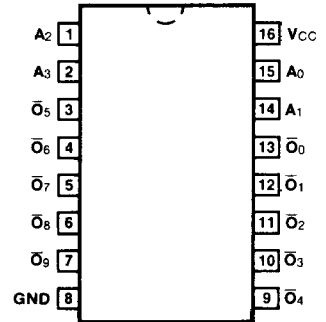


9301 *010098*
93L01 *α*
 1-OF-10 DECODER *016614*

CONNECTION DIAGRAM
PINOUT A



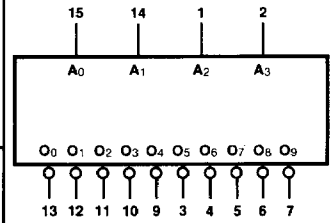
DESCRIPTION — The '01 multipurpose decoders are designed to accept four inputs and provide ten mutually exclusive outputs.

- **MULTIFUNCTION CAPABILITY**
- **MUTUALLY EXCLUSIVE OUTPUTS**
- **DEMULPLEXING CAPABILITY**
- **TYPICAL POWER DISSIPATION OF 145 mW for '01, 45mW for 'L01**

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	9301PC, 93L01PC		9B
Ceramic DIP (D)	A	9301DC, 93L01DC	9301DM, 93L01DM	6B
Flatpak (F)	A	9301FC, 93L01FC	9301FM, 93L01FM	4L

LOGIC SYMBOL



$V_{CC} = \text{Pin } 16$
 $GND = \text{Pin } 8$

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

PIN NAMES	DESCRIPTION	93XX (U.L.) HIGH/LOW	93L (U.L.) HIGH/LOW
$A_0 - A_3$	Address Inputs	1.0/1.0	0.5/0.25
$O_0 - O_9$	Decoder Outputs (Active LOW)	20/10	10/5.0 (3.0)

6

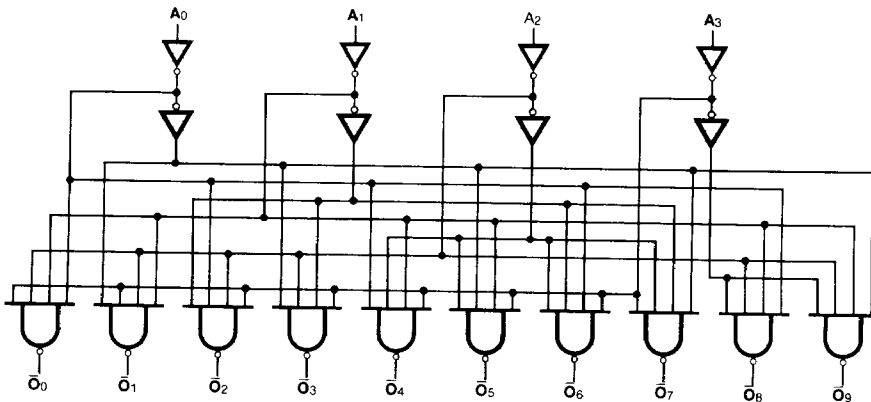
FUNCTIONAL DESCRIPTION — The '01 decoder accepts four active HIGH BCD inputs and provides ten mutually exclusive active LOW outputs, as shown by logic symbol or diagram. The active LOW outputs facilitate addressing other MSI units with active LOW input enables. The logic design of the '01 ensures that all outputs are HIGH when binary codes greater than nine are applied to the inputs. The most significant input A_3 produces a useful inhibit function when the '01 is used as a 1-of-8 decoder.

TRUTH TABLE

INPUTS				OUTPUTS									
A_0	A_1	A_2	A_3	\bar{O}_0	\bar{O}_1	\bar{O}_2	\bar{O}_3	\bar{O}_4	\bar{O}_5	\bar{O}_6	\bar{O}_7	\bar{O}_8	\bar{O}_9
L	L	L	L	L	H	H	H	H	H	H	H	H	H
H	L	L	L	H	L	H	H	H	H	H	H	H	H
L	H	L	L	H	H	L	H	H	H	H	H	H	H
H	H	L	L	H	H	H	L	H	H	H	H	H	H
L	L	H	L	H	H	H	H	L	H	H	H	H	H
H	L	H	L	H	H	H	H	H	L	H	H	H	H
L	H	H	L	H	H	H	H	H	H	L	H	H	H
H	H	H	L	H	H	H	H	H	H	H	L	H	H
L	L	L	H	H	H	H	H	H	H	H	H	L	H
H	L	L	H	H	H	H	H	H	H	H	H	H	L
L	H	L	H	H	H	H	H	H	H	H	H	H	H
H	H	L	H	H	H	H	H	H	H	H	H	H	H
L	L	H	H	H	H	H	H	H	H	H	H	H	H
H	L	H	H	H	H	H	H	H	H	H	H	H	H
L	H	H	H	H	H	H	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H	H	H	H	H	H	H

H = HIGH Voltage Level
L = LOW Voltage Level

LOGIC DIAGRAM



DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

SYMBOL	PARAMETER	93XX		93L		UNITS	CONDITIONS
		Min	Max	Min	Max		
I_{CC}	Power Supply Current	44		13		mA	$V_{CC} = \text{Max}$

AC CHARACTERISTICS: $V_{CC} = +5.0 \text{ V}$, $T_A = +25^\circ \text{C}$ (See Section 3 for waveforms and load configurations)

SYMBOL	PARAMETER	93XX		93L		UNITS	CONDITIONS
		$C_L = 15 \text{ pF}$		$C_L = 15 \text{ pF}$			
		Min	Max	Min	Max		
t_{PLH}	Propagation Delay	35		36		ns	Figs. 3-1, 3-20
t_{PHL}	A_n to \bar{O}_n	30		36			