

Wire-wound Ferrite Bead Inductors for Power Lines LSMC/LSMG/LAMG/LCMC/LCMG/LBMC/LBMG/LLMC/LLMG/LMMC/LMMG series

PRECAUTIONS

1. Circuit Design

Precautions

- ◆ Verification of operating environment, electrical rating and performance
 1. A malfunction in medical equipment, spacecraft, nuclear reactors, etc. may cause serious harm to human life or have severe social ramifications. As such, any inductors to be used in such equipment may require higher safety and/or reliability considerations and should be clearly differentiated from components used in general purpose applications.
 2. When inductors are used in places where dew condensation develops and/or where corrosive gas such as hydrogen sulfide, sulfurous acid, or chlorine exists in the air, characteristic deterioration may occur. Please do not use inductors under such environmental conditions.
- ◆ Operating Current (Verification of Rated current)
 1. The operating current including inrush current for inductors must always be lower than their rated values.
 2. Do not apply current in excess of the rated value because the inductance may be reduced due to the magnetic saturation effect.
- ◆ Temperature rise

Temperature rise of power choke coil depends on the installation condition in end products.
Make sure that temperature rise of power choke coils in actual end products is within the specified temperature range.

2. PCB Design

Precautions

- ◆ Land pattern design
 1. Please refer to a recommended land pattern.

3. Considerations for automatic placement

Precautions

- ◆ Adjustment of mounting machine
 1. Excessive impact load should not be imposed on the products when mounting onto the PC boards.
 2. Mounting and soldering conditions should be checked beforehand.

Technical considerations

- ◆ Adjustment of mounting machine
 1. When installing products, care should be taken not to apply distortion stress as it may deform the products.

4. Soldering

Precautions

- ◆ Wave soldering
 1. Please refer to the specifications in the catalog for a wave soldering.
- ◆ Reflow soldering
 1. Please contact any of our offices for a reflow soldering, and refer to the recommended condition specified.
- ◆ Lead free soldering
 1. When using products with lead free soldering, we request to use them after confirming adhesion, temperature of resistance to soldering heat, etc. sufficiently.
- ◆ Preheating when soldering

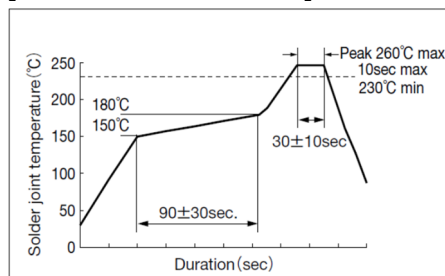
Heating : The temperature difference between soldering and remaining heat should not be greater than 150°C.
Cooling : The temperature difference between the components and cleaning process should not be greater than 100°C.
- ◆ Recommended conditions for using a soldering iron

Put the soldering iron on the land-pattern.
Soldering iron's temperature – Below 350°C
Duration – 3 seconds or less
The soldering iron should not directly touch the inductor.

Technical considerations

- ◆ Wave, Reflow, Lead free soldering
 1. If products are used beyond the range of the recommended conditions, heat stresses may deform the products, and consequently degrade the reliability of the products.

【Recommended reflow condition】



- ◆ Preheating when soldering
 1. There is a case that products get damaged by a heat shock.

	<ul style="list-style-type: none"> ◆ Recommended conditions for using a soldering iron <ol style="list-style-type: none"> 1. If products are used beyond the range of the recommended conditions, heat stresses may deform the products, and consequently degrade the reliability of the products.
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5. Handling

Precautions	<ul style="list-style-type: none"> ◆ Handling <ol style="list-style-type: none"> 1. Keep the inductors away from all magnets and magnetic objects. ◆ Setting PC boards <ol style="list-style-type: none"> 1. When setting a chip mounted base board, please make sure that there is no residual stress to the chip by distortion in the board or at screw part. ◆ Breakaway PC boards (splitting along perforations) <ol style="list-style-type: none"> 1. When splitting the PC board after mounting inductors, care should be taken not to give any stresses of deflection or twisting to the board. 2. Board separation should not be done manually, but by using the appropriate devices. ◆ Mechanical considerations <ol style="list-style-type: none"> 1. Please do not give the inductors any excessive mechanical shocks.
Technical considerations	<ul style="list-style-type: none"> ◆ Handling <ol style="list-style-type: none"> 1. There is a case that a characteristic varies with magnetic influence. ◆ Setting PC boards <ol style="list-style-type: none"> 1. There is a case that a characteristic varies with residual stress. ◆ Breakaway PC boards (splitting along perforations) <ol style="list-style-type: none"> 1. Planning pattern configurations and the position of products should be carefully performed to minimize stress. ◆ Mechanical considerations <ol style="list-style-type: none"> 1. There is a case to be damaged by a mechanical shock.

6. Storage conditions

Precautions	<ul style="list-style-type: none"> ◆ Storage <ol style="list-style-type: none"> 1. To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled. <ul style="list-style-type: none"> • Storage conditions <ul style="list-style-type: none"> Ambient temperature -5~40°C Humidity Below 70% RH <p>The recommended ambient temperature is below 30°C. Even under ideal storage conditions, solderability of products electrodes may decrease as time passes. For this reason, inductors should be used within 6 months from the time of delivery.</p>
Technical considerations	<ul style="list-style-type: none"> ◆ Storage <ol style="list-style-type: none"> 1. Under a high temperature and humidity environment, problems such as reduced solderability caused by oxidation of terminal electrodes and deterioration of taping/packaging materials may take place.

▶ This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our specification. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our Web site (<http://www.ty-top.com/>).