

Fiber optic active connector PC type end face

Article Overview

A PC (Physical Contact) fiber optic connector end face features a slightly curved surface that allows direct contact between fiber cores, reducing air gaps and enabling reliable optical signal transmission.

Structure and Design

The PC end face is polished to a slight convex curvature, with the fiber core positioned at the highest point of the curve. This design ensures that when two fibers are connected, their cores make physical contact, minimizing the air gap between them and improving light coupling efficiency. The curvature is subtle, giving the appearance of a nearly flat surface while still achieving physical contact .

Performance Characteristics

- o Return Loss: PC connectors typically have a return loss of around -40 dB, which is sufficient for general data, video, and voice transmission .
- o Insertion Loss: The insertion loss is generally low, often less than 0.3 dB, depending on connector quality and cleanliness .
- o Comparison: PC connectors are older technology and have been largely replaced by UPC (Ultra Physical Contact) connectors, which offer a more domed polish and higher return loss (-50 dB), and APC (Angled Physical Contact) connectors, which have an 8° angled end face to reduce back-reflection (-60 dB), .

Applications

PC connectors are widely used in telecom networks, LANs, MANs, and data centers where moderate return loss is acceptable. They are compatible with standard connector types such as SC, FC, and ST . While UPC and APC connectors are preferred for high-speed or high-reflection-sensitive applications, PC connectors remain cost-effective and reliable for general optical communication needs.

Summary

The PC type end face is a fundamental fiber optic connector design that ensures physical contact between fiber cores, reducing signal loss and maintaining stable transmission. Its simplicity and cost-effectiveness make it suitable for many standard optical communication systems, though higher-performance UPC and APC connectors are used in more demanding scenarios .

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This article includes the latest fiber optic connector types chart, covering important

Compare PC vs UPC vs APC fiber connectors to choose the best type for your network.

End Face Structure - The basic difference between UPC vs PC is the structure of the end

In the PC connector, the two fibers meet, as they do with the flat connector, but the end faces are polished to be

This article explores the importance of key parameters--Radius of Curvature, Apex Offset, and Fiber

hing fiber optic connectors. PC -the first way, means slightly oval shape which is perpendicular towards connection axis, and the

Back reflection represents the light reflected back to the source from a connector mating or other discontinuity in a fiber. It is the

Among these components, fiber connector types are essential to network performance,

Introduction to Different Connector Types To put it simply, PC, UPC, and APC refer to the polish styles of the ferrules

APC are generally used for optical RF applications in high wavelength ranges such as CATV, but also for

Learn the key differences between APC vs UPC vs PC fiber connectors: end-face shape, return loss, polishing types, compatibility

Fiber connectors are connectors used as terminations of optical fiber cables. They are widely used in optical fiber communications

To put it simply, PC, UPC, and APC define the type of polish used on the fiber optic

PC stands for Physical Contact. This polishing style was created to solve the biggest problem of the early flat-polished

APC, UPC, and PC connectors define different shapes of fiber connector end faces. Either of them is physical contact

But it should be paired with other angled physical contact connectors because of its angled



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