

Optical Module Die Casting Production



AI Overview

Die casting is a high-precision, high-volume manufacturing process used to produce durable, thermally efficient, and dimensionally accurate optical module housings.

Overview of Die Casting for Optical Modules

Die casting is a metal casting process where molten metal is injected under high pressure into precision molds, producing components with tight tolerances, excellent surface finish, and high structural integrity. For optical modules, die casting is ideal because it ensures micron-level accuracy, which is critical for maintaining optical alignment and signal stability in high-speed communication systems.

Materials and Alloys

Common materials for optical module die casting include:

- Aluminum alloys (e.g., ADC12) for lightweight, high thermal conductivity, and corrosion resistance.
- Zinc alloys for excellent electromagnetic interference (EMI) shielding and dimensional stability.
- Magnesium alloys for lightweight housings with good thermal performance.

These materials are selected to balance mechanical strength, thermal management, and EMI shielding, ensuring reliable operation under high-speed and high-density conditions.

Precision and Tolerances

Die-cast optical module housings require tight dimensional control to ensure proper alignment of optical components and connectors. High-pressure die casting allows for:

- Tolerances as tight as ± 0.0005 inches.
- Consistent wall thickness distribution to prevent shrinkage and stress concentration.
- Repeatable production of complex, thin-walled structures suitable for SFP, QSFP, and OSFP modules.

Thermal Management

Optical modules generate heat during operation. Die-cast housings are designed to:

- Dissipate heat efficiently from core areas to prevent local overheating.
- Maintain structural stability under repeated insertion cycles and high-speed operation.
- Optimize thermal conduction paths through integrated wall thickness and material selection.

Post-Processing and Surface Treatment

After casting, optical module housings may undergo:

- Machining, tapping,...

Article Content

High-Quality Assemblable Die Casting 400g Qsfp Optical Module

QSFP Optical Module Housing 10 Production capacity depend on complicity of different products and the quantity 2 Production Type Mass Production 11 Type of production Mass production 3 Material

Why Die Castings Are Essential for Modern Optical Modules

Conclusion In modern optical communication systems, die casting is far more than just a manufacturing process—it is a foundation of performance, reliability, and innovation. From heat dissipation to EMI

Die Casting Optical Transceiver Housing

If you are looking for a reliable custom manufacturer of die-cast housings, please contact us. We offer one-stop solutions for die casting optical transceiver

Assemblable Cold Chamber Die Casting Qsfp-Dd

Since established in 2002, Shenzhen Aoli Casting Hardware Products Co., Ltd has been grown from a professional zinc alloy die-casting

Custom Die Casting For Optical Communication | GuangWei

At Dongguan GuangWei Communication Technology Co., Ltd., we engineer high-precision zinc and aluminum alloy die-cast housings for next-generation optical transceivers — including SFP, SFP+,

High-End Precision Die-Casting Osfp Optical Module

Since established in 2002, Shenzhen Aoli Casting Hardware Products Co., Ltd has been grown from a professional zinc alloy die-casting

How to achieve outstanding quality, performance and costing of optical ...

In general, the chassis and cover of the optical module are made of die-casting, which has the advantages of high dimensional accuracy and low processing cost, so it is the most commonly

Premium 400g Qsfp-Dd Die Casting Housing for Optical

Premium 400g Qsfp-Dd Die Casting Housing for Optical Modules, Find Details and Price about Die Casting Housing and Optical Module Housing from Dongguan

Dongguan Youge communication Co.,Ltd

We handle molding, plastic injection, die-casting, Stamping, assembling, and packing at our factory. All these allows us to carefully control

Die-Casting Base For Optical Module Housing

Die-Casting Base For Optical Module Housing The structural organization of precision Die-Casting Base is tight and the strength is relatively high. Die casting

Die Cast Optical Parts | Precision Solutions for High-End Optics

The die cast optical components mentioned in this article refer to parts manufactured through the die casting process that provide support or protection for your optical equipment. Potential applications

Why Optical Module Manufacturers Choose Zinc Die Casting As

Many optical module manufacturers choose zinc die casting for their housings because it offers a unique combination of precision, strength, and production efficiency.

Precision die casting for Fiber Optic Components

Industrial and smart infrastructure optical systems As network speeds increase and optical components become more compact, precise die-cast housings and supports are essential for

High-End Aluminum Die Casting Base Parts for Optical Module

Since established in 2002, Shenzhen Aoli Casting Hardware Products Co., Ltd has been grown from a professional zinc alloy die-casting manufacturer to a professional enterprise engaged in

100g Qsfp-Dd Die Casting Housing for Optical Module

100g Qsfp-Dd Die Casting Housing for Optical Module, Find Details and Price about Aoc Adapter Chassis Aoc Adapter Cover from 100g Qsfp-Dd Die Casting

Casting information --optical module

1.Casting information Casting name: optical module casting requirement□surface requirements casting process: Die Casting machine tonnage:250 punch diameter mm:50 alloy

What the Role of Die Casting in Optical Transceiver

Die casting offers numerous advantages when used for optical transceiver housings. Firstly, it enables the production of highly accurate and

What are some die-cast optical module products

Overview The die cast optical components mentioned in this article refer to parts manufactured through the die casting process that provide support or protection for your optical equipment. Potential

Optics Die Casting

With Elimold, you can enjoy the best advice and practical solutions for optical die casting molds and mass production of optical die casting parts. We offer a wide range of tolerances, materials and

Assemblable 800g Osfp Zamak 3# Base Die Castings

Assemblable 800g Osfp Zamak 3# Base Die Castings for Optical Module, Find Details and Price about Die Casting Zinc Alloy Parts from Assemblable 800g

Precision Die Casting SFP Housing: A Closer Look

The precision die casting process also ensures excellent dimensional stability and surface finish for the SFP housing. This is crucial for maintaining the

Forming and casting

We develop component designs, replication and cutting tools, optimize machining processes and cycle times for forming and casting of optical glass, fiber

High-End Osfp Optical Module Structure by Cold

Since established in 2002, Shenzhen Aoli Casting Hardware Products Co., Ltd has been grown from a professional zinc alloy die-casting

High Precision Zinc Alloy Die Casting Parts for Optical Transceiver ...

We offer a full-spectrum, one-stop manufacturing solution encompassing mold design, die casting, CNC machining, surface treatment (such as plating, spraying, and passivation), and comprehensive

#opticalmodules #diecasting #zincdiecasting #dfm # ...

How We Approach a New Optical Module Project (From RFQ to Mass Production) In high-speed optical modules (800G / 1.6T), success is rarely determined at the production stage. ☐☐ It's decided ...

Contact Us

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