



# FSUSB45 — Hi-Speed USB2.0 (480Mbps) Switch with Dedicated Charger Port Detect

## Features

- Low On Capacitance: 5.9pF Typical
- Low On Resistance: 3.9Ω Typical
- Low Power Consumption: 1μA Maximum
  - 15μA Maximum I<sub>CC</sub>T over an Expanded Voltage Range (V<sub>IN</sub>=1.8V, V<sub>CC</sub>=4.3V)
- Wide -3db Bandwidth: > 720MHz
- Packaged in:
  - 10-Lead MicroPak™ (1.6 x 2.1mm)
  - 10-Lead UMLP (1.4 x 1.8mm)
- 8kV ESD Rating, >16kV Power/GND ESD Rating
- Power-Off Protection on All Ports When V<sub>CC</sub>=0V

## Applications

- Cell Phone, PDA, Digital Camera, and Notebook
- LCD Monitor, TV, and Set-top Box

## IMPORTANT NOTE:

For additional performance information, please contact [analogswitch@fairchildsemi.com](mailto:analogswitch@fairchildsemi.com).

## Description

The FSUSB45 is a bi-directional, low-power, two-port, Hi-Speed, USB2.0 switch. Configured as a double-pole, double-throw (DPDT) switch, it is optimized for switching between two Hi-Speed (480Mbps) sources or a Hi-Speed source and a Full-Speed (12Mbps) source.

The FSUSB45 is compatible with the requirements of USB2.0 and features an extremely low on capacitance (C<sub>ON</sub>) of 5.9pF. The wide bandwidth of this device (720MHz) exceeds the bandwidth needed to pass the third harmonic, resulting in signals with minimum edge and phase distortion. Superior channel-to-channel crosstalk also minimizes interference.

The FSUSB45 contains special circuitry on the switch I/O pins for applications where the V<sub>CC</sub> supply is powered-off (V<sub>CC</sub>=0), which allows the device to withstand an over-voltage condition. This device is designed to minimize current consumption even when the control voltage applied to the SEL pin is lower than the supply voltage (V<sub>CC</sub>). This feature is especially valuable to mobile applications, such as cell phones, allowing for direct interface with the general-purpose I/Os of the baseband processor. An additional feature is the detection of the 1,1 state on D+/D- to signal an interrupt (INT) to the processor when entering a dedicated charging port mode of operation.

## Ordering Information

Part Number	Top Mark	Operating Temperature Range	Package
FSUSB45L10X	JA	-40 to +85°C	10-Lead MicroPak™ 1.6 x 2.1mm, JEDEC MO-255B
FSUSB45UMX	JB	-40 to +85°C	10-Lead, Quad, Ultrathin Molded Leadless Package (UMLP), 1.4 x 1.8mm


MicroPak™ is a trademark of Fairchild Semiconductor Corporation.

All packages are lead free per JEDEC: J-STD-020B standard.



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| Build it Now <sup>™</sup>            | Green FPS <sup>™</sup> e-Series <sup>™</sup>   | POWEREDGE <sup>®</sup>                 | SyncFET <sup>™</sup>             |
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| Global Power Resource <sup>SM</sup>  | Power220 <sup>®</sup>  |  |                                  |

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**PRODUCT STATUS DEFINITIONS**

**Definition of Terms**

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
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