



**Low Power Offset Voltage Quad Comparators**

**LM339** Low Power Offset Voltage Quad Comparators

**General Description**

The LM339 series consists of four independent precision voltage comparators with an offset voltage specification as low as 2mV. The input common mode voltage range of these comparators includes ground, even when operated from a single power supply voltage. Operation from split power supplies is also possible and the low power supply current drain is independent of the magnitude of the power supply voltage.

The LM339 series is designed to directly interface with TTL and CMOS.

The LM339 series can be widely used in such applications as battery charger, cordless telephone, switching power supply, DC-DC module and PC motherboard.

The LM339 series are available in 2 Packages: DIP-14 and SOP-14.

**Features**

- Wide Supply Voltage Range
  - Single Supply: 2.0V to 36V
  - Dual Supplies:  $\pm 1.0V$  to  $\pm 18V$
- Very Low Supply Current Drain: 0.8mA
  - Independent of Supply Voltage
- Low Input Bias Current: 25nA (Typical)
- Low Input Offset Current:  $\pm 5nA$  (Typical)
- Low Input Offset Voltage:  $\pm 2mV$  (Typical)
- Input Common Mode Voltage Range Includes Ground
- Differential Input Voltage Range Equals to the Power Supply Voltage
- Low Output Saturation Voltage: 250mV at 4mA
- Open Collector Output

**Applications**

- Battery Charger
- Cordless Telephone
- Switching Power Supply
- DC-DC Module
- PC Motherboard

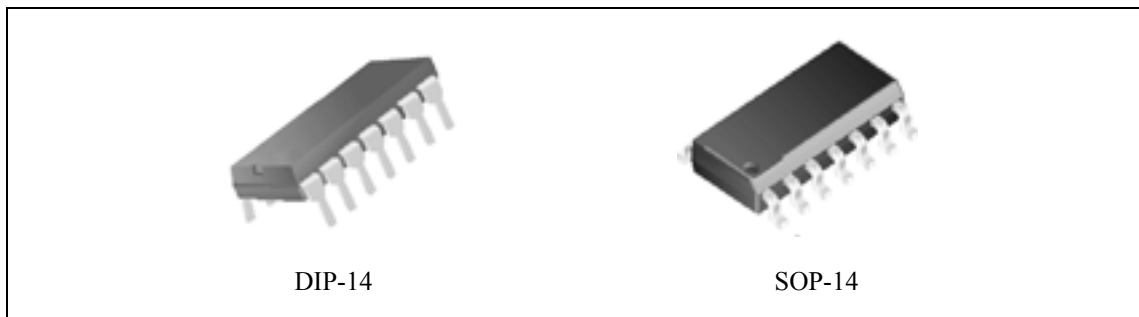


Figure 1. Package Types of LM339









## Typical Application

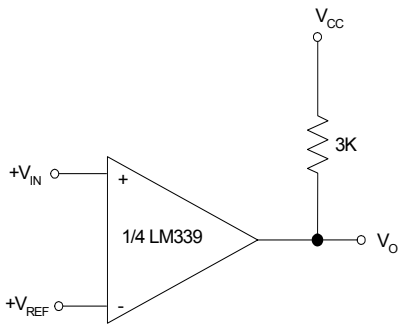


Figure 9. Basic Comparator

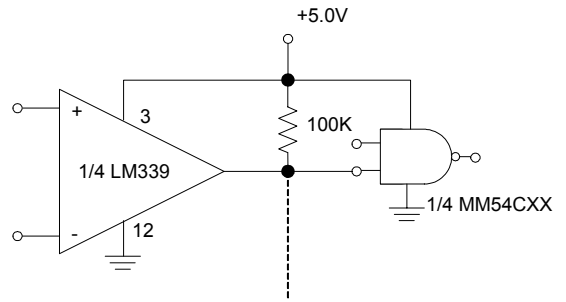


Figure 10. Driving CMOS/TTL

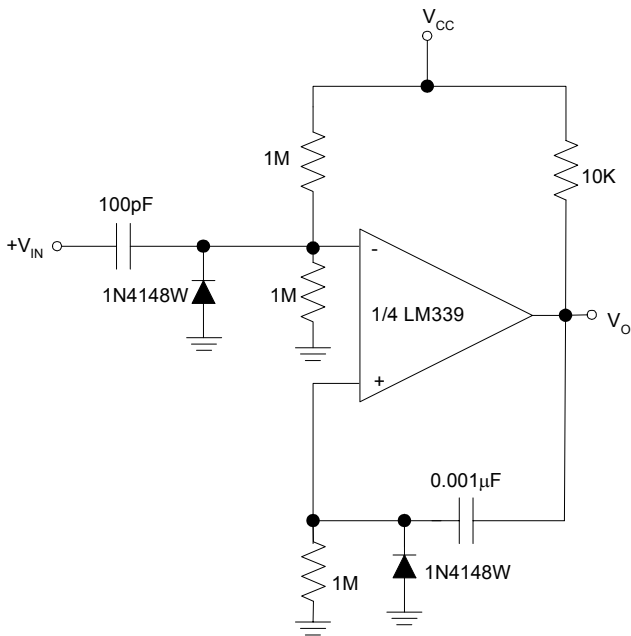


Figure 11. One Shot Multivibrator

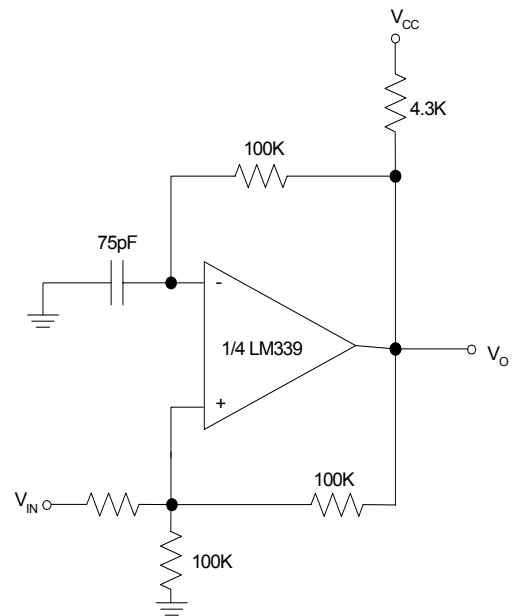
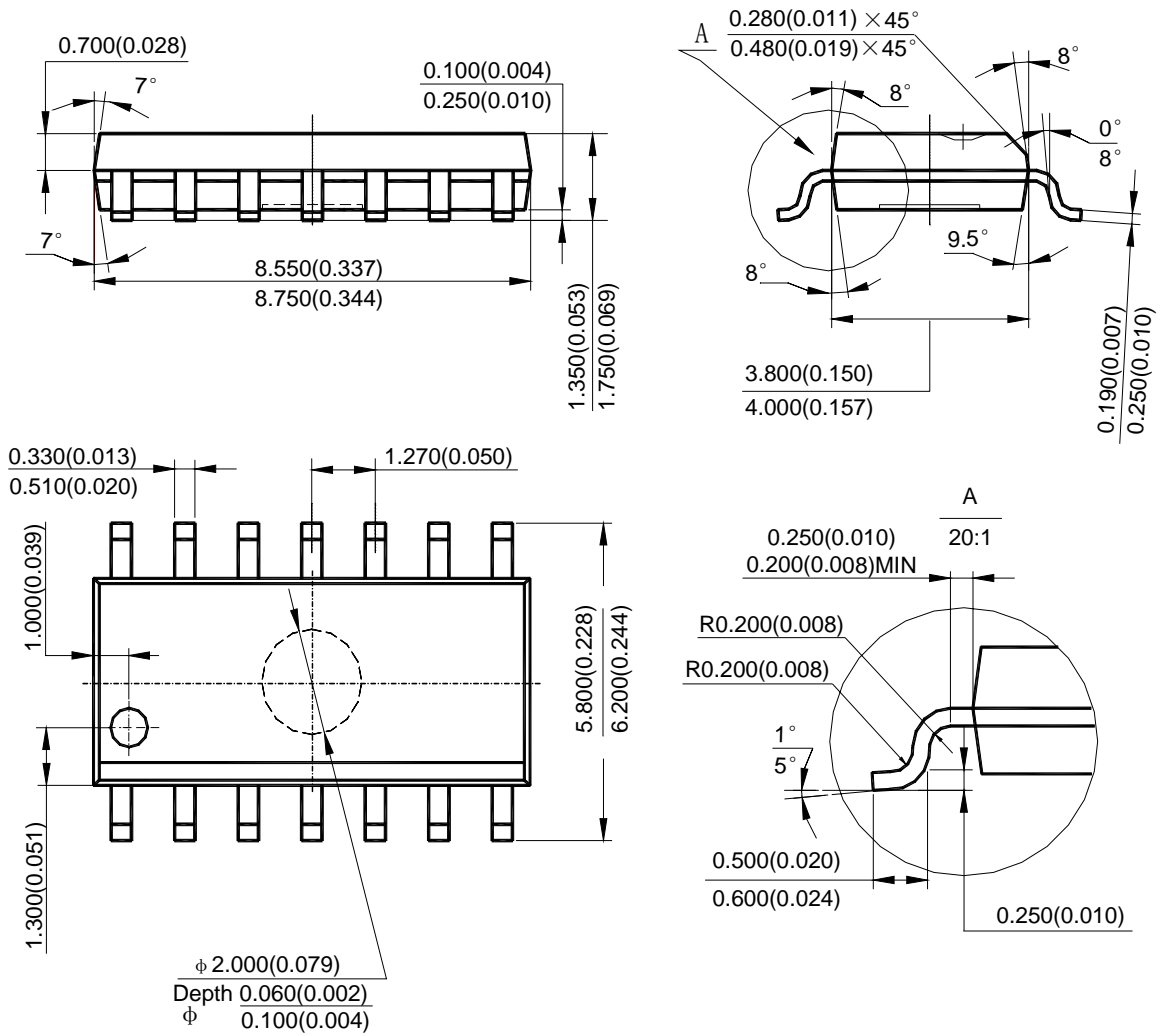


Figure 12. Squarewave Osillator

# SOP-14 Package Outline Dimensions

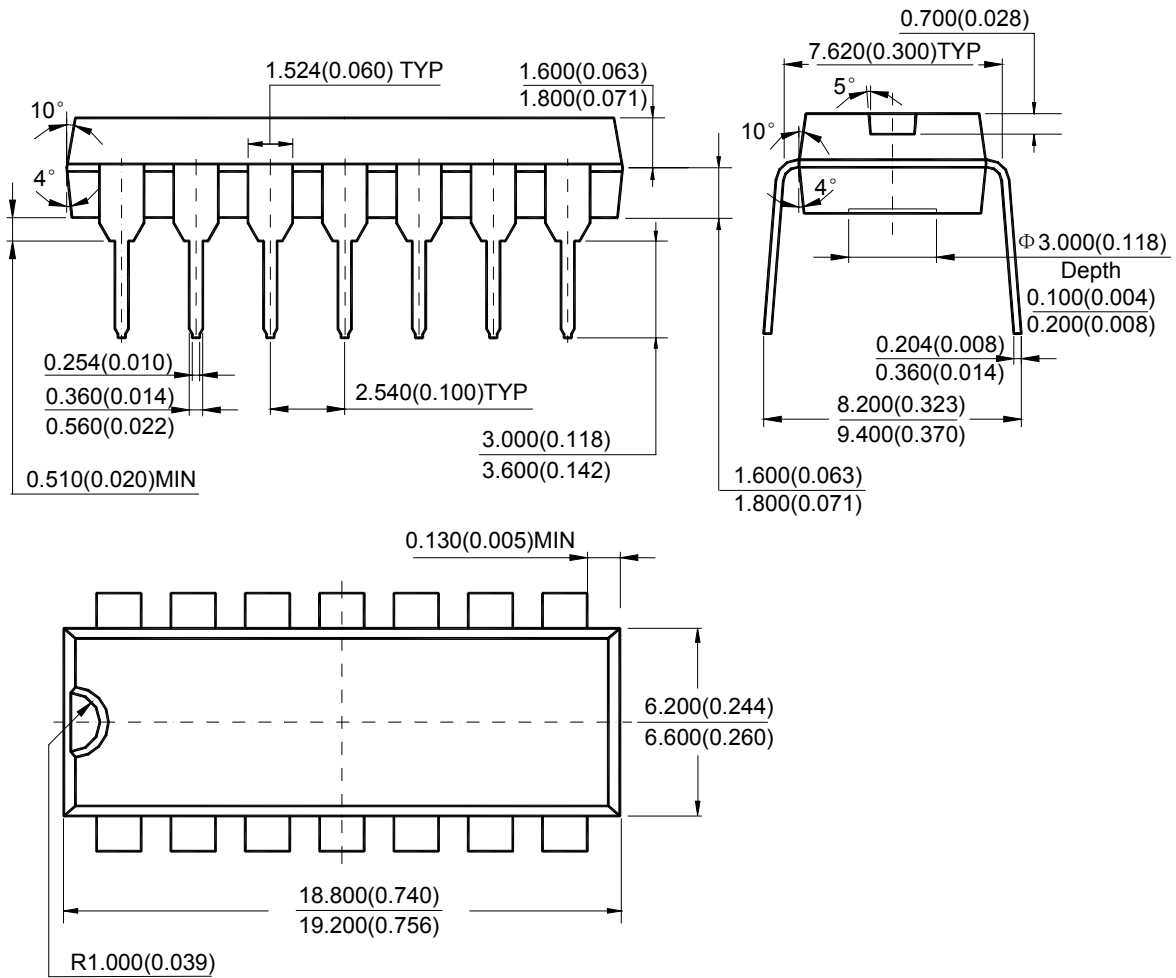
Unit: mm(inch)



Note: Eject hole, oriented hole and mold mark is optional.

# DIP-14 Package Outline Dimensions

Unit: mm(inch)



Note: Eject hole, oriented hole and mold mark is optional.