

HIGH-SPEED CMOS LOGIC

016689 TYPES SN54HC4538, SN74HC4538 DUAL PRECISION RETRIGGERABLE/RESETTABLE MONOSTABLE MULTIVIBRATORS

D2684, DECEMBER 1982

- Positive- and Negative-Edge Triggered Inputs with Hysteresis
- Complementary Outputs Available
- Independent Clear Inputs
- Wide Range of Output Pulse Durations
- Package Options Include Both Plastic and Ceramic Chip Carriers in Addition to Plastic and Ceramic DIPs
- Dependable Texas Instruments Quality and Reliability

description

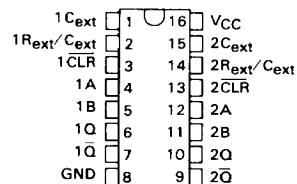
The 'HC4538 can be triggered by either the positive- or the negative edge of an input pulse. This device will produce an accurate output pulse over a wide range of pulse durations. The output pulse duration and accuracy are determined by the external timing components C_{ext} and R_{ext} . Trigger and clear propagation delays are independent of R_{ext} and C_{ext} .

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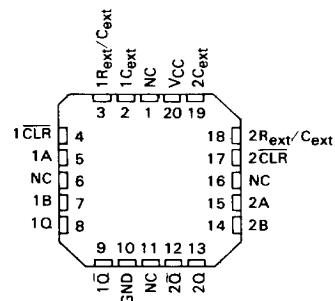
A clear input is provided for immediate termination of the output pulse or to prevent output pulses when power is turned on.

The SN54HC4538 is characterized for operation over the full military temperature range of -55°C to 125°C . The SN74HC4538 is characterized for operation from -40°C to 85°C .

SN54HC4538 . . . J PACKAGE
SN74HC4538 . . . J OR N PACKAGE
(TOP VIEW)



SN54HC4538 . . . FH OR FK PACKAGE
SN74HC4538 . . . FH OR FN PACKAGE
(TOP VIEW)

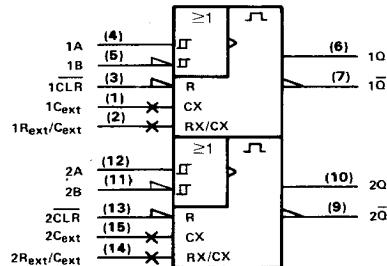


NC — No internal connection

logic symbol

FUNCTION TABLE

INPUTS			OUTPUTS	
CLEAR	A	B	Q	\bar{Q}
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	I	—	—
H	I	H	—	—



Pin numbers shown are for J and N packages.

maximum ratings, recommended operating conditions, and electrical characteristics

See Table IV, page 2-6.

Note: The minimum recommended supply voltage for this device is 3 V.

PRODUCT PREVIEW

This document contains information on a

TEXAS INSTRUMENTS

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TYPES SN54HC4538, SN74HC4538
DUAL PRECISION RETRIGGERABLE/RESETTABLE
MONOSTABLE MULTIVIBRATORS

timing requirements (supplement to recommended operating conditions)

		SN54HC4538			SN74HC4538			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
t_w	Pulse duration, A high or B low							MHz
R_{ext}	External timing resistance							$k\Omega$
C_{ext}	External timing capacitance							μF

switching characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 5\text{ V},$	$V_{CC} = 4.5\text{ V to }5.5\text{ V},$			UNIT	
			$C_L = 15\text{ pF},$	$C_L = 50\text{ pF}$				
			$R_L = 2\text{ k}\Omega,$	$T_A = 25^\circ\text{C}$	$T_A = 25^\circ\text{C}$	$SN54\text{HC'}$	$SN74\text{HC'}$	
$t_{PLH\uparrow}$	A	Q	MIN	TYP	MAX	MIN	MAX	ns
	B							
$t_{PHL\uparrow}$	A	Q						ns
	B							
$t_{PHL\downarrow}$	CLR	Q						ns
$t_{PLH\downarrow}$		Q						ns
$t_{wQ(\min)\uparrow}$	A or B	Q						ns
$t_{wQ\downarrow}$	A or B	Q						μs
C_{pd}	Power dissipation capacitance per monostable			No load, $T_A = 25^\circ\text{C}$			pF typ	

$\dagger C_{ext} = 0, R_{ext} = 5\text{ k}\Omega$

$\ddagger t_{wQ}$ = duration of pulse at output Q.

NOTE 1: For load circuit and voltage waveforms, see page 1-14.

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