

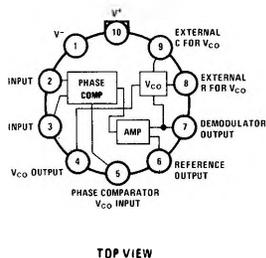
# LM565 phase locked loop

## general description

The LM565 phase locked loop (PLL) is a self-contained, adaptable filter and demodulator for the frequency range from 0.001 Hz to 500 kHz. The circuit comprises a voltage-controlled oscillator of exceptional stability and linearity, a phase comparator, an amplifier and a low-pass filter. The center frequency of the PLL is determined by the free-running frequency of the VCO; this frequency can be adjusted externally with a resistor or a capacitor. The low pass filter, which determines the capture characteristics of the loop, is formed by an internal resistor and an external capacitor. Features include:

- Extreme stability of center frequency—200 ppm/°C typ
- Wide range of operating voltage— $\pm 5$  to  $\pm 12$  volts with very small frequency drift—100 ppm/°C typ
- Very high linearity of demodulated output—0.5% typ
- Center frequency programming by means of a resistor, capacitor, voltage or current

## connection diagrams

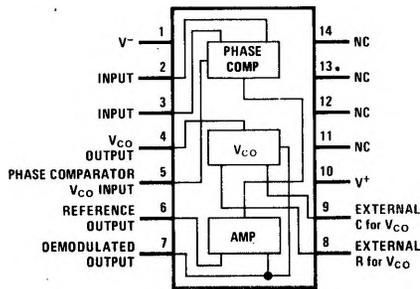


TOP VIEW

- TTL and DTL compatible square-wave output; loop can be opened to insert digital frequency divider
- Highly linear triangle wave output
- Reference output for connection of comparator in frequency discriminator
- Bandpass, adjustable from  $\leq \pm 1\%$  to  $> \pm 60\%$
- Frequency adjustable over 10 to 1 range with same capacitor

Applications include:

- Frequency shift keying
- Modems
- Telemetry receivers
- Tone decoders
- SCA receivers
- Wideband FM discriminators
- Data synchronizers
- Tracking filters
- Signal restoration
- Frequency multiplication & division



TOP VIEW