

## Application: USB2.0 Switching in Compact Portable Devices Pericom Devices: PI3USB10 – USB2.0 Switch

### Overview

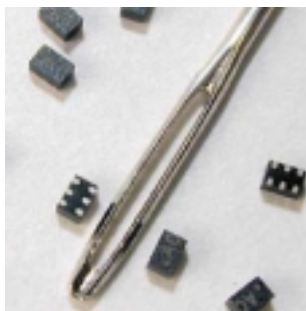
Pericom's PI3USB10 is the newest member of the first unified USB2.0 Switch solution family in the world. The PI3USB10 USB2.0 Switch is ideal for portable devices, such as cellular phones, Personal Digital Assistants (PDAs), and compact notebook computers, which offer connection options integrating the Hi-Speed USB functionality. This single low cost device can add the flexibility of supporting two independently operating USB connections without the need to invest in more expensive host controllers that would strain the budget for these consumer devices. For notebook manufacturers that have already eliminated the hub controller, and use a higher port count host controller, this is also the perfect solution.



The PI3USB10 is ideal for space limited designs

### Small Footprint, Wide Bandwidth

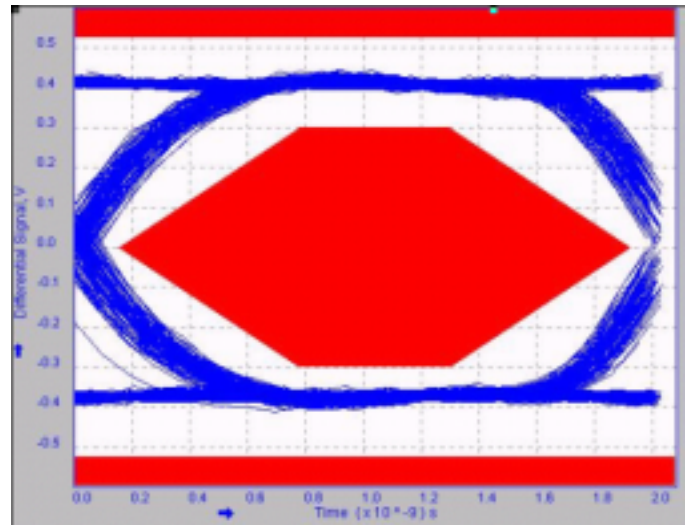
The PI3USB10 USB2.0 Switch device is offered in the new 12-contact TDFN package. The TDFN (Thin Dual Inline Flat No Lead) package is the latest innovate technology that allows the package to be as small as possible while still retaining the capability to implement the product features needed for a demanding application like the routing of Hi-Speed USB signals. For small packages, handling and the damaging of leads during the assembly process can be a significant concern. With the new TDFN type packages, there are no external leads to content with, increasing the ease of handling while still retaining the small footprint needed in space conscious designs.



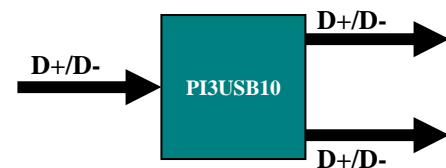
6-contact TDFN Packages

### Solution with the USB2.0 Switch

Pericom's new USB2.0 switches support all the needs of the system with one device. They have also been designed for ease of layout. The PI3USBxx devices align the differential signals from the USB host controller in such a way to reduce Crosstalk and other noise interference between the signal lines.



Hi-Speed USB "Eye" Pattern with PI3USBxx Device



### The PI3USB10 USB2.0 Switch

The PI3USB10 (2-Channel, 2:1, Mux/Demux) device was designed using the same breakthrough technology as the PI3L301D Gigabit Ethernet LAN Switch, allowing it to achieve a bandwidth of 500 Megahertz. This wide bandwidth, in combination with low and flat on-resistance and low on-capacitance, yields a switch that can pass Hi-Speed USB signals with a bit rate of 480 Megabits per second at a signal rate of 240 Megabits per second, without distorting them to the point that they fail the USB Implementer's Forum mandated "Eye" pattern test due to excessive insertion loss.

## Key Features & Specifications

- ❑ Differential 2-Channel, 2:1 Mux/Demux Switching
- ❑ Low On-Resistance: 4-Ohms
- ❑ Low Channel-to-Channel Skew: 100 picoseconds
- ❑ Low Crosstalk: -27 decibels @ 250 Megahertz
- ❑ High Off Isolation: -32 decibels @ 250 Megahertz
- ❑ Near Zero Propagation Delay: 250 picoseconds
- ❑ Fast Switching Speed: 9 nanoseconds
- ❑ Low On-Capacitance: 9 picoFarads
- ❑ VCC Operating Range: +3.0 Volts to +3.6 Volts
- ❑ ESD: >2000 Volts ... Human Body Model
- ❑ Bandwidth/Data Frequency: >500 Megahertz
- ❑ Packages Available: 12-contact TDFN

## Key Benefits

- ❑ Integrated Low, Full, and Hi-Speed Signal Solution
- ❑ Lower Cost Solution (Replaces additional devices or need for higher cost host controllers)
- ❑ Easy layout (Does not require multiple PCB layers for routing the I/O lines)

## Contact Information

### [Application Support](#)