Recommended Soldering Pattern and Amount

Relationship between Recommended Soldering Pattern and Solder Amount

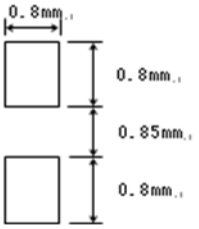
When reflow soldering a surface-mounted LED (chip LED), the proper mounting pattern and amount of solder must be used. If this relationship is not properly maintained, after mounting, the LEDs may float, which may affect the optical characteristics of some products. This section explains the relationship between the recommended soldering pattern and the amount of solder.

Recommended Soldering Pattern

Please refer to the "Precautions" in each product specification for the recommended patterns of surface mount LEDs.

In the case of SML-D1 series (1.6x0.8 t=0.55 size), the following pattern shape is recommended.

SML-D1Series
Recommended
Soldering Pattern



In the soldering process, a metal mask is used to apply solder paste to the patterned area, and after the product is mounted, reflow soldering is used to solder the product. If the amount of solder is too much, a lot of solder is rooted in the bottom surface of the product, which may cause the product to tilt after reflow soldering. Please adjust the amount of solder so that the product will not be tilted.

Relationship between Recommended Pattern and Metal Mask Aperture

(Basic)

The recommended pattern and the aperture of the metal mask are basically the same shape. In this case, however, the thickness of the metal mask is assumed to be 100μ. If the thickness of the metal mask is increased due to the combination with other mounted components, the opening of the metal mask may need to be reduced and the amount of soldering may need to be adjusted.

(Adjustment example) When the thickness of the metal mask is 150μ

In order to reduce the amount of solder, the mounting pattern should remain the recommended pattern, but the aperture of the metal mask should be made smaller.

The size of the aperture of the metal mask should be 100μ/150μ ≈ 67% of the aperture.

For other products of the same 1.6x0.8 size, the shape of the solder fillet changes depending on the shape of the terminals (e.g., whole side electrodes and half-through-hole shape) and the thickness of the terminals, so the amount of solder must be adjusted according to the mounting conditions.

Notes

1) The information contained herein is subject to change without notice.

2) Before you use our Products, please contact our sales representative and verify the latest specifications :

3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
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7) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.

8) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.

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