

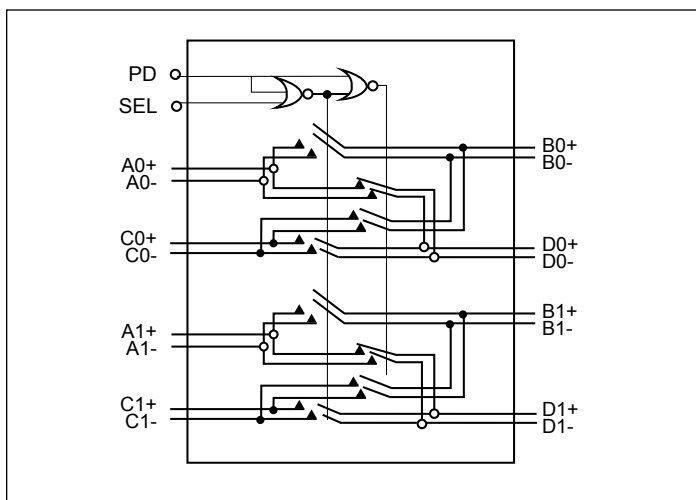
# PI3DBS16222

## 3.3V 20Gbps 4 Channel 2x2 Exchange Switch

### Features

- Four Differential Channel 2x2 Exchange Switch
- Data Rate 20Gbps Performance; Enable applications in PCI Express Gen 4, USB 3.1 Gen 2, Thunderbolt™ 3, 10G BASE-KR
- Bidirectional Operation
- Low Bit-to-Bit Skew: 10ps (Between ± Signals)
- Low Crosstalk:
  - -30dB @ 4.0GHz (8Gbps)
  - -19dB @ 8.0GHz (16Gbps)
- Low Insertion Loss:
  - -1.0dB @ 4.0GHz (8Gbps)
  - -1.5dB @ 8.0GHz (16Gbps)
  - -2.0dB @ 10 GHz
- V<sub>DD</sub> Operating Range: 3.3V ± 10%
- 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)
- Packaging (Pb-free & Green):
  - 30-contact, TQFN (ZL30), 2.5mm × 4.5mm
  - 24-contact, X1QFN(XEA24), 2mm × 4mm

### Block Diagram



### Description

The PI3DBS16222 is a differential exchange switch featuring pass-through pinout. It supports 2x2 exchange switch operating at 20Gbps, enables applications in PCI Express Gen 4, USB 3.1 Gen 2, Thunderbolt 3, 10G BASE-KR.

With the select control input low, Port A connects to port B, and port C connects to port D for an 8-channel differential pass-through. When the select control input is high Port A connects to port D, and port B connects to port C.

### Applications

- Server/Storage (PCIe Gen 4)
- PC/Notebook/Tablet/AIO (USB 3.1 Gen 2, Thunderbolt 3)
- Embedded (USB 3.1 Gen 2)
- Network Routers and Switch (10G BASE-KR)

### Ordering Information

Part Number	Package	Description
PI3DBS16222ZLEX	ZL	30-contact, Thin Fine Pitch Quad Flat No-Lead Package (TQFN)
PI3DBS16222XEAEX	XEA	24-contact, Extra Thin Fine Pitch QFN (X1QFN)

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