

热敏电阻

THERMISTOR

使用注意事项

■ 使用电压

若使用的电压过高，则因传感器自身发热，不仅无法正确检测出周围的温度，而且可能会引起异常高温，损坏传感器。因此，对于异常电压，请采取保护电路等安全措施。

■ 使用环境

请勿在下列环境中使用，否则将导致特性劣化，严重时甚至会造成故障(或人身伤害事故)。

- 1) 直接接触水的场所、因湿度大可能会导致结露的场所
- 2) 有腐蚀性、还原性气体(硫化氢、亚硫酸、氯气、氨气等)的环境
- 3) 有挥发性、可燃性气体的环境
- 4) 多尘的场所
- 5) 减压或加压后的空气中
- 6) 暴露于盐水、油、药液、有机溶剂的场所
- 7) 振动或冲击过大的场所
- 8) 其他与上述环境相当的场所

请务必在成品上附加适当的故障保护功能，确保在产品出现异常或不良状况时，可防止二次灾害的发生。

■ 安全预防

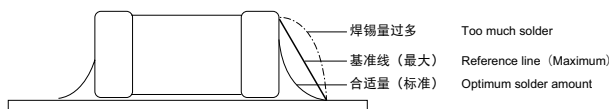
医疗、宇航、核电等设备上使用的电子部件，与用于一般民用设备的相比，常常要求更高的可靠性，因为这些设备一旦发生故障，经常会导致人身危害或引起巨大的社会损失。考虑用于此类用途时，请务必事先与本公司联系。

■ 保存环境

- 1) 保存温度、湿度
环境温度：-10~40℃
相对湿度：70%RH以下(不可结露)
- 2) 保存期限
购入后12个月以内
- 3) 开封后的处理
请在打开最小包装后密封保存或置于有干燥剂的密封容器内保存。
- 4) 保存场所
请保存在无阳光直射及特殊气体(硫磺和氯气等)的场所。

■ 安装条件

- 1) 设计时确保焊盘的大小左右均等。
- 2) 焊剂请使用低活性(卤化物含有率在0.2wt%以下)的产品。
- 3) 焊接后进行超音波清洗时，输出过大会引起主板共振，由此可能会造成主板破裂或端子电极粘着力下降。故此，推荐按以下条件进行清洗。
频率：40kHz以下
输出：20W/L以下
清洗时间：5分钟以内
- 4) 焊锡量越多，本产品所受的机械应力就越大，过大时可能会造成破裂。请以焊料圆角的上端为芯片厚度的1/2~2/3为标准调整焊料的涂抹量。



- 5) 若在传感器焊接于主板上后的工序或处理中主板发生弯曲，传感器可能会发生破裂。因此在设计零部件配置时，应尽量避免施加会使主板产生挠曲的过大应力。
- 6) 进行主板分割时，由于传感器受到机械应力的作用，故请采取适当的传感器配置和分割方法。

■ 其他注意事项

请务必在规定的温度范围内使用，否则可能会导致材质及特性劣化。若对本产品规格有任何不明之处，请与本公司联系。

Caution in Chip Thermistor usage

■ Operating Power

Thermistors shall not be operated in excess of the specified Maximum permissible electrical power" in the specifications. Unless the thermistors are operated under the specified Maximum permissible electrical power, it may cause burnout and damage due to thermal run away. Fully check safety and reliability in your circuit.

■ Operating Conditions

Do not use the thermistors under the following conditions because all these factors deteriorate the thermistor characteristics or cause failures and burnout.

- 1) Wet or humid locations
- 2) Corrosive or deoxidizing gas (Hydrogen sulfide, Sulfurous acid, Chloride and ammonia, etc.)
- 3) Volatile or flammable gas
- 4) Dusty conditions
- 5) Under high pressure or low pressure
- 6) locations with salt water, oils, chemical liquids or organic solvents
- 7) Strong vibrations or mechanical impact
- 8) Other places similar to the hazardous conditions mentioned above

Be sure to provide an appropriate fail-safe function on your product to prevent secondary damages that may be caused by the failure of our product.

■ Safety precaution

Our products shall be used for general purpose applications required for consumer type electronics equipment. Strongly recommend to consult us before use of our product, if you think about use of our products on the following special applications with high level of safety. Medical equipment, Aircraft equipment, Aerospace equipment, Atomic power equipment, etc.

■ Storage conditions

- 1) Storage temperature and humidity
Temperature : -10 to +40 degree C
Humidity : less than 70%RH(not dewing condition)
- 2) Storage term
Use our product within 12 months after delivery.
- 3) Handling after unpacking
After unpacking, reseal products or store them in a sealed package with a dry agent.
- 4) Storage place
Do not store our products in direct sunlight or in corrosive gas(sulfuric acid or chlorine gas, etc.)

■ Soldering and mounting notice

- 1) Use recommended dimensions of lands and the dimensions shall be symmetrical.
- 2) Use rosin-based flux. Do not use strong acid flux with halide content over 0.2wt%.
- 3) Do not use ultrasonic cleaning with too much output to avoid deteriorating the strength of the terminal electrodes or cracking in the solder and/or ceramic bodies of the products. The followings are recommended conditions for ultrasonic cleaning.
Frequency : less than 40 kHz
Output : less than 20 W/L
Cleaning time : less than 5 min
- 4) Too much soldering may cause mechanical stress resulting in cracking. The amount of solder shall be controlled according to the standard height of fillet shown below. As a guide, top edge of the solder fillet is about 1/2 to 2/3 of the chip thickness.

- 5) Choose a mounting position that minimizes the stress imposed on the chip during bending of the board.
- 6) Since dividing or breaking of the PC boards may cause mechanical stress in the thermistors on the PC boards, it shall be done carefully by using a jig to prevent the product from mechanical damage.

■ Other caution

Use this product within the specified temperature range. Feel free to contact us when you have any questions regarding our products.