The Newest Function World Well-known

Dry Cabinets with Medium Temperature(45 deg, 60 deg) + Ultra-low Humidity(1%RH)

Delivering globally to the world's top tier OEM and EMS companies, and manufacturing factories in Asia and in Europe, Totech Super Dry has become the industry measure for ultra low humidity storage cabinets. Proper control of moisture sensitive devices (MSDs) per IPC and JEDEC standards has become more critical than ever since the introduction of lead free and its higher reflow temperatures. Boasting <1% relative humidity control and the fastest recovery times, Super Dry cabinets are available in a wide range of sizes and configurations, all with certified performance control measures.

Baking is needed to reset the floor life of MSDs, to deal with MSDs that the exposure time has exceeded the floor ife in the ambient environment or even the MSDs that expose in the environment for only a short time. Backing can extend the storage time and ensure the quality safety. However, with the development of new style of chip encapsulation and mounting technics, the traditional high temperature backing shows its shortcomings.

Problems Caused by Traditional High Temperature Baking

① Some MSD reels and racks are not suitable for high temperature baking, and the efficiency would be very low if baking after taking off the MSDs from the racks.
② Some MSD components and PCBs can not bear high temperature baking for a long time.
③ For some other MSD components, if the temperature is higher, the damage caused to the components would be more serious, even though the components can bear the high temperature, there would still be potential thermal destruction and oxidation, or there would be inter metallic growth at the inner joint of the components, reducing solder ability.
④ Baking is only possible one time according to IPC, and the components must be processed at once after baking to avoid re-absorption of moisture.

With the popularity of IPC/JEDEC J-STD-033B.1, people are taking more consideration on the the double functions of dry cabinets with ultra-low humidity and medium temperature baking (Normal ~ 50℃). Our Super Dry medium temperature baking cabinets （M-TEMP Series） install a 50℃ heater into our dry cabinets to acceralate the dehumidification. And if the M-TEMP Series are used in all production processes, not only the defective products caused by thermal stress can be avoided, but also the process can be simplified and the production cost be reduced.

Features of M-TEMP Series

① Advanced ultra-low humidity technology, effective thermal insulation to make the energy consumption the lowest.
② Steady environment of 50℃+2%RH.
③ Effective dehumidificatin to make sure a short recovery time after door open and close.
④ Digital control panel for easy operation.
⑤ ESD safe design.

Three Advantages to the Components

① No need of pre-baking: To prevent the defective products.

② Mild baking: Cause no flaws to SMDs during dehumidification.

③ Moisture prevention: To prevent moisture absorption in one hour after taken from the cabinet.

The below table shows different baking time for drying Mounted or Unmounted SMD under different humidity and temperature conditions. Packages were exposed to Conditions 60% RH. For ICs with Novolac, Biphenyl and Multifunctional Epoxies.

Thickness	**Level**	**1%RH** HSD /HSDi Series			**2%RH** MSD/SD/SDA Series		**5%RH** Nitrogen Cabinet	
		25Cº	40Cº	60Cº	25Cº	40Cº	40Cº	90Cº
	2a	5days	2 days	12 hrs	7 days	3 days	5 days	23 hrs
	3	8 days	3 days	18 hrs	12 days	5 days	8 days	33 hrs
≤1.4mm	4	9 days	4 days	24 hrs	13 days	6 days	9 days	37 hrs
	5	10 days	5 days	30 hrs	14 days	7 days	10 days	41 hrs
	5a	10 days	6 days	36 hrs	15 days	9 days	10 days	54 hrs
	2a	22 days	10 days	2 days	30 days	15 days	22 days	3 days
	3	23 days	11 days	2 days	35 days	16 days	23 days	4 days
＞1.4mm	4	28 days	14 days	3 days	40 days	17 days	28 days	5 days
≤2.0mm	5	35 days	16 days	4 days	50 days	24 days	35 days	6 days
	5a	56 days	18 days	4 days	67 days	27 days	56 days	8 days
	2a	67 days	20 days	5 days	80 days	30 days	67 days	10 days
	3	67 days	22 days	5 days	80 days	31 days	67 days	10 days
＞2.0mm	4	67 days	22 days	5 days	80 days	31 days	67 days	10 days
≤4.5mm	5	67 days	22 days	5 days	80 days	31 days	67 days	10 days
	5a	67 days	22 days	5 days	80 days	31 days	67 days	10 days

Note

Blue: Based on 100TQFP-Test (Semi-conductor(100TQFP)baking feature)

Orange：Based on IPCJ-STD-033B.

From the table we can see that ultra low humidity and medium temperature baking can shorten the baking time and improve the baking efficiency obviously, So this M-TEMP baking dry cabinet is highly recommand to protect customers' moisture sensitive components.