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MSL (Moisture Sensitivity Levels)

Encoder modules are hygroscopic (moisture absorbing). If the read head is soldered after absorbing moisture, the read head plastic may crack and the surfaces between the plastic and other materials separate.

Please follow recommendations for the Floor Life times (time from opening vacuum sealed packages to time of reflow). When exceeded, follow the recommended bake operation.

MSL Floor Life and Bake guidelines

Part	Package type	Package thickness [mm]	MSL Rating	Floor Life time Maximum	Pre-reflow Moisture Bake Times @125°C ±5°C
SMD-01A	HCOB14	1.68	4	72 Hours	4 Hours
SMD-01B	HCOB14	1.68	4	72 Hours	4 Hours
SMD-04B	LCOB14	1.0	4	72 Hours	4 Hours
SM3414B	HCOB16	1.0	4	72 Hours	4 Hours

SMD shipping trays withstand 125°C baking operations; no need to remove encoder from the trays. However, labeling and tape need be removed prior to placing in oven.

Storage and management after Opening Package

1. Before opening: Store at temperature of $\leq 30^{\circ}\text{C}$ and humidity (RH) of $\leq 60\%$: mount within one year.
2. Mount parts at temperature $\leq 30^{\circ}\text{C}$ and relative humidity (RH) $\leq 60\%$,
3. Parts not mounted within allowed maximum Floor Life time require bake prior to reflow.
4. Baking time vary by actual time package is opened. Refer to MSL guidelines table
5. Baking @ 125°C should be performed only one time.
6. Parts stored after opening $\leq 30^{\circ}\text{C}$ and $\leq 60\%$ RH should be mounted within one month.

Handling, Pick & place operations

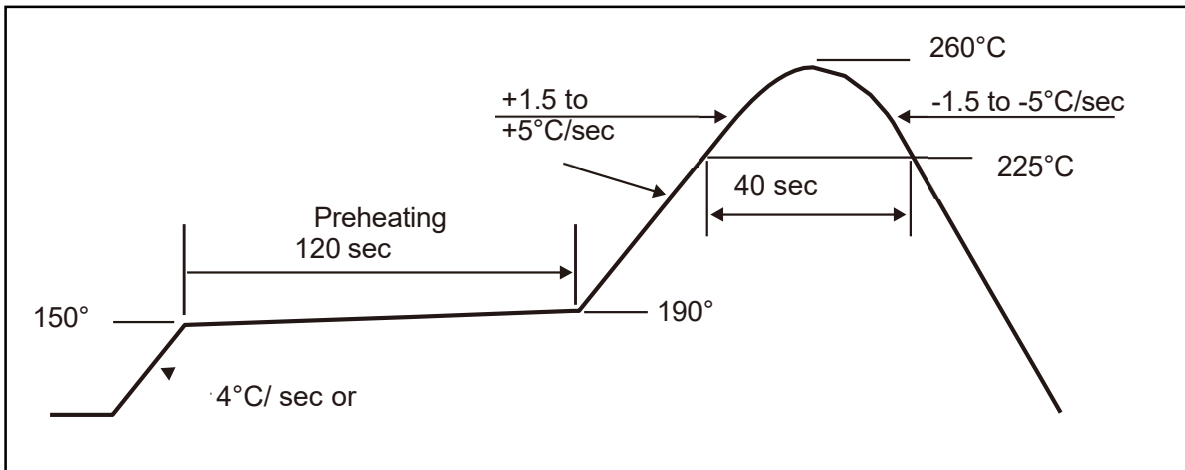
1. Top surface of Encoder is an optical surface which require care to prevent damage, scratch or contamination.
2. Manual pick operation. We recommend tweezers to grasp encoder modules at their sides; Manual vacuum pick not recommended without recommended rubber pickup tip.
3. SMD encoder trays are designed to avoid touching the optical surface. Do not substitute tray or tray covers.
4. Pick and place machine rubber tip must not touch optical surface areas around and between LED and Sensor to prevent damage.
5. Micro-Mechanics R3-140 is a rectangular rubber tip 4.05x5.05mm. With proper setup does not touch critical optical surface areas.
6. Round tip may be acceptable, but please evaluate operation and results carefully.

Soldering Precautions.

1. Solder within the Floor Life time, which is 72 hours from time of opening package
2. When soldering, ensure no foreign matter is adhering to the SMD surface.
3. Ensure no mechanical stress or strong vibration is applied until the devices have cooled to room temperature

Reflow Profile (Infrared)

Temperature profile conditions (Package surface temperature)



In accordance with "Storage and Management after Opening the Package" section, please reflow within the maximum allowed time after opening vacuum sealed package. If time is exceeded, then pre-bake per recommendations in table MSL Floor Life and Bake guidelines

- N₂ [nitrogen] atmosphere is best for reflow chambers; normal atmosphere generally acceptable
- Maximum reflows is two (2) times.
- Please be sure to reduce temperature ripple of preheat to the extent possible.
- Do not touch product after reflow soldering until it declines to room temperature, to prevent package resin deformation.
- Inadequate reflow condition could cause significant fluctuation of output signal amplitude.

See our website for more information, or contact sales and technical staff at

sales@vcamerica.com or call 1-702-597-2495 x1.