

# 4007UB

## DUAL COMPLEMENTARY PAIR PLUS INVERTER

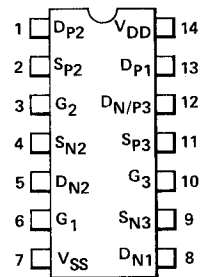
**DESCRIPTION** — The 4007UB is a Dual Complementary Pair and an Inverter with access to each device. It has three n-channel and three p-channel enhancement mode MOS transistors. For proper operation  $V_{SS} \leq V_1 \leq V_{DD}$ .

- **INPUT DIODE PROTECTION ON ALL INPUTS**
- **DRAINS AND SOURCES TO N- AND P-CHANNEL TRANSISTORS AVAILABLE**

**PIN NAMES**

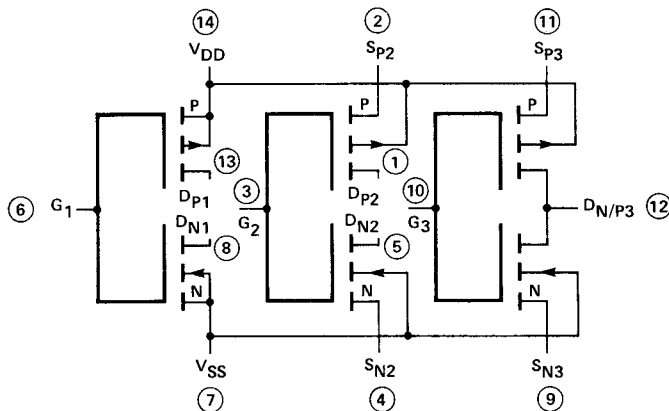
- SP2, SP3 Source Connection to Second and Third p-channel Transistors
- DP1, DP2 Drain Connection from the First and Second p-channel Transistors
- DN1, DN2 Drain Connection from the First and Second n-channel Transistors
- SN2, SN3 Source Connection to the Second and Third n-channel Transistors
- DN/P3 Common Connection to the Third p-channel and n-channel Transistor Drains
- G1-G3 Gate Connection to n- and p-channel Transistors 1, 2 and 3

**CONNECTION DIAGRAM  
DIP (TOP VIEW)**



**NOTE:**  
The Flatpak version has the same pin-outs (Connection Diagram) as the Dual In-line Package.

**LOGIC SYMBOL**



DC CHARACTERISTICS:  $V_{DD}$  as shown,  $V_{SS} = 0$  V (See Note 1)

SYMBOL	PARAMETER		LIMITS									UNITS	TEMP	TEST CONDITIONS
			$V_{DD} = 5$ V			$V_{DD} = 10$ V			$V_{DD} = 15$ V					
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX			
$I_{DD}$	Quiescent Power Supply Current	XC			1			2			4	$\mu$ A	MIN, 25°C	All inputs at 0 V or $V_{DD}$
				7.5			15			30	MAX			
		XM			0.25			0.5			1	$\mu$ A	MIN, 25°C	
				7.5			15			30	MAX			

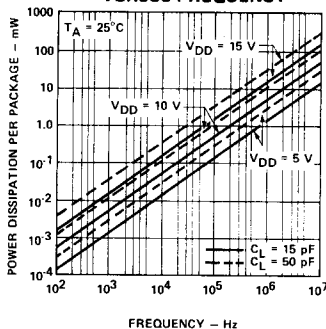
AC CHARACTERISTICS:  $V_{DD}$  as shown,  $V_{SS} = 0$  V,  $T_A = 25^\circ$  C (See Note 2)

SYMBOL	PARAMETER		LIMITS									UNITS	TEST CONDITIONS
			$V_{DD} = 5$ V			$V_{DD} = 10$ V			$V_{DD} = 15$ V				
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX		
$t_{PLH}$	Propagation Delay			42	85		23	40		18	32	ns	$C_L = 50$ pF, $R_L = 200$ k $\Omega$
$t_{PHL}$				42	85		23	40		18	32		
$t_{TLH}$	Output Transition Time			65	135		30	70		25	45	ns	Input Transition Times $\leq 20$ ns
$t_{THL}$				65	135		30	70		25	45		

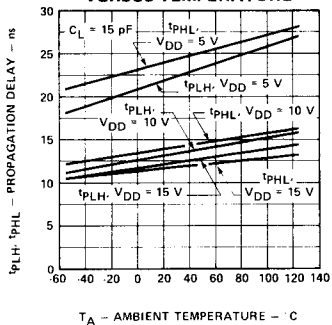
NOTES:

1. Additional DC Characteristics are listed in this section under 4000B Series CMOS Family Characteristics.
2. Propagation Delays and Output Transition Times are graphically described in this section under 4000B Series CMOS Family Characteristics.

POWER DISSIPATION VERSUS FREQUENCY



PROPAGATION DELAY VERSUS TEMPERATURE



PROPAGATION DELAY VERSUS LOAD CAPACITANCE

