

**DESCRIPTION**

The 8263/8264 3-Input, 4-Bit Multiplexer is a gating array whose function is analogous to that of a 4-pole, 3-position switch. Four bits of digital data are selected from one of three inputs. A 2-bit channel-selection code determines which input is to be active.

The Data Complement input controls the conditional complement circuit at the Multiplexer output to effect either inverting or non-inverting data flow.

The 8263 employs active output structures to effect minimum delays: the 8264 utilizes bare collector outputs for expansion of input terms.

The 8264 may be expanded by connecting its outputs to the outputs of another 8264. Provision is made for use of a 3-bit code to determine which Multiplexer is selected; thus, eight Multiplexers may be commoned to effect a 4-pole, 24-position switch.

**PIN CONFIGURATIONS**

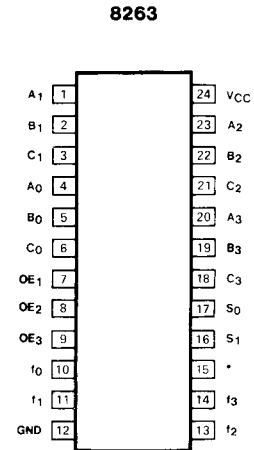


Figure A

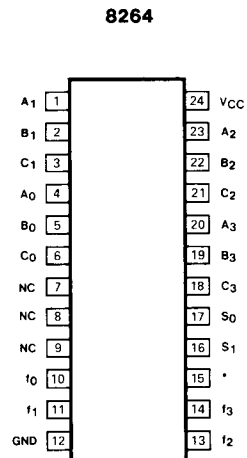


Figure B

\*Data complement

**ORDERING CODE (See Section 9 for further Package and Ordering Information)**

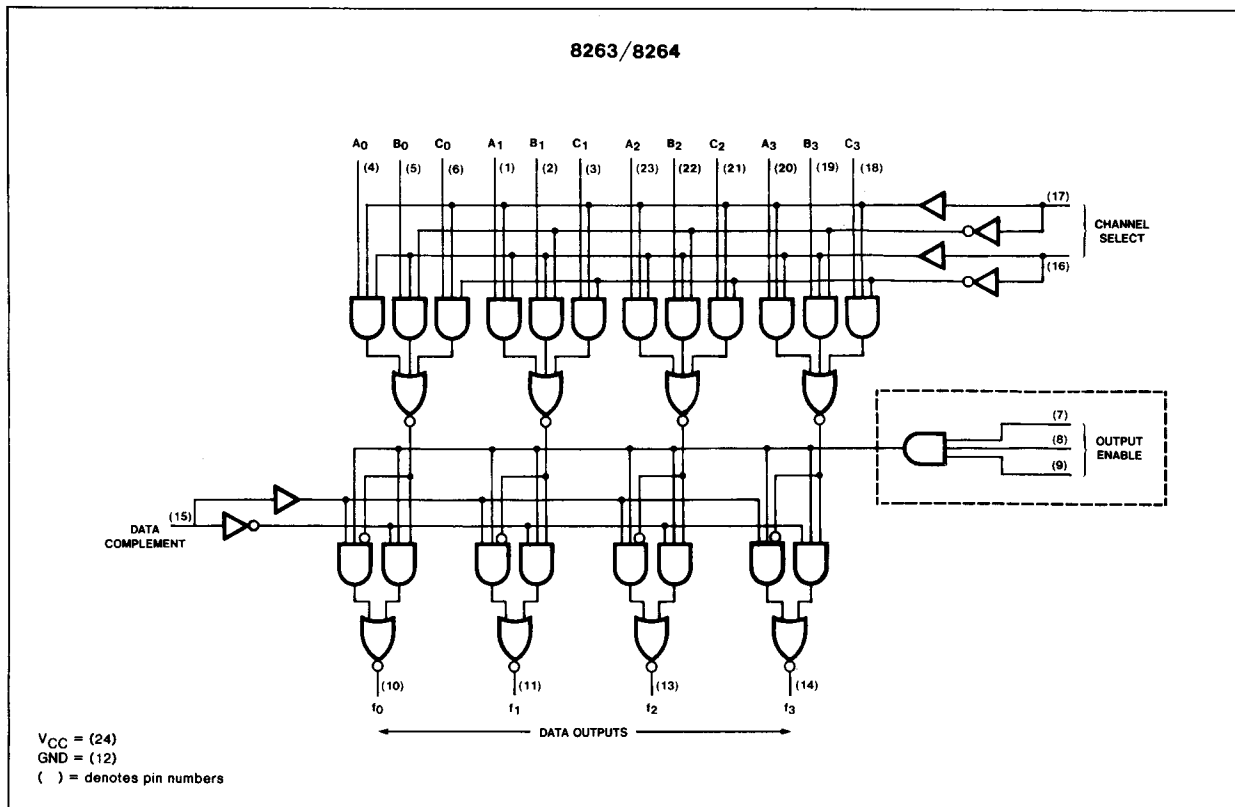
PACKAGES	PIN CONF.	COMMERCIAL RANGES	MILITARY RANGES
		V <sub>CC</sub> =5V ± 5%; T <sub>A</sub> =0°C to +75°C	V <sub>CC</sub> =5V ± 5%; T <sub>A</sub> =-55°C to +125°C
Plastic DIP	Fig.A	N8263N	
	Fig.B	N8264N	
Ceramic DIP	Fig.A	N8263F	S8263F
	Fig.B	N8264F	S8264F
Flatpak	Fig.A		S8263Q
	Fig.B		S8264Q

**TRUTH TABLE**

DATA INPUT			CHANNEL SELECT		DATA COMPLEMENT	OUTPUT ENABLE (8264)	DATA OUTPUTS
A <sub>n</sub>	B <sub>n</sub>	C <sub>n</sub>	S <sub>0</sub>	S <sub>1</sub>			
A <sub>n</sub>	X	X	H	H	L	H	A <sub>n</sub>
X	B <sub>n</sub>	X	L	H	L	H	B <sub>n</sub>
X	X	C <sub>n</sub>	H	L	L	H	C <sub>n</sub>
X	X	X	L	L	L	H	0
A <sub>n</sub>	X	X	H	H	H	H	$\bar{A}_n$
X	B <sub>n</sub>	X	L	H	H	H	$\bar{B}_n$
X	X	C <sub>n</sub>	H	L	H	H	$\bar{C}_n$
X	X	X	L	L	H	H	H
X	X	X	X	X	X	L	H

H = HIGH  
L = LOW  
X = Don't care

LOGIC DIAGRAM



DC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	8263		8264		UNIT
		Min	Max	Min	Max	
$V_{OH}$ Output HIGH voltage	$V_{CC} = 4.75V, I_{OH} = -800\mu A$	2.6				V
$I_{OH}$ Output HIGH current	$V_{CC} = 4.75V, V_{OUT} = 2.0V$				200	$\mu A$
$V_{OL}$ Output LOW voltage	$V_{CC} = 4.75V, I_{OL} = 9.6mA$ 8264 $I_{OL} = 16mA$		0.4		0.4	V
$I_{IL}$ Input LOW current $A_n, B_n, C_n, OE, DC$ $S_0, S_1$	$V_{CC} = 5.25V, V_{IN} = 4.5V$		-1.6 -3.2		-1.6 -3.2	mA mA
$I_{IH}$ Input HIGH current $A_n, B_n, C_n, OE, DC$ $S_0, S_1$	$V_{CC} = 5.25V, V_{IN} = 4.5V$		40 80		40 80	$\mu A$ $\mu A$
$I_{OS}$ Output short circuit current	$V_{CC} = 5V, V_{OUT} = 0V$	-20	-70			mA
$I_{CC}$ Supply current	$V_{CC} = 5.25V$		80		90.4	mA

AC CHARACTERISTICS:  $T_A = 25^\circ\text{C}$  (See Section 4 for Waveforms and Conditions)

PARAMETER	TEST CONDITIONS	8263		8264		UNIT
		$C_L = 18\text{pF}$ $R_1 = \infty\Omega$ $R_2 = 150\Omega$		$C_L = 30\text{pF}$ $R_1 = 360\Omega$ $R_2 = 440\Omega$		
		Min	Max	Min	Max	
$t_{PLH}$ $t_{PHL}$	Propagation delay $A_n$ to $f_n$		26 26		36 36	ns ns
$t_{PLH}$ $t_{PHL}$	Propagation delay $S_0, S_1$ to $f_n$		36 36		36 36	ns ns
$t_{PLH}$ $t_{PHL}$	Propagation delay DC to $f_n$		26 26		30 30	ns ns
$t_{PLH}$ $t_{PHL}$	Propagation delay OE to $f_n$				30 30	ns ns

NOTE

b. For family dc characteristics, see inside front cover for 54/74 and 54H/74H, and see inside back cover for 54S/74S and 54LS/74LS specifications.

AC WAVEFORMS

