

■ Notice (Soldering and Mounting)

1. Soldering

(1) Re-flow soldering

Please mount component on a circuit board by re-flow soldering. Flow soldering is not acceptable.

Recommendable Flux and Solder

Flux	Please use rosin based flux, but do not use water soluble flux.
Solder	Please use solder (Sn-3.0Ag-0.5Cu) under the following condition. Standard thickness of soldering paste: 0.10 to 0.15mm

Recommendable Soldering Profile

Pre-heating	150 to 180°C	60 to 120 sec.
Heating	220°C min.	30 to 60 sec.
Peak Temperature	upper limit: 260°C	1 sec. max.
	lower limit: 245°C	5 sec. max.

Temperature shall be measured on the surface of component.

(2) Soldering with Iron

Be compelled to mount component by using soldering iron, please do not directly touch the component with soldering iron. The terminals of component or electrical characteristics may be damaged if excess thermal stress is applied.

Recommendable Soldering with Iron

Heating of the soldering iron	350°C max.
Watt	30W max.
Shape of the soldering iron	ø3mm max.
Soldering Time	5 sec. max. at one terminal
Solder	Sn-3.0Ag-0.5Cu

(3) Solder Volume

Please make the solder volume less than the height of the substrate. When exceeding the substrate, the damage of adhesive for sealing between the metal cap and the substrate may occur.

(4) etc.

Do not reuse removed component from a circuit board after soldering.

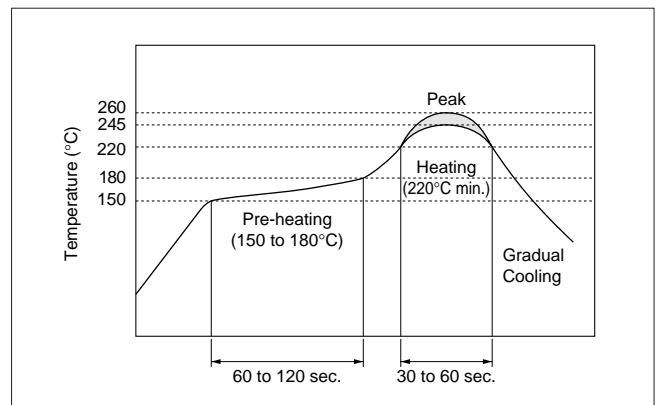
(5) Condition for Placement Machines


The component is recommended with placement machines with employ optical placement capabilities. The component might be resulted in damage by excessive mechanical force. Please make sure that you have evaluated by using placement machines before going into mass production. Do not use placement machines which utilize mechanical positioning. Please contact Murata for details beforehand.


2. Wash

(1) Cleaning Solvents

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



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(2) Temperature Difference : $dT *1$

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

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

(3) Conditions

(a) Ultrasonic Wash

1 minute max. in above solvent at $+60^{\circ}\text{C}$ max.
(Frequency: 28kHz, Output: 20W/l)

(b) Immersion Wash

5 minutes max. in above solvent at $+60^{\circ}\text{C}$ max.

(c) Shower or Rinse Wash

5 minutes max. in above solvent at $+60^{\circ}\text{C}$ max.

(4) Drying

5 minutes max. by air blow at $+80^{\circ}\text{C}$ 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.

3. Coating

Conformal coating of the component is acceptable.

However, the resin material, curing temperature, and other process conditions should be evaluated to confirm stable electrical characteristics are maintained.

■ 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.