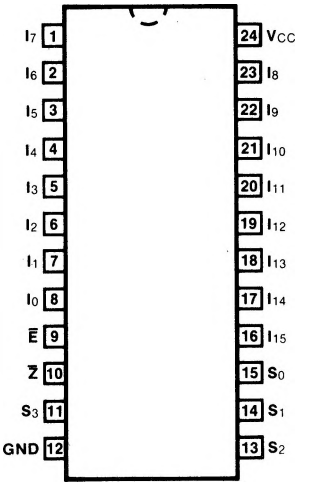
54/74150

16-INPUT MULTIPLEXER

DESCRIPTION — Signals applied to the Select ($S_0 - S_3$) inputs determine which of the data inputs ($I_0 - I_{15}$) is routed through to the output. Data from the selected input appears at the output ($\overline{Z}$) in inverted form. When the active-LOW Enable input is HIGH, the output will be HIGH, regardless of other input conditions.

CONNECTION DIAGRAM
PINOUT A



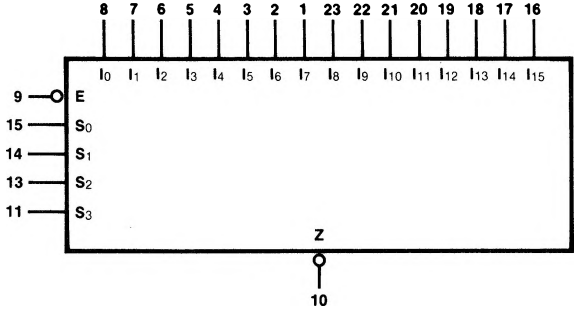
ORDERING CODE: See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		V_{CC} = +5.0 V ±5%, T_A = 0°C to +70°C	V_{CC} = +5.0 V ±10%, T_A = -55°C to +70°C	
Plastic DIP (P)	A	74150PC		9N
Ceramic DIP (D)	A	74150DC	54150DM	6N
Flatpak (F)	A	74150FC	54150FM	4M

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

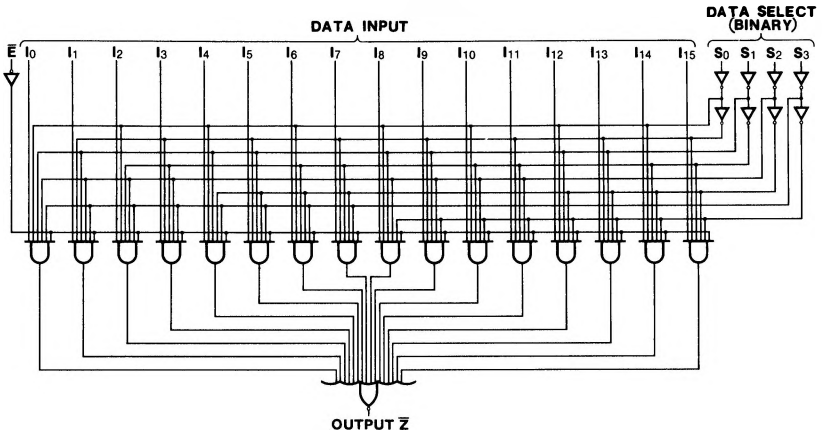
PIN NAMES	DESCRIPTION	54/74 (U.L.) HIGH/LOW
$I_0 - I_{15}$	Data Inputs	1.0/1.0
$S_0 - S_3$	Select Inputs	1.0/1.0
$\overline{E}$	Enable Input (Active LOW)	1.0/1.0
$\overline{Z}$	Inverted Data Output	20/10

LOGIC SYMBOL



V_{CC} = Pin 24
GND = Pin 12

LOGIC DIAGRAM



TRUTH TABLE

INPUTS					OUTPUT
S_3	S_2	S_1	S_0	$\overline{E}$	$\overline{Z}$
X	X	X	X	H	H
L	L	L	L	L	$\overline{I}_0$
L	L	L	H	L	$\overline{I}_1$
L	L	H	L	L	$\overline{I}_2$
•	•	•	•	•	•
H	H	L	L	L	$\overline{I}_{12}$
H	H	L	H	L	$\overline{I}_{13}$
H	H	H	L	L	$\overline{I}_{14}$
H	H	H	H	L	$\overline{I}_{15}$

H = HIGH Voltage Level
L = LOW Voltage Level
X = Immaterial

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

SYMBOL	PARAMETER		54/74 Min	54/74 Max	UNITS	CONDITIONS
I_{OS}	Output Short Circuit Current	XM	-20	-55	mA	V_{CC} = Max
		XC	-18	-55		
I_{CC}	Power Supply Current			68	mA	V_{CC} = Max, V_{IN} = 4.5V

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

SYMBOL	PARAMETER	54/74 C_L = 15 pF, R_L = 400 Ω Min	54/74 C_L = 15 pF, R_L = 400 Ω Max	UNITS	CONDITIONS
t_{PLH} t_{PHL}	Propagation Delay S_n to $\overline{Z}$, 3 Levels		35 33	ns	Figs. 3-1, 3-20
t_{PLH} t_{PHL}	Propagation Delay I_n to $\overline{Z}$		20 14	ns	Figs. 3-1, 3-4
t_{PLH} t_{PHL}	Propagation Delay $\overline{E}$ to $\overline{Z}$		24 30	ns	Figs. 3-1, 3-5