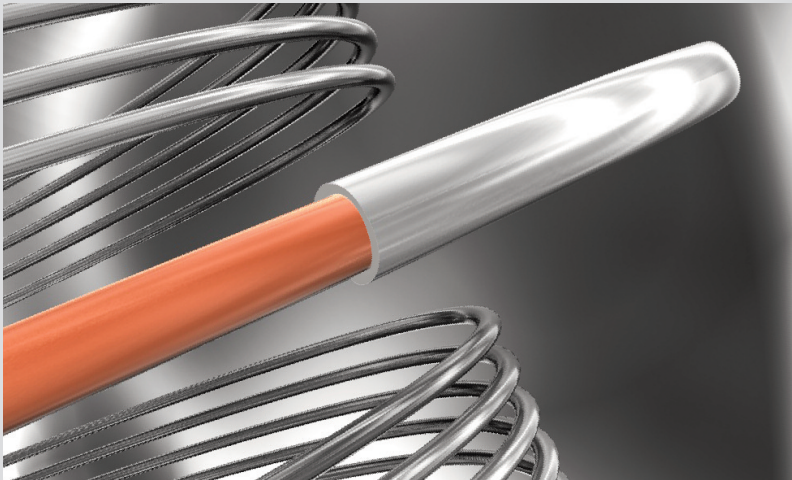


CucorAl

Aluminum Cladded Copper Wire for Power Application



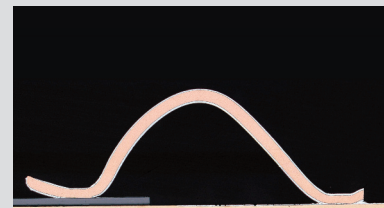
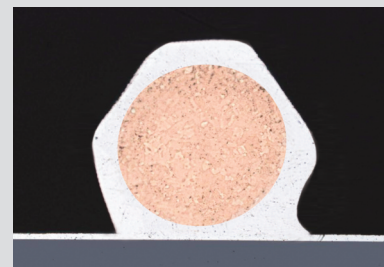
CucorAl Benefits

- Softness and good bonding characteristics
- Increased reliability compared to standard aluminum material
- Compatibility with standard bonding and standard chip technology
- Superior electrical and thermal capabilities
- Outstanding power cycling performance

The CucorAl bonding wire is a composite wire type with a copper core and aluminum coating. The material mix of aluminum and copper provides excellent electrical and mechanical properties. This is reflected by the long-term behavior during both passive temperature cycling tests and especially active power cycling tests – in comparison to pure Al material. The copper proportion of this thick wire is between 60 – 70 percent by volume. The provided diameters range from 200 µm until 500 µm.

This wire type can be applied on both, diodes and on IGBTs. The good bondability of the wire is achieved by the softness of the aluminum coating. At the same time, the copper core provides excellent electrical and thermal properties.

Furthermore, the Al/Cu structure enables reliable bonding windows without changing the chip metalization. Additionally, the CucorAl bonding wire has been designed to be used with conventional bonding equipment.

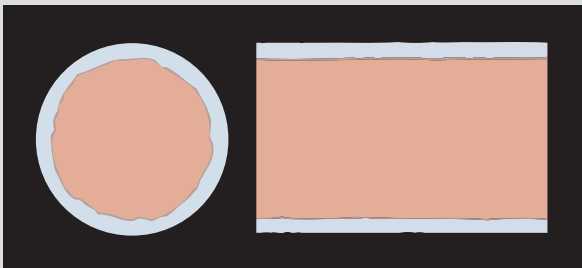


Recommended Technical Data of CucorAl

Diameter	Microns (µm)	200	300	350	400	450	500
	Mils	8	12	14	16	18	20
Elongation	(%)	> 15	> 15	> 15	> 15	> 15	> 15
Breaking Load	(cN)	400	1000	1400	2000	2600	3200
		- 700	- 1400	- 2000	- 2600	- 3300	- 4000

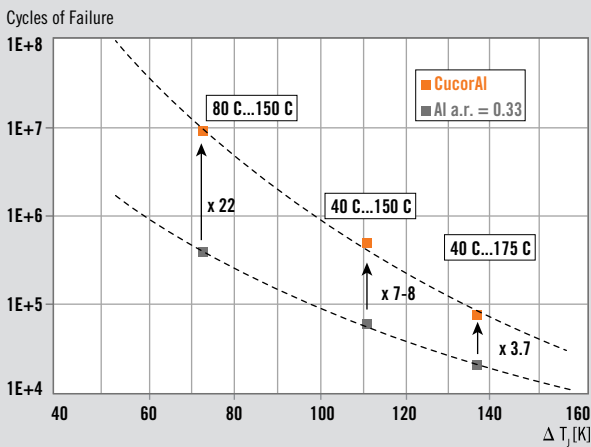
For other diameters, please contact Heraeus Bonding Wires sales representative.

CucorAI



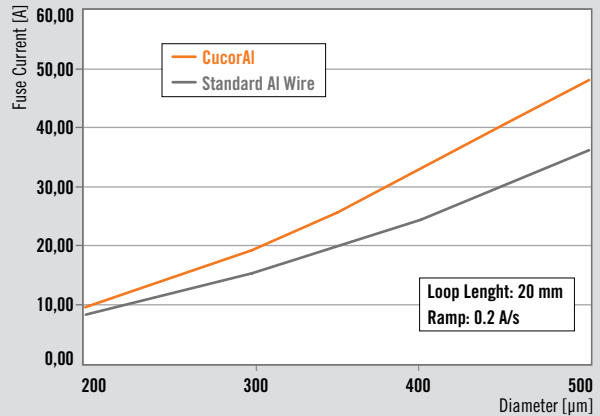
Cross section of am 300 µm Al/Cu wire bond

Power Cycling Lifetime as a Function of ΔT_j

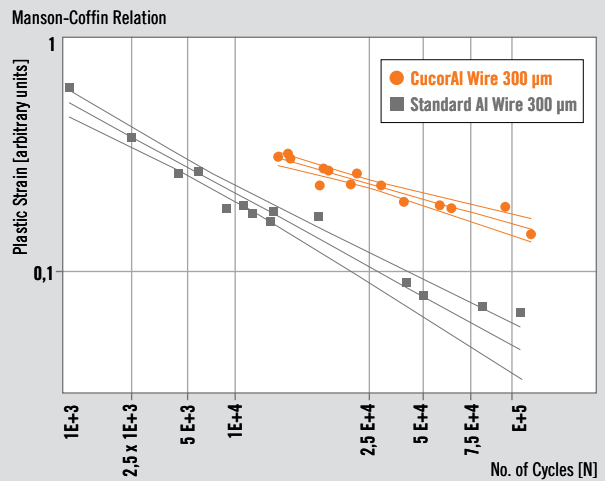


Publication on PCIM 2012, R. Schmidt et al.

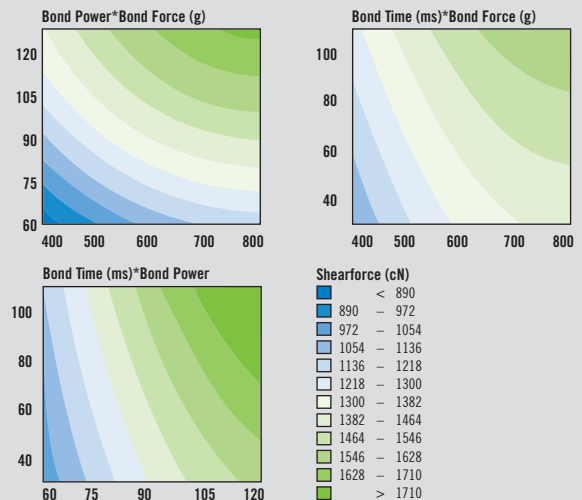
Fusing Current



Fatigue Behavior in Micromechanical Cycling Test



Bonding Window



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