

Product Overview

MC74VHC1GT32: Single 2-Input OR Gate, TTL Level

For complete documentation, see the data sheet.

The MC74VHC1GT32 is an advanced high speed CMOS 2-input 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 5 V 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 3.0 V CMOS logic to 5.0 V CMOS Logic or from 1.8 V CMOS logic to 3.0 V CMOS Logic while operating at the high-voltage power supply. The MC74VHC1GT32 input structure provides protection when voltages up to 5.5 V are applied, regardless of the supply voltage. This allows the MC74VHC1GT32 to be used to interface 5 V circuits to 3 V circuits. 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: $t_{PD} = 3.5$ ns (Typ) at $V_{CC} = 5$ V
- Low Power Dissipation: $I_{CC} = 2$ mA (Max) at $T_A = 25^\circ\text{C}$
- TTL-Compatible Inputs: $V_{IL} = 0.8$ V; $V_{IH} = 2.0$ V
- CMOS-Compatible Outputs: $V_{OH} > 0.8 V_{CC}$; $V_{OL} \text{ CC @Load}$
- Power Down Protection Provided on Inputs and Outputs
- Balanced Propagation Delays
- Pin and Function Compatible with Other Standard Logic Families
- Chip Complexity: FETs = 3/4 100
- Pb-Free Packages are Available

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
M74VHC1GT32DFT1G	Pb-free Halide free	Active	OR	1	3	5.5	7.5	8	SC-88A / SC-70-5
M74VHC1GT32DFT2G	Pb-free Halide free	Active	OR	1	3	5.5	7.5	8	SC-88A / SC-70-5
M74VHC1GT32DTT1G	Pb-free Halide free	Active	OR	1	3	5.5	7.5	8	TSOP-5 / SOT-23-5
MC74VHC1GT32DBVT1G	Pb-free Halide free	Active	OR	1	3	5.5	7.5	8	SC-74A
MC74VHC1GT32P5TG	Pb-free Halide free	NEW	OR	1	3	5.5	7.5	8	SOT-953
NLV74VHC1GT32DTT1G	AEC Qualified PPAP Capable Pb-free Halide free	Active	OR	1	3	5.5	7.5	8	TSOP-5 / SOT-23-5
NLVVHC1GT32DFT1G	AEC Qualified PPAP Capable Pb-free Halide free	Active	OR	1	3	5.5	7.5	8	SC-88A / SC-70-5
NLVVHC1GT32DFT2G	AEC Qualified PPAP Capable Pb-free Halide free	Active	OR	1	3	5.5	7.5	8	SC-88A / SC-70-5

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