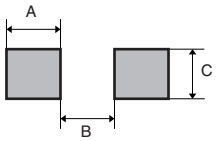
HANDLING PRECAUTIONS

■Soldering

1. Basic design

Recommended board pattern.



unit:mm

size	A	B	C
1608	0.75~1.0	0.6~0.8	0.8~1.3
2012	0.8~1.5	0.8~1.2	1.0~1.3
3216	1.1~1.6	1.5~2.0	2.0~3.0

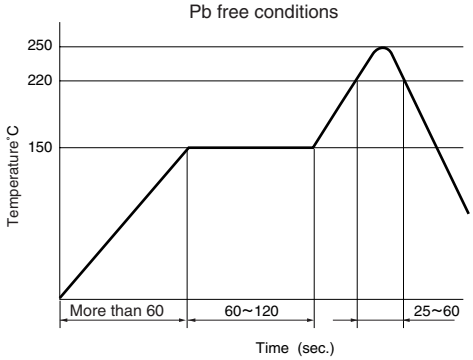
*Please set up pattern thickness/width depends on the rated voltage.

2. General cautions for soldering

• Flow soldering:
Preheating: Approx. 150˚C for 2 min.
Soldering temperature: 260˚C±5˚C for 10±1 sec.

• Reflow soldering:
Temperature profile is shown in the right.
Solder with2~3wt% Ag added is recommended.
Reflow soldering should be done only twice.

Pb free conditions



• matters that required attention

This profile has confirmed a characteristic and quality by typical lead-free paste. On the occasion of use, please evaluate and confirm used soldering paste or with having it mounted in the product.

■When using soldering iron

Soldering iron temperature: 280˚C to 320˚C Soldering duration: approx. 4 sec. Power consumption: 20W Shape: 1mm diameter

■Shelf Life

The product is to be used within six(6) months after its delivery since the solderability of the product may be deteriorated due to the oxidation of terminal electrode, depending upon the storage environment. If the product be used after an elapse of six(6) months, please be sure to use it after confirming the solderability.

■Environment for use

This product is to be so designed and manufactured for its application to ordinary electronic products. Therefore, please be sure not to use this product under special conditions including the followings. The manufacturer's warranty will not cover any required characteristics of this product if this product be used under such special conditions. When using this product, you are required to confirm its reliability beforehand.

1. Where the product is exposed to an open-air;
2. Where corrosive gas exists;
3. Where dew formation and water content is occasioned;
4. Where static electricity and magnetic field is strongly occasioned;
5. Where the product is installed adjacent to the heated part(s);
6. Where resin coating and plastic seal is applied;
7. Where oscillation or impulse exceeds the requirement as stipulated in the catalogue or delivery specifications.

■Precautions for product storage

Storage condition

- Avoid storage in high temperature and high humidity environment as such condition may deteriorate the solderability of external electrode.
- Avoid storage in atmosphere containing toxic gasses or acid (e.g. sulpher and chlorine) as such gas may deteriorate the solderability of external electrode.
- Avoid storage near strong magnetic field as such condition may magnetize the product.

Storage after unpacking

- Products should be stored in environment with temperature lower than 40˚C and humidity lower than 70% RH.
- To achieve best solderability, use the products as soon as possible after unpacking. Store the leftover product in dry condition with desiccant.

HANDLING PRECAUTIONS

■Precautions for the safety use

The products are designed and manufactured for the use in ordinary electronic products. If any of these products are used in special applications requiring high reliability such as aerospace instruments, aircraft equipment, submarine repeater, atomic power control system, life-support system, fuel control, vehicle instrument including its accessories, safety equipment, where product defects or its misconduct might pose a safety risk or cause a social problem, please consult sales offices well in advance.

The products may cause a trouble at a certain probability. In case of circuit design using the products, products' security must be kept taking into consideration of the sufficient fail safe design as per the following manners;

① Secure the safety of the products by protection circuit and protective device.

② Design and arrange circuit with redundant circuit to avoid resulting in fatal defects by single trouble.

If the chip beads for electric power source be installed near the parts heated, its design must be made especially taking the heat radiation into consideration, and also, you are required to use the products confirming the temperature rise of the parts.

If the neighboring parts are heated excessively, the products may be ignitable by excessive heating due to insufficient heat radiation.

■Working current

Electric current used for the products is to be less than rated current including its peak current. When transitional current such as pulse be turned on, be sure to check and confirm its reliability under the conditions that the products have already been mounted on your products. If the steady state current exceeds the rated current, the products may be ignitable by excessive heating.