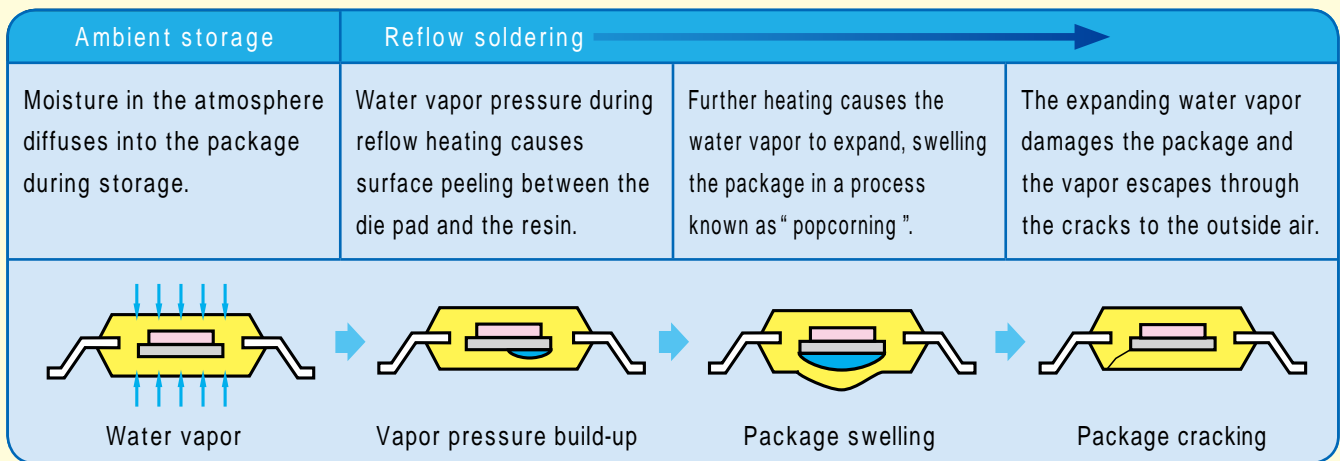
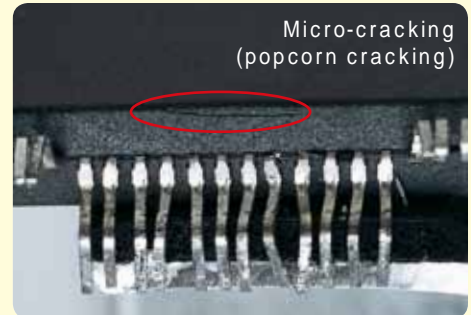


# Preventing cracks of IC packages and LEDs with McDry ultra-low humidity control

Even when the doors are opened and closed, McDry provides functionality equivalent to moisture barrier bags. (Conforms to the new IPC/JEDEC J-STD-033C standard.)

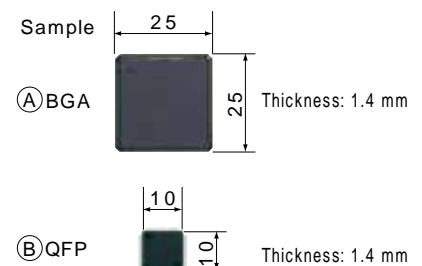
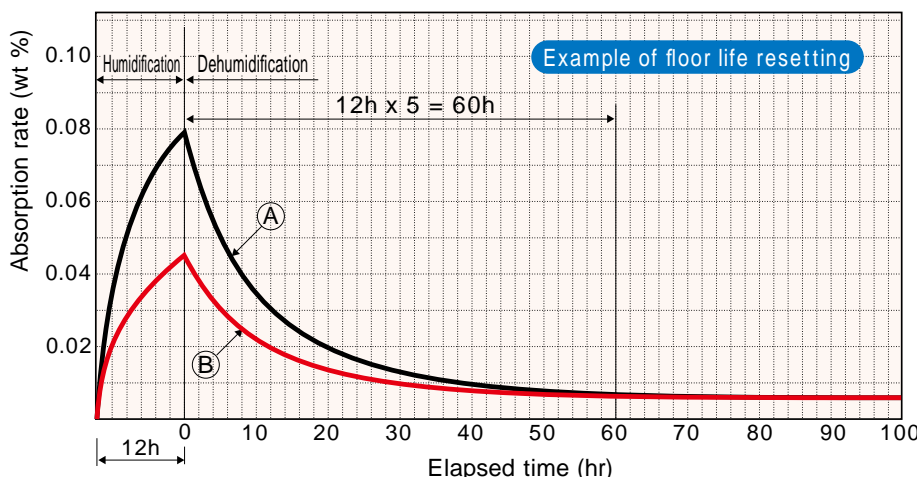
## Preventing popcorn cracks of MSDs (moisture-sensitive devices)

If an IC package or LED has been taken out of its moisture barrier bag and is not surface mounted during its floor life (the permitted time for exposure to the air), it will absorb moisture from the air and exceed its permitted moisture content level. **When IC packages or LEDs that have absorbed enough moisture to exceed their permitted levels are surface mounted, the heating during reflow causes the moisture accumulated in the die pad to instantly expand, resulting in popcorn cracking in almost 100% of cases.** To avoid this scenario, simply reset the floor life of the IC packages or LEDs by storing them in a McDry ultra-low humidity cabinet as soon as they are removed from the moisture barrier bags.



## Room temperature dehumidification of IC packages under the new IPC/JEDEC control standards (resetting)

According to new IPC/JEDEC J-STD-033C Standard, level 2 to level 4 IC packages removed from moisture barrier bags are to be kept in storage cabinets at a humidity of 10%RH or less. The standard also specifies that the floor life of an IC package removed from its moisture barrier bag and left exposed at 30 °C with a humidity of 60% RH or less will be reset if the package is stored in a cabinet with a humidity of 10% RH or less for 5 times as long as it was left exposed. (Note that the exposure period must not exceed 12 hours.)



Pretreatment: Baked at 125 °C for 24 hours

Measurement conditions

- (1) Humidification: Exposed for 12 hours at 30 °C and 60% RH (using a constant temperature and humidity room)
- (2) Dehumidification: Stored in a low-humidity cabinet at 3% RH