Supertex inc.

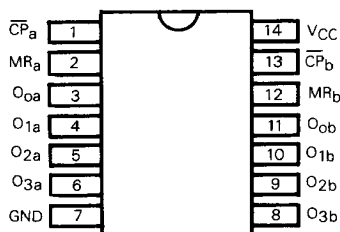## Dual 4-Bit Binary Ripple Counter

Preliminary

Device Parameter	High Speed (74HCT)	Standard (74SC)	Military (54HCT)
Dual 4-Bit Binary Ripple Counter	74HCT393	74SC393	54HCT393
Operating Voltage Range (°C)	−40 to +85	−40 to +85	−55 to +125
Recommended operating voltage (V)	4.75 to 5.25	4.75 to 5.25	4.50 to 5.50
Typical fmax MHz	−	20	−

Features

☐ Pin and function compatible to 54/74LS equivalent circuits

☐ Typical DC operating supply current: $10\mu A$

☐ MIL STD 883B Screening/Leadless chip carrier available

☐ Fast propagation delay times

☐ Fan out of 30 LSTTL loads

☐ Fully TTL and CMOS compatible

☐ −40°C to +85°C operating temperature range

☐ Capable of operating over 3-volt to 6-volt range

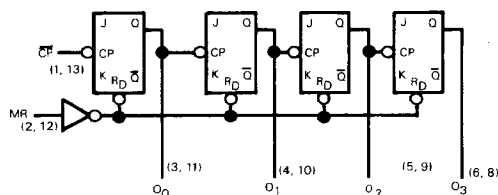☐ High speed silicon-gate CMOS technology

General Description

The '393 is a Dual 4-Bit Binary Ripple Counter with separate Clock and Master Reset inputs to each counter. The operation of each half of the '393 is the same as the '93 except no external clock connections are required. The counters are triggered by a HIGH-to-LOW transition of the Clock ($\overline{CP}_a$ and $\overline{CP}_b$) inputs. The counter outputs are internally connected to provide Clock inputs to succeeding stages. The outputs of the ripple counter do not change synchronously and should not be used for high speed address decoding.

The Master Resets (MR_a and MR_b) are active-HIGH asynchronous inputs to each 4-bit counter identified by the "a" and "b" suffixes in the Pin Configuration. A HIGH level on the MR input overrides the clock and sets the outputs LOW.

Pin Configuration

Function Block Diagram

( ) = Pin numbers
V_{CC} = Pin 14
GND = Pin 7