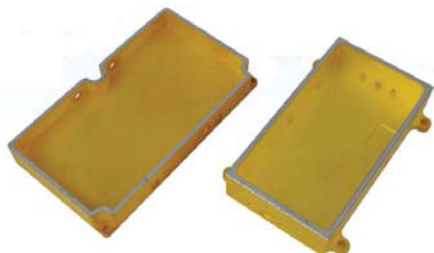


There is a good wetability between Al and Si and no intermediate phase compounds in the preparation process. So the Si/Al composites inherite the good characteristics of low thermal, good expansion and easy of processing.



Mechanical properties of materials

Materials	Tensile strength(Mpa)	Flexural strength(Mpa)	Elastic Modulus(Gpa)
50%Si/Al	138	172	121
42%Si/Al	176	213	101
27%Si/Al	236	210	92
22%Si/Al	236	210	85

Key technical specifications

Si/Al Composite Material: 50%Si/Al、42%Si/Al、27%Si/Al、22%Si/Al;

Material Density:≤2.7g/cm³ ;

Thermal Conductivity At Room Temperature: Si/Al Composite material≥120W/m • K;

Thermal conductivity between 20-200℃;

50%Si/Al: 12.1±1ppm/℃;

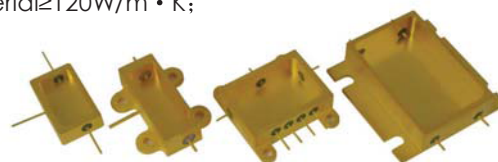
42%Si/Al: 13.4±1ppm/℃;

27%Si/Al: 16.7±1ppm/℃;

22%Si/Al: 17.6±1ppm/℃;

The material compact density up to 99%, no internal inclusions, porosity, cracks and other defects;

After high-pressure helium adsorption test, the leak rate≤5×10⁻⁹ Pa·m³/s;



Performance Advantages

Low thermal expansion coefficient;

Good thermal conductivity;

Good tightness to protect the electronic devices from high temperatures, high humidity, corrosion, radiation and other harmful environmental impact;

Good strength and stiffness to support and protect the chips;

Good properties in forming and welding to process into a variety of complex shapes;

Light weight,suitable for field of aerospace and other portable electronic devices requiring high density of electronic packaging materials;

Physical Properties Of High Si/Al Alloy(SAXX)

Model	Density<(g/cm ³)	Air Tightness<(P • m ³ /s)	Thermal Conductivity >(W/m • K)	Thermal Expansion Coefficient(±)ppm/K
SA22	2.65	5.0x10 ⁻⁸	165	18
SA27	2.6	5.0x10 ⁻⁸	155	17
SA42	2.55	5.0x10 ⁻⁸	145	13
SA50	2.5	5.0x10 ⁻⁸	125	11



This product is widely used in the field of electronics, aerospace, aviation, ships and so on. The key indicators such as expansion coefficient, thermal conductivity, density can be made according to customer requirements. Good packaging materials, modern electronic packaging requirements, advanced IC performance can be realized by us.

Mechanical properties of high Si/Al alloy(SAXX)

Model	Yield Strength(Mpa)	Fracture Strength(Mpa)	Elastic Modulus(Gpa)
50%Si/Al	175	210	85
42%Si/Al	175	200	85
27%Si/Al	145	200	100
22%Si/Al	115	160	115