



New Product Announcement

PI7C9X3G606GPQ PI7C9X3G808GPQ PI7C9X3G816GPQ

PCIe 3.0, 6-8 Ports/6-16 Lanes, Automotive-Compliant Packet Switch for Connected Driving Applications

The PI7C9X3GxxxGPQ automotive PCIe® 3.0 packet switch family supports up to 16-lane SERDES in flexible 2-, 3-, 4-, 5-, 6-, and 8-port configurations for ADAS, telematics and infotainment applications.

Their architecture allows flexible port configuration by allocating variable lane widths for each port. They can be configured to have different port types, such as upstream port, downstream ports and cross-domain end-point (CDEP) ports to support various applications.

The PI7C9X3GxxxGPQ can connect up to 7 endpoints, such as PCIe SSD drives. They support multi-host applications and up to 8 DMA physical channels and 3 configurable CDEP ports for high performance fabric and failover applications. Their superior signal integrity performance enables support for long PCIe trace length with loss more than 30dB.

- The PI7C9X3G606GPQ offers 6 PCIe3 ports and 6 PCIe3 lanes in a 144-pin 10mm x 10mm FCCSP.
- The PI7C9X3G808GPQ offers 8 PCIe3 ports and 8 PCIe3 lanes in a 196-pin 15mm x 15mm HFCBGA.
- The PI7C9X3G816GPQ offers 8 PCIe3 ports and 16 PCIe3 lanes in a 324-pin 19mm x 19mm HFCBGA.

The PI7C9X3GxxxGPQ offers additional benefits such as maintaining high-signal integrity in stress channel, advanced power management mechanism, enhanced reliability, availability, and serviceability (RAS), and surprised hot plug with LED enclosure management.

Automotive-compliant - AEC qualified, manufactured in IATF 16949 certified sites supporting PPAP documents.

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The DIODES Advantage

Automotive-compliant PCIe 3.0 packet switches bring greater data lane versatility to automotive systems.

- **Multi-Host Application**
Supports cross-domain end-point (CDEP) ports, and up to 8 physical or 16 virtual DMA channels
- **Low Packet Forwarding Latency <150ns (Typical)**
Maintains high performance for data transmissions
- **Integrated PCIe 3.0 Clock Buffer**
Provides flexibility in design and reduces overall cost
- **Diagnostic Software Tools: PHY Eye, MAC Viewer, Online Remote Loopback PRBS, and Compliance Tests**
Assists with debugging and project development
- **Advanced Error Reporting, Error Handling, End-to-End Data Protection, Hot-Plug and Surprise Removal**
Ensures high reliability

Applications

PCIe packet switching/routing in:

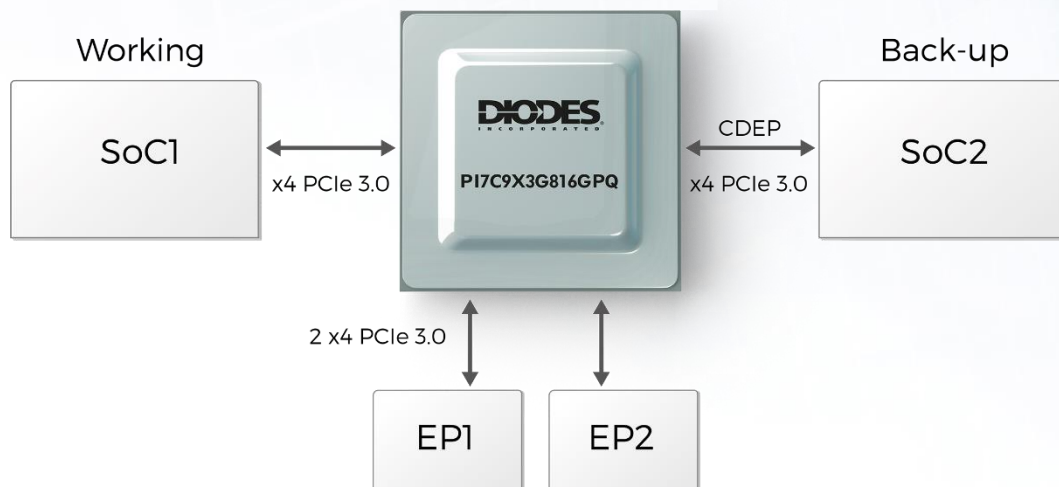
- ADAS
- Zonal ECUs
- Infotainment
- In-vehicle communication
- Central controllers
- Telematics
- Cockpit controls



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Typical Application



Product Portfolio

Part Number	PCIe Specification	Ports	Lanes	Power (Typical)	Latency	Operating Temperature	AEC-Q100	Package
				W	ns	°C		
PI7C9X3G606GPQ	3.0	6	6	2.5	150	-40 to +85	Grade3	FCCSP (FCA144)
PI7C9X3G808GPQ	3.0	8	8	2.9	150	-40 to +85	Grade3	HFCBGA (HFC196)
PI7C9X3G816GPQ	3.0	8	16	4.1	150	-40 to +85	Grade3	HFCBGA (HFC324)

Ordering Information

Orderable Part Number	Compliance (Only Automotive Support PPAPs)	Package Code	Package	Moisture Sensitivity	Packing	
					Carrier	Quantity
PI7C9X3G606GPQ3FCAEX	Automotive	FCA	144-pin FCCSP 10mm x 10mm	MSL-3	13" Tape & Reel	3,000
PI7C9X3G808GPQ3HFCEX	Automotive	HFC	196-pin HFCBGA 15mm x 15mm	MSL-3	13" Tape & Reel	800
PI7C9X3G816GPQ3HFCE	Automotive	HFC	324-pin HFCBGA 19mm x 19mm	MSL-3	Tray	84

Note: Adding an X suffix =Tape & Reel