

Next generation of high strength copper alloy

Wieland K58 high-strength copper alloys serves miniaturized connector springs



Wieland's solution for miniaturized springs

Strip made of K58 – C70250 – CuNi3SiMg

Electronics is restlessly following the path of further miniaturization. As a result, the connectors, whose task is to transmit power and signals, are also increasingly becoming smaller. For physical reasons, the contact force must remain the same, but the available space for the copper material that has to apply the spring force becomes less. The copper alloy strip has to become thinner and stronger. This step can only be implemented with particularly high-strength materials. Wieland's new development in this direction is the new super high strength copper alloy K58 (CuNi3SiMg, C70250) in temper R920. Available thicknesses are in the range of 0.05 to 0.3 mm.

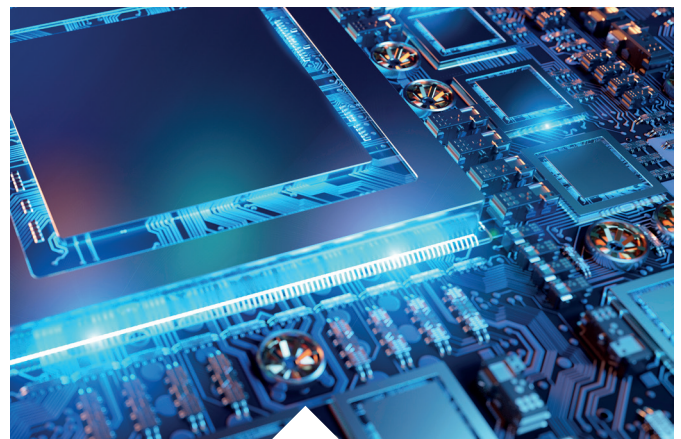
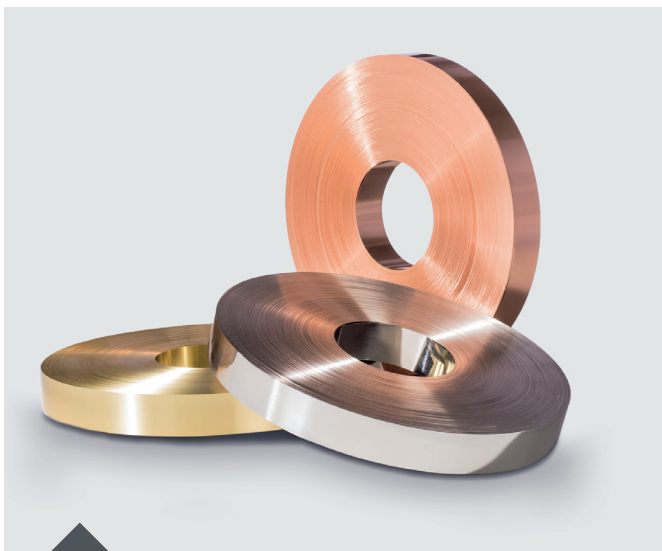
Perfectly suited for miniaturized electronic components

Wieland K58 R920 exhibits excellent strength and thermal relaxation resistance while maintaining acceptable electrical conductivity. This property combination is due to the ability of the material to form hardening precipitations inside the crystal lattice. Wieland developed the CuNiSiMg alloy K58, the composition of which falls into the range of the well known Corson alloy C70250. Increased

contents of the alloying elements Ni and Si alloy enable an increase in the number of strength effective precipitations in the microstructure. Thus it is now possible to achieve tensile strength values of 920 MPa and above. Additionally the thermal relaxation resistance is further increased, too. With this properties even very thin strip down to 50 µm in thickness are able to provide suitable spring forces in miniaturized electronic components.

Reliable in tough conditions

The properties of K58 R920 render it ideal for application in the consumer and computer industry where miniaturization is particularly important. Advantages of K58 are good formability, excellent resistance against fatigue damage and an outstanding stress relaxation resistance which allows service under elevated temperature up to 130 °C and even higher.



Miniaturized electronic components contain sockets, springs and connectors made of high performance alloys, such as Wieland-K58 R920

Wieland-K58 R920 Your benefits

- K58 R920 is characterized by excellent strength and an acceptable electric conductivity.
- The material provides very high spring forces and is specialized to very thin strip gauges down to 0.50 mm.
- Excellent resistance against stress relaxation and fatigue behavior make it a fitting material for applications with exposure to high temperatures

Do you want to learn more about Wieland K58 R920?

Please join our website and use our Wieland knowledge based program Alloywizard
wieland-alloywizard.com

Do you want to test Wieland K58 R920 in your production?

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