Heraeus

MaxSoft^a

Copper Wire for High Pin Count and Fine Pitch Applications





Std Copper



MoxSoft 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

Bonding Conditions: Wire diameter: MaxSoft / Standard Copper at 1 mil · Device: K&S PBGA 2 X 2 test die · Capillary: Cupra C8-FC1011-R34 (T=4.0 mils) · Bonder: K&S 8028 PPS Bonding temperature: 175°C

Recommended Technical Data of MoxSoff									
Diameter	Microns	15	18	20	23	25	28	30	33
	Mils	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Recommended Specs for Ball Bonding									
Elongation (%)		7 - 15	7 – 15	7 – 15	8-16	8-16	8 - 16	8-16	8-16
Breaking Load (g)		3 - 6	3 – 8	4 - 10	5 - 11	6 - 12	8 - 15	10 - 18	14 - 21

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

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Characteristics for 1 mil diameter Max

Physical Properties					
Density	8.92 g/cm ³				
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				
FAB Hardness (120 mA EFO)	85 – 95 HV (0.01 N/5 s)				
Elastic Modulus	$80\sim90~{ m GPa}$				
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				

Resistance vs Wire Diameter



Electrical Resistance after Aging (at 175°C)



Au wire & Al metallization Au wire & Al/Cu/Si metallization Cu wire & AL metallization

Reduced Pad Metal Splash







Wire diameter (mils)

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