DIODES
INCORPORATED®

PCI Express 3.0 8-Port/ 16-Lane Packet Switch Enhances Performance of Storage/Embedded/Network Applications

The PI7C9X3G816GP is a PCIe® 3.0 packet switch that supports 16-lane SERDES in flexible 2-port, 3-port, 4-port, 5-port, and 8-port configurations.

The architecture of the PCIe packet switch allows for flexible port configuration by allocating variable lane widths for each port.

The packet switch can be configured to have different port types such as upstream ports, downstream ports, and Cross-Domain End-Point (CDEP) ports to support various applications, which include port fan-out and dual-host connectivity.

Inside the packet switch, multiple DMA channels are embedded to facilitate data communication more efficiently among the host(s) and end points.

The PI7C9X3G816GP offers additional benefits such as maintaining high-signal integrity in stress channels; advanced power management mechanisms; enhanced reliability, availability and serviceability (RAS); and surprised hot plug with LED enclosure management.

The Diodes Advantage

- **Flexible ports/lanes configuration**
  x1/x2/x4 lanes options meet multiple applications
- **Integrated PCIe 3.0 clock buffer**
  Provides flexibility in design and reduces the overall cost
- **Low packet forwarding latency <150ns (typical case)**
  Provides high performance for data transmission
- **Advanced power savings**
  Reduces power usage and power dissipation
- **Supports dual host application**
  Including Cross-Domain End-Point (CDEP) and 4 physical or 8 virtual DMA channels
- **Advanced error reporting, error handling mechanism, end-to-end data protection, hot-plug, and surprise removal**
  Highly reliable
- **Diagnostic software tools: PHY eye, MAC viewer, online remote loopback PRBS, and compliance testing**
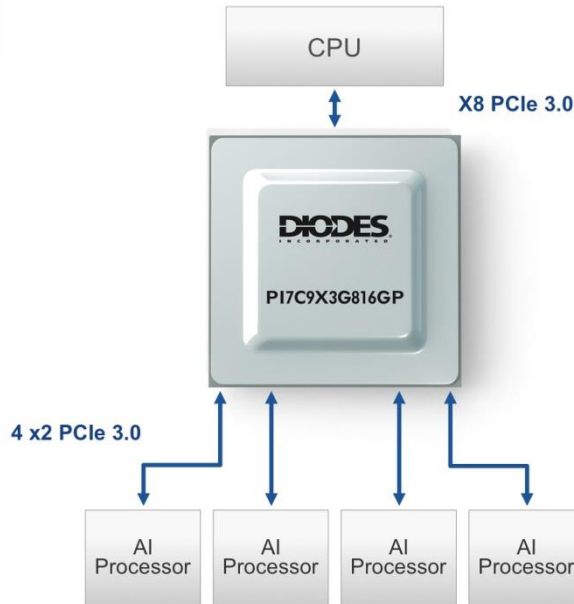 Helpful in debugging and project development

Applications

- Networking switches/routers
- 5G/Wired/Wireless telecom/Data Communication
- Printers/MFPs/peripherals
- Surveillance/security
- Fail-over systems
- AI/deep learning
- NAS/storage
- Data center servers
- Embedded systems
- HBA/combo cards
- IPC/industrial control

Typical Application
AI/Deep Learning:

PCIe 3.0 Packet Switch Product Portfolio

Part Number	PCIe Specification	Ports	Lanes	Power* (W)	Operating Temperature (ºC)	Package
PI7C9X3G816GP	**3.0**	**8**	**16**	**4.1**	**-40~ +85**	**HFC324**
PI7C9X3G808GP	3.0	8	8	2.9	-40~ +85	HFC196
PI7C9X3G606GP	3.0	6	6	2.5	-40~ +85	FCA144

* Power is measured under the conditions of 0.95V/1.8V with PCIe3 devices usage on all downstream ports and full data traffic operation on all EPs

Ordering Information

Orderable Part Number	Compliance	Package Code	Package	Moisture Sensitivity	Pin Count	Quantity per Tray
PI7C9X3G816GPBHFCE	Standard	HFC	19x19mm HFCBBA	MSL-3	234	84