

FSA223 — USB2.0 High-Speed (480Mbps) and Audio Switches with Negative Signal Capability

Features

- HS-USB: 4Ω Typical On Resistance
- HS-USB: 4.5pF Typical On Capacitance
- Audio: 3Ω Typical On Resistance
- -3db Bandwidth: > 720MHz
- Low Power Consumption
- Power-off Protection on Common D+/R, D-/L Ports
- Automatically Detects V_{CC} for Switch Path Selection

Applications

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

Related Resources

- Please refer to tape and reel specifications on www.fairchildsemi.com; <http://www.fairchildsemi.com/packaging>.

Description

The FSA223 is a Double-Pole, Double Throw (DPDT) multiplexer that combines a low-distortion audio and a USB2.0 High-Speed (HS) switch path. This configuration enables audio and USB data to share a common connector port. The architecture is designed to allow both audio and USB signals to swing below ground. This means a common USB and headphone jack can be used for personal media players and portable peripheral devices.

Since USB2.0 is an industry standard for shared data-path in portable devices, the FSA223 also incorporates a V_{CC} detection capability. The FSA223 includes a power-off feature to minimize current consumption when V_{CC} is not present. This power-off circuitry is available for the common D+/R, D-/L ports only. Typical applications involve switching in portables and consumer applications, such as cell phones, digital cameras, and notebooks with hubs or controllers.

IMPORTANT NOTE:

For additional performance information, please contact analogswitch@fairchildsemi.com.

Ordering Information

| Part Number | Package Number | Top Mark | Pb-Free | Package Description |
|-------------|----------------|----------|---------|--|
| FSA223L10X | MAC010A | GN | Yes | 10-Lead MicroPak™, JEDEC MO-255, 1.6 x 2.1mm |
| FSA223MUX | MUA010A | FSA223 | Yes | 10-Lead MSOP, JEDEC MO-187, 3.0mm Wide |
| FSA223UMX | MLP010A | GP | Yes | 10-Lead Quad, Ultrathin MLP, 1.4 x 1.8mm |

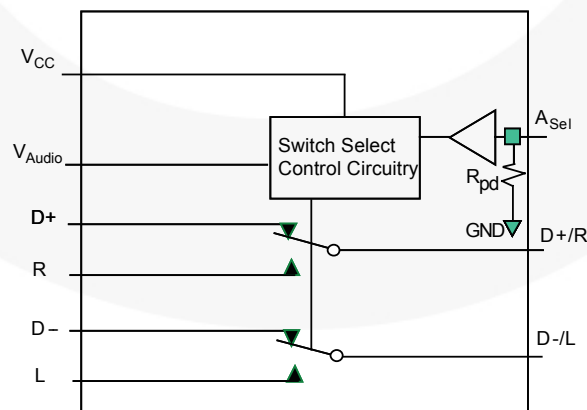





Figure 1. FSA223 Analog Symbol



TRADEMARKS

The following are registered and unregistered trademarks and service marks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

- | | | | |
|---|---|--|---|
| ACEx [®] | Green FPS [™] | Power247 [®] | SuperSOT [™] -8 |
| Build it Now [™] | Green FPS [™] e-Series [™] | POWEREDGE [®] | SyncFET [™] |
| CorePLUS [™] | GTO [™] | Power-SPM [™] | The Power Franchise [®] |
| CROSSVOLT [™] | i-Lo [™] | PowerTrench [®] |  |
| CTL [™] | IntelliMAX [™] | Programmable Active Droop [™] | TinyBoost [™] |
| Current Transfer Logic [™] | ISOPANAR [™] | QFET [®] | TinyBuck [™] |
| EcoSPARK [®] | MegaBuck [™] | QS [™] | TinyLogic [®] |
|  | MICROCOUPLER [™] | QT Optoelectronics [™] | TINYOPTO [™] |
| Fairchild [®] | MicroFET [™] | Quiet Series [™] | TinyPower [™] |
| Fairchild Semiconductor [®] | MicroPak [™] | RapidConfigure [™] | TinyPWM [™] |
| FACT Quiet Series [™] | MillerDrive [™] | SMART START [™] | TinyWire [™] |
| FACT [®] | Motion-SPM [™] | SPM [®] | μSerDes [™] |
| FAST [®] | OPTOLOGIC [®] | STEALTH [™] | UHC [®] |
| FastvCore [™] | OPTOPLANAR [®] | SuperFET [™] | UniFET [™] |
| FPS [™] |  | SuperSOT [™] -3 | VCX [™] |
| FRFET [®] | PDP-SPM [™] | SuperSOT [™] -6 | |
| Global Power Resource SM | Power220 [®] | | |

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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

Rev. I31