

PI7C9X2G606PR

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

Features

- PCISIG PCI Express 2.1 certificated
- 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® 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

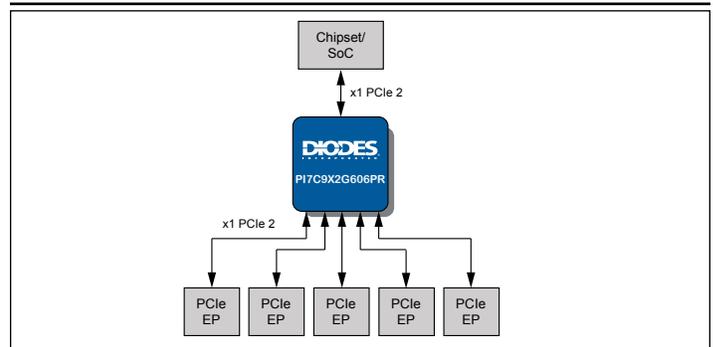
The PI7C9X2G606PR is a 6-lane PCI Express Gen 2 Switch with 6 PCI Express ports specifically designed to meet high performance and the latest GREEN low-power, lead (Pb)-free system requirements, such as Network, Embedded, Storage and other platforms. The name of the family, GreenPacket, refers to Diodes 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
PI7C9X2G606PRENJAEX	NJA	196-Ball, Low Profile BGA (0.6mm Ball)
PI7C9X2G606PREEVB	Board	Evaluation kit for PI7C9X2G606PRE

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. E = Revision
5. E = Pb-free and Green
6. X suffix = Tape/Reel