

High Temperature Resistance Selection Guide for Data Center Interconnect Core Switches



Article Overview

Selecting high-temperature resistant components for DCI core switches requires careful consideration of thermal limits, interface materials, and connector performance to ensure reliability and signal integrity under elevated operating conditions.

Thermal Guidelines and Environmental Considerations

Data center core switches must operate reliably within the thermal envelope defined by industry standards. ASHRAE recommends maintaining IT equipment within a temperature range of 18–27°C for optimal performance, but modern high-density environments may expose switches to higher temperatures, sometimes exceeding 35°C. Elevated temperatures can impact switch reliability, power distribution, and component lifespan, making thermal management a critical design factor .

Thermal Interface Materials (TIMs)

Using high-performance thermal interface materials is essential for dissipating heat from switch ASICs, FPGAs, and CPUs. Phase-change materials (PCM) in pad or paste form provide low thermal impedance and reliable heat transfer, with typical bond line thicknesses below 0.038 mm for optimal performance. PCM pads and pastes are suitable for high-temperature applications, with phase-change points around 45°C a...

Article Content

High Temperature Resistance Selection Guide for Data Center ...

We'll discuss thermal resistance in conventional mil-spec style interconnects, as well as higher and lower temperature performing

Switches-H3C

H3C industrial switches can operate in -40°C - 75°C environments for a long time, and use industrial components to reach IP40

POWER INTERCONNECT PRODUCTS

SELECTOR GUIDE Our power interconnect portfolio provides a broad range of solutions to meet your power design challenges.

High-Speed Copper Interconnect Solutions

Voilex High-Speed Copper Interconnect Solutions As next-gen data centres deploy faster speeds in a tighter space, cables must

BRKCOM-2658

Port Consolidation, Local Switching (Traffic Seg) Plug-n-play fabric, Better collab between NW/Storage/Server admin, Highly

Intra-data center interconnects, networking, and architectures

This leads to a discussion on the advantages and limitations of different technologies in data centers. Finally, we present our

High Temperature Resistance Selection Guide for Data Center ...

Best Core Switches for 2026 Enterprise Networks Discover the best core switches for 2026 enterprise networks. Explore top-rated

High Temperatures Wire & Cable Applications | TPC Wire & Cable

Explore Amphenol TPC's high temperature cable solutions engineered to withstand extreme heat, abrasion, and chemicals in steel

USA and Local National Gas Station Price Heat Map

Check out the heat map for average unleaded gas prices around the country for both Canada and the US. Type in your city to see a

Switches

Data Center Switches Ultra-Wideband, Simple, and Intelligent Integration Providing scalable, intelligent, and fully visualized

H3C S10500X-G Series Next Generation Core Switch

Powered by the H3C COMWARE 7 network operating system, the S10500X-G offers a comprehensive set of features tailored to both

Best Data Center Switching Reviews 2026 | Gartner Peer Insights

Find the top Data Center Switching Solutions with Gartner. Compare and filter by verified product reviews and choose the software

Data Center Ethernet Switch Connectors | Molex

High-Performance Ethernet Switch Connectors As data centers evolve, the demand for high-speed performance, reliable signal

H3C S12500X-AF Data Center Cloud Core Series Switches

The S12500X-AF switch series use QoS policies to filter and limit traffic from data plane to control plane. During a DoS attack, the

Data Center Switch Wiki and Buying Guide

Learn how to choose the best data center switch with insights on functions, size, data rate, hardware and software to future

Data Center Interconnect Reference Design Guide

Data Center Interconnect Reference Design Guide Data centers of all sizes host significant amounts of business-critical data—data

Data Center Networking Solutions

Stay in control with Cisco data center networking solutions that provide industry leading networking operations, automation, and

Breaking Down the Core Data Center Design Criteria for 2025

This guide of gbc engineers delves into the essential data center design criteria, providing insights to help you build a

Guide to Select and Upgrade Cisco Data Center Switch

Guide to Select and Upgrade Cisco Data Center Switch How to identify the right Cisco Data Center/Nexus Switch for your needs?

HIGH-SPEED INTERCONNECTS

As data center interconnect strategies shift, market confusion has increased around the technologies, suppliers, coding and build

H3C S10500X Series Multiservice Core Switch

H3C S10500X series switch is designed for the core layer of data centers and next-generation campus networks as well as the

Switches in a Data Center

Switch selection is generally considered first during data center design. To meet the needs of different customers, Huawei produces

H3C S9827 Series Data Center Switches

H3C S9827 high-density intelligent series switches is developed for data centers and cloud computing networks. It provides powerful

H3C S6800 Series Data Center Switches

By using TRILL technology, S6800 series switch becomes the ideal choice to build a large, high-performance, and scalable cloud

Best Practices Guide for Energy-Efficient Data Center Design

Executive Summary This guide provides an overview of best practices for energy-efficient data center design which spans the

Contact Us

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