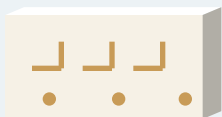


Technical Ceramics for Semiconductor Work

Manufacturing | die packaging | bonding fixtures | thermal processing



Alumina

Al₂O₃

Economical packaging workhorse

CERDIP packages, hybrid circuits, bondable metallized substrates, fixture insulators.

k: 20-35 W/mK

Diamond grinding / laser



Zirconia

ZrO₂

Tough & wear resistant

Precision locating pins, clamps, contact surfaces, insulating bushings.

k: 2-3 W/mK

Diamond grinding



Silicon nitride

Si₃N₄

Thermal-cycle reliability

Power-module substrates, rugged supports, mechanically stressed packaging.

k: 20-90 W/mK

Diamond grinding



Silicon carbide

SiC

Harsh-process hardware

Furnace susceptors, wafer supports, wear parts and high-temp process fixtures.

k: 80-200 W/mK

Specialized grinding



MACOR

Glass-ceramic

Easy prototype machining

Custom vacuum fixtures, spacers, feedthrough supports and complex insulators.

k: ~1.5 W/mK

Conventional CNC



Aluminum nitride

AlN

Heat-spreading insulator

High-power die carriers, laser packages, thermally conductive electrical isolation.

k: 140-200 W/mK

Diamond / specialized laser



Boron nitride

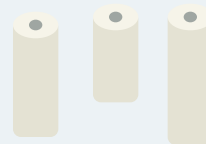
h-BN

Machinable specialty ceramic

High-temp supports, non-wetting crucibles, thermal processing fixtures.

k: Grade-dependent W/mK

Conventional machining



Steatite

Mg-silicate

Low-cost insulation

Heater terminals, standoffs, ceramic beads and electrical hardware.

k: ~2-4 W/mK

Usually formed / ground

Fast selection: AlN = thermal | Alumina = cost | Si₃N₄ = thermal cycling | MACOR / h-BN = machining

Thermal conductivity values are approximate and grade-dependent. Illustrations are schematic, not product photographs.

Basis: Ortech ceramics material catalog | 2026