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SIM800H&L_ Secondary Reflow SMT _Guidelines_V1.00



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Version History

Date	Version	Description of change	Author
2013-09-05	1.00		songjialin

Scope

This document can apply to SIM800H and SIM800L modules.

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1. Storage Notes

1.1. The Moisture Sensitivity Level

The moisture sensitivity level of SIM800H&L is 3. The module should be mounted within 168 hours after unpacking in the environmental conditions of temperature $<30^{\circ}\text{C}$ and relative humidity of $<60\%$ (RH). It is necessary to bake the module if the above conditions are not met.

Table1: Moisture Sensitivity Level and Floor Life

Moisture Sensitivity Level (MSL)	Floor Life (out of bag) at factory ambient $\leq 30^{\circ}\text{C}/60\%$ RH or as stated
1	Unlimited at $\leq 30^{\circ}\text{C}/85\%$ RH
2	1 year
2a	4 weeks
3	168 hours
4	72 hours
5	48 hours
5a	24 hours
6	Mandatory bake before use. After bake, it must be reflowed within the time limit specified on the label.

NOTES:

For product handling, storage and processing, IPC/JEDEC J-STD-033 must be followed.

1.2. Baking Requirements

SIM800H&L modules are vacuum packaged, and guaranteed for 6 months storage without opening or leakage under the following conditions: the environment temperature is lower than 40°C , and the air humidity is less than 90%.

If the condition meets one of the following ones shown below, the modules should be baked sufficiently before re-flow soldering, and the baking condition is shown in below table; otherwise the module will be at the risk of permanent damage during re-flow soldering.

- If the vacuum package is broken or leakage;
- If the vacuum package is opened after 6 months since it's been packed;
- If the vacuum package is opened within 6 months but out of its Floor Life at factory ambient $\leq 30^{\circ}\text{C}/60\%$ RH or as stated.

Table 2: Baking requirements

Baking temperature	Moisture	Time
40°C±5°C	<5%	192 hours
120°C±5°C	<5%	6 hours

NOTES:

Care should be taken if that plastic tray is not heat-resistant, the modules should be taken out for preheating, otherwise the tray may be damaged by high-temperature heating.

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2. PCB Design Notes

2.1. Layout Requirements

- For SIM800H&L modules, layout of other components within 1mm area is prohibited. The minimum distance on the PCB edge from SIM800H&L modules is 1.5mm.
- If the PCB layout is double-sided, it is suggested that SIM800H&L side is the last for reflow.

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3. Assembly Instructions

3.1. Stencil Design

Recommended thickness of the SIM800H&L stencil is 0.12mm; For stencil design, please refer to Figure1 and Figure2.

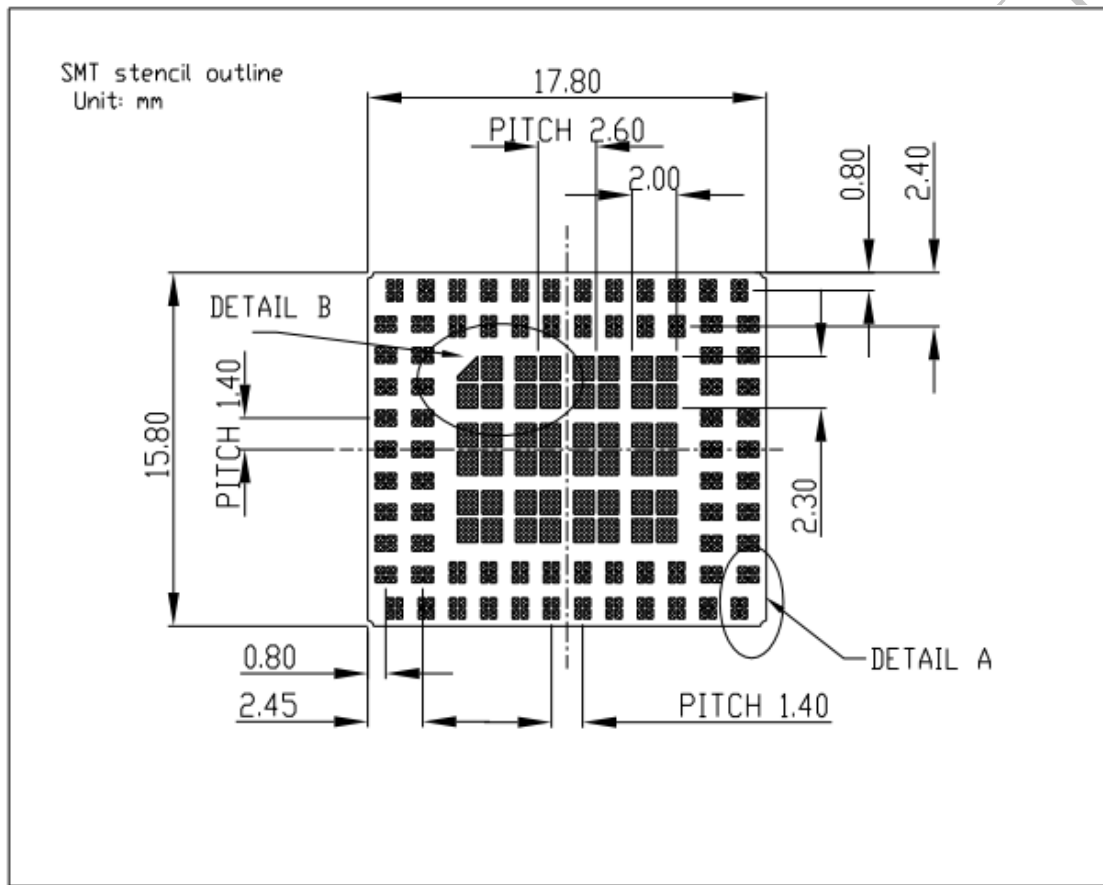


Figure 1: Recommended SMT stencil outline A (Unit: mm)

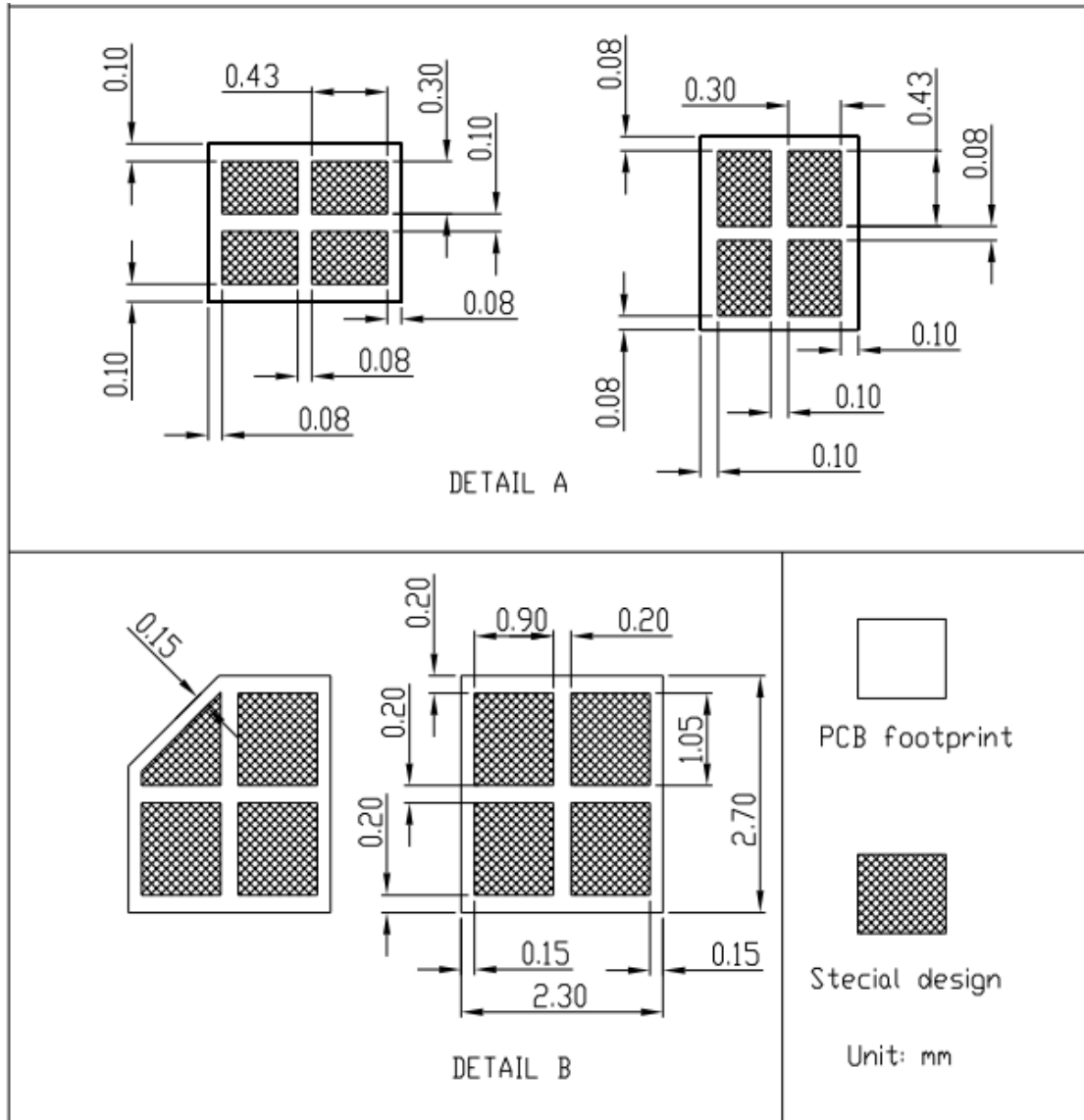


Figure 2: Recommended SMT stencil outline B (Unit: mm)

3.2. Reflow Profile

Recommend the solder paste type: M705-GRN360-K2-V.

Please refer to the recommended ramp-soak-spike reflow profile as following shows.

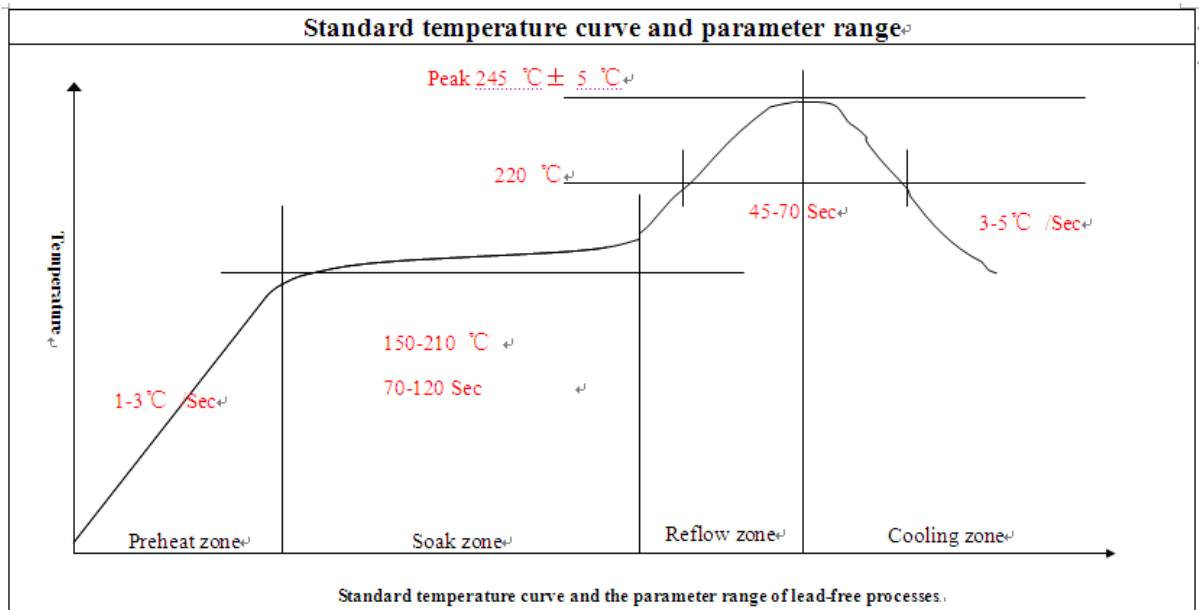


Figure 3: Standard temperature curve and the parameter range of lead-free processes

NOTES:

Recommended temperature curve of different solder paste is not completely consistent, The temperature curve of solder paste please contact suppliers.

3.3. Reflow Times

For SIM800H&L modules, the reflow time should be not more than one time after the modules delivered to customer.

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