensions (WxHxD cm)	88 x 90 x 38
Internal Dimensions (WxHxD cm)	87 x 83 x 33
Effective Capacity (l)	252
Weight (kg)	39
Loading capacity cabinet (kg)	150 kg
Shelves/max. load (kg)	3 stainless steel / 50
Mean Power Consumption	28 W/h

External Dimensions (WxHxD cm)	50 x 63 x 58
Internal Dimensions (WxHxD cm)	49 x 56 x 53
Effective Capacity (l)	145
Weight (kg)	29
Loading capacity cabinet (kg)	150 kg
Shelves/max. load (kg)	3 stainless steel / 50
Mean Power Consumption	21 W/h



OPTIONS



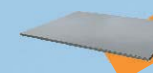
SMD Reel Rack on sliding rails
Single: Art.No. 20014100
Double: Art.No. 20014001



SMD Reel Rack
Art.No. 20014000



Shelf on Sliding Rails
Art.No. 20011041
Shelves on sliding rails simplify access to stock when the distance between shelves is very small.



Shelves
Art.No. 20012000
Additional shelves help to increase the usable space inside the dry cabinet.



Shelf Dividers
Single: Art.No. 22613051
Double: Art.No. 22613050



Castors (4 pc)
Art.No. 20017030



Adjustable legs (4 pc)
SD-1106/SD-1104/SD-702:
Art.No. 20010010,
SD-502/SD-302/SD-252/SD-151:
Art.No. 20010080



Trolley
SD-302: Art.No. 20030215
SD-151: Art.No. 20015115



External alarm light
Art.No. 20016030
The alarm light is activated when the internal humidity level exceeds a preset value.



Door Alarm
Art.No. 20016010
The door alarm is activated in case of the door is opened longer than the preset time.



MSL-Jet stamp
Art.No. 90014625
Mark your packages of SMD components with their moisture sensitivity level and their start and expiry dates.

HEATER



Heater SH 230-4
Art.No. 21001001

The warmed up ambient air accelerates drying of stored electronic devices. No threat of increased oxidation because the temperature is limited to 40°C. This procedure is conform to the IPCJEDEC J-STD-033A standards, and even exceeds the results of all known drying processes so far world wide. Available for: SD/HSD-1106, SD/HSD-1104, SD-302.



Heater SH 230-1
Art.No. 21001200

MEASUREMENT



Dew point meter for calibration
Art.No. 20000700
The sensor provides reliable and high performance dew-point measurements with revolutionary long-term stability. The autocalibration procedure detects on-line possible measurement inaccuracies and automatically corrects dry-end drift in the calibration curve.

Relative humidity
Measurement range 0 - 100% RH
Accuracy (20°C) at 1% RH +/- 0,2% RH



Humidity & Temperature Logger, Art.No. 20000650
For control and documentation. Measuring and logging of relative humidity and temperature by internal memory of as many as 16.000 readings (8.000 Data sets with date, time, humidity and temperature). Communication over infra red or RS232 connection.

Relative humidity
Measurement range 0 - 100% RH
Accuracy (20°C) at 1% RH +/- 3% RH

OVEN



SDO 90° Oven
Art.No. 21002000

Designed for Totech dry cabinets the 90° oven is primarily made for occasional "baking" at temperatures from 40° to 90°C. It is placed inside the dry atmosphere of the cabinet. Therefore, when ever necessary, components which have been exposed to air too long and are needed in short term for processing, can be de humidified very quickly. This procedure goes conform to the drying regulations found in the IPC-JEDEC J-STD-033A standard.

PURGE SYSTEMS

The Auto-Flow-System has been designed as an accessory for the Drying Cabinet of Totech Europe. The apparatus serves the quick dehumidification of the cabinet atmosphere after opening the door. The drying follows with a rinsing sequence with dried air or nitrogen (N²) which is automatically effected after closing the door. The simple Flow-System allows a permanent ... with nitrogen.



N²-auto-flow-system
Art.No. 22613000
• Stand By 0 - 20 l/min
• N²-Pressure 1 - 12 bar
• Purge Flow 0 - 100 l/min
• Purge Time 0 - 79 min
• Power Range 90 - 264 V ac



N²-flow-system
Art.No. 20010020
• Stand By 10 - 100 l/min
• N²-Pressure 1 - 12 bar