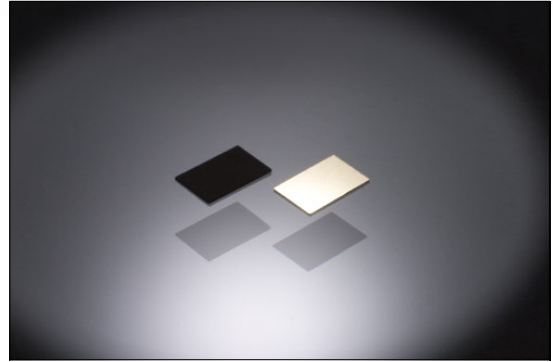


### Thermal Management

Applied Diamond, Inc. produces cost effective diamond heat sinks for thermal management applications including solid state laser diodes, III/V semiconductors, laser arrays, power transistors, radar arrays and amplifiers.

Complex devices running at high speeds and power levels generate a significant amount of heat. Proper thermal management with diamond heat sinks enhances product performance and life. When temperature limits your ability to increase power, our CVD diamond heat sinks and heat spreaders provide the solution.



*High conductivity and low CTE mean dimensional stability at high temperature and power.*

### Unsurpassed Thermal Conductivity

One of the most remarkable properties of diamond is its thermal conductivity. Diamond has the highest thermal conductivity of any material by far; exceeding that of copper by a factor of five. Thermal conductivity can be tailored within the range of 800 -1800 W/mK, to enable matching cost/performance to the needs of the application.

Material	Thermal Conductivity W/mk
CU	400
AlN	160
Applied Diamond CVD HS 800	800
Applied Diamond CVD HS 1000	1000
Applied Diamond CVD HS 1800	1800

### Three Standard Product Thicknesses

- 150 microns
- 300 microns
- 500 microns

### Laser Cutting For Customized Sizes

Applied Diamond uses its laser cutting equipment for both routine and specialized shapes. Engineered laser systems and computer controlled motion allows both economical long production runs and specialized cutting of microchannels, vias, scribing and complex geometries.

### Metalization

Metalization is an important part of heat sink preparation. While our standard scheme uses titanium for adhesion, platinum as a diffusion barrier and gold for bonding, other schemes are available upon request. Au-Sn, and other low temperature braze layers are also available.

### Exceptional Properties, Expert Support

In addition to high thermal conductivity, diamond is chemically inert making it an ideal material for hostile, corrosive environments. The technicians at Applied Diamond Inc. have worked with diamond since 1986 and are committed to offering exceptional technical support and customer service.

**For More Information Call — 302-999-1132**

