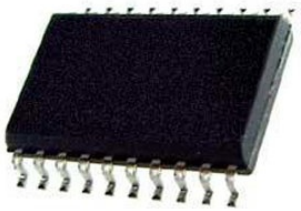
ADUM4166BRIZ

Data Sheet

5.7kV rms Digital Isolator for Isolated USB 2.0 High Speed (Downstream Clock Input)

Manufacturers	Analog Devices, Inc
Package/Case	20-Lead SOIC (Increased Creepage)
Product Type	Interface ICs
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for ADUM4166BRIZ or Email to us: sales@ovaga.com We will contact you in 12 hours. RFQ

General Description

The ADuM4165/ADuM4166 are USB 2.0 port isolators, utilizing Analog Devices, Inc., *i*Coupler® technology to dynamically support all USB 2.0 data rates; low (1.5 Mbps), full (12 Mbps), or high (480 Mbps), as required. The devices support host isolation with automatic speed negotiation as well as peripheral isolation.

High speed data is retimed for jitter reduction, requiring an external clock signal or crystal input. The ADuM4165 supports the clock or crystal input on the upstream side, and the ADuM4166 supports the clock or crystal input on the downstream side, offering two options to best suit the system design.

The low power standby mode for downstream (Side 2) supports applications with limited available power, such as battery-operated peripherals. The upstream (Side 1) standby current meets USB 2.0 requirements for suspended operation.

The isolators are specified over an extended industrial temperature range of −55°C to +125°C and are available in a 20-lead, wide-body, increased creepage SOIC_IC with 8.3 mm creepage and clearance.

APPLICATIONS

Protected by U.S. Patents 7,075,329; 8,432,182; 8,525,547; and 8,564,327. Other patents are pending.

Features

USB 2.0 signaling with automatic detection of low, full, and high speed connections

1.5 Mbps, 12 Mbps, and 480 Mbps data rates

Bidirectional USB isolator for upstream or downstream ports

Redriving and high speed data retiming for input jitter removal and an open eye

Flexible clock input options

Application

USB peripheral, USB host, and USB hub isolation

Electronic test and measurement equipment

Medical devices and integrated PCs

Industrial PCs and isolated USB ports for debug or upgrade

4.5 V to 5.5 V V

BUSx

21 mA typical idle, low or full speed mode supply current

48 mA typical idle, high speed mode supply current

Ultra low power standby in USB 2.0 suspend (L2) or disconnect

1.7 mA typical low power standby, upstream supply current

20 µA typical low power standby, downstream supply current

1.5 Mbps, 12 Mbps, and 480 Mbps data rates

Redriving and high speed data retiming for input jitter removal and an open eye

Flexible clock input options

21 mA typical idle, low or full speed mode supply current

48 mA typical idle, high speed mode supply current

1.7 mA typical low power standby, upstream supply current

20 µA typical low power standby, downstream supply current

Passed CISPR32/EN55032 Class B emissions

High common-mode transient immunity: 50 kV/µs typical

Safety and regulatory approvals (pending)

UL (pending): 5700 V rms for 1 minute per UL 1577

CSA Component Acceptance Notice 5A (pending)

IEC 62368-1, IEC 61010-1 and IEC60601-1

VDE certificate of conformity (pending)

DIN V VDE V 0884-11 (VDE V 0884-11):2017-01

PEAK

Operating temperature range: −55°C to +125°C

20-lead, wide-body, increased creepage SOIC_IC package with 8.3 mm creepage and clearance

UL (pending): 5700 V rms for 1 minute per UL 1577

CSA Component Acceptance Notice 5A (pending)

IEC 62368-1, IEC 61010-1 and IEC60601-1

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PEAK

IEC 62368-1, IEC 61010-1 and IEC60601-1

DIN V VDE V 0884-11 (VDE V 0884-11):2017-01

PEAK

Related Products

ADV7181CBSTZ

Analog Devices, Inc

LQFP-64

AD8170AR

Analog Devices, Inc

SOP8

AD724JR

Analog Devices, Inc

SOIC-16

ADV7393BCPZ

Analog Devices, Inc

LFCSP-VQ-40

ADV7391WBCPZ

Analog Devices, Inc

LFSCP-3

ADV7390BCPZ

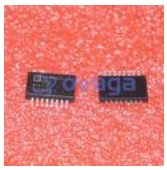
Analog Devices, Inc

QFN32

ADV7341BSTZ

Analog Devices, Inc

LQFP-64



ADUM4160BRIZ

Analog Devices, Inc

SOIC-16