

BB05xi – CuSn0,5Ni

Material Designation			Nominal Composition (mass content in %)		About The Alloy
DIN-EN Symbol	(CuSn0,5Ni)		Cu	Balance	<p>BB05xi is a low-alloyed copper alloy which exhibits an electrical conductivity similar to CuFe2P. Small additions of xi improve softening. The alloy does not reach the spring force of the bronzes, however, in comparison with pure copper, the alloy is significantly harder and in comparison to CuFe2P, which is very often used in a hot dip tinned condition for lead frames for applications in anti-skid, ESP and transmission control systems, BB05xi can easily be recycled.</p>
DIN-EN	-		Sn	0,6	
UNS	C19024		Zn	< 0,05	
JIS	-		Ni	< 0,4	
Physical Properties			Fe	< 0,02	
			Pb	< 0,005	
			P	0,008 - 0,05	
			Other	< 0,1	
Electrical conductivity soft	36	MS/m	Typical Applications		<p>BB05xi has excellent soldering and welding properties, especially Laser welding. The alloy is an ideal solid solution alloy. There is no Zn evaporation during welding or other influence of precipitates on the laser beam.</p> <p>BB05xi meets with respect to Pb and Cd the OEKO-TEX Standard 100.</p>
Thermal conductivity	250	W/(m·K)	<ul style="list-style-type: none">• 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		
Thermal expansion coefficient **	17	10-6/K			
Density	8,9	g/cm³			
Modulus of elasticity	126	GPa = kN/mm²			
* Reference values at room temperature					
** Between 20 and 300 °C					

Mechanical Properties *)

Temper condition		O R 250 H 50	H02 R 330 H 90	H04 R 380 H 115	H06 R 440 H 120	H08 R 480 H 140
Tensile strength in N/mm ²		250 - 320	330 - 400	380 - 460	440 - 500	> 480
0.2 % yield Strength in N/mm ²		100	280	350	400	450
Elongation A _{L50} %		> 30	> 8	> 5	> 4	> 2
Vickers hardness HV		50 - 80	90 - 110	115 - 135	120 - 145	> 140
Electrical conductivity in % IACS		62	62	61	61	60
Minimum radius of the bending mandrel for 90° bend and strip thickness s, tempered quality						
0.10 ≤ s ≤ 0.25 mm	transverse	0 x s	0 x s	0 x s	1 x s	1.5 x s
	parallel	0 x s	0 x s	0 x s	1 x s	1.5 x s
0.25 < s ≤ 0.5 mm	transverse	0 x s	0 x s	0.5 x s	1 x s	-
	parallel	0 x s	0 x s	0.5 x s	1.5 x s	-

*) Reference values

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Processing Instructions

Cold forming properties	very good
Machinability	sufficient
Electroplating properties	very good
Hot-dip tinning properties	very good
Soldering	very 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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