A product Line of
Diodes Incorporated

PRODUCT BRIEF

PI3USB102J

USB 2.0 High-Speed (480 Mbps) Switch with 5V Protection

Description

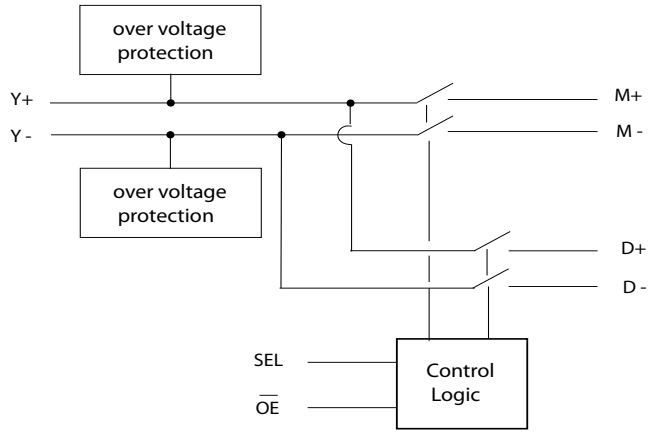
The PI3USB102J is a single differential channel 2:1 multiplexer/ demultiplexer USB 2.0 Switch. Industry leading advantages include a propagation delay of 250ps, resulting from its low channel resistance and I/O capacitance. PI3USB102J is bidirectional and offers very little attenuation of high-speed signals. It is designed for low bit-to-bit skew, high channel-to-channel noise isolation and is compatible with various standards, such as High Speed USB 2.0 (480 Mb/s).

The PI3USB102J offers over voltage protection for the Y+/Y- pins as per the USB 2.0 specification. With the chip powered on or off if Y+/Y- pins are shorted to VBUS (5V +/- 5%) a less than 3.6V signal will transmit through M+/M- and D+/D- outputs after 300ns.

Applications

- Routes signals for USB 2.0
- PC, Notebooks and Hand-held devices

Block Diagram



Features

- USB 2.0 compliant (high speed, full speed, and low speed)
- RON: 2.0Ω typical @ VIN < 0.5V
- Channel On Capacitance: 7.0pF (Max)
- Wide -3dB Bandwidth: 1,600MHz
- Low bit-to-bit skew
- Low Crosstalk: -29B @ 480 Mbps
- Off Isolation: -28dB @ 480 Mbps
- Near-Zero propagation delay: 250ps
- Support 1.8-V logic on control pins
- VDD Operating Range: 3.0V to 3.6V
- Data pin I/O, ESD: 8kV HBM
- I/O pins are protected and can tolerate a short to VBUS
- Y+/Y- can provide over-voltage protection to M/D ports
- Packaging (Pb-free & Green):
  10-contact, X2QFN, 1.4mm x 1.2mm x 0.35mm (XUC)
- Low supply current: 30nA (Typ)
- Operating temperature: -20oC to 100oC