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**PART NUMBER****54L98J-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.*

## 54L98

### 4-Bit Data Selectors/Storage Registers

These monolithic data selectors/storage registers are composed of four S-R master-slave flip-flops, four AND-OR-INVERT gates, one buffer, and six inverter/drivers.

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**FOR REFERENCE ONLY**

# TYPE SN54L98 4-BIT DATA SELECTORS/STORAGE REGISTERS

DECEMBER 1972—REVISED DECEMBER 1983

- Dependable Texas Instruments Quality and Reliability

## description

These monolithic data selectors/storage registers are composed of four S-R master-slave flip-flops, four AND-OR-INVERT gates, one buffer, and six inverter/drivers.

When the word select input is low, word 1 (A1, B1, C1, D1) is applied to the flip-flops. A high input to word select will cause the selection of word 2 (A2, B2, C2, D2). The selected word is shifted to the output terminals on the negative-going edge of the clock pulse.

Typical power dissipation is 25 mW. The SN54L98 is characterized for operation over the full military temperature range of  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ .

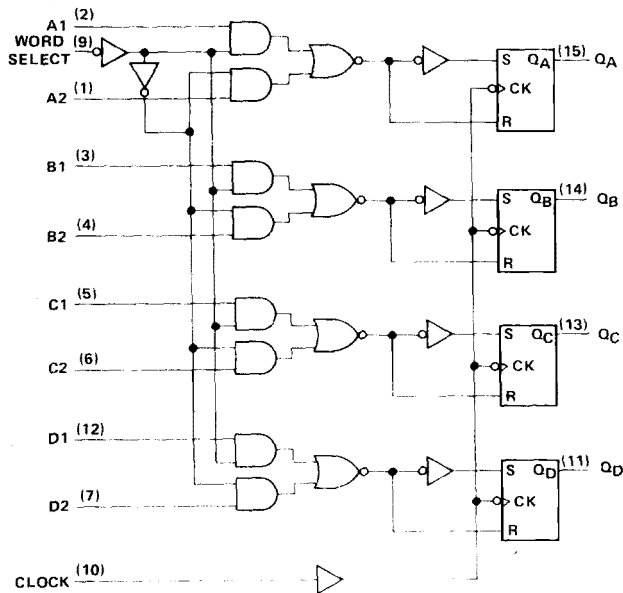
SN54L98 . . . J PACKAGE  
(TOP VIEW)

A2	1	16	V <sub>CC</sub>
A1	2	15	Q <sub>A</sub>
B1	3	14	Q <sub>B</sub>
B2	4	13	Q <sub>C</sub>
C1	5	12	D1
C2	6	11	Q <sub>D</sub>
D2	7	10	CLK
GND	8	9	WS

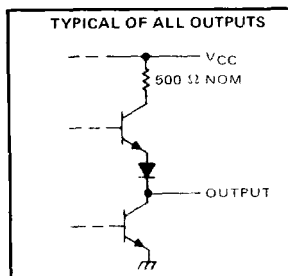
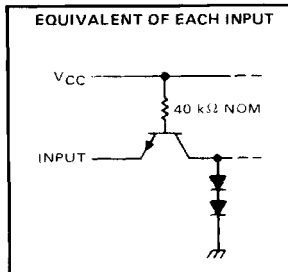
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TTL DEVICES

## logic diagram



## schematics of inputs and outputs



## PRODUCTION DATA

This document contains information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

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INSTRUMENTS

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# TYPE SN54L98 4-BIT DATA SELECTORS/STORAGE REGISTERS

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, $V_{CC}$ (see Note 1)	8 V
Input voltage (see Note 2)	5.5 V
Operating free-air temperature range: SN54L98	-55°C to 125°C
Storage temperature range	-65°C to 150°C

NOTES: 1. Voltage values are with respect to network ground terminal.  
2. Input voltages must be zero or positive with respect to network ground terminal.

## recommended operating conditions

			SN54L98			UNIT
			MIN	NOM	MAX	
V <sub>CC</sub>	Supply voltage		4.5	5	5.5	V
V <sub>IH</sub>	High-level input voltage		2			V
V <sub>IL</sub>	Low-level input voltage		0.7			V
I <sub>OH</sub>	High-level output current		− 0.1			mA
I <sub>OL</sub>	Low-level output current		2			mA
t <sub>w(clock)</sub>	Width of clock pulse		200			ns
t <sub>su(H)</sub>	Setup time for high-level data	at A, B, C, or D	100			ns
		at word select	150			
t <sub>su(L)</sub>	Setup time for low-level data	at A, B, C, or D	120			ns
		at word select	100			
T <sub>A</sub>	Operating free-air temperature		− 55      125			°C

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

PARAMETER	TEST CONDITIONS†	SN54L98			UNIT
		MIN	TYP‡	MAX	
$V_{OH}$	$V_{CC} = \text{MIN}$ , $V_{IH} = 2 \text{ V}$ , $V_{IL} = 0.7 \text{ V}$ , $I_{OH} = -0.1 \text{ mA}$	2.4	3.3		V
$V_{OL}$	$V_{CC} = \text{MIN}$ , $V_{IH} = 2 \text{ V}$ , $V_{IL} = 0.7 \text{ V}$ , $I_{OL} = 2 \text{ mA}$		0.15	0.3	V
$I_I$	$V_{CC} = \text{MAX}$ , $V_I = 5.5 \text{ V}$			0.1	mA
$I_{IH}$	$V_{CC} = \text{MAX}$ , $V_I = 2.4 \text{ V}$			10	μA
$I_{IL}$	$V_{CC} = \text{MAX}$ , $V_I = 0.3 \text{ V}$			-0.18	mA
$I_{OS} §$	$V_{CC} = \text{MAX}$	-3		-15	mA
$I_{CC}$	$V_{CC} = \text{MAX}$ , See Note 3		5	9	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ All typical values are at  $V_{CC} = 5 \text{ V}$ ,  $T_A = 25^\circ\text{C}$ .

§ Not more than one output should be shorted at a time.

NOTE 3:  $I_{CC}$  is measured with all inputs grounded and all outputs open.

## switching characteristics, $V_{CC} = 5 \text{ V}$ , $T_A = 25^\circ\text{C}$ (see note 4)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
$f_{\text{max}}$	Any	Any	$R_L = 4 \text{ k}\Omega$ , $C_L = 50 \text{ pF}$	3	5		MHz
$t_{PLH}$					115	200	ns
$t_{PHL}$					125	200	ns

NOTE 4: See General Information Section for load circuits and voltage waveforms.

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