

# PI7C9X2G606PR

## PCIe 2 6-Port/6-Lane Packet Switch, GreenPacket Family

### Features

- PCISIG PCI Express 2.1 certified
- Reliability, Availability and Serviceability
  - Supports Data Poisoning and End-to-End CRC
  - Advanced Error Reporting and Logging
- Device State Power Management
  - Supports D0, D3Hot and D3Cold device power states
- Advanced Power Savings
  - Empty downstream ports are set to idle
- Programmable driver current and de-emphasis level at each individual port
- Port Arbitration: Round Robin (RR), Weighted RR and Time-based Weighted RR
- Extended Virtual Channel capability
  - Two Virtual Channels (VC) and Eight Traffic Class (TC) support
  - Independent TC/VC mapping for each port
- Supports Isochronous Traffic
  - Isochronous traffic class mapped to VC1 only
- Supports "Cut-through"(Default) as well as "Store and Forward" mode for switching packets
- Strapped pins configurable with optional EEPROM or SMBus
- Peer-to-peer switching between any two downstream ports
- Supports up to 512-byte maximum payload size
- Power Dissipation: 0.6 W typical in L0 normal mode
- Industrial Temperature Range: -40° to 85°C
- MTBF: 50,927,360 hours
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative.  
<https://www.diodes.com/quality/product-definitions/>
- Packaging (Pb-free & Green):
  - 196-pin LPGA 15mm x 15mm

### Applications

- Wireless AP/ Switch Router
- Wired/ Wireless Tele/ data communication
- Embedded system
- IPC/ Industrial control
- Automotive
- NAS/ Storage
- Server
- Printer/ MFP/ Peripheral
- Surveillance/ Security
- HBA/ Combo cards
- Set-top box and consumer devices
- NB/ PC Motherboard PCIe slot expansion

### Industry Specifications Compliance

- PCI Express<sup>®</sup> Base Specification, Revision 2.1
- PCI Express CEM Specification, Revision 2.0
- PCI-to-PCI Bridge Architecture Spec., Rev 1.2
- Advanced Configuration Power Interface (ACPI) Specification
- SMBus interface support

### Description

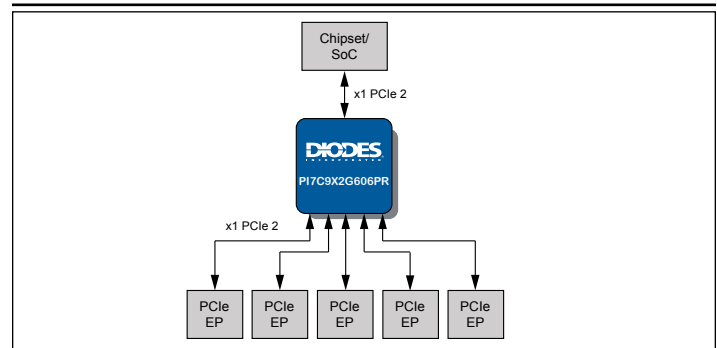
The PI7C9X2G606PR is a 6-lane PCI Express Gen 2 Switch with 6 PCI Express ports specifically designed to meet high performance and the latest GREEN low-power, lead (Pb)-free system requirements, such as Network, Embedded, Storage and other platforms. The name of the family, GreenPacket<sup>™</sup>, refers to Pericom proprietary power saving technology.

The PI7C9X2G606PR provides one upstream port supporting x1, and 5 downstream ports that support x1 operation. The flexible upstream port provides users the flexibility to expand or fan-out from a wide range of x86, ARM, MIPS, PowerPC SoC/ Chipset, and it is a suitable solution for wired/ wireless Networking, Switch router, Embedded, Storage, HBA, Surveillance, Combo card and other applications.

### Enhanced Features

- 150ns typical latency for packet running through switch without blocking
- Link Power Management
  - Supports L0, L0s, L1, L2, L2/L3Ready and L3 link power states
  - Active state power management for L0s and L1 states
  - Supports PCI-PM and ASPM of L1.1 PM Sub-state
- Supports Device Specific PME Turn-Off Message for each downstream port
- Support Access Control Service (ACS) for peer-to-peer traffic
- Support Address Translation (AT) packet for SR-IOV application
- Support OBFF and LTR
- Support Serial Hot Plug Controller

### Application Example



### Ordering Information

Part Number	Package	Description
PI7C9X2G606PRDNJAEX	NJA	196-Ball, Low Profile BGA (0.6mm Ball)
PI7C9X2G606PRDEVB	Board	Evaluation kit for PI7C9X2G606PRD

#### Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. D = Revision
5. E = Pb-free and Green
6. X suffix = Tape/Reel