

## SB28 – CuNi3SiMg

## Material Designation

DIN-EN Symbol	CuNi3SiMg
DIN-EN	-
UNS	C70250
JIS	-

## Physical Properties

Electrical conductivity soft	25	MS/m
Thermal conductivity	190	W/(m·K)
Thermal expansion coefficient **	17,6	10 <sup>-6</sup> /K
Density	8,8	g/cm <sup>3</sup>
Modulus of elasticity	132	GPa = kN/mm <sup>2</sup>
Stress relaxation:		
TM Temper condition up to	175	°C fair

\* Reference values at room temperature

\*\* Between 20 and 300 °C

Nominal Composition  
(mass content in %)

Cu	Balance
Ni	3
Si	0,6
Mg	0,1
Zn	< 0,3
Fe	< 0,1
Pb	0,005
Other	< 0,1

## Typical Applications

- Age-hardenable alloys for connectors and power transistor carriers and semiconductor devices
- Leaf springs for relays
- Stamped-bent parts
- Transistor carriers
- Connector pins
- Carriers
- Car electrics

## About The Alloy

SB28 is an age-hardening CuNi3Si alloy, that, in comparison with SB22, has higher contents of nickel and silicon with additions of magnesium in order to be able to adjust a particularly high strength and stress relaxation resistance.

It has an  $\alpha$ -structure with very fine precipitations and recommends itself both for lead frames which require a high rigidity of the pins and for connectors with particularly high demands on strength, electrical conductivity, thermal load and relaxation behaviour.

In addition, SB28 can also be used for current-carrying formed parts and contact springs due to its good fatigue strength, forming and spring properties. The alloy can be surface-refined to various procedures

The alloy is registered with the U.S. EPA as antimicrobial.

## Mechanical Properties \*)

Temper condition	TM00 ** R 620 H 180	TM02 ** R 650 H 200	TM03 ** R 690 H 220	TM04 ** R 710 H 225
Tensile strength in N/mm <sup>2</sup>	620 - 750	650 - 780	690 - 810	710 - 830
0.2 % yield Strength in N/mm <sup>2</sup>	500	585	655	700
Elongation A <sub>L50</sub> %	> 12	> 9	> 7	> 4
Vickers hardness HV	180 - 230	200 - 240	220 - 250	225 - 255
Electrical conductivity in % IACS	40	40	40	40

Minimum radius of the bending mandrel for 90° bend and strip thickness s

0.10 ≤ s ≤ 0.50 mm	transverse parallel	0 x s 0 x s	1 x s 1 x s	1.5 x s 1.5 x s	2.0 x s 2.0 x s
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\*) Reference values    \*\*) mill aged

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## Processing Instructions

Cold forming properties	very good
Machinability	satisfactory
Electroplating properties	good
Hot-dip tinning properties	good
Soldering	good
Resistance welding	good
Gas shielded arc welding	good
Laser welding	good

## Available Versions

Coils with standard outer diameters of 1200 mm
Strips in reel form with coil weight of up to 1500 kg
Multipancake up to 2.5 t
Hot-dip tinned strips
Profiled strips
Electroplated strips (tin, nickel)

## Available Dimensions

Bright pre-rolled strips 1 to 2.5 mm
Precision strip thickness from 0.05 to 1.2 mm
Strip width from 3.0 to 600 mm, but at least 10 times of the strip thickness
Other widths available on request

## Your Local Contact Person

Europe

Asia



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