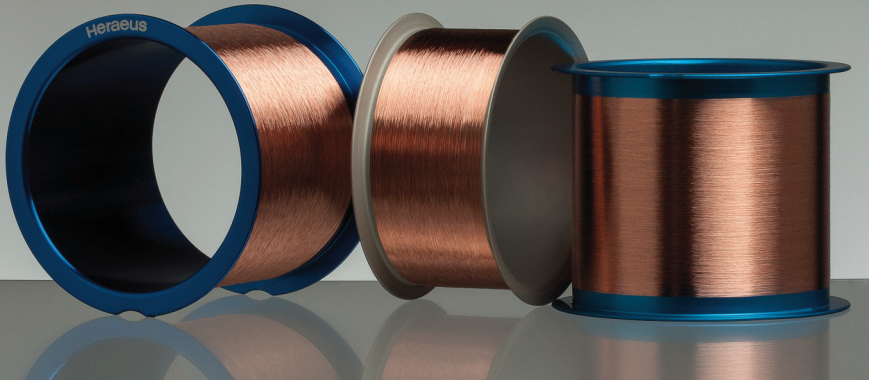


MaxSoft2

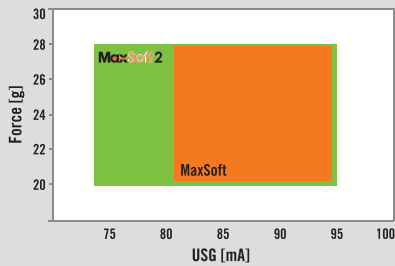
Copper Wire for High Pin Count and Fine Pitch Applications



MaxSoft2 Benefits & Features

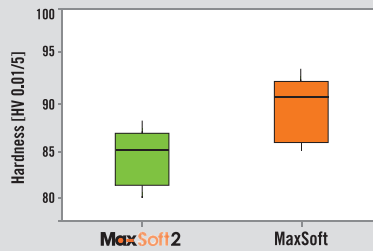
- Higher MTBA (Mean Time Between Assist) and better workability
- Wider 1st and 2nd bond process window
- Able to bond at lower bonding parameter
- Softer FAB (Free Air Ball) & wire hardness
- Available in diameter ranging from 15 μm to 50 μm (0.6 mil to 2.0 mils)

1st Bond Process Window



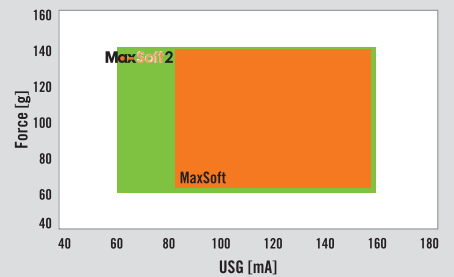
Wire diameter: 20 μm, Device: QFP 208L,
Capillary: CU-FF-1115-P37 (H:10, CD:12.5, TO:27, OR:01, FA:08),
Bonder: iConn, Bonding Temperature: 220 °C

FAB Hardness



Target FAB: 40 μm
Wire Diameter: 0.8 mil
EFO Current/Time: 60 mA/265 μs
Bonder: iConn

2nd Bond Process Window



Wire diameter: 20 μm, Device: QFP 208L,
Capillary: CU-FF-1115-P37 (H:10, CD:12.5, TO:27, OR:01, FA:08),
Bonder: K&S Maxum, Bonding Temperature: 220 °C

Higher Stitch Pull



Wire diameter: 20 μm, Device: QFP 208L,
Capillary: CU-FF-1115-P37 (H:10, CD:12.5, TO:27, OR:01, FA:08),
Bonder: K&S Maxum, Bonding Temperature: 220 °C

Recommended Technical Data of MaxSoft2

Diameter	Microns	15	18	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
Recommended Specs for Ball Bonding											
Elongation (%)		7 – 12	8 – 14	10 – 15	11 – 16	13 – 19	14 – 19	15 – 20	16 – 21	16 – 21	12 – 18
Breaking Load (g)		3 – 5	4 – 6	6 – 8	7 – 10	9 – 12	11 – 14	13 – 16	17 – 21	22 – 30	35 – 45

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

MaxSoft2 Characteristics for 0.8 mil diameter

Physical Properties

Density	8.92 g/cm ³
Melting Point	1081 °C
Thermal Conductivity	405 W/m.K
Specific Heat Capacity @ 25 °C	419 J/kg.K
Coeff. of Thermal Expansion	18.1 µm/m °C, (0 – 100 °C)
Electrical Resistivity	1.70 µΩ/cm
FAB Hardness	80 – 90 (0.01 N/5s)
Wire Hardness	82 – 92 (0.01 N/5 s)
Elastic Modulus	80 – 90 GPa

Chemical Composition

Cu Purity	99.97 % (min)
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Other Guidelines

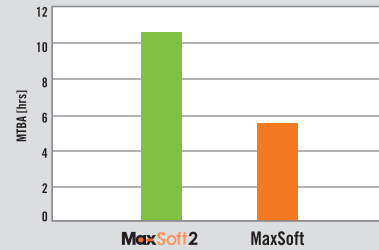
Floor Life	7 days
Shelf Life Time	6 months
Shielding Gas	Forming Gas (95N ₂ :5H ₂)

Reliability Data

Reliability	Test Conditions	Test Result	
BHAST (Bias HAST) 50 devices	130 °C / 85%RH +3v / 192 hrs	Passed	–
BPT (Ball Pull Test) Spec: ≥ 2.7 g Samples size = 30 readings		Passed	Mean = 8.7 g Min = 7.4 g Max = 9.8 g
BST (Ball Shear Test) Spec: ≥ 14 g Samples size = 30 readings		Passed	Mean = 38.8 g Min = 34.7 g Max = 44.6 g

Wire diameter: 23 µm, Device: TSOP

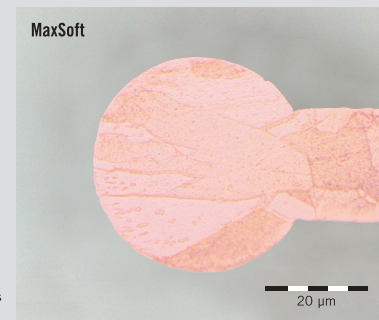
Mean Time Between Assist (MTBA)



	MaxSoft2	MaxSoft
No. of Real Stoppages	3	6
No. and Type of Stoppage	- Short Tail (3x)	- NSOL (3x) - Short Tail (3x)

Total Touchdown: 1000 kbonds each wire
Wire diameter: 20 µm (0.8 mil)
Device: QFP 208L
Bonder: K&S Maxum

FAB Morphology



Target FAB: 40 µm
Wire Diameter: 0.8 mil
EFO Current/Time: 60 mA/265 µs
Bonder: iConn

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