

What are some brands of high thermal conductivity aluminum optical modules



Article Overview

Brands and alloys for high thermal conductivity aluminum optical modules include Nikkei MC Aluminum America's Al-Si, Al-Fe, Al-Ni series, and Alcoa's AT237 alloy.

Key Aluminum Alloys for Optical Modules

- Nikkei MC Aluminum America offers high thermal conductivity aluminum alloys suitable for optical modules, heat sinks, and electronics. Their Al-Si, Al-Fe, and Al-Ni series provide a balance of thermal performance, castability, and structural integrity, making them suitable for LED lighting, motor parts, and high-speed optical modules .
- Alcoa AT237 is a specialized high thermal conductivity alloy designed for electronics and electrical applications. It allows for thin walls, small parts, and complex shapes, making it ideal for optical module housings where efficient heat dissipation is critical .
- 6063-T5 Aluminum is widely used in heat sink applications due to its combination of thermal conductivity (201–210 W/m·K), extrudability, and structural adequacy, which can also be applied in optical module housings requiring fine fins for heat dissipation .

Optical Module Housing Considerations

Aluminum alloys are preferred for optical module housings because they offer good thermal conductivity, low weight, and cost-effectiveness. For high-speed modules (400G, 800G, and beyond), thermal management is critical, and aluminum housings are often paired with advanced thermal interface materials (TIMs) or integrated hea...

Article Content

Aug 01, 2025

Why AlN Ceramic Substrates Are Used in Optical Modules

Due to its excellent thermal conductivity and electrical insulation properties, aluminum nitride (AlN) ceramic substrates

Sep 13, 2025

High Thermal Conductivity Aluminum Alloy Modules

Our cutting-edge lighting solutions feature high thermal conductivity aluminum alloy modules that enhance durability and efficiency.

Mar 12, 2026

Optical Module Housings Guide

Discover the role of optical module housings in data centers & 5G. Learn about materials like ceramics & alloys,

Jun 17, 2026

Top 10 Companies in the High Thermal Conductivity Diamond

In this blog, we profile the Top 10 Companies in the High Thermal Conductivity Diamond Aluminum Industry —a

Apr 04, 2026

Aluminum for Optics, Electronics

Aluminum alloys for optical and electronic require a low CTE (coefficient of thermal expansion) and often some high temperature

Apr 21, 2026

High Conductivity Aluminum Alloys: A Comprehensive Overview

High conductivity aluminum alloys have become pivotal in various industrial applications due to their exceptional

Apr 27, 2026

Thermal Conductivity Comparison for Distinctive Alloys of Aluminum

Pure aluminum holds the highest possible value among all the die-casting options. However, such high conductivity

Mar 26, 2026

Henkel unveils high thermal conductivity gap filler for AI data center ...

While next-generation 800G, 1.6T, and coherent optical transceivers are meeting speed, distance, latency, and

Aug 27, 2025

Aluminium Conductivity Thermal: Ranking the Best Heat Conductors

This article ranks the best heat conductors across both pure metals and aluminium alloy families, explains what

Jan 15, 2026

How Aluminum Nitride Ceramics Solve the Thermal and High

The 5G and AI computing revolution is confronting a core contradiction in optical modules: heat dissipation versus

Jul 15, 2026

Ceramic Substrates for Optical Communication Modules | High Thermal ...

Enhance your optical communication systems with our high-performance Ceramic Substrates, specifically designed for optical

Feb 22, 2026

Thermal Conductivity Solution for Optical Modules

Thermal Conductivity Solutions for Optical Modules: Keeping the Light Cool Optical modules (transceivers) are the

Jul 23, 2026

Smart Multilayer AlN Substrate and Packaging | TDK Electronics

TDK's new smart AlN multilayer substrates and packages are shifting the boundaries of high-power devices in terms of power

Jan 24, 2026

Materials with high thermal conductivity

Discover the significance of materials with high thermal conductivity - from copper to nanomaterials and their impact on technology.

Jun 12, 2026

Thermal Conductivity of Aluminium

The high thermal conductivity of pure aluminum is primarily due to the efficient movement of free electrons. When alloying elements

Dec 18, 2025

Best Aluminum Alloys For Heat Transfer

In particular, injection molded aluminum may be lower in density, but its thermal conductivity still remains high. While extruded or die

Mar 21, 2026

Aluminum (Al) Mirrors

Aluminum mirrors from Kingwin Optics provide exceptional reflective performance for thermal imaging systems,

Mar 10, 2026

Thermal and Electrical Conductivity of Aluminum Alloys:

Abstract This critical review examines past and current studies to enhance conductivity properties of aluminum (Al)

Aug 14, 2025

High In-Plane Thermal Conductivity of Aluminum Nitride Thin Films

High thermal conductivity materials show promise for thermal mitigation and heat removal in devices. However,

Dec 05, 2025

High Thermal Conductivity Alloys

Explore high thermal conductivity aluminum alloys for heat sinks, radiation plates, and parts needing efficient heat dissipation.

May 12, 2026

Smart Multilayer AlN Substrate and Packaging | TDK Electronics

AlN offers a high thermal conductivity of 180 W/m K Compared to other standard materials such as Al_2O_3 (Aluminum oxide) or

Feb 20, 2026

#aluminumnitride #opticalmodules #thermalmanagement #datacenter

AI data centers are pushing optical modules to 400G, 800G, and beyond. More speed = more heat. And that heat is becoming a

Apr 05, 2026

Top 10 Thermally Conductive Materials

Top 10 thermally conductive materials with a high thermal conductivity that can effectively transfer and take up heat from their

May 06, 2026

High Conductivity Aluminum Alloys: A Comprehensive Overview

Future Trends in High Conductivity Aluminum Alloys Nanostructured Alloys Eco-Friendly Production Conclusion

Oct 31, 2025

Thermal Conductivity Chart of Aluminum Profiles | MachineMFG

Ever wondered how different aluminum alloys compare in thermal conductivity? This article presents a detailed chart

May 13, 2026

Why Aluminum Nitride (AlN) Substrates Are Critical for 800G and 1.6T ...

With the widespread adoption of 800G optical modules and the gradual deployment of 1.6T products, the issues of heat

Jun 28, 2026

Effect of alloying elements on thermal conductivity of aluminum ...

The thermal conductivity of aluminum alloys is mainly influenced by alloying elements, including their species,

May 17, 2026

Extended study into the prominence of aluminum content in controlling ...

Extended study into the prominence of aluminum content in controlling optical parameters, thermal properties,

Dec 29, 2025

Spectral Emissivity and Thermal Conductivity Properties of Black ...

Black aluminum is a material characterized by high surface porosity due to columnar growth and exhibits unique optical

Apr 08, 2026

CerAMfacturing of Aluminum Nitride with High Thermal Conductivity

Aluminum nitride (AlN) is an excellent material for heat sinks and is used, for example, in high-performance electronics,

Jan 03, 2026

Analysis of thermal conductivity of aluminum alloys by ...

Abstract Thermal conductivity (TC) of commercially available Aluminum alloys is often hard to predict by machine

Jan 15, 2026

High Thermal Conductivity AlN for Optical Modules

When 1.6T optical modules overheat, causing a potential 30% drop in computing power, aluminum nitride (AlN)

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://khanimamboguesthouse.co.za>

Email: sales@khanimamboguesthouse.co.za

Phone: +27 64 852 1973

Address: Unit 7, Greenway Business Park, 8 Innovation Drive, Centurion, 0157, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

