

# PI2DBS32412

## 1.8V, 32 Gbps, 4-Channel 2:1 Mux/De-Mux Switch

### Description

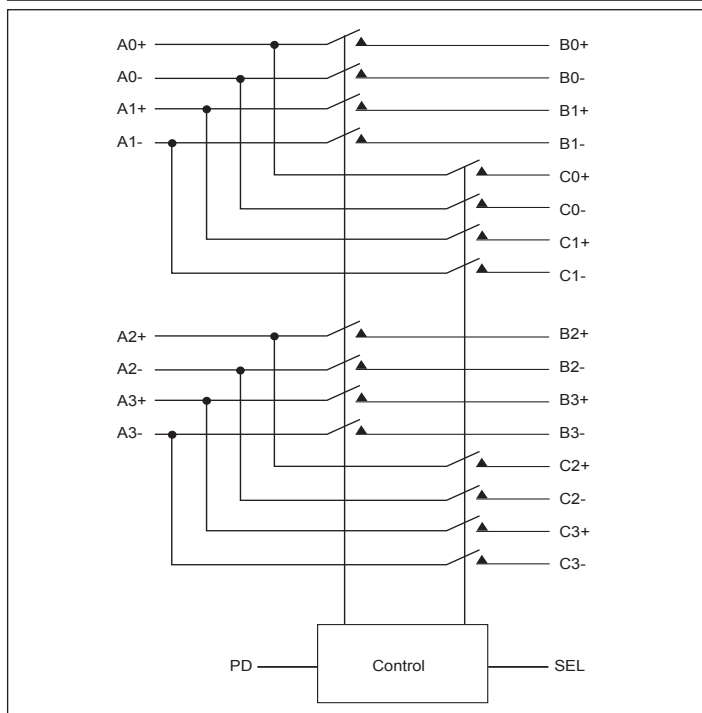
The DIODES PI2DBS32412 is a generic analog high speed passive mux/demux. The configuration is 8-to-4 differential-channel, and data rate is up to 32Gbps. Based on a unique design technique, Diodes has been able to optimize dynamic electrical characteristics of the device, like low insertion loss, crosstalk and return loss.

It allows high-speed switching with minimum attenuation to the signal and suitable for multiple signal types like PCIe® 5.0, USB 3.0/3.1, USB 3.2 Gen1x1/Gen2x1, USB4 Gen2x1/Gen3x1, 10GE, Thunderbolt 3, Thunderbolt 4, SAS3.0 and CXL1.0 signals.

### Application(s)

Routing high speed differential signals such as PCIe 5.0, USB 3.0/3.1, USB 3.2 Gen1x1/Gen2x1, USB4 Gen2x1/Gen3x1, 10GE, Thunderbolt 3, Thunderbolt 4, SAS3.0 and CXL1.0 signals.

### Block Diagram



### 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.

### Features

- 4-Differential Channel, 2:1 Mux/DeMux
- Up to 32Gbps for Applications including PCIe 5.0, USB 3.0/3.1, USB 3.2 Gen1x1/Gen2x1, USB4 Gen2x1/Gen3x1, 10GE, Thunderbolt 3, Thunderbolt 4, SAS3.0 and CXL1.0
- Bi-directional Operation
- Low Bit-to-Bit Skew: 3ps typ
- Low Channel-to-Channel Skew: 10ps typ
- Low Insertion Loss: -1.7dB @ 5GHz, -2.0dB @ 8GHz, -3.2dB @ 16GHz
- Return Loss: -18.1dB @ 5GHz, -20.0dB @ 8GHz, -22.0dB @ 16GHz
- Low Power Consumption: 400µA typ
- Supply Voltage: 1.8V
- Industrial Temperature Range: -40°C to 105°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-Q100/101/104/200, 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):
  - 32-Pins, 2 x 4.8 mm, UQFN (ZTF)

### Ordering Information

Part Number	Package	Description
PI2DBS32412ZTFEX	ZTF	32-Pins, U-QFN2048-32

- Notes:
- E = Pb-free and Green
  - X suffix = Tape/Reel