



July 2008

FSUSB46 — Hi-Speed USB2.0 (480Mbps) DPST Switch with Dedicated Charger Port Detection

Features

- Low On Capacitance: 7.0pF 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, 8-Lead MicroPak™ (1.6mm wide), US8 (3.1mm wide), and UMLP (1.4x1.4mm)
- 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 FSUSB46 is a bi-directional, low-power, Hi-Speed, USB2.0 switch. Configured as a double-pole, single-throw switch (DPST) switch, it is optimized for switching a Hi-Speed (480Mbps) source.

The FSUSB46 is compatible with the requirements of USB2.0 and features an extremely low on capacitance (C_{ON}) of 3.9pF. 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 FSUSB46 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 /OE 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. An additional feature is the detection of the 1-1 (high/high) 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	Operating Temperature Range	Package	Eco Status
FSUSB46L8X	-40 to +85°C	8-Lead MicroPak™ 1.6mm Wide	RoHS
FSUSB46K8X	-40 to +85°C	8-Lead US8, JEDEC MO187, Variation CA 3.1mm	Green
FSUSB46UMX	-40 to +85°C	8-Lead Ultrathin Molded Leadless Package (UMLP), 1.2 x 1.4mm	Green

For Fairchild's definition of "green" Eco Status, please visit: http://www.fairchildsemi.com/company/green/rohs_green.html.

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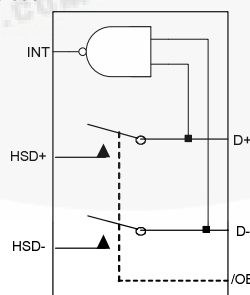


Figure 1. Analog Symbol

FSUSB46 — Hi-Speed USB2.0 (480Mbps) DPST Switch with Dedicated Charger Port Detection

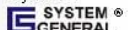


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Definition of Terms

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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.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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