Monostable Multivibrator Dual-Element -55°C 125°C 16-Pin PDIP Tube

Manufacturer:	Texas Instruments, Inc
Package/Case:	DIP
Product Type:	Logic ICs
RoHS:	RoHS Compliant/Lead free
Lifecycle:	Active
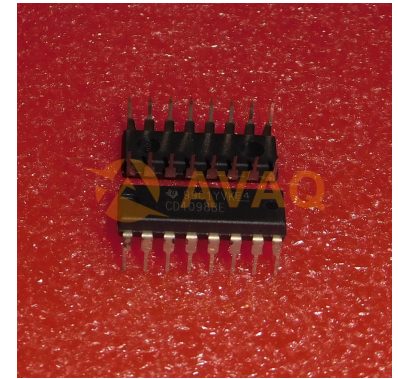
Images are for reference only

Inquiry

General Description

CD4098B dual monostable multivibrator provides stable retriggerable/resettable one-shot operation for any fixed-voltage timing application.

An external resistor (RX) and an external capacitor (CX) control the timing for the circuit. Adjustment of RX and CX provides a wide range of output pulse widths from the Q and Q\ terminals. The time delay from trigger input to output transition (trigger progagation delay) and the time delay from set input to output transition (reset progagation delay) are independent of RX and CX.

Leading-edge-triggering (+TR) and trailing-edge-triggering (-TR) input are provided for triggering from either edge of an input pulse. An unused +TR input should be tied to VSS. An unused (-TR) input should be tied to VDD. A RESET (on low level) is provided for immediate termination of the output pulse or to prevent output pulses when power is turned on. An unused RESET input should be tied to VDD. However, if an entire section of the CD4098B is not used, its RESET should be tied to VSS. See Table 1.

In normal operation the circuit triggers (extends the output pulse one period) on the application of each new trigger pulse. For operation in the non-retriggerable mode, Q\ is connected to -TR when leading-edge triggering (+TR) is used or Q is connected to +TR when trailing-edge triggering (-TR) is used.

The time period (T) for this multivibrator can be approximated by: TX= RXCX for CX 0.01 uF. Time periods as a function of RX for values of CX and VDD are given in Fig. 8. Values of T vary from unit to unit and as a function of voltage, temperature, and RXCX.

The minimum value of external resistance, RX, is 5 k. The maximum value of external capacitance, CX, is 100uF. Fig.9 shows time periods as a function of CX for values of RX and VDD.

The output pulse width has variations of ±2.5% typically, over the temperature range of -55°C to 125°C for CX= 1000 pF and RX= 100 k.

For power supply variations of ±5%, the output pulse width has variations of ±0.5% typically, for VDD= 10 V and 15 V and ±1% typically, for VDD= 5 V at CX= 1000 pF and RX= 5 k.

These types are supplied in 16-lead hermetic dual-in-line ceramic packages (F3A suffix), 16-lead dual-in-line plastic package (E suffix), 16-lead small-outline packages (M, M96, and MT suffixes), and 16-lead thin shrink small-outline packages (PW and PWR suffixes).

The CD4098B is similar to type MC14528.

Key Features

Retriggerable/resettable capability

Trigger and reset propagation delays independent of RX, CX

Triggering from leading or trailing edge

Q and Q\ buffered outputs available

Separate resets

Wide range of output-pulse widths

100% tested for maximum quiescent current at 20 V

Maximum input current of 1 uA at 18 V over full package-temperature range; 100 nA at 18 V and 25°C

Noise margin (full package-temperature range):
1 V at VDD = 5 V

2 V at VDD = 10 V

2.5 V at VDD = 15 V

5-V, 10-V, and 15-V parametric ratings

Standardized, symmetrical output characteristics

Meets all requirements of JEDEC Tentative Standard No. 13B, "Standard Specifications for Description of 'B' Series CMOS Devices."

Applications:
Pulse delay and timing

Pulse shaping

Astable multivibrator

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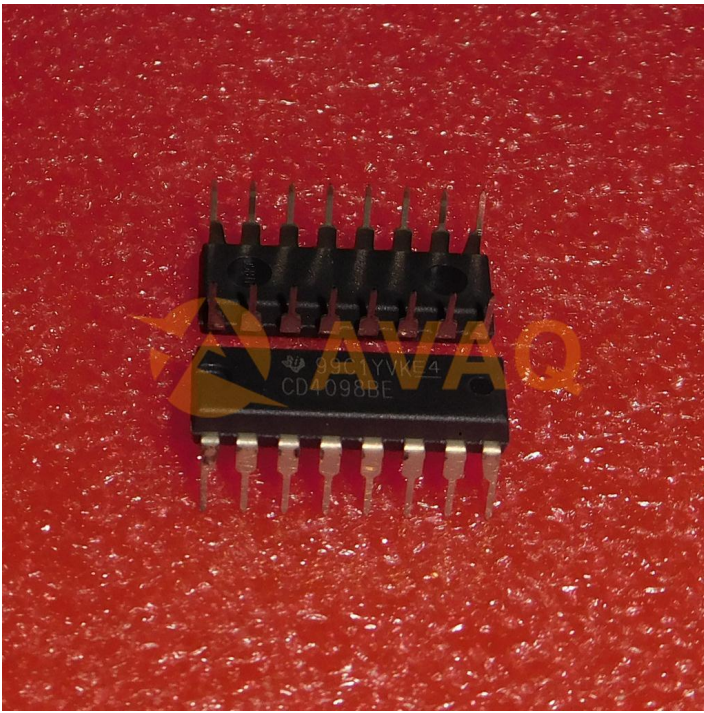
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Recommended For You

CD4070BE

Texas Instruments, Inc

DIP14

CD74HCT138E

Texas Instruments, Inc

DIP16

CD74HC08E

Texas Instruments, Inc

DIP

CD74HC4075E

Texas Instruments, Inc

DIP

CD74ACT74E

Texas Instruments, Inc

DIP-14

CD74HC75E

Texas Instruments, Inc

DIP

CD4504BE

Texas Instruments, Inc

DIP16

CD4068BE

Texas Instruments, Inc

DIP

CD4081BE

Texas Instruments, Inc

DIP14

CD4001BE

Texas Instruments, Inc

DIP14

CD4512BE

Texas Instruments, Inc

DIP16

CD4069UBE

Texas Instruments, Inc

DIP14

CD74HCT151E

Texas Instruments, Inc

DIP

CD74HC04M

Texas Instruments, Inc

SOP14

CD4013BE

Texas Instruments, Inc

DIP14