Guidelines/Recommendations

MSL (moisture sensitivity level) of bare PCBs

(setting parameters subject to user-specific processing operations)

Objective:
- Clarification of contradictory statements regarding bare PCBs in accordance with MSL classification based on J-STD-033 or J-STD-020.
- Background: Avoiding the “popcorn effect” in SMD components.

Statement/information:
- The J-STD standard does not classify bare PCBs; it describes and requires electronic components to be classified into MS levels.
- Floor life of bare PCBs after the seal on the original packaging has been broken is recommended with a maximum value of MSL 2a.
- The PCB’s shelf life (depending on the soldering surface) still applies.
- Repackaging remaining quantities of bare PCBs does not extend the shelf life

(see also ZVEI “Recommendations for storage of bare PCBs”)

PCB and Electronic Systems Division within the German Electrical and Electronic Manufacturers’ Association, Working Group “Quality Management” September 2018
Application recommendation:

- Packaging in ESD-ready, needled shrink wrap is standard for inner-European transport. Bare PCBs absorb moisture until the saturation of the base material has been reached. No MSL can be indicated.

- Indicating an MSL only makes sense for vacuum packaging, in which case the use of a moisture indicator and desiccant (silica gel) is recommended.

- If vacuum packaging with desiccant is requested, instructions should be given (front of the PCB package, not directly on the PCB surface). These instructions should also be observed in the event of repackaging.

(see also ZVEI “Recommendations for storage of bare PCBs”)

Source: J-STD-033

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