PI7C9X2G608GP

PCIe2 6-Port/ 8-Lane Packet Switch, GreenPacket Family

Features

→ 8-lane PCI Express Gen 2 Switch with 6 PCI Express ports
→ Supports "Cut-through"(Default) as well as "Store and Forward" mode for packet switching
→ Peer-to-peer switching between any two downstream ports
→ 150 ns typical latency for packet routed through Switch without blocking
→ Integrated reference clock for downstream ports
→ Register configurable with optional EEPROM, SMBus or I2C
→ Compliant with System Management (SM) Bus Revision 2.0
→ Compliant with I2C-Bus Specification Revision 2.1
→ Compliant with PCI Express Base Specification Revision 2.1
→ Compliant with PCI Express CEM Specification Revision 2.0
→ Compliant with PCI-to-PCI Bridge Architecture Specification Revision 1.2
→ Compliant with Advanced Configuration Power Interface (ACPI) Specification
→ Reliability, Availability and Serviceability
  ▫ Supports Data Poisoning and End-to-End CRC
  ▫ Advanced Error Reporting and Logging
→ Advanced Power Saving
  ▫ Empty downstream ports are set to idle state to minimize power consumption
→ Link Power Management
  ▫ Supports L0, L0s, L1, L2, L2/L3Ready and L3 link power states
  ▫ Active state power management for L0s and L1 states
→ Device State Power Management
  ▫ Supports D0, D3Hot and D3Cold device power states
→ Supports Device Specific PME Turn-Off Message for each downstream 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
  ▫ Disabled VCs' buffer is assigned to enabled VCs for resource sharing
  ▫ Independent TC/VC mapping for each port
  ▫ Provides VC arbitration selections: Strict Priority, Round Robin (RR) and Programmable Weighted RR
→ Supports Isochronous Traffic
  ▫ Isochronous traffic class mapped to VC1 only
  ▫ Strict time based credit policing
→ Supports up to 512-byte maximum payload size
→ Programmable driver current and de-emphasis level at each individual port
→ Support Address Translation (AT) and Access Control Service (ACS)
→ Support OBFF and LTR
→ Support Serial Hot Plug Controller
→ Low Power Dissipation: 1.05 W typical in L0 normal mode (Including clock buffer Pd)
→ Industrial Temperature Range -40°C to 85°C
→ 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/
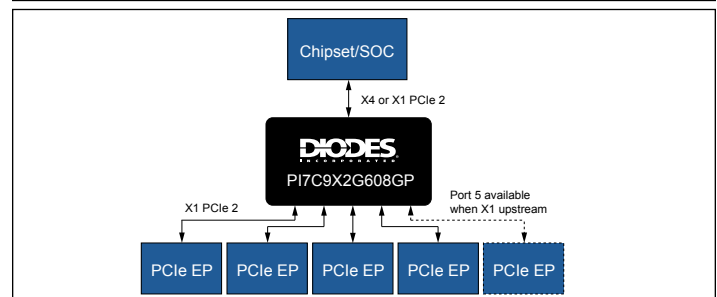→ Package: 196-pin LBGA 15mm x 15mm

Description

The PI7C9X2G608GP is an 8-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 Embedded, Storage, Network and other platforms. The name of the family, GreenPacket, refers to Diodes proprietary power saving technology.

The PI7C9X2G608GP provides one upstream port supporting x4 or x1, and 4 or 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 Embedded, Storage, wired/ wireless Networking, HBA, Surveillance, Combo card and other applications.

Applications

→ Embedded System
→ IPC/ Industrial Control
→ Automotive
→ NAS/ Storage
→ Server
→ Wireless AP/ Switch Router
→ Wired/ Wireless Tele/ Data Communication
→ Printer/ MFP/ Peripheral
→ Surveillance/ Security
→ HBA / Combo Cards
→ Set-top Box and Consumer Devices
→ NB/ PC Motherboard PCIe Slot Expansion

Application Example

Ordering Information

Part Number	Package	Description
PI7C9X2G608GPCNJEX	NJ	196-Pin, 15mm x 15mm(LBGA)
PI7C9X2G608GPCEVBX1U	Board	Evaluation kit for PI7C9X2G608GPC with x1 uplink
PI7C9X2G608GPCEVBX4U	Board	Evaluation kit for PI7C9X2G608GPC with x4 uplink

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