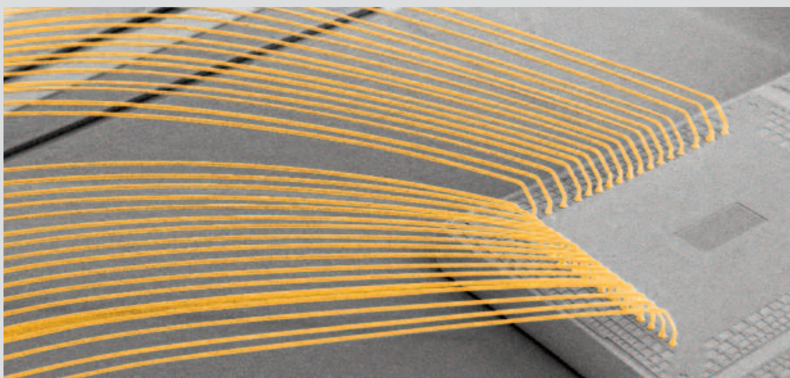
Heraeus

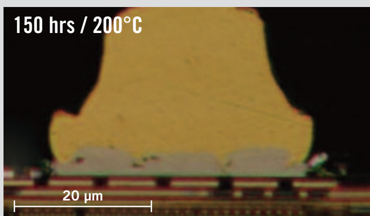
Rel-k

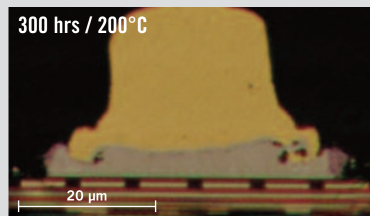
2N5 Gold Wire for High Reliability and Sensitive Pad Structures

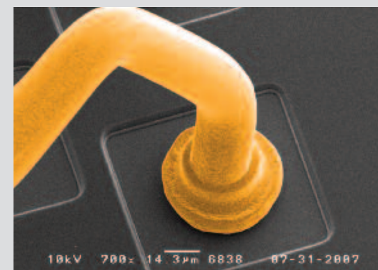


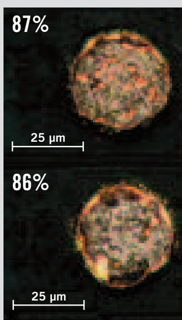
Rel-k Benefits

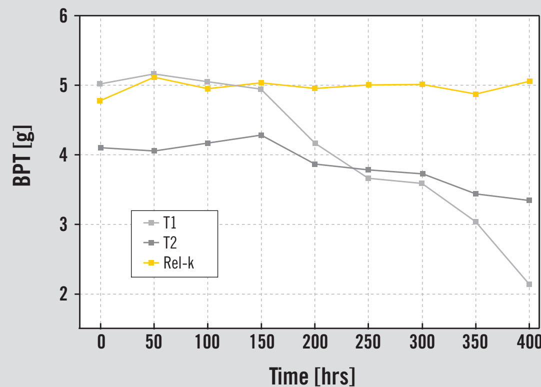
- High reliability of 1st ball bonds and stable 2nd bondability
- Superior coverage of 1st ball bonds
- Good loop shape
- Lower FAB hardness than conventional 2N wire
- Excellent performance for preventing of pad damages

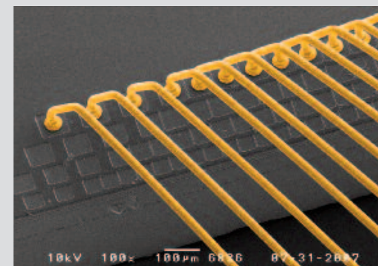












Recommended Technical Data of Rel-k

Diameter										
Microns (µm)	15	17	20	23	25	28	30	33	38	50
Mils	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	2.0
Elongation (%)	2 – 7	2 – 7	2 – 8	2 – 8	2 – 8	3 – 8	3 – 8	3 – 8	3 – 12	3 – 12
Breaking Load (g)	> 3	> 4	> 5	> 8	> 9	> 11	> 13	> 15	> 20	> 35

For other diameters, please contact your local representative.

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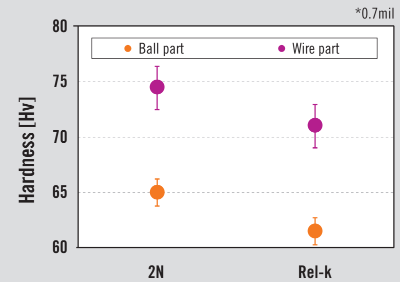
Characteristics (for 17 µm diameter wire)

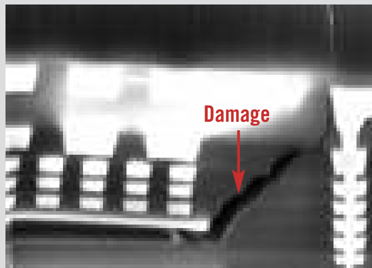
Non-Gold Elements	< 0.5%
Breaking Load @ Room Temperature	> 6 g at 4% EL
Breaking Load @ 250°C / sec.	> 4 g
Elastic Modulus	> 85 GPa
Heat Affected Zone (HAZ)	~ 90 µm (for 30 µm ball diameter)
Neck Strength	~ 4 g (at 30 µm ball diameter)
Melting Point	1063°C
Density	19.32 g/cm^3
Heat Conductivity	3.17 W/cm·K
Electrical Resistivity	2.4 µOhm-cm
Coeff. of Linear Expansion (0 – 100°C)	14.2 ppm / K
Fusing Current for 17 µm, dia 10 mm length (in air)	0.26 A

Hardness (Hv)

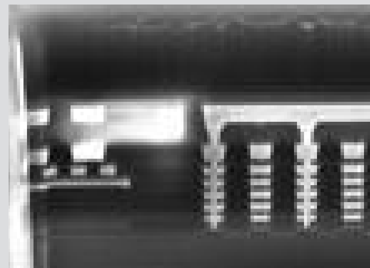


Bonding Condition:
It is measured at the center of ball and wire parts after mounting with resin. Tester: Mitutoyo MVK-H300A2 · Test load: 1.0 gf · Holding time: 15 sec. · Number of measured sample: Ball part: 15 · Wire part: 15

Compare of Pad Damage



Conventional 2N



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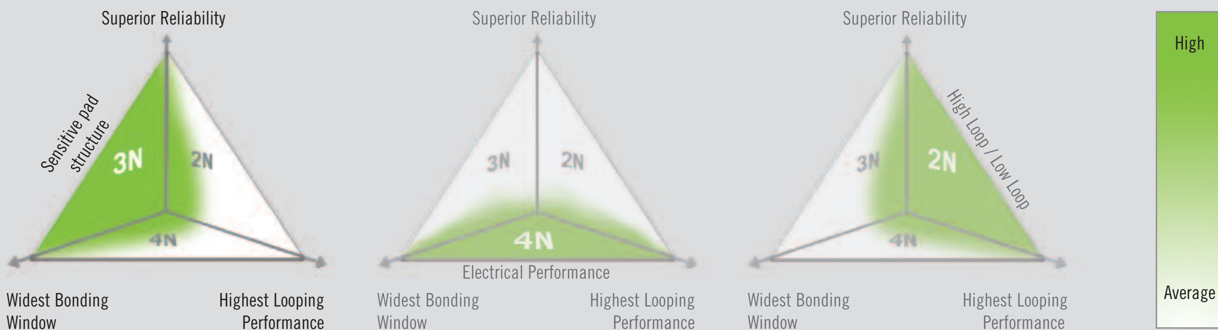
Lower Part Images of Pad after High Power Bonding

Gold Wire Segmentation by Properties



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The data given here is correct as of April 2009. We reserve the right to make technical alterations as necessary.