



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_{CC}T 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
 - D+/D- Pins Tolerate up to 5.25V

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.

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

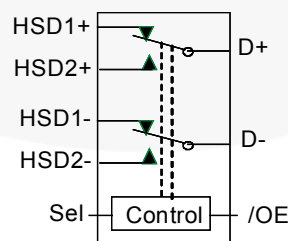


Figure 1. Analog Symbol



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PRODUCT STATUS DEFINITIONS

Definition of Terms

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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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