



# 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<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
  - D+/D- Pins Tolerate up to 5.25V
- Over-Voltage Tolerance (OVT) on all USB Ports Up to 5.25V without External Components

## 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<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 FSUSB40 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 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	Operating Temperature Range	Package	 Eco Status
FSUSB40L10X	HD	-40 to +85°C	10-Lead MicroPak™ 1.6 x 2.1mm, JEDEC MO-255B	RoHS
FSUSB40UMX	HC	-40 to +85°C	10-Lead, Quad, Ultrathin Molded Leadless Package (UMLP), 1.4 x 1.8mm	Green








MicroPak™ is a trademark of Fairchild Semiconductor Corporation.

 For Fairchild's definition of "green" Eco Status, please visit: [http://www.fairchildsemi.com/company/green/rohs\\_green.html](http://www.fairchildsemi.com/company/green/rohs_green.html).



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**Definition of Terms**

Datasheet Identification	Product Status	Definition
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Preliminary	First Production	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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