

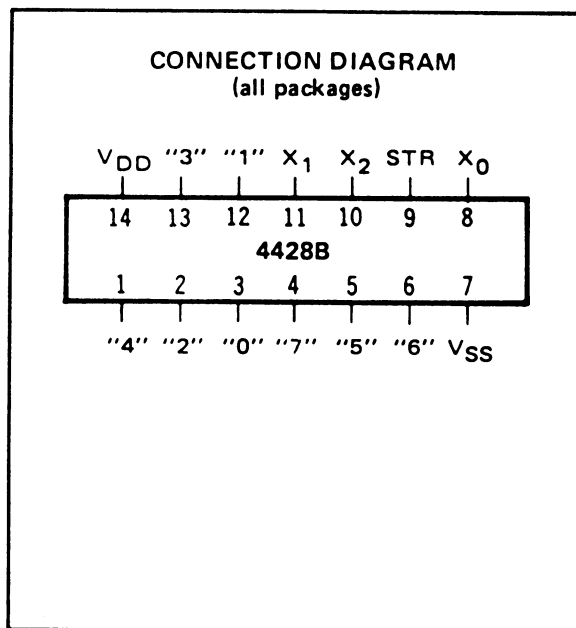
CMOS BINARY-TO-OCTAL DECODER

FEATURES

- ◆ Binary-to-Octal Decoding
- ◆ Buffered Outputs Go High on Selection
- ◆ Strobe Input for Simple Expansion

DESCRIPTION

The 4428B is a one-of-eight CMOS Strobed Decoder. The three inputs labeled X_0 , X_1 , and X_2 , constitute a three-bit word which defines a number from 0 to 7, and activates one of eight outputs of the decoder. The Strobe line inhibits the outputs from responding to the inputs. If the Strobe line is a logic "1", one of eight outputs is a logic "1". This is an important feature of the Strobe since many 4428B's may be cascading to produce a 1 or N X 8 strobed decoder. This array is particularly useful in expanding memory systems.



TRUTH TABLE – Strobe at Logical 1

Address Input				Output							
X_2	X_1	X_0		"0"	"1"	"2"	"3"	"4"	"5"	"6"	"7"
PIN	10	11	8	3	12	2	13	1	5	6	4
0	0	0	0	1	0	0	0	0	0	0	0
0	0	0	1	0	1	0	0	0	0	0	0
0	0	1	0	0	0	1	0	0	0	0	0
0	0	1	1	0	0	0	1	0	0	0	0
0	1	0	0	0	0	0	0	1	0	0	0
0	1	0	1	0	0	0	0	0	1	0	0
0	1	1	0	0	0	0	0	0	0	1	0
0	1	1	1	0	0	0	0	0	0	0	1

RECOMMENDED OPERATING CONDITIONS

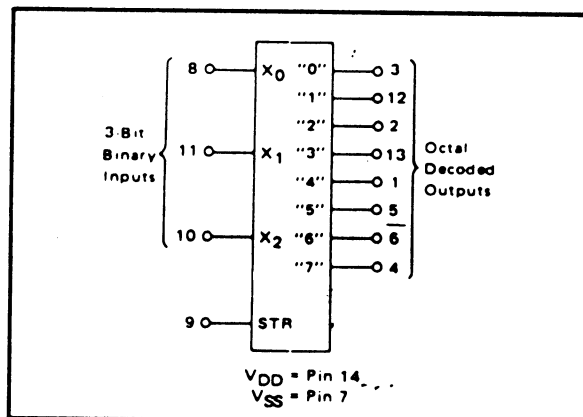
For maximum reliability:

DC Supply Voltage $V_{DD} - V_{SS}$ 3 to 15 Vdc

Operating Temperature T_A

C -55 to +125 °C
E -40 to +85 °C

BLOCK DIAGRAM



ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS¹

PARAMETER	V _{DD} (Vdc)	CONDITIONS	T _{LOW} ²		+25°C			T _{HIGH} ²		Units
			Min.	Max.	Min.	Typ.	Max.	Min.	Max.	
QUIESCENT DEVICE CURRENT	I _{DD}	V _{IN} = V _{SS} or V _{DD} All valid input combinations	—	5	—	0.05	5	—	150	μAdc
			—	10	—	0.1	10	—	300	
			—	20	—	0.2	20	—	600	

NOTES: ¹ Remaining Static Electrical Characteristics are listed under "4000B Series Family Specifications".

² T_{LOW} = -55°C for C

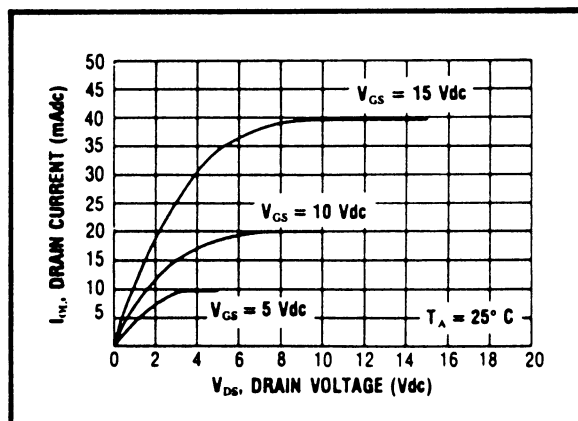
= -40°C for E

T_{HIGH} = +125°C for C

= + 85°C for E

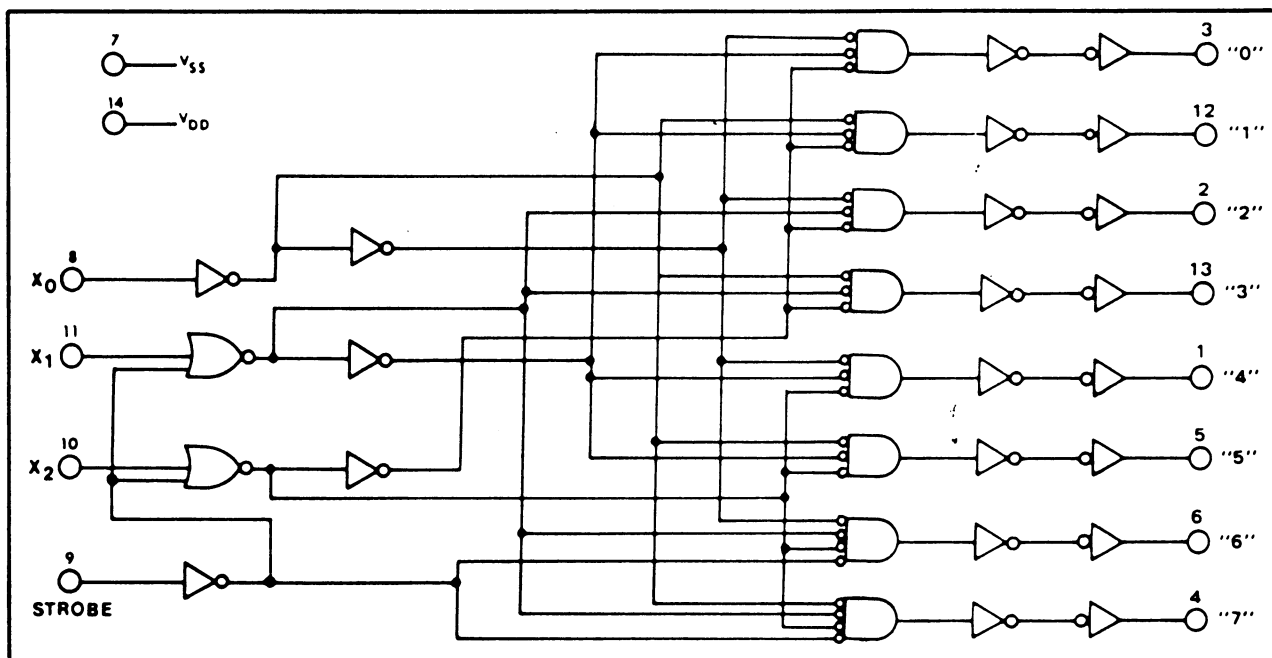
DYNAMIC CHARACTERISTICS (C_L = 50pF, T_A = 25°C)

PARAMETERS		V _{DD} (Vdc)	Min.	Typ.	Max.	Units
PROPAGATION DELAY TIME	t _{PLH} , t _{PHL}	5	—	225	450	ns
		10	—	100	200	
		15	—	70	140	
OUTPUT TRANSITION TIME	t _{TLH} , t _{THL}	5	—	100	200	ns
		10	—	50	100	
		15	—	40	80	



Typical N-Channel
Sink Current Characteristics

LOGIC DIAGRAM



APPLICATIONS INFORMATION

SIX-BIT BINARY 1-OF-64 DECODER

