boway 52100 SG

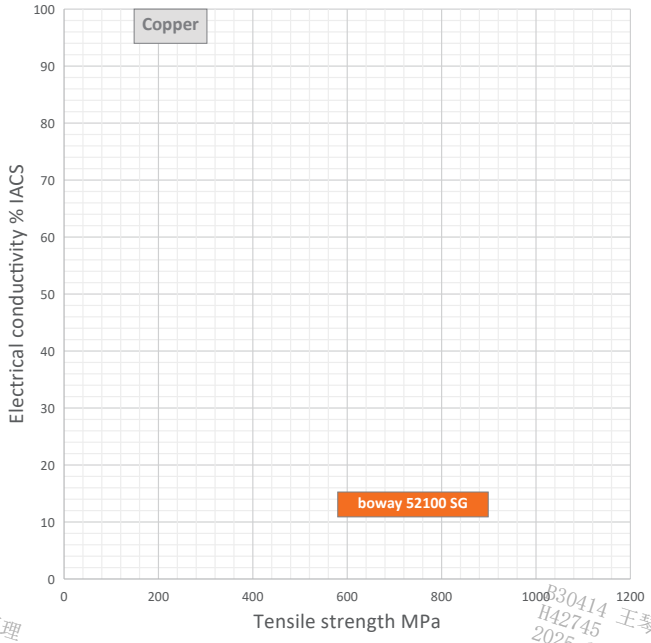
Material Designation

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

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.

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

Physical Properties*

Density	8.8	g/cm^3
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^{-6}/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.

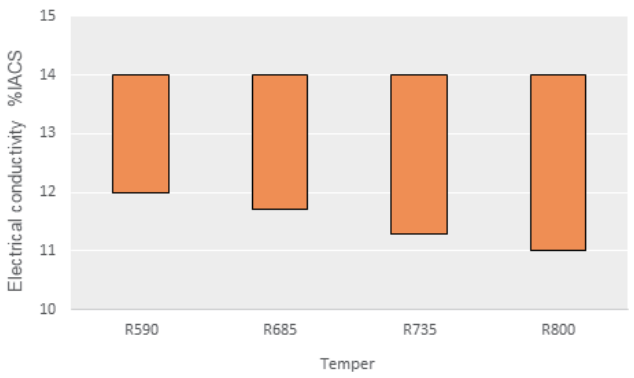
Packaging

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.