

SN74LCV1G3208:

Single 3-Input Positive or-and Gate

Product Feature Sheet

Features

- Supports 5 V V_{CC} operation
- Inputs accept voltages to 5.5 V
- Max t_{pd} of 5 ns at 3.3 V
- Low power consumption, 10- μ A max I_{CC}
- ± 24 mA output drive at 3.3 V
- Input hysteresis allows slow input transition and better switching noise immunity at the input
- ($V_{hys} = 250$ mV Typ @ 3.3 V)
- Can be used in three combinations:
 - OR-AND gate
 - OR gate
 - AND gate
- I_{off} supports partial-power-down mode operation
- Latch-up performance exceeds 100 mA per JESD 78, Class II
- ESD protection exceeds JESD 22
 - 2000 V Human Body Model (A114-A)
 - 200 V Machine Model (A115-A)
 - 1000 V Charged-Device Model (C101)

Device Overview

This device is designed for 1.65 V to 5.5 V V_{CC} operation.

The SN74LVC1G3208 is a single 3-input positive OR-AND gate. It performs the Boolean function $Y = (A + B) \cdot C$ in positive logic.

By tying one input to GND or V_{CC} , the SN74LVC1G3208 offers two more functions. When C is tied to V_{CC} , this device performs as a 2-input OR gate ($Y = A + B$). When A is tied to GND, the device works as a 2-input AND gate ($Y = B \cdot C$). This device also works as a 2-input AND gate when B is tied to GND ($Y = A \cdot C$).

NanoStar™ and NanoFree™ package technology is a major breakthrough in IC packaging concepts, using the die as a package.

This device is fully specified for partial-power-down applications using I_{off} . The I_{off} circuitry disables the outputs, preventing current backflow through the device when it is powered down.

Absolute Maximum Ratings:

Supply Voltage Range	-0.5 V to 6.5 V
Input Voltage Range	-0.5 V to 6.5 V
Voltage Range Applied to Any Output in the High-Impedance or Power-off State	-0.5 V to 6.5 V
Voltage Range Applied to Any Output in the High or Low State	-0.5 V to $V_{CC} + 0.5$ V
Input Clamp Current	-50 mA
Output Clamp Current	-50 mA
Continuous Output Current	± 50 mA
Continuous Current Through V_{CC} or GND	± 100 mA
Package Thermal Impedance (DBV Package)	165 °C/W
Package Thermal Impedance (DCK Package)	259 °C/W
Package Thermal Impedance (YEP/YZP Package)	123 °C/W
Storage Temperature Range	-65 °C to 150 °C

Typical Applications

- Defense
- Aerospace
- Medical