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PI3DBS12412A

12Gbps, 2-Lane (4-Channel), Differential 2:1 Mux/DeMux. 3.3V

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Product Description

The PI3DBS12412A is an 8 to 4 differential channel multiplexer/demultiplexer switch. This solution can switch multiple signal types up to data rate of 12Gbps. Using a unique design technique, Diodes Incorporated has been able to minimize the impedance of the switch such that the attenuation observed through the switch is minimal. The unique design technique also offers a layout targeted for Thunderbolt & SAS 3.0 signals, which minimizes the channel to channel skew as well as channel to channel crosstalk as required by high speed signals.

Features

- 4 Differential Channel, 2:1 Mux/DeMux
- Up to 12Gbps data rate for SAS 3.0 Application
- Compatible with Thunderbolt signaling, 10.3125Gbps
- 10Gbps Ethernet, USB 3.1
- Bi-directional operation
- 3dB Bandwidth: 11.3 GHz
- Low Bit-to-Bit Skew, 1ps typ

- Low channel-to-channel skew, 7ps typ
- Low insertion loss: -1.4dB@5 GHz, -1.5dB@6 GHz
- Return loss: -19.3dB@5 GHz, -17.3dB@6 GHz
- Low Crosstalk: -30.5dB@6 GHz
- Low Off Isolation: -17.1dB@6 GHz
- Low power consumption -400µA typ
- Supply Voltage 3.3V $\hat{I}$ Industrial Temperature Range: -40oC to 85oC
- ESD – 2KV Human Body Model (HBM)
- Packaging (Pb-free & Green):
 - 42-contact, TQFN (ZH42), 3.5x9mm
 - 40-contact, TQFN (ZL40), 3x6mm

Application

- Routing high speed differential signals such as Thunderbolt
- 10 Gigabit Ethernet
- PCI-Express 3.0
- SAS 3.0
- USB 3.1.