New Product Announcement

PI7C9X3G1224GP

PCI Express 3.0 12-Port/24-Lane Packet Switch for Industrial, Storage, and Network Systems

The DIODES™ PI7C9X3G1224GP is a PCIe® 3.0 packet switch that supports 24-lane Serializer/Deserializer (SERDES) in flexible 2-port to 12-port configurations. The architecture of the PCIe packet switch allows flexible port configuration by allocating variable lane widths for each port, making it suitable for industrial, storage, and network systems.

The packet switch can be configured to have different port types, such as upstream, downstream, and cross-domain end-point (CDEP) to support various applications. This includes port fan-out and multi-host connectivity. Inside the packet switch, multiple direct memory access (DMA) channels are embedded to facilitate data communication more efficiently among the host(s) and end-points.

The PI7C9X3G1224GP offers additional features, such as a built-in thermal sensor that instantly reports operational temperature, maintenance of high-signal integrity in stress channels, and advanced power management mechanisms. It supports higher levels of reliability, availability, and serviceability (RAS), and surprise removal with LED enclosure management.

The device is available in a 324-pin 19mm x 19mm HFCBGA package.

The DIODES™ Advantage

The PI7C9X3G1224GP supports multiple high-performance endpoint connections and failover systems.

- **Integrated PCIe 3.0 Clock Buffer**
  Provides flexibility in design and reduces the overall cost
- **Low Packet Forwarding Latency <150ns (Typical Case)**
  High-performance for data transmission
- **Supports Multi-Host Application**
  A cross-domain end-point (CDEP) and 8 physical or 16 virtual DMA channels
- **High Reliability**
  Advanced error reporting, error handling mechanism, end-to-end data protection, hot-plug, and surprise removal
- **Diagnostic Software Tools: PHY Eye, MAC Viewer, Online Remote Loopback PRBS, and Compliance Test**
  Helps with debugging and project development

Applications

- AI/deep learning
- NAS/storage
- Datacenter servers
- Embedded systems
- HBA/combo cards
- Fail-over systems
- Surveillance/security
- Networking/switches
- 5G/wired communication
- Printers/peripherals

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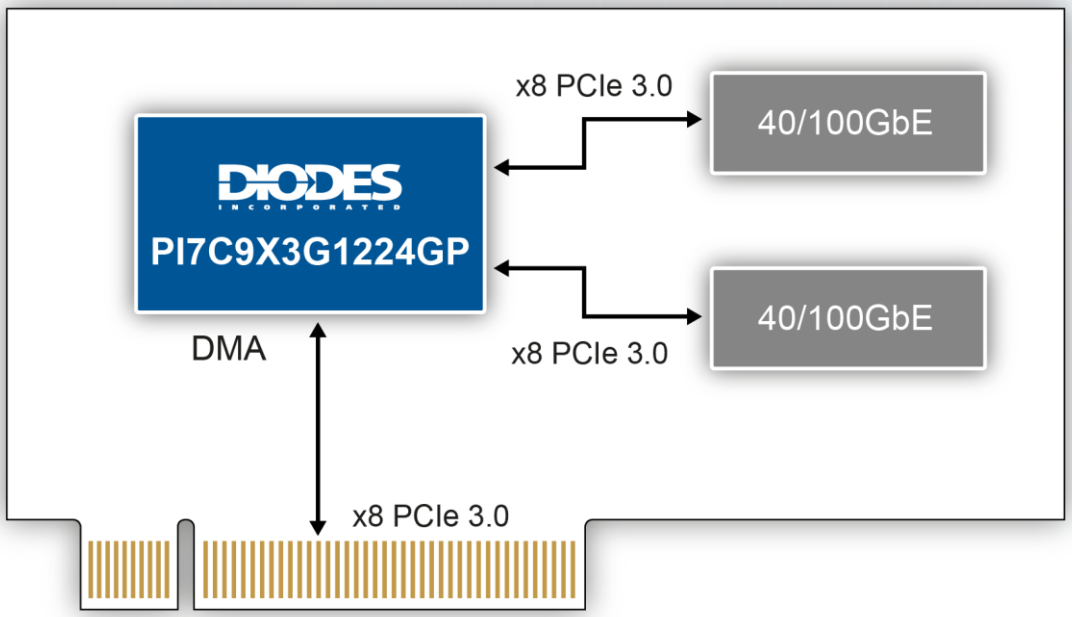
Typical Application - Multi-Port Network HBA



PCIe 3.0 Packet Switch Portfolio

Part Number	PCIe Specification	Ports	Lanes	Power*	Latency	Operating Temperature	Package
				(W)	(ns)	(°C)	
PI7C9X3G1224GP	**3.0**	**12**	**24**	**4.3**	**150**	**-40 to +85**	**HFCBGA (HFC324)**
PI7C9X3G1632GP	3.0	16	32	5.6	150	-40 to +85	HFCBGA (HFC676)
PI7C9X3G816GP	3.0	8	16	4.1	150	-40 to +85	HFCBGA (HFC324)
PI7C9X3G808GP	3.0	8	8	2.9	150	-40 to +85	HFCBGA (HFC196)
PI7C9X3G606GP	3.0	6	6	2.5	150	-40 to +85	FC LFBGA (FCA144)

* Power is measured under the conditions of 0.95V/1.8V with PCIe 3.0 device usage on all downstream ports and full data traffic operation on all endpoints when Tj=80°C

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package Code	Package	Pin Count	Moisture Sensitivity	Packing	
						Quantity	Carrier
PI7C9X3G1224GPAHFCE	Standard	HFC	19mm x 19mm HFCBGA	324	MSL-3	84	Tray