Chip Beads(SMD)
For Signal Line

HF70ACB, HF50ACB, HF30ACB Series

FEATURES
• This extensive series completely covers impedance values ranging from 7 to 125Ω[100MHz] and can be applied to a wide range of circuits.
• The 2012, 3216, 3225 and 4532 types all use HF70, 50 and 30 materials. The most suitable component can be selected for the circuit pattern and the suppression band.
• These components are applicable for both flow and reflow solderings, and have outstanding physical characteristics such as excellent terminal strength, body strength, resistance to soldering heat, solderability and mounting reliability.
• Available reflow soldering.
• It is a product conforming to RoHS directive.

PRODUCT IDENTIFICATION

<table>
<thead>
<tr>
<th>HF70</th>
<th>ACB</th>
<th>201209</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
</tbody>
</table>

(1) Material name
(2) Series name
(3) Dimension code
(4) Packaging style
T: ø180mm reel taping
TL: ø330mm reel taping

TEMPERATURE RANGES
Operating –40 to +125°C
Storage –40 to +125°C

PACKAGING STYLE AND QUANTITIES

<table>
<thead>
<tr>
<th>Packaging style</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taping</td>
<td>201209</td>
<td>2000 pieces/reel</td>
</tr>
<tr>
<td></td>
<td>321611</td>
<td>2000 pieces/reel</td>
</tr>
<tr>
<td></td>
<td>322513</td>
<td>2000 pieces/reel</td>
</tr>
<tr>
<td></td>
<td>453215</td>
<td>1000 pieces/reel</td>
</tr>
</tbody>
</table>

HANDLING AND PRECAUTIONS
• Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
• After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
• Do not expose the inductors to stray magnetic fields.
• Avoid static electricity discharge during handling.
• When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM

<table>
<thead>
<tr>
<th>Type</th>
<th>L</th>
<th>W</th>
<th>T</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>201209</td>
<td>2.0±0.2</td>
<td>1.25±0.2</td>
<td>0.9±0.2</td>
<td>0.3±0.2</td>
</tr>
<tr>
<td>321611</td>
<td>3.2±0.2</td>
<td>1.6±0.2</td>
<td>1.1±0.2</td>
<td>0.3±0.2</td>
</tr>
<tr>
<td>322513</td>
<td>3.2±0.2</td>
<td>2.5±0.2</td>
<td>1.3±0.2</td>
<td>0.3±0.2</td>
</tr>
<tr>
<td>453215</td>
<td>4.5±0.25</td>
<td>3.2±0.25</td>
<td>1.5±0.25</td>
<td>0.3±0.2</td>
</tr>
</tbody>
</table>

RECOMMENDED PC BOARD PATTERN

<table>
<thead>
<tr>
<th>Type</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>201209</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>321611</td>
<td>1.1</td>
<td>2.2</td>
<td>1.4</td>
</tr>
<tr>
<td>322513</td>
<td>1.1</td>
<td>2.2</td>
<td>2.3</td>
</tr>
<tr>
<td>453215</td>
<td>1.5</td>
<td>3.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

Please contact our Sales office when your application are considered the following:
The device’s failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

• All specifications are subject to change without notice.
**ELECTRICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Impedance ($\Omega$)</th>
<th>DC resistance ($\mu$) max.</th>
<th>Rated current (mA) max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>201209</td>
<td>HF70ACB201209</td>
<td>10±25%</td>
<td>0.1</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>HF50ACB201209</td>
<td>11±25%</td>
<td>0.1</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>HF30ACB201209</td>
<td>7±25%</td>
<td>0.1</td>
<td>600</td>
</tr>
<tr>
<td>321611</td>
<td>HF70ACB321611</td>
<td>26±25%</td>
<td>0.2</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>HF50ACB321611</td>
<td>31±25%</td>
<td>0.2</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>HF30ACB321611</td>
<td>19±25%</td>
<td>0.2</td>
<td>500</td>
</tr>
<tr>
<td>322513</td>
<td>HF70ACB322513</td>
<td>52±25%</td>
<td>0.3</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>HF50ACB322513</td>
<td>60±25%</td>
<td>0.3</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>HF30ACB322513</td>
<td>31±25%</td>
<td>0.3</td>
<td>400</td>
</tr>
<tr>
<td>453215</td>
<td>HF70ACB453215</td>
<td>120±25%</td>
<td>0.4</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>HF50ACB453215</td>
<td>125±25%</td>
<td>0.4</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>HF30ACB453215</td>
<td>70±25%</td>
<td>0.4</td>
<td>300</td>
</tr>
</tbody>
</table>

**RECOMMENDED SOLDERING CONDITION**

**REFLOW SOLDERING**

- 250 to 260°C
- 230°C
- 180°C
- 150°C

**Time(s)**

- 10s max.
- Natural cooling
- Preheating
- 60 to 120s
- Soldering
- 30 to 60s

**TYPICAL ELECTRICAL CHARACTERISTICS**

**Z, X, R vs. FREQUENCY CHARACTERISTICS**

- **HF70ACB201209**
- **HF50ACB201209**
- **HF30ACB201209**
- **HF70ACB321611**
- **HF50ACB321611**
- **HF30ACB321611**
- **HF70ACB322513**
- **HF50ACB322513**
- **HF30ACB322513**
- **HF70ACB453215**
- **HF50ACB453215**
- **HF30ACB453215**

**Test Equipment:** RF Impedance Analyzer YHP4191A

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TYPICAL ELECTRICAL CHARACTERISTICS
Z, X, R vs. FREQUENCY CHARACTERISTICS

HF70ACB453215

HF50ACB453215

HF30ACB453215

TEST EQUIPMENT: RF IMPEDANCE ANALYZER YHP4191A

PACKAGING STYLES
201209 TO 322513 TYPES

REEL DIMENSIONS

TAPE DIMENSIONS

Dimensions in mm

Type A B C D T
201209 1.4±0.1 2.25±0.1 4.0±0.1 2.0±0.05 1.25max.
321611 1.75±0.1 3.45±0.1 4.0±0.1 2.0±0.05 1.4max.
322513 2.6±0.1 3.45±0.1 4.0±0.1 2.0±0.05 1.6max.

Dimensions in mm

Type A B C D T
453215 3.37±0.1 4.75±0.1 8.0±0.1 2.0±0.05 1.8max.

Dimensions in mm

003-01 / 20071025 / e9415_hf_acb