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Global Semiconductor Package Heat Sink Material Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Semiconductor Package Heat Sink Material market size is expected to reach $ 3221 million by 2032, rising at a market growth of 6.7% CAGR during the forecast period (2026-2032).

Semiconductor Package Heat Sink Material refers to the materials and semi-finished forms used to build package-level thermal paths, including IC package heat spreaders / IHS lids, power module baseplates, heat spreaders for ceramic/metal/plastic packages, and spacers for double-side cooling or stacked assemblies. The mainstream material set is driven by a triad of high thermal conductivity, CTE matching, and manufacturability (forming/plating/assembly): Cu/Al metals (often plated), controlled-CTE composites/laminates such as Cu-Mo, Cu-W and Cu/Cu-Mo/Cu laminates, Al-SiC aluminum-based MMCs for high-reliability baseplates, electrically insulating high-k ceramics (e.g., AlN), and ultra-high-k options such as CVD diamond heat spreaders and metal-diamond composites. A.L.M.T. explicitly positions CPC™ (Cu/Cu-Mo/Cu) as an adjustable-CTE heat spreader family and lists both thermal buffer plates and double-side cooling spacers, while Denka defines ALSINK as an Al-SiC + ceramics MMC with low thermal expansion and high thermal conductivity; Element Six positions CVD diamond heat spreaders for higher power density.

Technology differentiation centers on moving heat away from the die efficiently while maintaining reliability under thermal cycling and managing package warpage. Cu-Mo/Cu-W composites are commonly produced via powder-metallurgy skeletons infiltrated with copper, enabling property tuning through composition; H.C. Starck Solutions describes Mo-Cu as a composite where Mo:Cu ratios can be varied to meet performance requirements. Laminates (e.g., CPC™) emphasize high-volume formability (including stamping) and plating options (Ni/Au/Ag) for brazing/solderability and corrosion

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protection; A.L.M.T. provides explicit statements on CPC™ and Ag-Diamond heat spreaders (high thermal conductivity and plating availability). For power modules, copper and AlSiC baseplates are widely discussed as “commonplace,” and Vincotech’s technical paper compares module designs with and without baseplates, including copper and AlSiC baseplates. On the IC package side, heat spreaders also provide die protection and warpage management, and an emerging trend is package-integrated two-phase structures (e.g., vapor-chamber heat spreaders) to enhance thermal performance at the package level.

Application pull is segmented by heat-flux and reliability: HPC/server CPUs/GPUs/AI accelerators increasingly require robust IHS/spreader stacks and, in some cases, package-integrated vapor-chamber concepts; power electronics (IGBT/SiC/GaN modules) rely on CTE-matched baseplates/submounts and insulating thermal ceramics to survive power cycling; and ceramic/metal/plastic packages (including RF/opto) often adopt Cu-W or similar CTE-matched heat spreaders and spacers to balance thermal and mechanical constraints. A.L.M.T. explicitly links Cu-W grades to CTE matching for Kovar/ceramic package use, while AMETEK states its molybdenum-copper and tungsten-copper composites are used in electronic packaging thermal-management applications (chip mounting, heat sinks/spreaders). Competition is multi-layered—materials suppliers (refractory metal composites/MMCs/ceramics/diamond/carbon), component fabricators with plating/finishing capabilities, OSAT/module makers, and system thermal integrators. Key trends are converging: (i) higher-k solutions (CVD diamond and metal-diamond composites) for power density scaling; (ii) tighter CTE control and lightweighting (AlSiC, CuMo/CuW, laminates) for warpage and cycling reliability; and (iii) increasing interest in package-integrated two-phase heat spreading. Denka’s disclosure that ALSINK is widely used in high-reliability railway inverter power modules and that capacity is being expanded illustrates the structural growth in power-module thermal material demand.

This report studies the global Semiconductor Package Heat Sink Material production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Semiconductor Package Heat Sink Material and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Semiconductor Package Heat Sink Material that contribute to its increasing demand across many markets.

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Highlights and key features of the study

Global Semiconductor Package Heat Sink Material total production and demand, 2021-2032, (K Pcs)
Global Semiconductor Package Heat Sink Material total production value, 2021-2032, (USD Million)
Global Semiconductor Package Heat Sink Material production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Pcs), (based on production site)
Global Semiconductor Package Heat Sink Material consumption by region & country, CAGR, 2021-2032 & (K Pcs)
U.S. VS China: Semiconductor Package Heat Sink Material domestic production, consumption, key domestic manufacturers and share
Global Semiconductor Package Heat Sink Material production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Pcs)
Global Semiconductor Package Heat Sink Material production by Product Type, production, value, CAGR, 2021-2032, (USD Million) & (K Pcs)
Global Semiconductor Package Heat Sink Material production by Application, production, value, CAGR, 2021-2032, (USD Million) & (K Pcs)

This report profiles key players in the global Semiconductor Package Heat Sink Material market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Shinko, Honeywell Advanced Materials, Jentech Precision Industrial, Denka, Sumitomo Electric (A.L.M.T. Corp.), Plansee, TAIWA CO., Ltd., Dana Incorporated, Kawaso Texcel, Wieland Microcool, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Semiconductor Package Heat Sink Material market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (K Pcs) and average price (US$/Pcs) by manufacturer, by Product Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

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Global Semiconductor Package Heat Sink Material Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Semiconductor Package Heat Sink Material Market, Segmentation by Product Type:

IC Package Heat Spreaders

Power Module Baseplate

Heatspreader for Ceramic/Metal/Plastic Package

Spacer

Global Semiconductor Package Heat Sink Material Market, Segmentation by Material:

Copper Heat Spreader

AlSiC Heat Spreader

CuMo Heat Spreader

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CuW Heat Spreader

Diamond Heat Spreaders

CPC (Cu-MoCu-Cu)

Others

Global Semiconductor Package Heat Sink Material Market, Segmentation by Application:

CPU/GPU

Power Module

Semiconductor RF Device

Communication

Others

Companies Profiled:

Shinko

Honeywell Advanced Materials

Jentech Precision Industrial

Denka

Sumitomo Electric (A.L.M.T. Corp.)

Plansee

TAIWA CO., Ltd.

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Dana Incorporated

Kawaso Texcel

Wieland Microcool

CPS Technologies

Element Six

AMETEK

Huangshan Googe

Jiangyin Saiying electron

Suzhou Haoli Electronic Technology

Kunshan Gootage Thermal Technology

SITRI Material Technologies

Hunan Harvest Technology Development

Malico Inc

Amulaire Thermal Technology

I-Chiun

Favor Precision Technology

Niching Industrial Corporation

Fastrong Technologies Corp.

ECE (Excel Cell Electronic)

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Shandong Ruisi Precision Industry

HongRiDa Electronics (HRD)

TBT Co., Ltd

Key Questions Answered:

1. How big is the global Semiconductor Package Heat Sink Material market?
2. What is the demand of the global Semiconductor Package Heat Sink Material market?
3. What is the year over year growth of the global Semiconductor Package Heat Sink Material market?
4. What is the production and production value of the global Semiconductor Package Heat Sink Material market?
5. Who are the key producers in the global Semiconductor Package Heat Sink Material market?
6. What are the growth factors driving the market demand?

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