

# MSL Baking Instruction

Customer Quality Engineering

December, 2011

# Moisture Caution Label – MSL 2



**CAUTION**  
This bag contains  
**MOISTURE-SENSITIVE DEVICES**

Level

**2**

1. Shelf life in sealed bag: 36 months at  $< 40^{\circ}\text{C}$  and  $< 90\%$  relative humidity (RH)
2. After this bag is opened, devices that will be subjected to convection reflow, or equivalent processing (peak package body temperature of  $220^{\circ}\text{C}$ ) must be:
  - a) Mounted within **1 year** at factory conditions of  $\leq 30^{\circ}\text{C}/60\%$  RH, or
  - b) Stored at  $\leq 10\%$  RH
3. Devices require baking before mounting if:
  - a) Humidity indicator card shows humidity  $> 60\%$  when measured at  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , or
  - b) Condition 2a or 2b is not met.
4. If baking is required, devices may be baked for:
  - a) **12** hours at  $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for high-temperature device containers.
  - b) Baking at  $40^{\circ}\text{C} + 5^{\circ}\text{C} / - 0^{\circ}\text{C}$  and  $< 5\%$  RH for low-temperature device containers is **NOT RECOMMENDED**.

Bag Seal Date (MM/DD/YY): \_\_\_\_\_

Note: LEVEL defined by IPC/JEDEC J-STD-020

# Moisture Caution Label – MSL 3



## CAUTION

This bag contains  
**MOISTURE-SENSITIVE DEVICES**

Level

**3**

1. Shelf life in sealed bag: 36 months at  $< 40^{\circ}\text{C}$  and  $< 90\%$  relative humidity (RH)
2. After this bag is opened, devices that will be subjected to convection reflow, or equivalent processing (peak package body temperature of  $220^{\circ}\text{C}$ ) must be:
  - a) Mounted within **168 hours** at factory conditions of  $\leq 30^{\circ}\text{C}/60\%$  RH,  
or
  - b) Stored at  $\leq 10\%$  RH
3. Devices require baking before mounting if:
  - a) Humidity indicator card shows humidity  $> 10\%$  when measured at  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , or
  - b) Condition 2a or 2b is not met.
4. If baking is required, devices may be baked for:
  - a) **12** hours at  $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for high-temperature device containers.
  - b) Baking at  $40^{\circ}\text{C} \pm 5^{\circ}\text{C} / -0^{\circ}\text{C}$  and  $< 5\%$  RH for low-temperature device containers is **NOT RECOMMENDED**.

Bag Seal Date (MM/DD/YY): \_\_\_\_\_

Note: LEVEL defined by IPC/JEDEC J-STD-020

# Moisture Caution Label – MSL 4



**CAUTION**  
This bag contains  
**MOISTURE-SENSITIVE DEVICES**

Level

**4**

1. Shelf life in sealed bag: 36 months at  $< 40^{\circ}\text{C}$  and  $< 90\%$  relative humidity (RH)
2. After this bag is opened, devices that will be subjected to convection reflow, or equivalent processing (peak package body temperature of  $220^{\circ}\text{C}$ ) must be:
  - a) Mounted within **72 hours** at factory conditions of  $\leq 30^{\circ}\text{C}/60\%$  RH, or
  - b) Stored at  $\leq 10\%$  RH
3. Devices require baking before mounting if:
  - a) Humidity indicator card shows humidity  $> 10\%$  when measured at  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , or
  - b) Condition 2a or 2b is not met.
4. If baking is required, devices may be baked for:
  - a) **12 hours** at  $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for high-temperature device containers.
  - b) Baking at  $40^{\circ}\text{C} \pm 5^{\circ}\text{C} / -0^{\circ}\text{C}$  and  $< 5\%$  RH for low-temperature device containers is **NOT RECOMMENDED**.

Bag Seal Date (MM/DD/YY): \_\_\_\_\_

Note: LEVEL defined by IPC/JEDEC J-STD-020

# Moisture Caution Label – MSL 5a



## CAUTION

This bag contains  
**MOISTURE-SENSITIVE DEVICES**

Level

**5a**

1. Shelf life in sealed bag: 36 months at  $< 40^{\circ}\text{C}$  and  $< 90\%$  relative humidity (RH)
2. After this bag is opened, devices that will be subjected to convection reflow, or equivalent processing (peak package body temperature of  $220^{\circ}\text{C}$ ) must be:
  - a) Mounted within **24 hours** at factory conditions of  $\leq 30^{\circ}\text{C}/60\%$  RH, or
  - b) Stored at  $\leq 10\%$  RH
3. Devices require baking before mounting if:
  - a) Humidity indicator card shows humidity  $> 10\%$  when measured at  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , or
  - b) Condition 2a or 2b is not met.
4. If baking is required, devices may be baked for:
  - a) **12 hours** at  $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for high-temperature device containers.
  - b) Baking at  $40^{\circ}\text{C} \pm 5^{\circ}\text{C} / -0^{\circ}\text{C}$  and  $< 5\%$  RH for low-temperature device containers is **NOT RECOMMENDED**.

Bag Seal Date (MM/DD/YY): \_\_\_\_\_

Note: LEVEL defined by IPC/JEDEC J-STD-020

# Moisture Caution Label – MSL 6

