

# SN54LS124/SN74LS124

## DUAL VOLTAGE-CONTROLLED OSCILLATORS

### Advance Information

**DESCRIPTION** – The SN54LS/74LS124 features two independent voltage-controlled oscillators (VCO) in a single package. The frequency of each VCO is established by an external component, either a capacitor or a crystal, in combination with two voltage-sensitive inputs, one for frequency range and one for frequency control. These highly stable oscillators can be set to operate at any frequency typically between 0.12 Hz and 30 MHz. The 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 operate from a single 5-volt supply. However, a set of supply-voltage and ground pins ( $V_{CC1}$  and  $GND_1$ ) are provided for the enable, synchronization-gating, and output sections, and an additional set ( $V_{CC2}$  and  $GND_2$ ) is provided for the oscillator and associated frequency-control circuits so that isolation can be accomplished in the system.

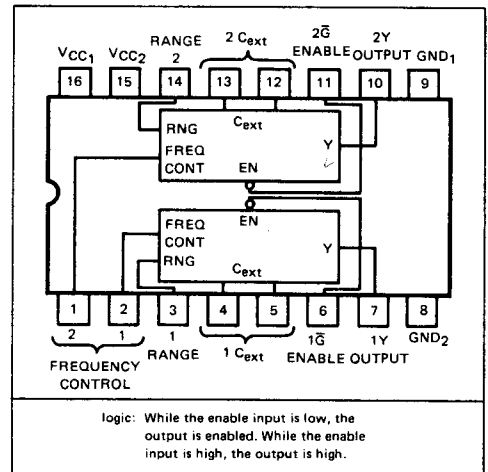
The enable input starts or stops the output pulses when it is low or high, respectively. The oscillator section runs continuously even while the output is disabled. The enable input is one standard load.

The pulse synchronization-gating section ensures that the first pulse is neither clipped nor extended. Duty cycle of the square-wave output is approximately 50 percent. Operation of both VCO's in the same package is not recommended.

- **TWO INDEPENDENT VCO'S IN A 16-PIN 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 VOLTAGES**

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

(TOP VIEW)



GUARANTEED FREQUENCY SPECTRUM	TYPICAL $f_{max}$	TYPICAL POWER DISSIPATION
1 Hz to 20 MHz	30 MHz	150 mW