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DATA SHEET: 62 Tin-36 Lead-2 Silver

Physical Properties of Bulk Solder

Solder Alloy Composition	62Sn-36Pb-2Ag (weight per cent)
Solidus	179°C
Liquidus	179°C
Density	8.50 Mg/m ³
Coefficient of Thermal Expansion	27.0 x 10 ⁻⁶ K ⁻¹
Young's Modulus	22.96 GNm ⁻²
Hardness	16 HV
Thermal Conductivity	50 W m ⁻¹ K ⁻¹
Electrical Conductivity	11.5% IACS
Electrical Resistivity	14.99 μΩ cm

Mechanical Properties: Tensile Strength (Stress, Nmm⁻²)

		<u>20°C</u>	<u>100°C</u>
Test speed	50 mm min ⁻¹ /Stress, Nmm ⁻²	66.6	58.8
	20	80.4	51.7
	5.0	65.4	44.3
	1.0	65.4	31.1
	0.2	42.6	27.8
	0.05	42.5	18.3

Typical impurity levels for electronic grade are less than:

Au: 0.05	Cu: 0.08	Ni: 0.01	Al: 0.005
Bi: 0.10	Fe: 0.02	Zn: 0.003	As: 0.03
Cd: 0.002	In: 0.10		

Soldering temperature for reflow should be at or above 235°C for a minimal time of 20 seconds. This assumes either very clean, soldering surfaces and an inert- (<20ppm O₂) or reducing atmosphere or the presence of a deoxidizing agent/flux during the soldering cycle. If and when the components are slightly oxidized, a combination with higher temperatures and/or longer soldering temperatures is required. For more oxidized surfaces, an appropriate flux must be used.

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