

Common mode filters

For ultra high-speed differential signal line

ALC-H series



ALC2012H type



FEATURES

- Downsized wound type chip common mode filter that maintains required common mode filter characteristics.
- Differential mode impedance is suppressed, so there is virtually no affect on high speed signals.
- Operating temperature range: -40 to +85°C

APPLICATION

- ETHERNET lines.

PART NUMBER CONSTRUCTION

| | | | | | | | | | |
|-------------|------------------------------|--------------------------|---|---------------------------|---|--------------------|---|--------------------|---|
| ALC | 2012 | H | - | 900 | - | 2P | - | T | 10G |
| Series name | LxW dimensions 2.0×1.2 mm | Product internal code | | Impedance (Ω)at 100MHz | | Number of lines | | Packaging style | 10G: For 10GETHERNET 05G: For 5GETHERNET |

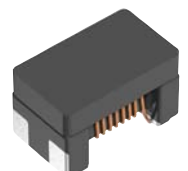
CHARACTERISTICS SPECIFICATION TABLE

| Common mode Impedance [at 100MHz] (Ω)min. (Ω)typ. | | DC resistance [1 line] (Ω)max. | Insulation resistance (MΩ)min. | Cutoff frequency (GHz)typ. | Characteristic impedance (Ω)typ. | Rated current (mA)max. | Rated voltage (V)max. | Part No. |
|---|-----|--------------------------------------|-----------------------------------|-------------------------------|-------------------------------------|---------------------------|--------------------------|--------------------------------------|
| 65 | 90 | 0.30 | 10 | 5 | 100 | 300 | 20 | ALC2012H-900-2P-T10G |
| 280 | 380 | 0.50 | 10 | — | — | 300 | 20 | ALC2012H-381-2P-T05G |

Measurement equipment

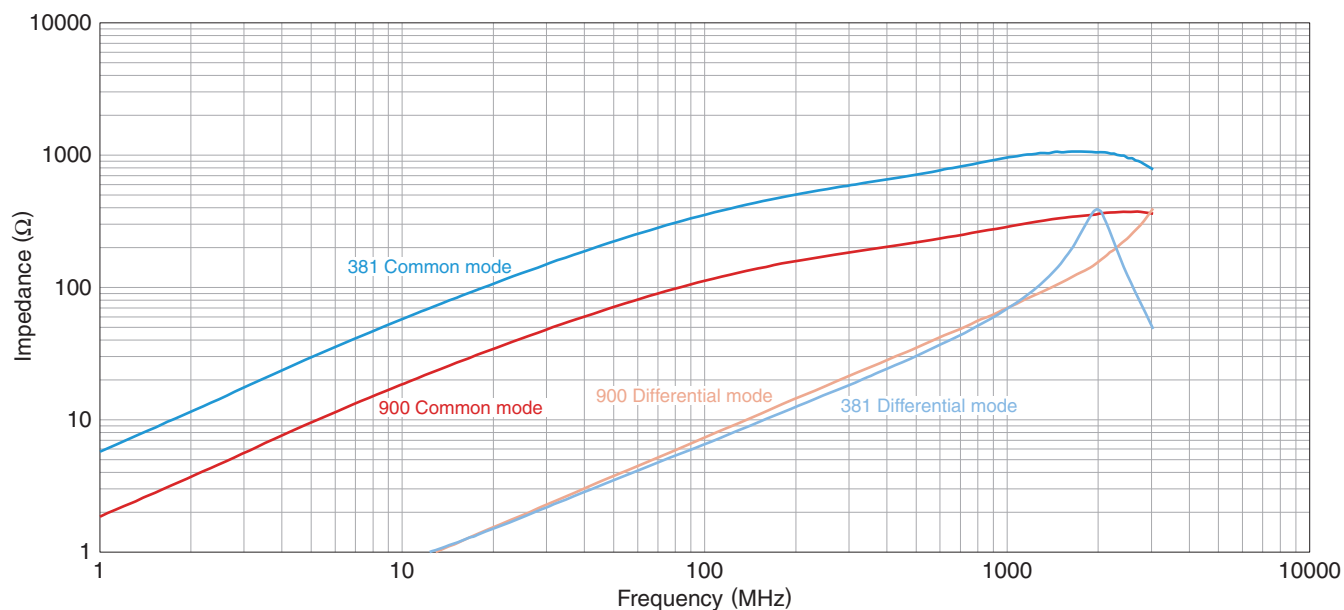
| Measurement item | Product No. | Manufacturer |
|-----------------------|-------------|-----------------------|
| Common mode impedance | 4991A | Keysight Technologies |
| DC resistance | 4338A | Keysight Technologies |
| Insulation resistance | 4339A | Keysight Technologies |

* Equivalent measurement equipment may be used.



ALC2012H type

■ IMPEDANCE VS. FREQUENCY CHARACTERISTICS



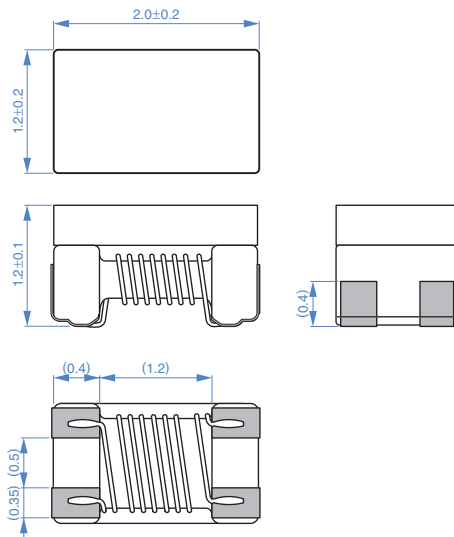
Measurement equipment

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

* Equivalent measurement equipment may be used.

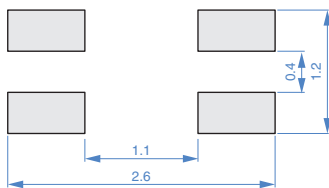
ALC2012H type

SHAPE & DIMENSIONS



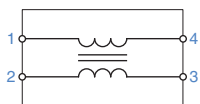
Dimensions in mm

RECOMMENDED LAND PATTERN



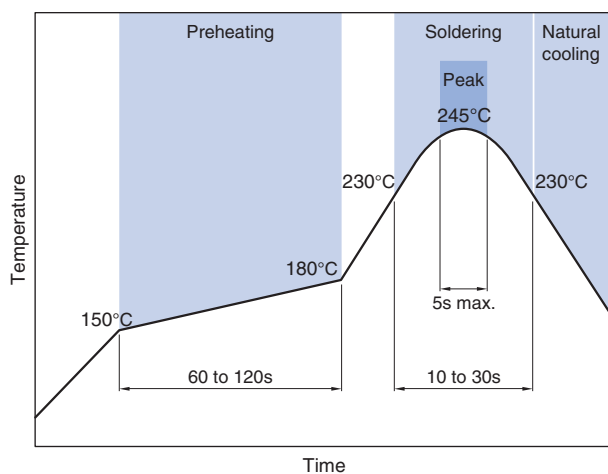
Dimensions in mm

CIRCUIT DIAGRAM



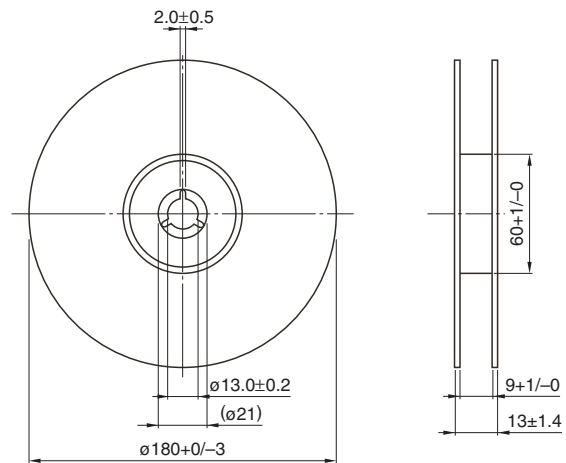
• No polarity

RECOMMENDED REFLOW PROFILE



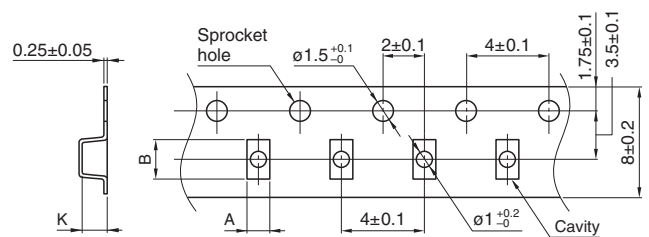
PACKAGING STYLE

REEL DIMENSIONS



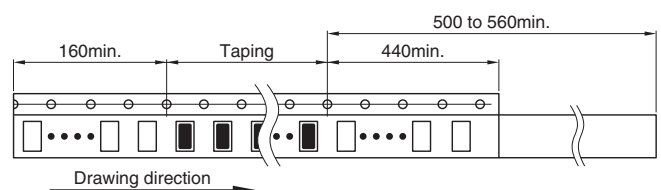
Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm

| Type | A | B | K |
|----------|-------|--------|-------|
| ALC2012H | (1.4) | (2.25) | (1.4) |



Dimensions in mm

PACKAGE QUANTITY

| Package quantity | 2000 pcs/reel |
|------------------|---------------|
|------------------|---------------|

TEMPERATURE RANGE, INDIVIDUAL WEIGHT

| Operating temperature range | Storage temperature range* | Individual weight |
|-----------------------------|----------------------------|-------------------|
| -40 to +85 °C | -40 to +85 °C | 10 mg |

* 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 6 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 for a purpose outside of the contents regulated in the delivery specifications.
- The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.
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.
If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

- (1) Aerospace/aviation equipment
- (2) Transportation equipment (cars, electric trains, ships, etc.)
- (3) Medical equipment
- (4) Power-generation control equipment
- (5) Atomic energy-related equipment
- (6) Seabed equipment
- (7) Transportation control equipment

- (8) Public information-processing equipment
- (9) Military equipment
- (10) Electric heating apparatus, burning equipment
- (11) Disaster prevention/crime prevention equipment
- (12) Safety equipment
- (13) Other applications that are not considered general-purpose applications

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.