

■ Notice (Soldering and Mounting)

1. Soldering Condition

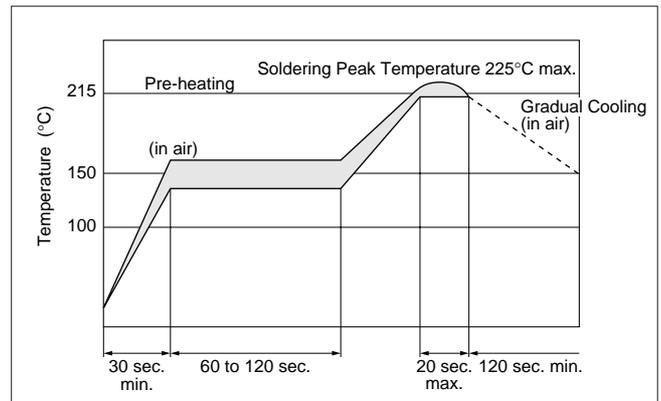
(1) Reflow

One heat stress, shown in the profile at right, is applied to resonator, then after being placed in natural conditions for 1 hour, the resonator is measured.

- (a) Pre-heating conditions should be +140 to +160°C for 60 to 120 seconds. Ascending time up +150°C should be longer than 30 seconds.
- (b) Heating conditions should be within 20 seconds at +215°C min., but peak temperature should be lower than +225°C.

(2) Soldering Iron

Soldering iron of +270±5°C should be placed 0.5mm above electrode of resonator. Melting solder through soldering iron should be applied to electrode for 3±1 seconds; then, after being placed in natural conditions for 24 hour, the resonator should be measured.



2. Wash

(1) Cleaning Solvents

HCFC, Isopropanol, Tap water, Demineralized water, Cleanthrough750H, Pine alpha 100S, Techno care FRW

(2) Temperature Difference : dT *1

$dT \leq 60^\circ\text{C}$ ($dT = \text{Component} - \text{solvent}$)

*1 ex. In case the component at +90°C immerses into cleaning solvent at +60°C, then $dT = 30^\circ\text{C}$.

(3) Conditions

(a) Ultrasonic Wash

1 minute max. in above solvent at +60°C max.
(Frequency: 28kHz, Output: 20W/l)

(b) Immersion Wash

5 minutes max. in above solvent at +60°C max.

(c) Shower or Rinse Wash

5 minutes max. in above solvent at +60°C max.

(4) Drying

5 minutes max. by air blow at +80°C max.

(5) Others

- (a) Total washing time should be within 10 minutes.
- (b) The component may be damaged if it is washed with chlorine, petroleum, or alkali cleaning solvent.

(c) Ultrasonic cleaning of the component is acceptable. However, the size of bath, size and thickness of PCB should be evaluated to confirm stable electrical characteristics are maintained.

3. Notice for Mounting

- (a) Please insure the component is thoroughly evaluated in your application circuit.
- (b) Please do not apply excess mechanical stress to the component and lead terminals during soldering.

(c) In the case of the bulk component, dry heating treatment (130°C. for 5 hours min.) is required before reflow soldering. Then, the component should be soldered within 48 hours after dry heating treatment.

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■ Notice (Storage and Operating Condition)

1. Product Storage Condition

Please store the products in a room where the temperature/humidity is stable, and avoid such places where there are large temperature changes.

Please store the products under the following conditions:

Temperature: -10 to + 40 degrees C

Humidity: 15 to 85% R.H.

2. Expiration Date on Storage

Expiration date (Shelf life) of the products is six months after delivery under the conditions of a sealed and unopened package. Please use the products within six months after delivery. If you store the products for a long time (more than six months), use carefully because the products may be degraded in solderability and/or rusty.

Please confirm solderability and characteristics for the products regularly.

3. Notice on Product Storage

- (1) Please do not store the products in a chemical atmosphere (Acids, Alkali, Bases, Organic gas, Sulfides and so on), because the characteristics may be reduced in quality, and/or be degraded in the solderability due to the storage in a chemical atmosphere.

- (2) Please do not put the products directly on the floor without anything under them to avoid damp and/or dusty places.

- (3) Please do not store the products in places such as: in a damp heated place, in a place where direct sunlight comes in, in a place applying vibrations.

- (4) Please use the products immediately after the package is opened, because the characteristics may be reduced in quality, and/or be degraded in the solderability due to storage under the poor conditions.

- (5) Please do not drop the products to avoid cracking of ceramic elements.

4. Others

Conformal coating of the component is acceptable. However, the resin material, curing temperature, and other process conditions should be evaluated to confirm that stable electrical characteristics are maintained.

Please be sure to consult with our sales representatives or engineers whenever and prior to using the products.

■ Notice (Rating)

The component may be damaged if excessive mechanical stress is applied.

■ Notice (Handling)

The component may stop oscillating or oscillate irregularly under improper circuit conditions.