

# Boron Carbide (B<sub>4</sub>C)

Performance parameters of boron carbide

Material Properties	Unit	Silicon carbide
Density	g/cm <sup>3</sup>	2.5
Knoop Hardness	kg/mm <sup>2</sup>	3200
Bending strength	MPa	410
Compressive strength	MPa	2500
Elastic modulus	GPa	470
Toughness	MPa·m <sup>1/2</sup>	2.5
Poisson's ratio	—	0.16
Young's Modulus	GPa	460

Thermal Properties	Unit	Silicon carbide
Thermal conductivity	W/mK	42
melting point	°C	2450
Specific heat capacity	J/g·K	0.9
linear expansion coefficient	10 <sup>-6</sup> /K	4

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Electrical Properties	Unit	Silicon carbide
Dielectric constant	1 MHz	7
Breakdown voltage	V/cm	1 × 10 <sup>6</sup>
Dielectric loss	1 MHz	0.001
Resistivity	Ω·cm	10 <sup>15</sup>

Note: This value is for reference only and may vary slightly depending on the batch conditions.

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