

3030 PKG Handling Guide



Handling Guide

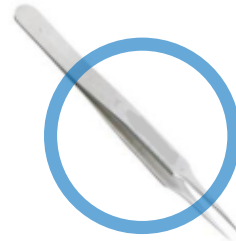
■ Handling Guide

- At LES(Light Emitting Surface) for Phosphor side is restricted to unusual direct-touch or strong external force

▶ Tools



Vacuum tweezer

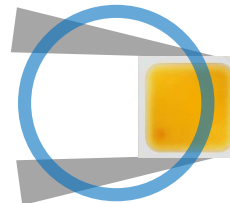


Normal tweezer

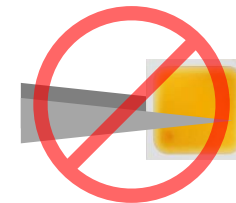
▶ Pick-up



Use vacuum tweezer case
(have to keep clean vacuum pad side)

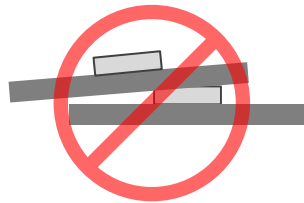


Softly handling when
use tweezer



DO NOT allow @ LES side

▶ Handling



DO NOT allow stacking




DO NOT allow finger touch
or Sharpen/Hard Object

※ Horizontally and Vertically direct force might cause fatal damage during manufacturing process of luminaire.

Precautions in Handling & Use

- 1) For over-current protection, users are recommended to apply resistors connected in series with the LEDs to mitigate sudden change of the forward current caused by shift of forward voltage.
- 2) This device should not be used in any type of fluid such as water, oil, organic solvent, etc. When cleaning is required, IPA is recommended as the cleaning agent. Some solvent-based cleaning agent may damage the silicone resins used in the device.
- 3) When the device is in operation, the forward current should be carefully determined considering the maximum ambient temperature and corresponding junction temperature.
- 4) LEDs must be stored in a clean environment. If the LEDs are to be stored for three months or more after being shipped from Samsung, they should be packed with a nitrogen-filled container (shelf life of sealed bags is 12 months at temperature 0~40 °C, 0~90 % RH).
- 5) After storage bag is opened, device subjected to soldering, solder reflow, or other high temperature processes must be:
Mounted within 672 hours (28 days) at an assembly line with a condition of no more than 30 °C / 60 % RH,
or Stored at <10 % RH
- 6) Repack unused devices with anti-moisture packing, fold to close any opening and then store in a dry place.
- 7) Devices require baking before mounting, if humidity card reading is >60 % at 23 ± 5 °C.
- 8) Devices must be baked for 12 hours or more at 60 ± 5 °C, if baking is required. (24 hours recommended)
- 9) The LEDs are sensitive to the static electricity and surge current. It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs. If voltage exceeding the absolute maximum rating is applied to LEDs, it may cause damage or even destruction to LED devices. Damaged LEDs may show some unusual characteristics such as increase in leakage current, lowered turn-on voltage, or abnormal lighting of LEDs at low current.
- 10) VOCs (Volatile Organic Compounds) can be generated from adhesives, flux, hardener or organic additives used in luminaires (fixtures). Transparent LED silicone encapsulant is permeable to those chemicals and they may lead to a discoloration of encapsulant when they exposed to heat or light. This phenomenon can cause a significant loss of light emitted (output) from the luminaires. In order to prevent these problems, we recommend users to know the physical properties of materials used in luminaires and they must be carefully selected.

Humidity & Prebaking [IPC/JEDEC J-STD-033C]



CAUTION

This bag contains
MOISTURE SENSITIVE DEVICES

LEVEL

2a

1. Shelf life in sealed bag: 12 months at <40°C and <90% relative humidity (RH)
2. Peak package body temperature: 240 °C
3. After this bag is opened, devices that will be subjected to reflow solder or other high temperature processes must be:
 - a. Mounted within 672 hours at factory conditions of equal to or less than 30°C /60% RH, or
 - b. Stored at <10% RH
4. Devices require bake, before mounting, if:
 - a. Humidity Indicator Card is >60% when read at 23±5°C, or
 - b. 2a is not met.
5. If baking is required, devices must be baked for 10 ~ 24 hours at 60±5°C

Note: If device containers cannot be subjected to high temperature or shorter bake times are desired, reference IPC/JEDEC J-STD-033 for bake procedure.

Bag seal due date: _____

(If blank, see code label)

Note: Level and body temperature by IPC/JEDEC J-STD-020

Reference Conditions for Drying Mounted or Unmounted SMD Packages
(User Bake: Floor life begins counting at time = 0 after bake)

Package Body	Level	Bake @ 125 °C +10/-0 °C		Bake @ 90 °C +8/-0 °C ≤5% RH		Bake @ 40 °C +5/-0 °C ≤5% RH	
		Exceeding Floor Life by >72 h	Exceeding Floor Life by ≤72 h	Exceeding Floor Life by >72 h	Exceeding Floor Life by ≤72 h	Exceeding Floor Life by >72 h	Exceeding Floor Life by ≤72 h
Thickness ≤1.4 mm	2	5 hours	3 hours	17 hours	11 hours	8 days	5 days
	2a	7 hours	5 hours	23 hours	13 hours	9 days	7 days
	3	9 hours	7 hours	33 hours	23 hours	13 days	9 days
	4	11 hours	7 hours	37 hours	23 hours	15 days	9 days
	5	12 hours	7 hours	41 hours	24 hours	17 days	10 days
	5a	16 hours	10 hours	54 hours	24 hours	22 days	10 days

Note 1: Table 4-1 is based on worst-case molded lead frame SMD packages. Users may reduce the actual bake time if technically justified (e.g., absorption/desorption data, etc.). In most cases it is applicable to other nonhermetic surface mount SMD packages. If parts have been exposed to >60% RH it may be necessary to increase the bake time by tracking desorption data to ensure parts are dry.

Note 2: For BGA packages >17 mm x 17 mm, that do not have internal planes that block the moisture diffusion path in the substrate, may use bake times based on the thickness/moisture level portion of the table.

Recommended Equivalent Total Floor Life (days) @20°C, 25°C & 30°C, 35°C
For ICs with Novolac, Biphenyl and Multifunctional Epoxies
(Reflow at same temperature at which the component was classified)
Maximum Percent Relative Humidity

Package Type and Body Thickness	Moisture Sensitivity Level	Relative Humidity (%)										Temperature (°C)	
		5%	10%	20%	30%	40%	50%	60%	70%	80%	90%		
Body Thickness is <2.1 mm including SOICs <18 pins All TQFPs All TSOPs All BGAs <1 mm body thickness	Level 2a	∞	∞	∞	∞	∞	∞	∞	17	1	0.5	0.5	35 °C
		∞	∞	∞	∞	∞	∞	∞	28	1	1	1	30 °C
		∞	∞	∞	∞	∞	∞	∞	∞	2	1	1	25 °C
	Level 3	∞	∞	∞	∞	∞	∞	8	5	1	0.5	0.5	35 °C
		∞	∞	∞	∞	∞	11	7	1	1	1	1	30 °C
		∞	∞	∞	∞	∞	14	10	2	1	1	1	25 °C
	Level 4	∞	∞	∞	7	4	3	2	1	0.5	0.5	35 °C	
		∞	∞	∞	9	5	4	3	1	1	1	1	30 °C
		∞	∞	∞	12	7	5	4	2	1	1	1	25 °C
	Level 5	∞	∞	∞	17	9	7	6	2	2	1	1	20 °C
		∞	∞	7	3	2	2	1	1	0.5	0.5	35 °C	
		∞	∞	13	5	3	2	2	1	1	1	1	30 °C
Level 5a	∞	∞	18	6	4	3	3	2	1	1	1	25 °C	
	∞	∞	26	8	6	5	4	2	2	2	2	20 °C	
	∞	7	2	1	1	1	1	1	0.5	0.5	35 °C		
	∞	10	3	2	1	1	1	1	1	0.5	0.5	30 °C	
	∞	13	5	3	2	2	2	1	1	1	1	25 °C	
	∞	18	6	4	3	2	2	2	2	2	1	20 °C	

∞ Represents indefinite exposure time allowed at conditions specified.