

PI3USB102E USB 2.0 High-Speed (480 Mbps) Switch with 5V Protection

The PI3USB102E 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. PI3USB102E is bidirectional and offers very little attenuation of high-speed signals. It is designed for low bit-tobit skew, high channel-to-channel noise isolation and is compatible with various standards, such as High Speed USB 2.0 (480 Mb/s).

The PI3USB102E 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%), M+/M- and D+/D- outputs are clamped to provide voltage protection for downstream devices.

Applications

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

Application Diagram



Block Diagram

Features

- → USB 2.0 compliant (high speed, full speed, and low speed)
- → R_{ON} : 4.0 Ω typical @ V_{DD} = 3.0V
- → Channel On Capacitance: 6.0pF
- → Wide -3dB Bandwidth: 1,000MHz
- → 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
- → V_{DD} Operating Range: 3.0V to 5.5V
- → ESD: 8kV HBM on Y+/Y- pins per JESD22 standard
- → Y+/Y- pins have over-voltage protection and can tolerate a short to V_{BUS}
- → Packaging (Pb-free & Green): -10-contact TQFN (ZL10)
 - 1.3mm x 1.6mm x 0.75mm



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