

Product Overview

MC74VHCT259A: 8-Bit Addressable Latch/1-of-8 Decoder CMOS Logic Level Shifter

For complete documentation, see the data sheet.

The MC74VHCT259 is an 8-bit Addressable Latch fabricated with silicon gate CMOS technology. It achieves high speed operation similar to equivalent Bipolar Schottky TTL while maintaining CMOS low power dissipation.

The internal circuit is composed of three stages, including a buffer output which provides high noise immunity and stable output.

The VHC259 is designed for general purpose storage applications in digital systems. The device has four modes of operation as shown in the mode selection table. In the addressable latch mode, the signal on Data In is written into the addressed latch. The addressed latch follows the data input with all non-addressed latches remaining in their previous states. In the memory mode, all latches remain in their previous state and are unaffected by the Data or Address inputs. In the one-of-eight decoding or demultiplexing mode, the addressed output follows the state of Data In with all other outputs in the LOW state. In the Reset mode, all outputs are LOW and unaffected by the address and data inputs. When operating the VHCT259 as an addressable latch, changing more than one bit of the address could impose a transient wrong address. Therefore, this should only be done while in the memory mode.

The VHCT inputs are compatible with TTL levels. This device can be used as a level converter for interfacing 3.3 V to 5.0 V because it has full 5 V CMOS level output swings.

The VHCT259A input structures provide protection when voltages between 0 V and 5.5 V are applied, regardless of the supply voltage. The output structures also provide protection when $V_{CC} = 0$ V. These input and output structures help prevent device destruction caused by supply voltage-input/output voltage mismatch, battery backup, hot insertion, etc.

Features

- High Speed: $t_{PD} = 7.6$ ns (Typ) at $V_{CC} = 5$ V
- Low Power Dissipation: $I_{CC} = 2$ mA (Max) at $T_A = 25^\circ\text{C}$
- High Noise Immunity: $V_{NIH} = V_{NIL} = 28\% V_{CC}$
- CMOS-Compatible Outputs: $V_{OH} > 0.8 V_{CC}$; $V_{OL} < 0.1 V_{CC}$ @Load
- Power Down Protection Provided on Inputs and Outputs
- Balanced Propagation Delays
- Pin and Function Compatible with Other Standard Logic Families
- Latchup Performance Exceeds 300 mA
- ESD Performance: HBM > 2000 V
- Pb-Free Packages are Available*

For more features, see the data sheet

Part Electrical Specifications

Product	Compliance	Status	Type	Channels	V_{CC} Min (V)	V_{CC} Max (V)	t_{pd} Max (ns)	I_O Max (mA)	Package Type
MC74VHCT259ADG	Pb-free	Active	Latch	1	4.5	5.5	10	8	SOIC-16
	Halide free								
MC74VHCT259ADR2G	Pb-free	Active	Latch	1	4.5	5.5	10	8	SOIC-16
	Halide free								
MC74VHCT259ADTG	Pb-free	Active	Latch	1	4.5	5.5	10	8	TSSOP-16
	Halide free								
MC74VHCT259ADTRG	Pb-free	Active	Latch	1	4.5	5.5	10	8	TSSOP-16
	Halide free								

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