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**PART NUMBER****54LS293JB-ROCV**

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**Rochester Electronics  
Manufactured Components**

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All re-creations are done with the approval of the Original Component Manufacturer. (OCM)

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceeds the OCM data sheet.

**Quality Overview**

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-38535
  - Class Q Military
  - Class V Space Level

**Qualified Suppliers List of Distributors (QSLD)**

- Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

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*The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OCM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.*

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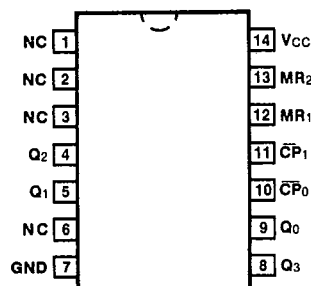
**54/74293**  
**54LS/74LS293**  
 MODULO-16 BINARY COUNTER

**DESCRIPTION** — The '293 is a 4-stage ripple counter containing a high speed flip-flop acting as a divide-by-two and three flip-flops acting as a divide-by-eight. HIGH signals on the Master Reset (MR) inputs override the clocks and force all outputs to the LOW state. The '293 is the same circuit as the '93 except that it has corner power pins and is therefore recommended for new designs. For detail specifications, truth tables and functional description, please refer to the '93 data sheet.

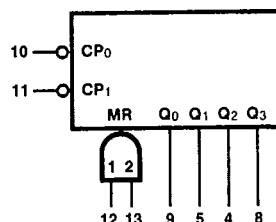
**ORDERING CODE:** See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		$V_{CC} = +5.0 \text{ V} \pm 5\%$ , $T_A = 0^\circ \text{C to } +70^\circ \text{C}$	$V_{CC} = +5.0 \text{ V} \pm 10\%$ , $T_A = -55^\circ \text{C to } +125^\circ \text{C}$	
Plastic DIP (P)	A	74293PC, 74LS293PC		9A
Ceramic DIP (D)	A	74293DC, 74LS293DC	54293DM, 54LS293DM	6A
Flatpak (F)	A	74293FC, 74LS293FC	54293FM, 54LS293FM	3I

**CONNECTION DIAGRAM**  
PINOUT A



**LOGIC SYMBOL**



$V_{CC}$  = Pin 14  
 $GND$  = Pin 7  
 NC = Pins 1, 2, 3, 6

**INPUT LOADING/FAN-OUT:** See Section 3 for U.L. definitions

PIN NAMES	DESCRIPTION	54/74 (U.L.) HIGH/LOW	54/74LS (U.L.) HIGH/LOW
$\overline{CP}_0$	$\div 2$ Section Clock Input (Active Falling Edge)	2.0/2.0	1.0/1.5
$\overline{CP}_1$	$\div 8$ Section Clock Input (Active Falling Edge)	2.0/2.0	1.0/1.0
MR <sub>1</sub> , MR <sub>2</sub>	Asynchronous Master Reset Inputs (Active HIGH)	1.0/1.0	0.5/0.25
Q <sub>0</sub>	$\div 2$ Flip-flop Output*	20/10	10/5.0 (2.5)
Q <sub>1</sub> — Q <sub>3</sub>	$\div 8$ Flip-flop Outputs	20/10	10/5.0 (2.5)

\*The Q<sub>0</sub> output is guaranteed to drive the full rated fan-out plus the  $\overline{CP}_1$  input.