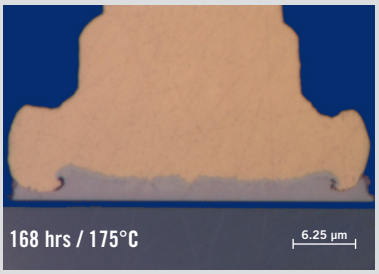
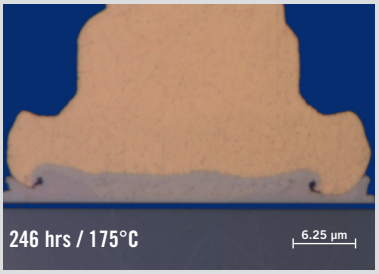
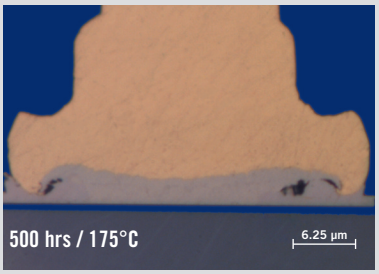
Heraeus

RADIX

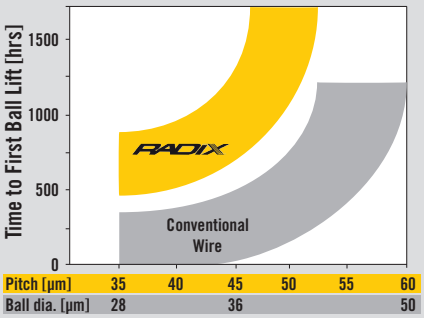
3N Gold Wire for Excellent Ball Bond Reliability







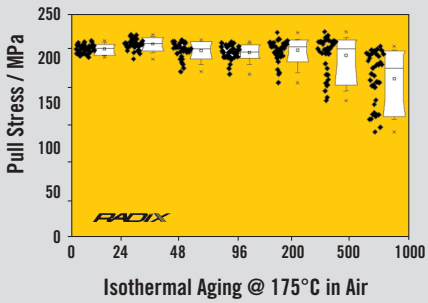
First Bond Reliability

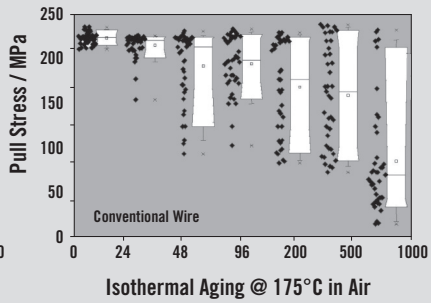


Ultimate Intermetallic Stability for Enhanced Reliability

- Optimised composition for ultimate intermetallic stability
- Superior reliability on a wide range of aluminum bond pad composition and thickness
- Applicable in a wide range of diameters including use in high-power applications
- Low hardness FAB (free-air-ball) allows bonding on sensitive bond structures
- Uncompromised low electrical resistivity

Reliability Comparison





Bonding Condition: Metallization: 0.5% Cu, 99.5% Al · Bond pad pitch: 35 µm · Bonded ball diameter: 28 µm Wire diameter: 15 µm
Bonding temperature: 170°C · Capillary: K&S M14CJ-2010-Z33-KSS Atlas

Recommended Technical Data of RADIX

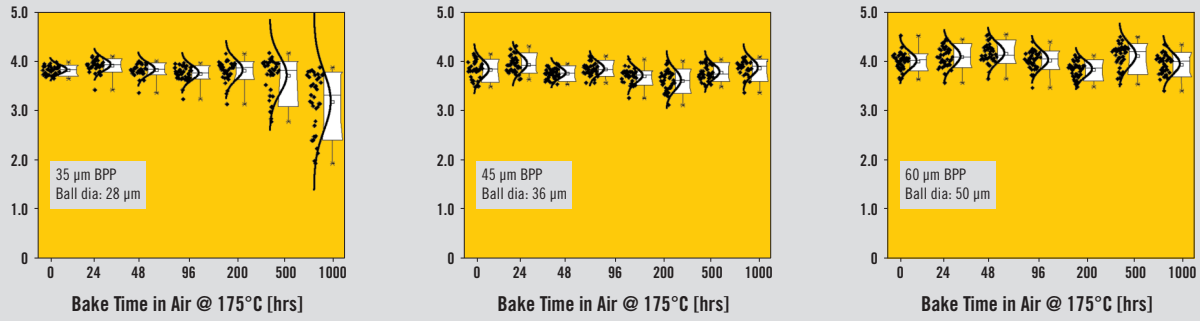
Diameter	Microns	15	18	20	23	25	28	30	32	33	35	38	50
	Mils	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.25	1.3	1.4	1.5	2.0
Recommended Specs for Ball Bonding													
Elongation (%)		2 – 6	2 – 6	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	4 – 12
Breaking Load (g)		2 – 5	3 – 7	4 – 8	7 – 12	8 – 13	10 – 15	12 – 17	13 – 21	14 – 22	16 – 23	20 – 28	32 – 46

For other diameters, please contact Heraeus Bonding Wires sales representative.

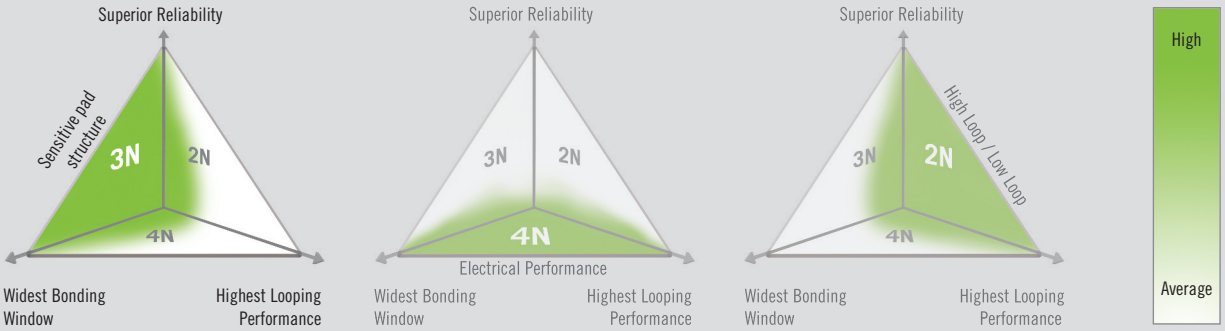
Characteristics for 25 µm diameter

Non-Gold Elements	< 0.1%
Elastic Modulus	~ 75 GPa
Heat Affected Zone (HAZ)	50 – 170 µm
Melting Point	1063 °C
Density	19.32 g/cm^3
Heat Conductivity	3.17 W/cm·K
Electrical Resistivity	2.3 µΩ-cm
Coeff. of Linear Expansion (20 – 100°C)	14.2 ppm/K
Fusing Current for 25 µm, dia 10 mm length (in air)	0.37 A
FAB Hardness	55 – 65 HV (0.01 N/5 s)

High Reliability



Gold Wire Segmentation by Properties



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