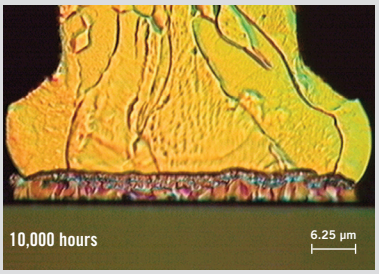
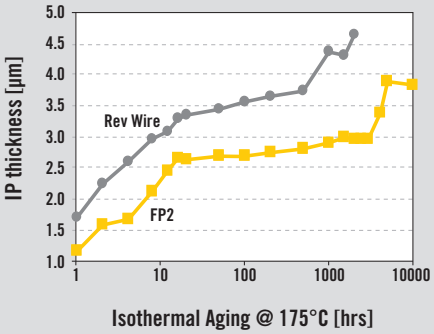
Heraeus

FP2
2N Gold Wire for Proven Ultimate Reliability



Reliable intermetallic grwoth –
Cross-section of device after aging @ 175°C

Slow Intermetallic Phase Growth Rate



FP2 Benefits

- Ultimate reliability wire through slow and uniform inter-metallic growth
- Superior elastic modulus provides sweep resistance for long wire span or ultra-fine pitch
- Short, fine-grain HAZ permits extremely low looping
- Excellent for ultra-fine wire diameters and low-k device compatibility

Cross-section of Fine & Short HAZ

Recommended Technical Data of FP2

Diameter	**Microns**	15	18	20	23	25	28	30	32	33
	Mils	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.25	1.3
Recommended Specs for Ball Bonding										
Elongation (%)		2 – 5	2 – 6	2 – 6	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7
Breaking Load (g)		3 – 7	5 – 9	6 – 11	9 – 14	11 – 16	14 – 20	16 – 21	18 – 24	19 – 26
In-Line Pad Pitch (µm)										
Min. In-Line Pad Pitch		35	45	50	60	65	70	80		

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

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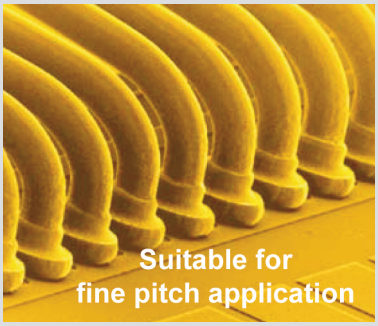
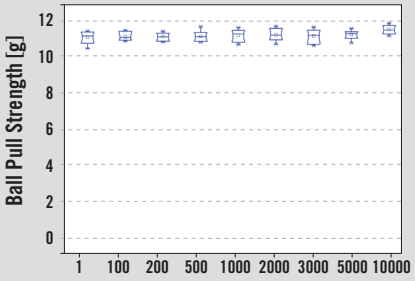
FP2 Characteristics for 25 µm diameter

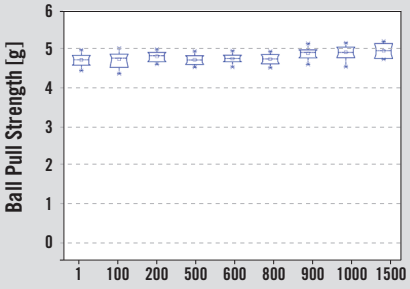
Non-Gold Elements	< 1%
Elastic Modulus	~ 90 GPa
Heat Affected Zone (HAZ)	35 – 110 µm
Melting Point	1063 °C
Density	19.28 g/cm^3
Heat Conductivity	2.25 W/cm·K
Electrical Resistivity	3.24 µΩ-cm
Coeff. of Linear Expansion (20 – 100°C)	14.2 ppm/K
Fusing Current for 30 µm, dia 10 mm length (in air)	0.37 A
FAB Hardness	60 – 70 HV (0.01 N/5 s)



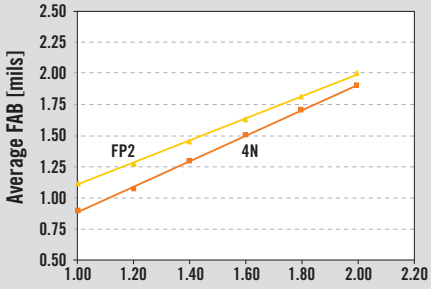
10,000 hours @ 175°C HTS (1 mil)



Ultra Fine Wire @ 200°C HTS (0.6 mil)

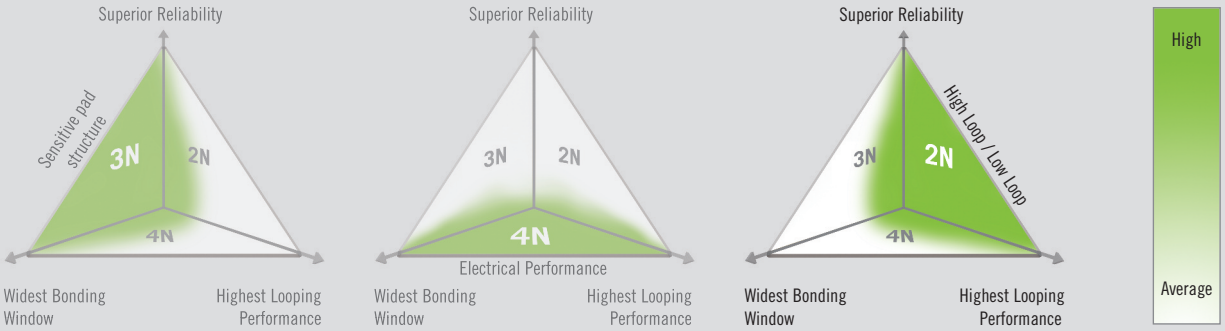


Slightly larger FAB over 4N Wire



Application Note:
- Dialed FAB is slightly larger than usual 4N wire (refer to graph on the right)
- Recommended to use K&S Fortus Capillary with FP2

Gold Wire Segmentation by Properties



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N, Layout: HETI4012-0516-1

The data given here is valid. We reserve the right to make technical alterations.