

# SN54LS324/SN74LS324 • SN54LS325/SN74LS325 SN54LS326/SN74LS326 • SN54LS327/SN74LS327

## VOLTAGE-CONTROLLED OSCILLATORS

### Advance Information

**DESCRIPTION** — Except for the LS324, all of these circuits feature two independent voltage-controlled oscillators on a single monolithic chip. The LS324, LS325 and LS326 have complementary outputs. Output frequency of the VCO is established by a single external component, in combination with voltage inputs, one for frequency control and on the LS324, another one for frequency range. These inputs can vary the output frequency by changing the voltage applied to them. These highly stable oscillators can operate at any frequency typically between 0.12 Hz and 30 MHz. With 2 volts on the frequency control input and the range input of the LS324, output frequency can be approximated as follows:

$$f_o = \frac{1 \times 10^{-4}}{C_{ext}}$$

where:  $f_o$  = output frequency in hertz

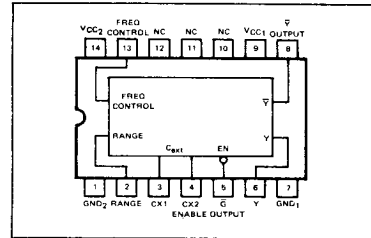
$C_{ext}$  = external capacitance in farads.

These devices can operate from a single 5-volt supply. However, a set of supply-voltage and ground pins ( $V_{CC1}$  and  $Gnd_1$ ) is provided for the enable, synchronization-gating, and output sections, and a separate set ( $V_{CC2}$  and  $GND_2$ ) is provided for the oscillator and associated frequency-control circuits so isolation can be accomplished in the system. Disabling either VCO of the LS325 and LS327 can be accomplished by removing the appropriate  $V_{CC2}$ . An enable input is available on both LS324 and LS326. While this input is low, the output is enabled. While the enable input is high, Y is high and  $\bar{Y}$  is low.

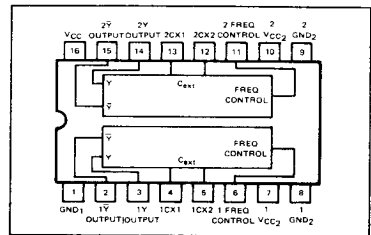
- **LS325, LS326 AND LS327 HAVE TWO INDEPENDENT VCO'S IN A SINGLE PACKAGE**
- **SEPARATE SUPPLY VOLTAGE PINS FOR ISOLATION OF FREQUENCY CONTROL INPUTS AND OSCILLATORS FROM OUTPUT CIRCUITRY**
- **OUTPUT FREQUENCY SET BY ONE EXTERNAL COMPONENT:**
  - **CRYSTAL FOR HIGH-STABILITY FIXED-FREQUENCY OPERATION**
  - **CAPACITOR FOR FIXED-OR VARIABLE-FREQUENCY OPERATION**
- **HIGHLY STABLE OPERATION OVER SPECIFIED TEMPERATURE AND/OR SUPPLY VOLTAGE RANGES**

This is advance information and specifications are subject to change without notice.

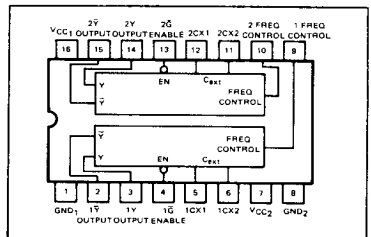
LS324 (TOP VIEW)



LS325 (TOP VIEW)



LS326 (TOP VIEW)



LS327 (TOP VIEW)

