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# Low-Power, Low Offset, Dual Comparators

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## FEATURES

- **Low Power Consumption: 0.6mA (TYP)**
- **Single Supply Voltage Range: 2V to 36V**
- **Dual Supplies Voltage Range:  $\pm 1V$  to  $\pm 18V$**
- **Low Offset Voltage: 1mV (TYP)**
- **Open Collector Output**
- **Low Input Bias Current: 25nA (TYP)**
- **Input Common-Mode Voltage Range to 0V**
- **Packages: SOP8, TSSOP8, MSOP8**
- **Operating Temperature Range:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$**

## APPLICATIONS

- **Zero-Crossing Detectors**
- **RC Timers**
- **IR Receivers**
- **Threshold Detectors and Phase Discriminators**
- **Rotary Position Encoders**

## PRODUCT DESCRIPTION

The TS393 is a dual-channel high precision voltage comparator with a typical 1mV offset voltage. The device can be operated over a wide range of supply voltages. It can be used with a single supply or a dual-supply as long as the difference between the two supplies is from 2V to 36V.

The device has a special feature that allows the input common-mode voltage to be set to negative power rail.

TS393 has an open-collector output buffer. This allows the output to be pulled to any voltage rail up to 36V, regardless of the supply voltage. Such open-collector output stage makes the device compatible with transistor-transistor logic (TTL) as well as capable of driving a minimal 16mA current load such as lamps and relays.

