

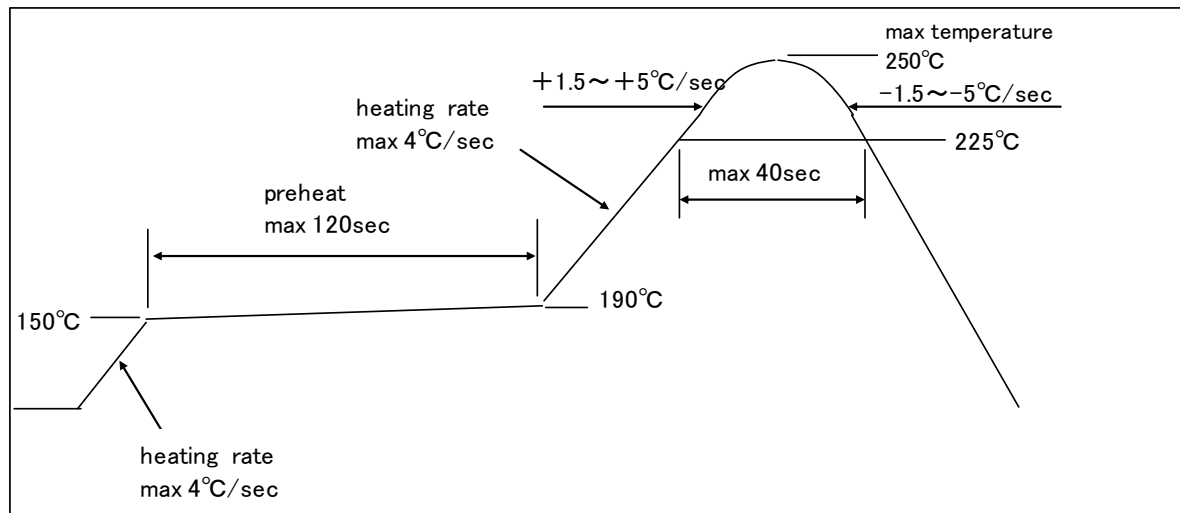
## 1. Board mounting process (Lead free)

### 1.1. Precaution of soldering

- The product is susceptible to moisture. Soldering with moist head could bring about cracks in resin, or interfacial peeling between the resin and others.
- Please check carefully to see if there are no particles on the product surface before soldering.
- Please be careful not to cause mechanical stress on or excessive vibration to the product until it declines to room temperature, after soldering.

### 1.2. Infrared reflows

Rapid temperature change might damage plastic package products. Therefore, Temperature profile condition as shown below (Temperature of package surface) is recommended for whole heating soldering process



- (1) Please mount board within 72 hours at temperature 30°C or less, and humidity of 60% or less.  
If you have pass more than 72 hours, please make sure to bake the product at 125°C±5°C for 3 hours before the reflow, and please mount board within 72 hours at temperature 30 °C or less, and humidity of 60% or less. Baking by 125°C should be performed only one time.
- (2) N2 atmosphere is recommend in reflow chambers.
- (3) The maximum number of reflows is up to two times.
- (4) Please try to minimize the temperature ripple of preheat as much as possible.
- (5) Please do not touch the product after reflow soldering until temperature drops to room temperature to prevent the resin deformation.
- (6) Note that inadequate reflow condition could cause significant fluctuation of output signal amplitude.

**1.3. Encoder IC cleaning**

When cleaning the product, wipe softly with lint free wiper (e.g., BEMCOT) moistened with methanol or ethanol. Note that using other chemicals or rubbing the product could cause scratches, tarnish, corrosion on surface of the product.

**2. Storage condition & necessary process after packing is opened**

- (1) Before packing is opened: Stored at temperature of 30°C or less, and humidity of 60% or less, please mount board within one year.
- (2) After packing is opened: Please mount board within 72 hours at temperature 30°C or less, and humidity of 60% or less. If you have pass more than 72 hours, please make sure to bake the product at 125°C±5°C for 3 hours before the reflow, and please mount board within 72 hours at temperature 30 °C or less, and humidity of 60% or less. Baking by 125°C should be performed only one time

\* If storing for more than 72 hours after opening, store at 30°C or less and 60% RH or less, and use within one month. When using after storage, bake under conditions (2) and mount board within 72 hours.

### **3. Precaution for handling**

- (1) Be careful not to touch the light-receiving part on the surface of this product.
- (2) Be careful not to touch this product with the scale when installing or adjusting this product/scale.
- (3) After installing this product/scale, use a light-shielding structure that does not allow external light to enter this product or leak the LED light of this product.
- (4) When installing this product, use an installation structure that takes heat dissipation into consideration and prevents temperature rise.
- (5) Work in an environment where the temperature and humidity are within the appropriate range. In particular, humidity has a significant effect on static electricity, and low humidity makes it easier for static electricity to occur. We recommend a temperature of 20°C to 28°C or less and a relative humidity of around 50%.
- (6) After installing this product/scale, do not allow objects to come into contact with this product or apply pressure to it.
- (7) If dirt, lint, oil, moisture, etc. adhere to the surface of this product/scale, the signal may be significantly reduced, so be careful when installing and design the structure so that dirt, lint, etc. do not adhere to it.
- (8) Do not stare at the LED for long periods of time (more than 10 seconds).
- (9) When a malfunction occurs, a large current may flow through the LED, causing it to emit high-intensity light. For eye safety reasons, take measures to avoid looking directly at this product.

Please pay your attention to the following points at time of using the products shown in this document.

1. The products shown in this document (hereinafter "Products") are designed and manufactured to the generally accepted standards of reliability as expected for use in general electronic and electrical equipment, such as personal equipment, machine tools and measurement equipment. The Products are not designed and manufactured to be used in any other special equipment requiring extremely high level of reliability and safety, such as aerospace equipment, nuclear power control equipment, medical equipment, transportation equipment, disaster prevention equipment, security equipment. The Products are not designed and manufactured to be used for the apparatus that exerts harmful influence on the human lives due to the defects, failure or malfunction of the Products.  
If you wish to use the Products in that apparatus, please contact our sales section in advance.  
In the event that the Products are used in such apparatus without our prior approval, we assume no responsibility whatsoever for any damages resulting from the use of that apparatus.
2. NPC reserves the right to change the specifications of the Products in order to improve the characteristics or reliability thereof.
3. The information described in this document is presented only as a guide for using the Products. No responsibility is assumed by us for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patents or other rights of the third parties. Then, we assume no responsibility whatsoever for any damages resulting from those infringements.
4. The constant of each circuit shown in this document is described as an example, and it is not guaranteed about its value of the mass production products.
5. In the case of that the Products in this document falls under the foreign exchange and foreign trade control law or other applicable laws and regulations, approval of the export to be based on those laws and regulations are necessary. Customers are requested appropriately take steps to obtain required permissions or approvals from appropriate government agencies.
6. When exporting customer's products that use the Products, customers must comply with the "Foreign Exchange and Foreign Trade Act" and other export-related laws and regulations, and follow the necessary procedures in accordance with those laws and regulations. Do not use the Products in equipment whose sale is prohibited by export-related laws and regulations ("JP Foreign Exchange and Foreign Trade Act" and "US Export Administration Regulations", etc.). In addition, please do not sell the Products to users who are expected to use it for the above equipment or companies in its supply chain. If a user who uses module parts and equipment using the Products is a company suspected of violating human rights, please do not sell the above parts and equipment to that user.



SEIKO NPC CORPORATION

2-9-4, Taito, Taito-ku, Tokyo  
110-0016, Japan  
Telephone: +81-3-6747-5300  
Facsimile: +81-3-6747-5303  
<https://www.npc.co.jp/>  
Email: [sales@npc.co.jp](mailto:sales@npc.co.jp)