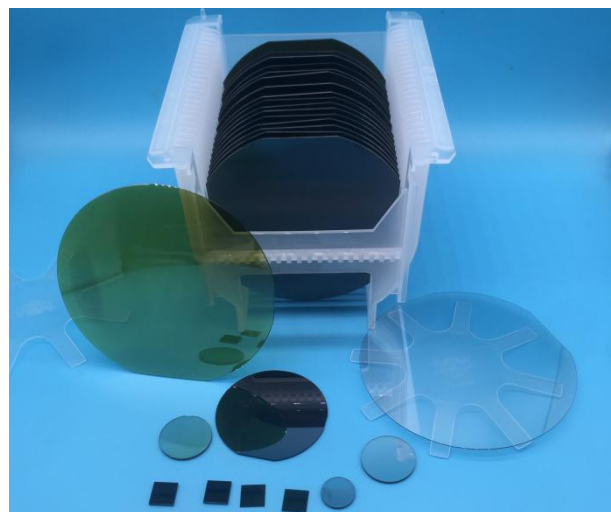


## Silicon Carbide (SiC)

N-type silicon carbide substrate material is an essential material to support the development of the power electronics industry. Its outstanding physical characteristics such as high-pressure resistance and high-frequency resistance can be widely used in high-power high-frequency electronic devices, electric vehicle PCU, photovoltaic inverter, rail transit power control system and other fields, and can play a role of reducing volume simplification system and improving power density.



### PARAMETERS

Growth Method	Seed crystal sublimation method, PVT (Physical gas phase transfer)		
Crystal Structure	Hexagonal		
Lattice Constant	a=3.08 Å, c=15.08 Å		
Marshalling Sequence	ABCACB(6H), ABCBACB(4H)		
Band gap	2.93 eV		
Mohs Hardness	9.2 (mohs)		
Thermal Conductivity @300K	5 (W/ cmK)		
Dielectric Constant	e(11)=e(22)=9.66 e(33)=10.33		
Conductor Type	I	N	
Dopant	Undoped	Vanadium	Nitrogen
Resistivity (ohm.cm)	> 1 x 10 <sup>7</sup>	> 1 x 10 <sup>5</sup>	0.01-0.2
Dimension	5x5mm, 10x10mm, 15x15mm, 20x20mm Ø50.8, Ø100 mm, Ø150mm		
Thickness	0.33/0.35/0.5mm, According to customer needs, substrates with special orientation and size can be customized.		
Polishing	One side or two sides		
Orientation	<0001>or <0001> off 4.0°		
Orientation Tolerance	±0.5°		
Edge Orientation Accuracy	2° (Special requirements can reach within 1°)		
Surface Roughness	Ra<5Å (5×5µm)		
Package	Class 100 clean bag, Class 1000 super clean room		