

February 1995

LP339 Ultra-Low Power Quad Comparator

LP339 Ultra-Low Power Quad Comparator

General Description

The LP339 consists of four independent voltage comparators designed specifically to operate from a single power supply and draw typically 60 μA of power supply drain current over a wide range of power supply voltages. Operation from split supplies is also possible and the ultra-low power supply drain current is independent of the power supply voltage. These comparators also feature a common-mode range which includes ground, even when operated from a single supply.

Applications include limit comparators, simple analog-to-digital converters, pulse, square and time delay generators; VCO's; multivibrators; high voltage logic gates. The LP339 was specifically designed to interface with the CMOS logic family. The ultra-low supply current makes the LP339 valuable in battery powered applications.

Advantages

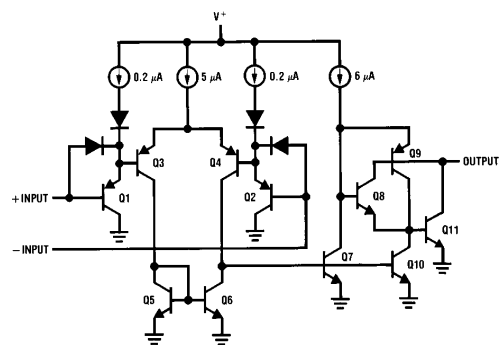
- Ultra-low power supply drain suitable for battery applications

- Single supply operation
- Sensing at ground
- Compatible with CMOS logic family
- Pin-out identical to LM339

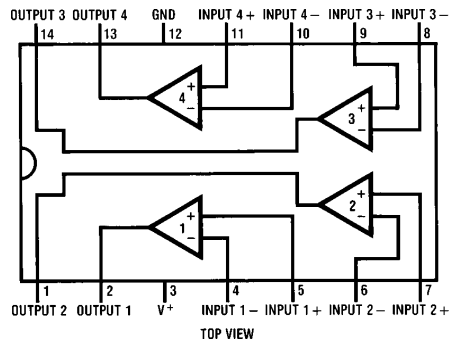
Features

- Ultra-low power supply current drain (60 μA)—independent of the supply voltage (75 μW /comparator at $+5\text{ V}_{\text{DC}}$)
- Low input biasing current 3 nA
- Low input offset current $\pm 0.5\text{ nA}$
- Low input offset voltage $\pm 2\text{ mV}$
- Input common-mode voltage includes ground
- Output voltage compatible with MOS and CMOS logic
- High output sink current capability (30 mA at $V_{\text{O}} = 2\text{ V}_{\text{DC}}$)
- Supply Input protected against reverse voltages

Schematic and Connection Diagrams



TL/H/5226-1



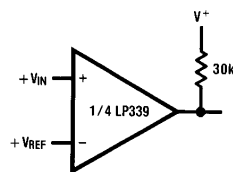
TL/H/5226-2

Order Number LP339M for S.O. Package
See NS Package Number M14A

Order Number LP339N for Dual-In-Line Package
See NS Package Number N14A

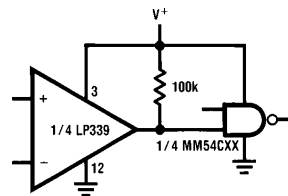
Typical Applications ($V^+ = 5.0\text{ V}_{\text{DC}}$)

Basic Comparator



TL/H/5226-3

Driving CMOS



TL/H/5226-4