

seed studio

INDUSTRIAL PRODUCT DATASHEET

USB Isolator

Secure your USB connections with the ADuM3160-based USB Isolator, offering 2500 V rms isolation and short-circuit protection.

SKU

114991949

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PRICE

\$18.99(Excl. VAT)



Overview



The USB Isolator provides galvanic isolation for USB 2.0 low- and full-speed connections, safeguarding host devices from surges, short circuits, and USB Killer attacks. It supports 1.5 Mbps and 12 Mbps data rates with 4.5 V to 5.5 V VBUS operation, UL 1577 2500 V rms isolation, and high common-mode transient immunity >25 kV/ μ s.

Key Features

- USB 2.0 compatible
- Low and full speed data rate: 1.5 Mbps and 12 Mbps
- Bidirectional communication
- 4.5 V to 5.5 V VBUS operation
- 7 mA maximum upstream supply current at 1.5 Mbps
- 8 mA maximum upstream supply current at 12 Mbps
- 2.3 mA maximum upstream idle current
- Upstream short-circuit protection
- Class 3A contact ESD performance per ANSI/ESD STM5.1-2007
- High common-mode transient immunity: >25 kV/ μ s
- RoHS compliant
- Qualified for automotive applications
- Safety and regulatory approvals
- UL recognition: 2500 V rms for 1 minute per UL 1577
- CSA Component Acceptance Notice #5A
- IEC 60950-1: 600 V rms (basic)
- VDE certificate of conformity
- DIN V VDE V 0884-10 (VDE V 0884-10):2006-12

- VIORM = 560 V peak

At present, the USB Killer (USB killer) made for some bad people leads to burning the USB port of the computer dev and even burning the motherboard. Some electronic enthusiasts use the bare electronic device but may damage it. When you DIY a new circuit board, but there may be a short circuit or the current is too large, plugged into the com causing the USB port to burn down or the motherboard is damaged.

We have created a hardware device that can prevent the USB Killer. Known as USB isolation. Its biggest feature is to short circuits when you use USB properly. It is the protection of your computer, microcontroller, Raspberry Pi and ot the USB port of your development board without affecting your USB device use! When a short circuit condition occi circuited and will not cause damage to your computer.

The USB Isolator is based on ADuM3160 component. The ADuM3160 is a USB port isolator based on Analog Devices, Inc., iCoupler technology. Combining high-speed CMOS and monolithic air core transformer technology, this isolation component provides outstanding performance characteristics and is easily integrated with low and full compatible peripheral devices.

Many microcontrollers implement USB so that it presents only the D+ and D- lines to external pins. This is desirable components and simplifies the design; however, this presents particular challenges when isolation is required. Because the USB lines must switch between actively driving D+/D- and allowing external resistors to set the state of the ADuM3160 provides mechanisms for detecting the direction of data flow and control over the state of the output. Data direction is determined on a packet-by-packet basis.

The ADuM3160 uses the edge detection based iCoupler technology in conjunction with internal logic to implement easily configured, upstream facing port isolator.

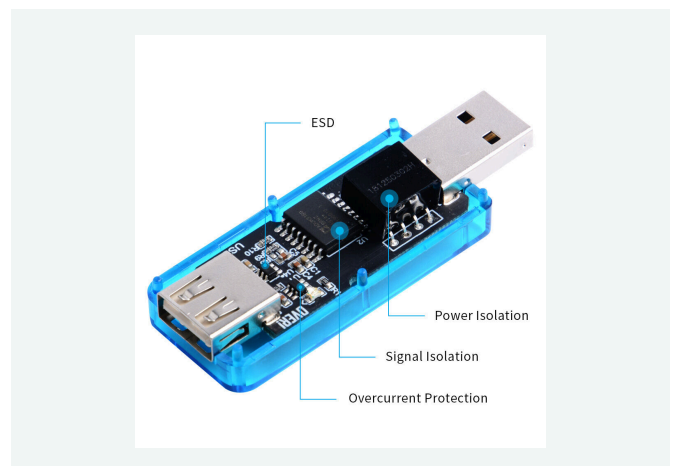
Isolating the upstream port provides several advantages in simplicity, power management, and robust operation.

The isolator has a propagation delay comparable to that of a standard hub and cable.

It operates with the bus voltage on either side ranging from 4.5 V to 5.5 V, allowing connection directly to VBUSx by The ADuM3160 provides isolated control of the pull-up resistor to allow the peripheral to control connection timing. The device draws low enough idle current that a suspend state is not required.

A 5 kV, reinforced insulation version, the ADuM4160, is available.

Product Gallery



Hardware Overview



Compliance & Logistics



HSCODE	8517180050
USHSCODE	8517180050
UPC	
EUHSCODE	8517180000
COO	CHINA

Resource Links

- <https://www.seeedstudio.com/USB-Isolator-p-4098.html>
- [Documentation](#)
- [Wiki](#)

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