

Digital Isolator Logic 2-CH 25Mbps Automotive 8-Pin SOIC T/R



Images are for reference only

[Inquiry](#)

Manufacturer: [Texas Instruments, Inc](#)

Package/Case: SOP-8

Product Type: Drivers

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

General Description

The ISO7220x and ISO7221x family devices are dual-channel digital isolators. To facilitate PCB layout, the channels are oriented in the same direction in the ISO7220x and in opposite directions in the ISO7221x. These devices have a logic input and output buffer separated by TI's silicon-dioxide (SiO₂) isolation barrier, providing galvanic isolation of up to 4000V_{PK} per VDE. Used in conjunction with isolated power supplies, these devices block high voltage and isolate grounds, as well as prevent noise currents on a data bus or other circuits from entering the local ground and interfering with or damaging sensitive circuitry. A binary input signal is conditioned, translated to a balanced signal, then differentiated by the capacitive isolation barrier. Across the isolation barrier, a differential comparator receives the logic transition information, then sets or resets a flip-flop and the output circuit accordingly. A periodic update pulse is sent across the barrier to ensure the proper dc level of the output. If this de-refresh pulse is not received every 4 μs, the input is assumed to be unpowered or not being actively driven, and the failsafe circuit drives the output to a logic high state.

The small capacitance and resulting time constant provide fast operation with signaling rates available from 0 Mbps (DC) to 150 Mbps (The signaling rate of a line is the number of voltage transitions that are made per second expressed in the units bps). The A-option, B-option, and C-option devices have TTL input thresholds and a noise filter at the input that prevents transient pulses from being passed to the output of the device. The M-option devices have CMOS V_{CC}/2 input thresholds and do not have the input noise filter and the additional propagation delay.

The ISO7220x and ISO7221x family of devices require two supply voltages of 2.8 V (C-Grade), 3.3 V, 5 V, or any combination. All inputs are 5-V tolerant when supplied from a 2.8-V or 3.3-V supply and all outputs are 4-mA CMOS.

The ISO7220x and ISO7221x family of devices are characterized for operation over the ambient temperature range of -40°C to +125°C.

Key Features

Qualified for Automotive Applications

1-Mbps and 25-Mbps Signaling Rate Options
Low Channel-to-Channel Output Skew: 1ns(Max)

Low Pulse-Width Distortion (PWD): 1ns(Max)

Low Jitter Content: 1 ns (Typ) at 150 Mbps

25-Year (Typ) Life at Rated Voltage (See Application Report SLLA197 and)

4000-V_{peak} Isolation, 560 V_{peak} VIORM
UL 1577, IEC 60747-5-2 (VDE 0884, Rev 2), IEC 61010-1, IEC 60950-1 and CSA Approved

50 kV/ μ s Typical Transient Immunity

Operates with 3.3-V or 5-V Supplies

4 kV ESD Protection

High Electromagnetic Immunity

-40°C to 125°C Operating Free-Air Temperature Range

Recommended For You

ISO7221BDR

Texas Instruments, Inc
SOP8

ISO7740FDWR

Texas Instruments, Inc
SOIC-16

ISO1432BDWR

Texas Instruments, Inc
SOIC16

ISO7341CQDWRQ1

Texas Instruments, Inc
SOP-16

ISO7760FQDBQRQ1

Texas Instruments, Inc
SSOP-16

ISO7421EDR

Texas Instruments, Inc
SOP8

ISO7720DR

Texas Instruments, Inc
SOP8

ISO7720FQDRQ1

Texas Instruments, Inc
SOP8

ISO6721FBQDRQ1

Texas Instruments, Inc
SOIC-8

ISO7721FQDRQ1

Texas Instruments, Inc
SOP8

ISO7721FDR

Texas Instruments, Inc
SOP8

ISO1540QDRQ1

Texas Instruments, Inc
SOP8

ISO7760DBQR

Texas Instruments, Inc
SSOP-16

ISO7421AQDRQ1

Texas Instruments, Inc
SOP8

ISO7731FQDWRQ1

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SOIC-16