

Polycrystalline CVD Diamond

DiaFlux™ 150



Product Features

- Polycrystalline CVD Diamond
- Grown by Plasma Chemical Vapor Deposition
- Thermal Conductivity 1,500 W/m·K (at 25 °C)
- Standard Thickness 200 / 350 / 500 μm
- Surface Roughness $R_a < 20 \text{ nm}$
- Electrically Insulating

Applications

- AI Semiconductor Thermal Management
- GaN RF Device Heat Spreader
- SiC Power Module Cooling
- Laser Diode Submount
- RF Power Device Thermal Management
- Power Electronics Heat Dissipation
- Advanced Semiconductor Packaging



Description

RFHIC's DiaFlux™ 150 is a polycrystalline CVD diamond heat spreader grown by plasma chemical vapor deposition. It provides a thermal conductivity of 1,500 W/m·K (at 25 °C) along with electrically insulating properties, and is available in 200 / 350 / 500 μm thicknesses with custom sizes and forms.

The DiaFlux 150 is suitable for thermal management of a wide range of high-power devices, including AI semiconductors, GaN RF devices, SiC power modules, laser diodes, and RF power devices.

Physical Characteristics

PARAMETER	SPECIFICATION
Growth Method	Plasma Chemical Vapor Deposition
Structure	Cubic, Polycrystalline
Grain Size	0.05 – 1 mm, dependent on thickness and process
Grade	Standard Thermal Grade
Thickness	200 / 350 / 500 μm
Thickness Tolerance	$\pm 20 \mu\text{m}$
Electrical Property	Electrically Insulating

Fabrication Capability

PARAMETER	SPECIFICATION
Bow	$\leq 15 \mu\text{m} / \text{cm diameter}$
Warp	$\leq 15 \mu\text{m} / \text{cm diameter}$
Surface Roughness	$R_a < 20 \text{ nm}$

Thermal Properties

PARAMETER	SPECIFICATION
Thermal Conductivity	1,500 W/m·K (at 25 °C)
Thermal Diffusivity	500 – 1,000 mm^2/s
Thermal Expansion Coefficient	$1.0 \times 10^{-6} \text{ K}^{-1}$
Specific Heat	0.400 – 0.700 $\text{J} \cdot \text{g}^{-1} \cdot \text{K}^{-1}$

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Finished Part Specifications and Tolerances

PARAMETER	SPECIFICATION
Size	Ø 3 – 100 mm (round) / 3 × 3 – 70 × 70 mm (square)
Edges	Laser cut
Edge Features	< 0.2 mm
Lateral Tolerance	± 0.2 mm

* Custom sizes, thicknesses and finishes are available on request.

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
DiaFlux 150	2026.09.09	0.1	-	Preliminary



Certification

This product is manufactured by a company that is certified for the AS9100D quality management system.

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