

## Common mode filters/Chokes

Automotive signal line (for power train/safety)

ACT series



AEC-Q200

## ACT45C type



## FEATURES

- Common mode choke for CAN-BUS, compatible with an operating temperature range of -40 to +125°C.
- Operating temperature range: -40 to +125 °C
- Compliant with AEC-Q200

## APPLICATION

- CAN-BUS

## PART NUMBER CONSTRUCTION

|                    |   |                                |   |                 |   |                 |               |
|--------------------|---|--------------------------------|---|-----------------|---|-----------------|---------------|
| <b>ACT45C</b>      | - | <b>110</b>                     | - | <b>2P</b>       | - | <b>TL</b>       | <b>000</b>    |
| Series - type name |   | Inductance(typ.)<br>( $\mu$ H) |   | Number of lines |   | Packaging style | Internal code |

## CHARACTERISTICS SPECIFICATION TABLE

| Common mode impedance<br>[10MHz] | Common mode inductance<br>[100kHz] | Stray inductance<br>[100kHz] | DC resistance    | Rated current | Insulation resistance | Rated voltage | Part No.                            |
|----------------------------------|------------------------------------|------------------------------|------------------|---------------|-----------------------|---------------|-------------------------------------|
| ( $\Omega$ )min.                 | ( $\Omega$ )typ.                   | ( $\mu$ H)typ.               | ( $\Omega$ )max. | (A)max.       | (M $\Omega$ )min.     | (V)max.       |                                     |
| 300                              | 600                                | 11                           | 0.05             | 0.25          | 10                    | 50            | <a href="#">ACT45C-110-2P-TL000</a> |
| 500                              | 1200                               | 22                           | 0.08             | 0.20          | 10                    | 50            | <a href="#">ACT45C-220-2P-TL000</a> |
| 1000                             | 2800                               | 51                           | 0.15             | 0.20          | 10                    | 50            | <a href="#">ACT45C-510-2P-TL000</a> |
| 2000                             | 5800                               | 100                          | 0.20             | 0.15          | 10                    | 50            | <a href="#">ACT45C-101-2P-TL000</a> |

 Measurement equipment

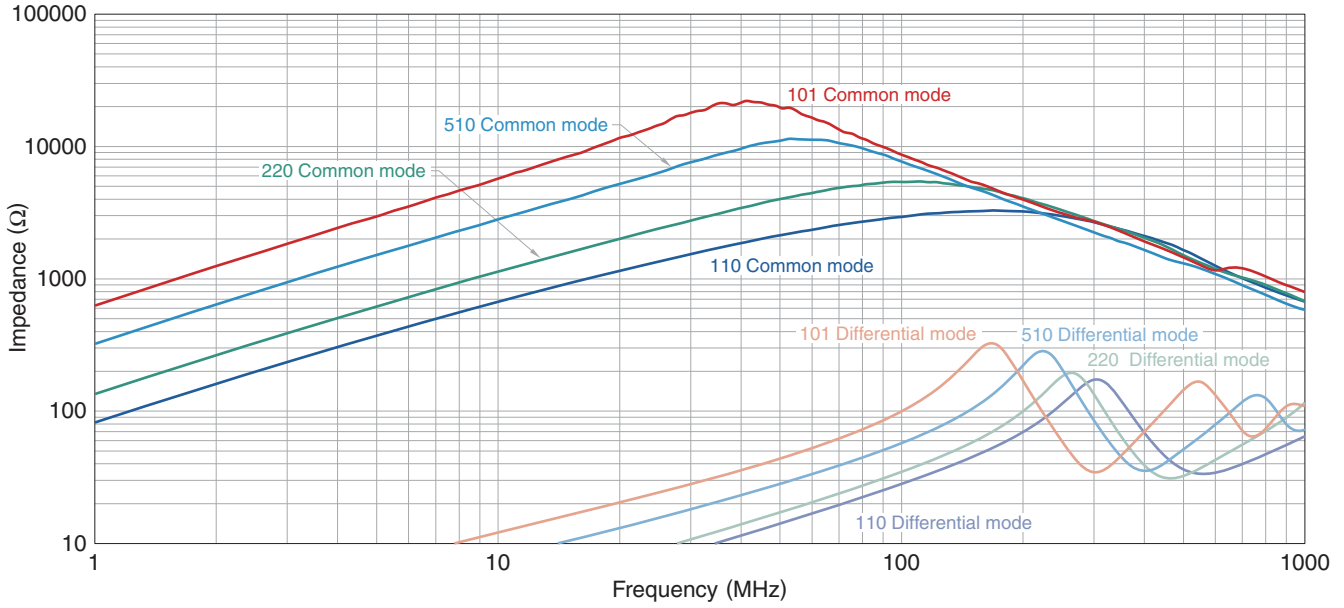
| Measurement item       | Product No. | Manufacturer          |
|------------------------|-------------|-----------------------|
| Common mode impedance  | 4991A       | Keysight Technologies |
| Common mode inductance | 4294A       | Keysight Technologies |
| DC resistance          | 4338A       | Keysight Technologies |
| Insulation resistance  | 4339A       | Keysight Technologies |

\* Equivalent measurement equipment may be used.



# ACT45C type

## IMPEDANCE VS. FREQUENCY CHARACTERISTICS



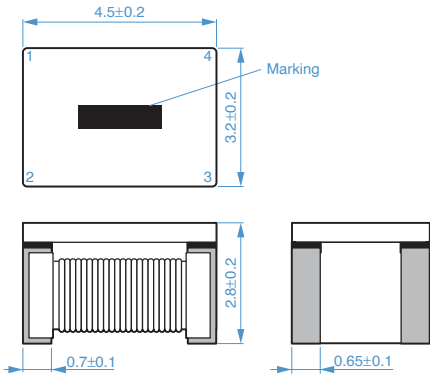
□ 測定器

| Product No. | Manufacturer          |
|-------------|-----------------------|
| 4991A       | Keysight Technologies |

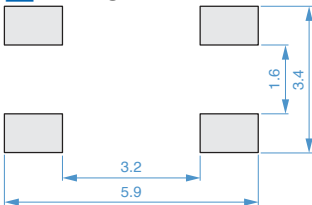
\* Equivalent measurement equipment may be used.

# ACT45C type

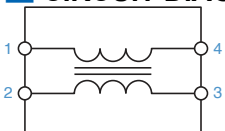
## SHAPE & DIMENSIONS



## RECOMMENDED LAND PATTERN

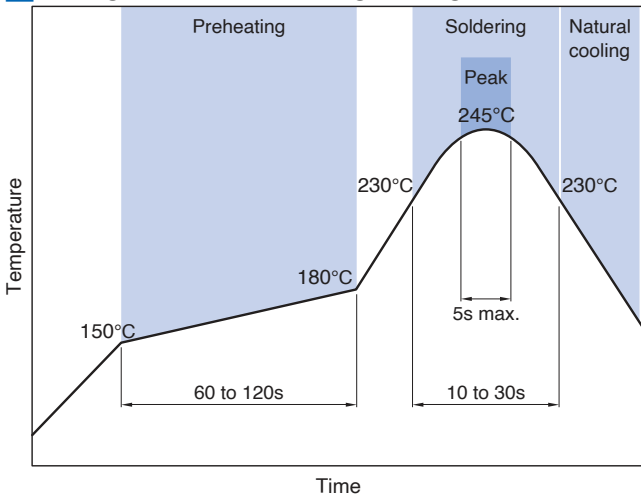


## CIRCUIT DIAGRAM



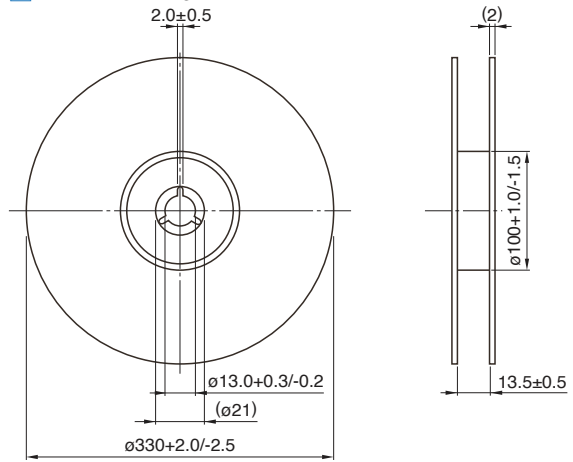
• No polarity

## RECOMMENDED REFLOW PROFILE



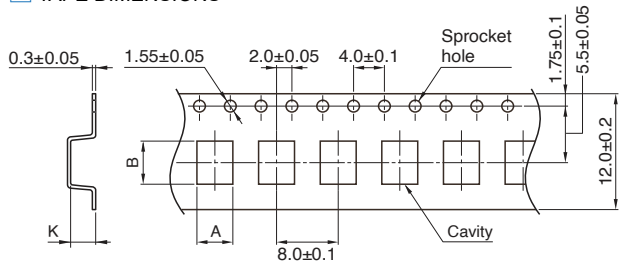
## PACKAGING STYLE

### REEL DIMENSIONS



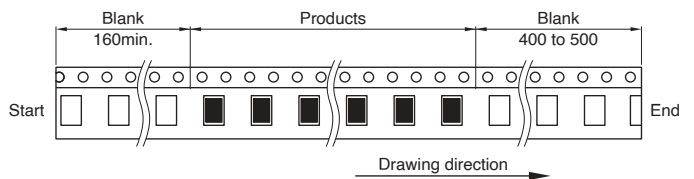
Dimensions in mm

### TAPE DIMENSIONS



Dimensions in mm

| Type   | A     | B     | K      |
|--------|-------|-------|--------|
| ACT45C | (3.6) | (4.9) | (3.05) |



### PACKAGE QUANTITY

|                  |                |
|------------------|----------------|
| Package quantity | 2,500 pcs/reel |
|------------------|----------------|

## TEMPERATURE RANGE, INDIVIDUAL WEIGHT

| Operating temperature range * | Storage temperature range ** | Individual weight |
|-------------------------------|------------------------------|-------------------|
| -40 to +125 °C                | -40 to +125 °C               | 0.14 g            |

\* Operating temperature range includes self-temperature rise.

\*\* The storage temperature range is for after the assembly.

# REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

## SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using this products

### REMINDERS

- The storage period is within 12 months. Be sure to follow the storage conditions (temperature: 5 to 40°C, humidity: 10 to 75% RH or less).  
If the storage period elapses, the soldering of the terminal electrodes may deteriorate.
- Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
- Soldering corrections after mounting should be within the range of the conditions determined in the specifications.  
If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.
- When embedding a printed circuit board where a chip is mounted to a set, be sure that residual stress is not given to the chip due to the overall distortion of the printed circuit board and partial distortion such as at screw tightening portions.
- Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
- Carefully lay out the coil for the circuit board design of the non-magnetic shield type.  
A malfunction may occur due to magnetic interference.
- Use a wrist band to discharge static electricity in your body through the grounding wire.
- Do not expose the products to magnets or magnetic fields.
- Do not use products that have received any excessive mechanical shock such as by being dropped.
- The performance of the product may deteriorate or at the worst case open if coating materials are used, thus please assess the situation beforehand by taking this factor into consideration.
- Due to the application of mechanical stress after mounting and handling such as contact, disconnection may occur.
- Do not use for a purpose outside of the contents regulated in the delivery specifications.
- The products listed on this specification sheet (the "Products") are intended for incorporation into automobile and/or equipment to be installed in automobile on the grounds that (i) the Products are used in accordance with the conditions and scope stated in this specification sheet and (ii) said automobile and/or equipment involving the Products are used under a normal operation and use condition.

Except for said incorporation into automobile and/or equipment installed in automobile, the Products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property. Please understand that we are not responsible for any damage or liability caused by use of the Products in any of the applications listed below or for any other use exceeding the range or conditions set forth in this specification sheet. If you intend to use the Products beyond the condition and scope of this specification sheet or in any of the applications listed below, please contact with our sales office. We will separately discuss with you applicable specification suitable for your intended use:

- |   |  |
|---|--|
| (1) Aerospace/aviation equipment                            | (7) Transportation control equipment   |
| (2) Transportation equipment (electric trains, ships, etc.) | (8) Public information-processing equipment                                  |
| (3) Medical equipment                                       | (9) Military equipment   |
| (4) Power-generation control equipment                      | (10) Electric heating apparatus, burning equipment                           |
| (5) Atomic energy-related equipment                         | (11) Disaster prevention/crime prevention equipment                          |
| (6) Seabed equipment  | (12) Safety equipment  |
|   | (13) Other applications that are not considered general-purpose applications |

When designing your equipment involving the Products, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc. in your equipment, to ensure higher safety.

As stated above, the Products are intended for incorporation into automobile and/or equipment to be installed in automobile, however, it is not prohibited to use the Products for general electronic equipment which is not required the same high level or reliability as automobile, or which is unlikely to damage its users' life, body and property or to cause extensive impact on society. Accordingly, all description in this specification sheet is applied if the Products are incorporated into general electronic equipment which is used for normal application under a normal operation and use condition.