

Application Instructions of Thermal Links “SEFUSE®”

The following application instructions of SEFUSE® SF series E type, U type are for the safety operation performance of thermal links and the product which use it. Please read and attention for following points.

1. Ratings

Code *1	Functioning Temperature Tf (°C) *2	Electrical Ratings	Code *1	Functioning Temperature Tf (°C) *2	Electrical Ratings
SF 70U/U-1, SF 70E/E-1, SF 76U/U-1, SF 76E/E-1, SF 91U/U-1, SF 91E/E-1, SF 96U/U-1, SF 96E/E-1, SF113U/U-1, SF113E/E-1 SF119U/U-1, SF119E/E-1, SF129U/U-1, SF129E/E-1, SF139U/U-1, SF139E/E-1, SF152U/U-1, SF152E/E-1, SF169U/U-1, SF169E/E-1, SF184U/U-1, SF184E/E-1, SF188U/U-1, SF188E/E-1, SF214U/U-1, SF214E/E-1, SF226U/U-1, SF226E/E-1, SF240U/U-1, SF240E/E-1,	73 77 94 99 113 121 133 142 157 172 184 192 216 227 240	120Vac 15A(Ind.) 20A(Res.) 240Vac 15A(Res.) 250Vac 10A(Res.) 15A(Res.) 17A(Res.) 277Vac 15A(Res.)	SF119Y/Y-1 SF129Y/Y-1 SF152Y/Y-1	121 133 157	250Vac, 15A(Res.) 277Vac, 20A(Res.) 120Vac, 25A(Ind.) 230Vac, 25A(Res.) 250Vac, 15A(Res.) 277Vac, 25A(Res.)

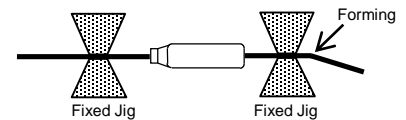
*1 SF○○○E,U,Y are short lead type and SF○○○E-1,U-1,Y-1 are long lead type.

*2 Functioning temperature (Tf): The temperature at which a thermal links changes its state of conductivity to open circuit with detection current as the only load.

2. Application Instructions

2-1. Lead forming

Since we adopt copper wire as leads of SEFUSE®, leads can be bent easily. However, it is recommended not to bend frequently and not to bend over 90° to protect the leads from broken. The stress shall not be applied to SEFUSE® itself at lead forming process, because the strong stress to SEFUSE® may break the sealing resin and cause the non-hermeticity. Therefore, it is recommended to hold the leads at lead forming process as shown below. If bending is required, a distance of minimum 1/8 in. (3mm) from the body of the SEFUSE® should be maintained.



2-2. Caution to keep mechanical strength

a) Tension of Lead

The tension to the lead of SF type shall not exceed 49N to achieve the long term performance.

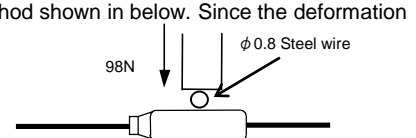
b) Connection of Lead

The strong stress shall not be applied to the sealing resin at the connection process of leads. The strong stress to the sealing resin may cause the damage of hermeticity.

c) Case strength

The mechanical strength of the case of SEFUSE® type SF is 98N by the test method shown in below. Since the deformation of the case of SF type cause the miss-operation of sliding contact, SF type SEFUSE® shall be handled carefully not to deform the case. The partial stress to case may break the cause itself.

Therefore, it is necessary not to apply the strong partial stress to case itself.



2-3. Connection of Lead to Other Lead by Calking

In order to avoid the heat by contact resistance with current, calking of leads shall be tight as possible as it can be done. Since the loose connection of leads of SEFUSE®, it may be the cause of the open of SEFUSE® earlier than expectation. Also, the heat of connected leads may affect the temperature rise of equipment itself. Although the contact resistance on connection portion of leads may be small at initial stage, it may come to large during the operation due to heat cycle or vibration. Since this rise of contact resistance may also cause the damage of SEFUSE® and equipment, calking treatment shall be carried carefully.

2-4. Soldering of Leads

When SEFUSE® is installed to electrical circuit by soldering, the high heat transmission from soldering position of lead to SEFUSE® shall be minimized so that SEFUSE® is not operated by heat. In order to minimize the heat transmission to SEFUSE®, the soldering position shall be as apart as possible from SEFUSE®. The pre-soldering of leads is also very effective to prevent the operation of SEFUSE® at soldering process.

2-5. Location of SEFUSE®

SEFUSE® shall be located carefully at proper position to keep the performance of SEFUSE®. SEFUSE® may operate at lower temperature than expectation under some high environmental temperature condition. The location of SEFUSE® shall be decided often checking the temperature of SEFUSE® at normal operation. Also, it is recommended to measure the temperature of SEFUSE® considering the heat-up by normal current and overshoot current before the decision of location of SEFUSE®. The temperature at the location of SEFUSE® shall be 20°C lower than the actual operating temperature and not be over than 140°C.

2-6. Protection Against Wetness

SEFUSE® is not suitable to operate in liquid (water, organic solvent etc.) and in the environment of harmful gas (sulfurous anhydride, nitrogen oxide gas etc.). It is also recommended to cover the SEFUSE® by Vinyl Pipe or Silicone Pipe for moisture free under high humidity.

3. Examination for damage

SEFUSE® may be damaged by the mechanical load and or heating (soldering etc.) at the assembly process to equipment. Therefore, we are recommended to inspect about the following inspections.

- | | |
|---|---------------------------------|
| (1) Appearance check for outside of SEFUSE® | (2) Conductivity check |
| (3) X-ray check for inside of SEFUSE® | (4) Operation check by sampling |

4. For reasons of safety

Thermal links is a non-repairable item. In case of replacement, choice the same manufacturer's equivalent thermal links (from the same catalogue reference), and mounted in exactly the same way. It is recommended to warn on the user's manual for general consumers who are not aware of the usage cautions for the thermal links. About, not to mount, remove or replace the thermal links.