Common mode filters
For high-speed differential signal line, general differential signal line
ACM series

ACM2012 type

**FEATURES**
- Downsized wound type chip common mode filter that maintains required common mode filter characteristics.
- Impedance for common mode noise can clear 1500Ω [100MHz], and has excellent EMC suppression.
- Differential mode impedance is suppressed, so there is virtually no affect on high speed signals.
- Operating temperature range: -40 to +85°C

**APPLICATION**
- Common mode noise countermeasure for high-speed differential signals where influence to the signal is a concern.
- USB line for PCs and peripheral devices.
- IEEE1394 lines and ETHERNET lines for PCs, STBs, etc.
- LCD panel LVDS and Panel Link lines.

**PART NUMBER CONSTRUCTION**

<table>
<thead>
<tr>
<th>Series name</th>
<th>LxWxH dimensions</th>
<th>Impedance (Ω) at 100MHz</th>
<th>Number of lines</th>
<th>Packaging style</th>
<th>Internal code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACM 2012 - 900 - 2P - T 002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CHARACTERISTICS SPECIFICATION TABLE**

<table>
<thead>
<tr>
<th>Impedance [100MHz]</th>
<th>DC resistance [per 1 line]</th>
<th>Rated voltage (V)max.</th>
<th>Rated current (A)max.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>65  90</td>
<td>0.19</td>
<td>50</td>
<td>0.4</td>
<td>ACM2012-900-2P-T002</td>
</tr>
<tr>
<td>90  120</td>
<td>0.22</td>
<td>50</td>
<td>0.37</td>
<td>ACM2012-920-2P-T002</td>
</tr>
<tr>
<td>150  200</td>
<td>0.25</td>
<td>50</td>
<td>0.35</td>
<td>ACM2012-201-2P-T002</td>
</tr>
<tr>
<td>270  360</td>
<td>0.5</td>
<td>50</td>
<td>0.22</td>
<td>ACM2012-361-2P-T002</td>
</tr>
<tr>
<td>1500 2000</td>
<td>2.5</td>
<td>50</td>
<td>0.15</td>
<td>ACM2012-202-2P-T002</td>
</tr>
</tbody>
</table>

Measurement equipment:

<table>
<thead>
<tr>
<th>Measurement item</th>
<th>Product No.</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common mode impedance</td>
<td>4991A</td>
<td>Keysight Technologies</td>
</tr>
<tr>
<td>DC resistance</td>
<td>4338A</td>
<td>Keysight Technologies</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>4339A</td>
<td>Keysight Technologies</td>
</tr>
</tbody>
</table>

* Equivalent measurement equipment may be used.

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.

Please note that the contents may change without any prior notice due to reasons such as upgrading.

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ACM2012 type

**IMPEDEANCE VS. FREQUENCY CHARACTERISTICS**

![Graph of impedance vs. frequency for ACM2012 type components.]

<table>
<thead>
<tr>
<th>Measurement equipment</th>
<th>Product No.</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4991A</td>
<td>Keysight Technologies</td>
</tr>
</tbody>
</table>

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**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

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACM2012</td>
<td>1.4±0.1</td>
<td>2.25±0.1</td>
<td>1.4±0.1</td>
</tr>
</tbody>
</table>

**PACKAGE QUANTITY**

Package quantity 2000 pcs/reel

**TEMPERATURE RANGE, INDIVIDUAL WEIGHT**

<table>
<thead>
<tr>
<th>Operating temperature range</th>
<th>Storage temperature range*</th>
<th>Individual weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>−40 to +85 °C</td>
<td>−40 to +85 °C</td>
<td>10 mg</td>
</tr>
</tbody>
</table>

* 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 less than 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.).
- Before soldering, be sure to preheat components.
  The preheating temperature should be set so that the temperature difference between the solder temperature and chip temperature does not exceed 150°C.
- 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.

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