

Solder Alloy Properties Comparison

PHYSICAL PROPERTIES				
	SCS7	Sn/Cu0.7	Sn63/Pb37	Test Method
Melting Temperature	227 °C	227 °C	183 °C	DSC (5°C/min)
Coefficient of Thermal Expansion	20.2 µm/m °C	19.3 µm/m °C	23.3 µm/m °C	TMA 0.01N, 10°C/min (20°C to 160°C)
Density	7.31 g/cm ³	7.31 g/cm ³	8.40 g/cm ³	SG Test Apparatus
MECHANICAL PROPERTIES *				
	SCS7	Sn/Cu0.7	Sn63/Pb37	Test Method
Tensile Strength	45.83 MPa	44.35 MPa	52.54 MPa	ASTM E8M 3mm/min, at 25 °C
Yield Strength	38.78 MPa	37.31 MPa	39.28 MPa	
Max Percent Strain	68.161%	58.31%	67.38%	
Energy to Yield Point	0.203 Joules	0.100 Joules	0.164 Joules	
Energy to Break Point	18.05 Joules	15.28 Joules	18.98 Joules	
Toughness	25.54 MPa	21.62 MPa	26.85 MPa	
Cycle Fatigue Resistance, N_f	3000 - 3500	1125	3650	ASTM E606-92
Creep Resistance	>40hrs	N.A.	>27 hrs	Load at 1kg @ 145°C