



June 2007

# FSUSB40 — Low-Power, Two-Port, Hi-Speed, USB2.0 (480Mbps) Switch

## Features

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

## 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 FSUSB40 is a bi-directional, low-power, two-port, Hi-Speed, USB2.0 switch. Configured as a double-pole, double-throw switch (DPDT) switch, it is optimized for switching between two Hi-Speed (480Mbps) sources or a Hi-Speed and Full-Speed (12Mbps) source.

The FSUSB40 is compatible with the requirements of USB2.0 and features an extremely low on capacitance ( $C_{ON}$ ) 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 FSUSB40 contains special circuitry on the switch I/O pins for applications where the  $V_{CC}$  supply is powered-off ( $V_{CC}=0$ ), 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 ( $V_{CC}$ ). This feature is especially valuable to ultra-portable applications, such as cell phones, allowing for direct interface with the general-purpose I/Os of the baseband processor. Other applications include switching and connector sharing in portable cell phones, PDAs, digital cameras, printers, and notebook computers.

## Ordering Information

Part Number	Top Mark	Pb-Free	Operating Temperature Range	Package
FSUSB40L10X	HD	Yes	-40 to +85°C	10-Lead MicroPak™ 1.6 x 2.1mm, JEDEC MO-255B
FSUSB40UMX	HC	Yes	-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.

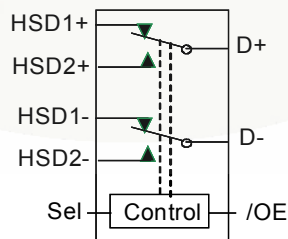



Figure 1. Analog Symbol





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## PRODUCT STATUS DEFINITIONS

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