

## boway 52100 SG

### Material Designation

Boway Designation	boway 52100 SG
UNS	C52100
EN	CuSn8
JIS	C5210
GB(China)	QSn8-0.3

### Chemical Composition\*

Sn	8	%
P	0.03-0.35	%
Cu	Rem.	

\* Nominal composition

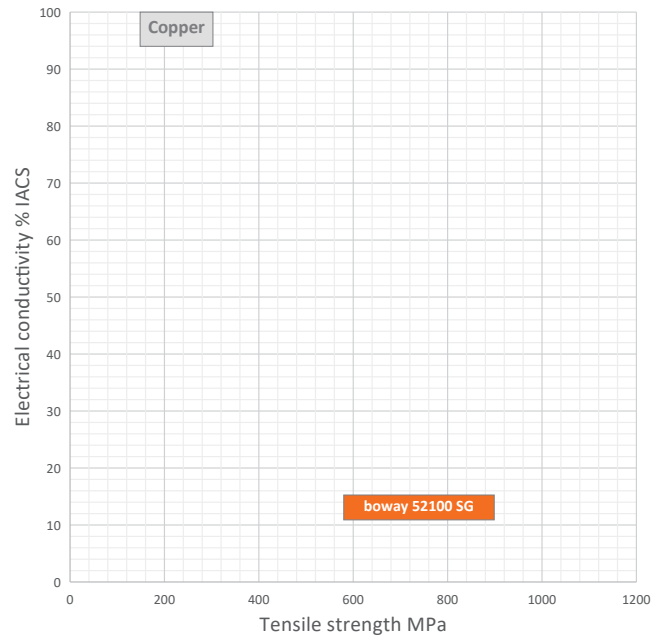
### Application Target

Signal connector	Very suitable
Power connector	Suitable
Miniaturized connector	Very suitable
Switch/Relay	Suitable
Semiconductor	Not recommended

Ideal for BTB connector, audio jack and other miniaturized connectors

### Fabrication Properties

Cold forming	Very good
Machining	Average
Electroplating	Very good
Hot dip tinning	Very good
Laser welding	Good
Resistance welding	Good
Soft soldering	Good



### Characteristics

Higher Strength Bronze. Very fine microstructure provides excellent bendability and fatigue performance combined with high strength. Good corrosion resistance and low sensitive to stress corrosion cracking. Excellent solderability.

### Physical Properties\*

Density	8.8	g/cm <sup>3</sup>
Electrical conductivity@20°C	13	% IACS
	7.5	MS/m
Thermal conductivity@20°C	67	W/(m·K)
Specific heat capacity	0.377	J/(g·K)
Modulus of elasticity	115	GPa
Poisson's ratio	0.33	
Coefficient of thermal expansion**	18.2	10 <sup>-6</sup> /K

\* Typical values at room temperature for reference

\*\* Average value between 20-300°C

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### Mechanical Properties

Temper	Tensile strength		Yield strength	Elongation	Hardness*
	MPa	ksi	MPa	A50 %	HV0.2
R590	590–705	85–102	≥ 540	≥ 20	185–235
R685	685–785	99–113	≥ 650	≥ 15	210–260
R735	735–835	106–121	≥ 700	≥ 9	230–270
R800	800–900	116–130	≥ 775	≥ 5	250–290

\*For reference only

### Bendability Bending thickness ≤ 0.4 mm; Bending width: 10 mm

Temper	90° R/T		180° R/T	
	Good Way	Bad Way	Good Way	Bad Way
R590	0	0	0	1
R685	0	0.5	0.5	2
R735	0	2	1	3.5
R800	1	4	-	-

90° bend test according to EN ISO7438, 180° bend test according to ASTM B820, shown values might show orange-peel, however no crack.

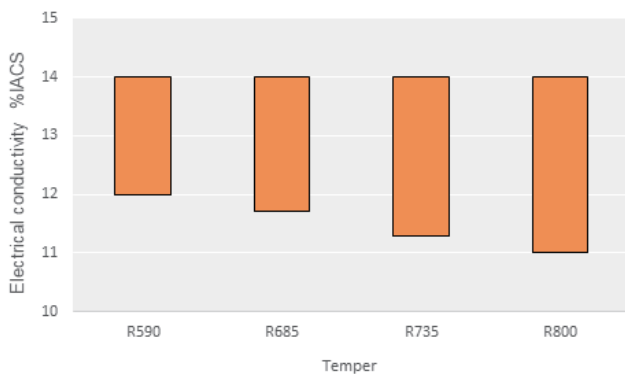
### Packaging

Standard coils with outside diameter up to 1300 mm.  
 Traverse-wound coils with drum weight up to 500 kg.  
 Multiple-coil up to 3 tons.

### Dimensions Available

Strip thickness 0.06–0.4 mm, other gauges on request.  
 Strip width from 8.5 mm.  
 Electroplated and Hot-dip tinned strip available.

### Electrical Conductivity



### Fatigue Strength

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for 10.000.000 load cycles under symmetrical alternate load without breaking. It depends on the temper selected and can be estimated typically by 1/3 of tensile strength. For solid solution fine grain materials fatigue strength might increase up to 1/2 of tensile strength.

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