

## Product Overview

### 74VHC123A: Dual Retriggerable Monostable Multivibrator

For complete documentation, see the data sheet.

The VHC123A is an advanced high speed CMOS Monostable Multivibrator fabricated with silicon gate CMOS technology. It achieves the high speed operation similar to equivalent Bipolar Schottky TTL while maintaining the CMOS low power dissipation. Each multivibrator features both a negative, A, and a positive, B, transition triggered input, either of which can be used as an inhibit input. Also included is a clear input that when taken low resets the one-shot. The VHC123A can be triggered on the positive transition of the clear while A is held low and B is held high. The output pulse width is determined by the equation:  $PW = (R_x)(C_x)$ ; where PW is in seconds, R is in ohms, and C is in farads. Limits for  $R_x$  and  $C_x$  are: External capacitor,  $C_x$  No limit External resistors,  $R_x V_{CC} = 2.0V, 5 \text{ kohm min } V_{CC} \geq 3.0V, 1 \text{ kohm min}$  An input protection circuit ensures that 0 to 7V can be applied to the input pins without regard to the supply voltage. This device can be used to interface 5V to 3V systems and two supply systems such as battery back up. This circuit prevents device destruction due to mismatched supply and input voltages.

### Features

- High Speed:  $t_{PD} = 8.1 \text{ ns (typ)}$  at  $T_A = 25^\circ\text{C}$
- Low Power Dissipation:  $I_{CC} = 4 \mu\text{A (Max)}$  at  $T_A = 25^\circ\text{C}$
- Active State:  $I_{CC} = 600 \mu\text{A (Max)}$  at  $T_A = 25^\circ\text{C}$
- High Noise Immunity:  $V_{NIH} = V_{NIL} = 28\% V_{CC} \text{ (min)}$
- Power down protection is provided on all inputs
- Pin and function compatible with 74HC123A

### Applications

- This product is general usage and suitable for many different applications.

### Part Electrical Specifications

Product	Compliance	Status	Channels	$V_{CC} \text{ Min (V)}$	$V_{CC} \text{ Max (V)}$	$t_{pd} \text{ Max (ns)}$	$I_O \text{ Max (mA)}$	Package Type
74VHC123AM	Pb-free	Active	2	2	5.5	10.2	8	SOIC-16
74VHC123AMTC	Pb-free Halide free	Active	2	2	5.5	10.2	8	TSSOP-16
74VHC123AMTCX	Pb-free Halide free	Active	2	2	5.5	10.2	8	TSSOP-16
74VHC123AMX	Pb-free	Active	2	2	5.5	10.2	8	SOIC-16
74VHC123ASJX	Pb-free	Active	2	2	5.5	10.2	8	SOP-16

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