Copper Wire for High Pin Count and Fine Pitch Applications

**MaxSoft**

**Benefits**
- Excellent 1st and 2nd bond performance
- Reduced pad metal splash
- Wider 2nd bond process window

**Features**
- Soft wire and FAB allow bonding on sensitive pad structures
- Excellent conductivity with less heat generation
- Available in diameters ranging from 0.6 – 1.3 mil

**Recommended Technical Data of MaxSoft**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Microns</th>
<th>Mils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>0.8</td>
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<td></td>
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<td>0.9</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>33</td>
<td>1.3</td>
</tr>
</tbody>
</table>

**Recommended Specs for Ball Bonding**

<table>
<thead>
<tr>
<th>Elongation (%)</th>
<th>7 – 15</th>
<th>7 – 15</th>
<th>7 – 15</th>
<th>8 – 16</th>
<th>8 – 16</th>
<th>8 – 16</th>
<th>8 – 16</th>
<th>8 – 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaking Load (g)</td>
<td>3 – 6</td>
<td>3 – 8</td>
<td>4 – 10</td>
<td>5 – 11</td>
<td>6 – 12</td>
<td>8 – 15</td>
<td>10 – 18</td>
<td>14 – 21</td>
</tr>
</tbody>
</table>

For other diameters, please contact Heraeus Bonding Wires sales representative.
Characteristics for 1 mil diameter

Physical Properties

- Density: 8.92 g/cm³
- Melting Point: 1083 °C
- Thermal Conductivity: 401 W/m.K
- Specific Heat Capacity @ 25 °C: 385 J/kg.K
- Coeff. of Thermal Expansion: 16.5 µm/m °C (20 – 100 °C)
- Electrical Resistivity: 1.69 µΩ.cm
- Elastic Modulus: 80 GPa

Chemical Composition

- Copper: 99.99% (min)

Other Guidelines

- Floor Life: 7 days
- Shelf Life Time: 6 month
- Recommended Shielding Gas: Forming Gas (95%N₂, 5%H₂)
- Bonding Temperature (Leadframe): 200 – 240 °C
- Bonding Temperature (Laminate): 165 – 175 °C

Reduced Pad Metal Splash

Bond pad: Al-1% Si-0.5Cu 10,000 – other conditions refer to front page

Resistance vs Wire Diameter

Electrical Resistance after Aging (at 175°C)

Copper Wire Products