Au HD5
Gold Bonding Wire for High Electrical Performance and Low Loop

These highly doped wires of different chemical compositions are very suitable for low and long loop applications. Both wire types are comparable in their characteristics and offer outstanding material and processing properties as well as good high temperature strength.

They represent an excellent bridge between doped and alloyed wires.

Areas of application
- Flat integrated circuits (BGA, MQFP, CQP, TSOP, TQFP, VSSOP, IC-cards,...)
- COB, foil frames

Au HD5 Benefits
- Low and long loop wire type
- Suitable for all high performance bonding machines
- Mid strength type
- Exact loop guiding
- Well proven loop stiffness and thermal stability
- Good high temperature strength

Recommended Technical Data of Au HD5

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Microns (µm)</th>
<th>17.5</th>
<th>20</th>
<th>23</th>
<th>25</th>
<th>30</th>
<th>33</th>
<th>38</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elongation</td>
<td>%</td>
<td>2 – 5</td>
<td>2 – 5</td>
<td>2 – 8</td>
<td>2 – 8</td>
<td>2 – 8</td>
<td>3 – 8</td>
<td>3 – 10</td>
<td>3 – 10</td>
</tr>
<tr>
<td>Breaking Load</td>
<td>cN</td>
<td>&gt; 5</td>
<td>&gt; 6</td>
<td>&gt; 7</td>
<td>&gt; 9</td>
<td>&gt; 14</td>
<td>&gt; 16</td>
<td>&gt; 20</td>
<td>&gt; 35</td>
</tr>
</tbody>
</table>

For other diameters, please contact Heraeus Bonding Wires sales representative.
**HD5 Characteristics for 25 µm diameter**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Gold Elements</td>
<td>&lt; 100 ppm</td>
</tr>
<tr>
<td>Elastic Modulus</td>
<td>&gt; 80 GPa</td>
</tr>
<tr>
<td>Heat Affected Zone (HAZ)</td>
<td>75 – 115 µm</td>
</tr>
<tr>
<td>Melting Point</td>
<td>1063 °C</td>
</tr>
<tr>
<td>Density</td>
<td>19.32 g / cm³</td>
</tr>
<tr>
<td>Heat Conductivity</td>
<td>3.12 W / cm-K</td>
</tr>
<tr>
<td>Electrical Resistivity</td>
<td>2.3 μΩ-cm</td>
</tr>
<tr>
<td>Coeff. of Linear Expansion</td>
<td>14.2 ppm / °C</td>
</tr>
<tr>
<td>Fusing Current</td>
<td>0.363 A</td>
</tr>
</tbody>
</table>

**Heat Affected Zone (HAZ)**

- Length of HAZ (µm)
- 80
- 70
- 60
- 50
- 40
- 30
- 20
- 10
- 0

**Breaking Load vs. Elongation**

- Tensile strength (N / mm²)
- 600
- 500
- 400
- 300
- 200
- 100
- 0

- Elongation
- 2%
- 4%
- 8%

**Neck Strength**

- Neck breaking force in cN
- 15
- 12
- 9
- 6
- 3

**Gold Wire Segmentation by Properties**

- Superior Reliability
- Electrical Performance
- Widest Bonding Window
- Highest Looping Performance

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