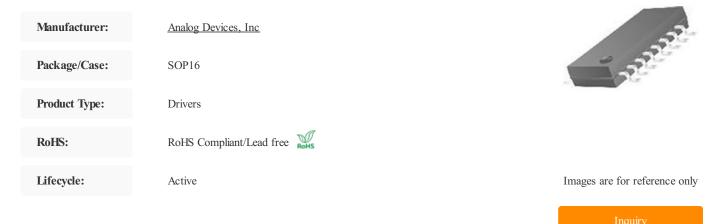


## Digital Isolator CMOS 2-CH 12Mbps 16-Pin SOIC W Tube



## **General Description**

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 speed USB-compatible peripheral devices.

Many microcontrollers implement USB so that it presents only the D+ and D- lines to external pins. This is desirable in many cases because it minimizes external 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 bus, the ADuM3160 provides mechanisms for detecting the direction of data flow and control over the state of the output buffers. 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 a transparent, easily configured, upstreamfacing port isolator. Isolating the upstream port provides several advantages in simplicity, power management, and robust operation.

The isolator has propagation delay comparable to that of a standard hub and cable. It operates with the supply voltage on either side ranging from 3.0 V to 5.5 V, allowing connection directly to VBUSx by internally regulating the voltage to the signaling level. 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. Applications

USB peripheral isolation Isolated USB hub Repeaters

### **Key Features**

Maximum full speed data rate of 12Mbps Maximum full speed propagation delay of 70ns Maximum full speed jitter of 3ns Supply voltage range from 3V to 5.5V Bidirectional communication 4.5V to 5.5V Vbus operation High common mode transient immunity of greater than 25KV/µs UL 1577, CSA and VDE approved USB 2.0 compatible

Operating temperature range from -40°C to  $105^{\circ}C$ 

# **Recommended For You**

ADM3490EARZ	ADuM3160BRWZ-RL	ADMB232EARUZ
Analog Devices, Inc	Analog Devices, Inc	Analog Devices, Inc
SOP-8	SOP16	TSSOP-16
ADuM5211ARSZ	ADuM1201BRZ-RL7	ADV7623BSTZ
Analog Devices, Inc	Analog Devices, Inc	Analog Devices, Inc
SSOP20	SOP8	LQFP144
ADuM1410BRWZ	AD698APZ	ADMB251EARWZ
Analog Devices, Inc	Analog Devices, Inc	Analog Devices, Inc
SOP16	PLCC28	SOP20
ADM485ANZ	ADuM6400ARWZ	ADuM1281BRZ
Analog Devices, Inc	Analog Devices, Inc	Analog Devices, Inc
DIP	SOP16	SOP8
ADUM142E0BRZ	ADuMI412BRWZ	ADV7622BSTZ
Analog Devices, Inc	Analog Devices, Inc	Analog Devices, Inc

SOP16

# Application

USB peripheral isolation

Isolated USB hub

Repeaters

SOP-16

TQFP144