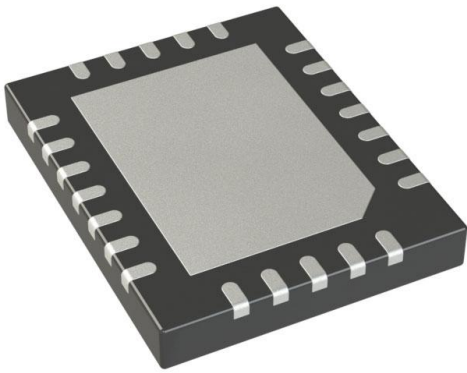


# PI3DBS16222Q2ZLEX Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	PI3DBS16222Q2ZLEX-DG
Manufacturer	<a href="#">Diodes Incorporated</a>
Manufacturer Product Number	PI3DBS16222Q2ZLEX
Description	PCIE SWITCH W-QFN2545-30 T&R 3.5
Detailed Description	USB, Telecommunications Switch IC 4 Channel 30-T QFN (2.5x4.5)



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RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

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## Purchase and inquiry

Manufacturer Product Number:

PI3DBS16222Q2ZLEX

Series:

-

Applications:

USB, Telecommunications

Switch Circuit:

DPDT

On-State Resistance (Max):

-

Voltage - Supply, Dual (V±):

-

Features:

Bi-Directional, SATA, USB 3.0

Grade:

Automotive

Mounting Type:

Surface Mount

Supplier Device Package:

30-TQFN (2.5x4.5)

Manufacturer:

Diodes Incorporated

Product Status:

Active

Multiplexer/Demultiplexer Circuit:

2:2

Number of Channels:

4

Voltage - Supply, Single (V+):

2.97V ~ 3.63V

-3db Bandwidth:

-

Operating Temperature:

-40°C ~ 105°C

Qualification:

AEC-Q100

Package / Case:

30-WFQFN Exposed Pad

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8542.39.0001

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



# PI3DBS16222Q

## 3.3V 20Gbps 4-Channel 2x2 Exchange Switch AEC-Q100 Grade, -40°C to 105°C

### Features

- Four Differential Channel 2x2 Exchange Switch
- Data Rate 20Gbps Performance; Enable applications in PCI Express® 4.0, USB 4.0, USB 3.1 Gen 2, Thunderbolt™ 4, 10G BASE-KR
- Bidirectional Operation
- Low Bit-to-Bit Skew: 10ps
- Low Crosstalk:
  - -30dB @ 4.0GHz
  - -19dB @ 8.0GHz
  - -17dB @ 10GHz
- Low Insertion Loss:
  - -1.0dB @ 4.0GHz
  - -1.5dB @ 8.0GHz
  - -2.0dB @ 10 GHz
- $V_{DD}$  Operating Range: 3.3V ± 10%
- AEC-Q100 Grade 2 Automotive Temperature Range: -40°C to 105°C
- Wettable QFN Design
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- The DIODES™ PI3DBS16222Q is suitable for automotive applications requiring specific change control; this part is AEC-Q100 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.  
<https://www.diodes.com/quality/product-definitions/>
- Packaging (Pb-free & Green):
  - 30-contact, TQFN (ZL30), 2.5mm × 4.5mm

### Application(s)

- Applications up to 20 Gbps including PCIe 4.0, USB 3.2 Gen 2, 10GE, Thunderbolt 4, SAS 3.0, and SATA 3.0
- Automotive

#### 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.

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The Diodes logo is a registered trademark of Diodes Incorporated in the United States and other countries.

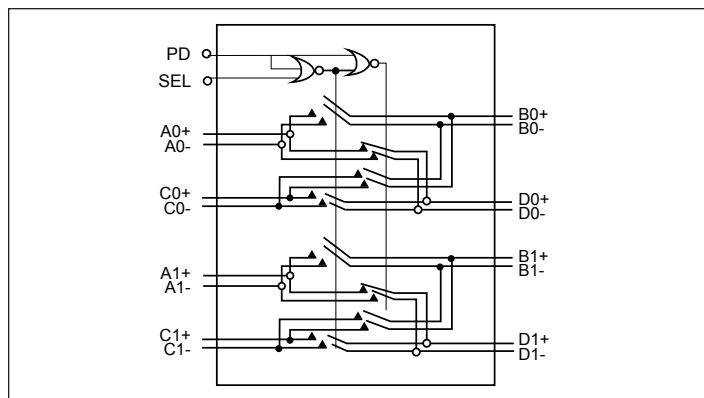
PCI Express® and PCIe® are trademarks or registered trademarks and/or service marks of PCI-SIG Corporation.

### Description

The PI3DBS16222Q is an automotive-qualified differential exchange switch featuring pass-through pinout. It supports 2x2 exchange switch operating at 20Gbps, and enables applications in PCI Express 4.0, USB 4.0, USB 3.1 Gen 2, Thunderbolt 4, 10G BASE-KR.

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

### Block Diagram



### Ordering Information

Part Number	Package	Description
PI3DBS16222QZLEX	ZL	30-contact, Thin Fine Pitch Quad Flat No Lead Package (TQFN)

#### Notes:

- Q = Automotive Compliant
- 2 = AEC-Q100 Grade Level
- E = Pb-free and Green
- X suffix = Tape/Reel

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