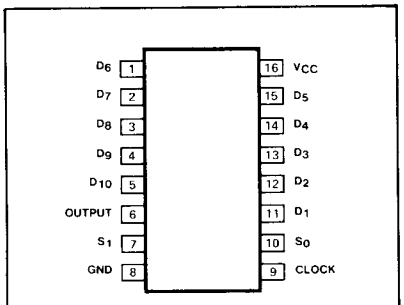
DESCRIPTION

The 8274 10-Bit Shift Register is an array of binary elements interconnected to perform the parallel-in serial-out shift function. The circuit has ten parallel inputs and a single true serial output. The D_1 input can also be used for serial entry. Two control inputs, S_0 and S_1, determine the operating mode of the shift register as shown in the Truth Table. A single buffered clock line connects all ten flip-flops which are activated on the high-to-low transition of the clock pulse.

Guaranteed input clock frequency is 25MHz. With the exception of the Hold Mode, the control inputs may be changed when the clock is in either the high or low state without causing false triggering. The Hold Mode can be entered only when the clock is low. Applications for the 8274 Shift Register include Parallel-to-Serial conversion, Modem Data Transmission, Pseudo-Random Code generation and Modulo-N Frequency Division.

PIN CONFIGURATION



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

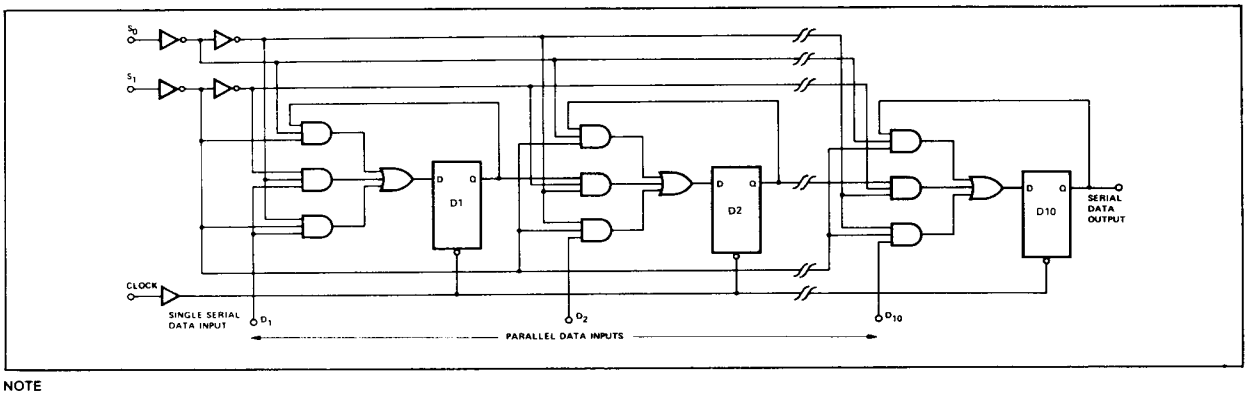
PACKAGES	COMMERCIAL RANGES V_{CC}=5V±5%; T_A=0°C to +75°C	MILITARY RANGES V_{CC}=5V±5%; T_A=−55°C to +125°C
Plastic DIP	N8274N	
Ceramic DIP	N89274F	S8274F
Flatpak		S8274W

MODE SELECT— FUNCTION TABLE

S_0	S_1	OPERATING MODE
L	L	Hold
L	H	Clear
H	L	Load
H	H	Shift

H = HIGH voltage level
L = LOW voltage level

LOGIC DIAGRAM



NOTE

a. The slashed numbers indicate different parametric values for Military Commercial temperature ranges respectively.

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE

PARAMETER		TEST CONDITIONS	8274		UNIT
			Min	Max	
V_{OH}	Output HIGH voltage	V_{CC} = 4.75V, I_{OH} = −800μA	2.6		V
V_{OL}	Output LOW voltage	V_{CC} = 4.75V, I_{OL} = 16mA		0.4	V
I_{IH}	Input HIGH current	V_{CC} = 5.25V, V_{IN} = 4.5V		40	μA
I_{IL}	Input LOW current D_n, S_0, S_1 Clock	V_{CC} = 5.25V, V_{IN} = 0.4V	 −0.2 −0.2	 −1.2 −1.6	mA mA mA
V_{BD}	Input breakdown voltage	V_{CC} = 5.0V, I_{IN} = 10mA	5.5		V
I_{OS}	Output short circuit current	V_{CC} = 5.0V, V_{OUT} = OV	−20	−70	mA
I_{CC}	Supply current	V_{CC} = 5.0V		108	mA

AC CHARACTERISTICS: T_A = 25° C (See Section 4 for Waveforms and Conditions)

PARAMETER		TEST CONDITIONS	8274 C_L = 18pF, R_1 = ∞Ω, R_2 = 84.5Ω		UNITS
			Min	Max	
f_{Max}	Maximum clock frequency	Figure 1	25		MHz
t_{PLH} t_{PHL}	Propagation delay Clock to output	Figure 1		40 40	ns ns

5

AC SET-UP REQUIREMENTS T_A = 25°C (See Section 4 for Waveforms and Conditions)

	PARAMETER	TEST CONDITIONS	8274		UNIT
			Min	Max	
t_W	Clock pulse width	Figure 1	20		ns
t_S	Set-up time Dn S_0,S_1	Figure 1	 10 25		 ns ns

AC WAVEFORMS

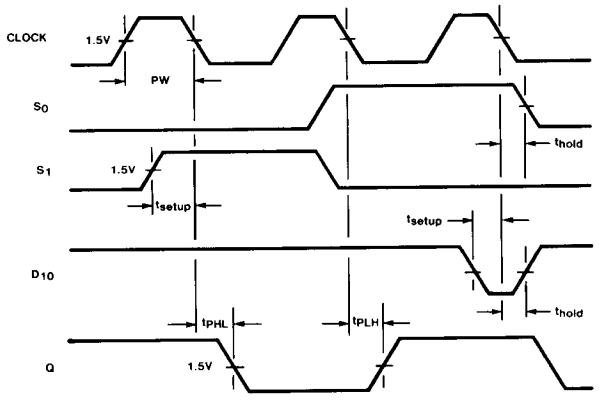


Figure 1