

Product Overview

MC74VHCT86A: Quad 2-Input XOR Gate / CMOS Logic Level Shifter with LSTTL-Compatible Inputs

For complete documentation, see the data sheet.

The MC74VHCT86A is an advanced high speed CMOS 2-input Exclusive-OR gate 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 device input is compatible with TTL-type input thresholds and the output has a full 5V CMOS level output swing. The input protection circuitry on this device allows overvoltage tolerance on the input, allowing the device to be used as a logic-level translator from 3.0V CMOS logic to 5.0V CMOS Logic or from 1.8V CMOS logic to 3.0V CMOS Logic while operating at the high-voltage power supply. The MC74VHCT86A input structure provides protection when voltages up to 7V are applied, regardless of the supply voltage. This allows it to be used to interface 5V circuits to 3V circuits. The output structures also provide protection when $V_{CC} = 0V$. 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: $t_{PD} = 4.8ns$ (Typ) at $V_{CC} = 5V$
- Low Power Dissipation: $I_{CC} = 2\mu A$ (Max) at $T_A = 25^\circ C$
- TTL-Compatible Inputs: $V_{IL} = 0.8V$; $V_{IH} = 2.0V$
- Power Down Protection Provided on Inputs and Outputs
- Balanced Propagation Delays
- Designed for 2V to 5.5V Operating Range
- Low Noise: $V_{OLP} = 0.8V$ (Max)
- Pin and Function Compatible with Other Standard Logic Families
- Latchup Performance Exceeds 300mA
- ESD Performance: HBM > 2000V; Machine Model > 200V

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
MC74VHCT86ADR2G	Pb-free	Active	XOR	4	2	5.5	null	8	SOIC-14
	Halide free								
MC74VHCT86ADTR2G	Pb-free	Active	XOR	4	2	5.5	null	8	TSSOP-14
	Halide free								

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