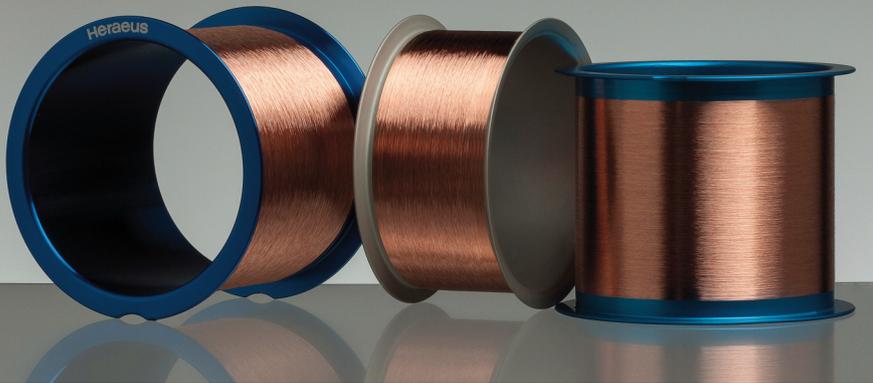


## MaxSoft2

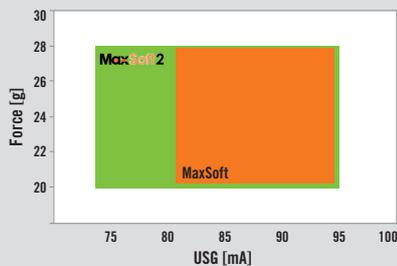
### Copper Wire for High Pin Count and Fine Pitch Applications



#### MaxSoft2 Benefits & Features

- Higher MTBA (Mean Time Between Assist) and better workability
- Wider 1<sup>st</sup> and 2<sup>nd</sup> 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)

#### 1<sup>st</sup> Bond Process Window



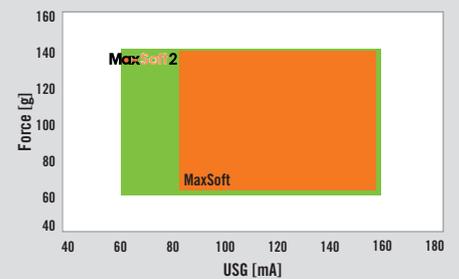
Wire diameter: 20 μm, Device: QFP 208L,  
Capillary: CU-FF-1115-P37 (H:10, CD:12.5, TO:27,  
OR:01, FA:08),  
Bonder: iConn, Bonding Temperature: 220 °C

#### FAB Hardness



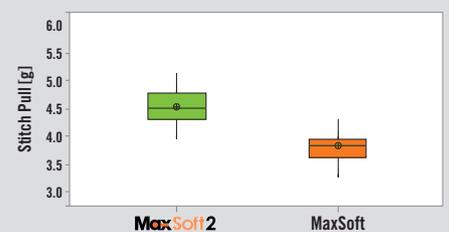
Target FAB: 40 μm  
Wire Diameter: 0.8 mil  
EFO Current/Time: 60 mA/265 μs  
Bonder: iConn

#### 2<sup>nd</sup> 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
<b>Recommended Specs for Ball Bonding</b>											
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 <sup>3</sup>
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 <sub>2</sub> :5H <sub>2</sub> )

## Reliability Data

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

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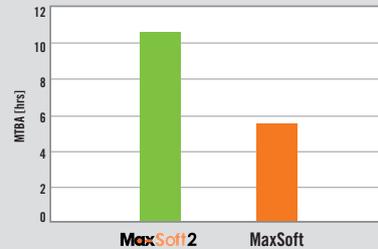
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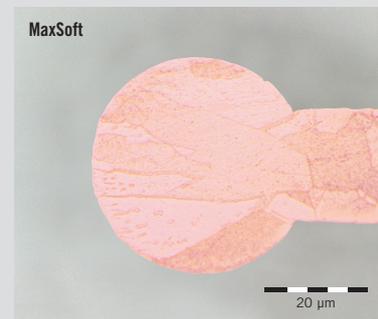
## Mean Time Between Assist (MTBA)



	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