

# 4085B

## DUAL 2-WIDE 2-INPUT AND-OR-INVERT GATE

OBSOLETE

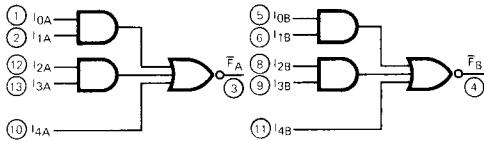
**DESCRIPTION** — The 4085B is a Dual 2-Wide 2-Input AND-OR-Invert (AOI) Gate, each with an additional input ( $I_{4A}$  or  $I_{4B}$ ) which can be used as either an Expander Input or an Inhibit Input by connecting it to any standard CMOS output. A HIGH on this Input ( $I_4$ ) forces the Output ( $\bar{F}$ ) LOW independent of the other four inputs ( $I_0$ - $I_3$ ). The Outputs ( $\bar{F}_A$  and  $\bar{F}_B$ ) are fully buffered for highest noise immunity and pattern insensitivity of output impedance.

### PIN NAMES

$I_{0A}$ - $I_{4A}$ ,  $I_{0B}$ - $I_{4B}$  Gate Inputs  
 $\bar{F}_A$ ,  $\bar{F}_B$  Outputs (Active LOW)

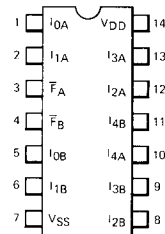
### CONNECTION DIAGRAM DIP (TOP VIEW)

### LOGIC DIAGRAM



$$\bar{F} = I_0 \cdot I_1 + I_2 \cdot I_3 + I_4$$

$V_{DD} = \text{Pin 14}$   
 $V_{SS} = \text{Pin 7}$



### NOTE:

The Flatpak version has the same pinouts (Connection Diagram) as the Dual In-line Package

### 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	XC			1			2			4	$\mu\text{A}$	MIN, 25°C MAX	All inputs at 0 V or $V_{DD}$	
					7.5			15			30				
	Supply Current	XM			0.25			0.5			1	$\mu\text{A}$			MIN, 25°C
					7.5			15			30				MAX

### AC CHARACTERISTICS: $V_{DD}$ as shown, $V_{SS} = 0$ V, $T_A = 25^\circ\text{C}$ (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, Any I to $\bar{F}$		56	115		25	55		17	44	ns	$C_L = 50$ pF, $R_L = 200$ k $\Omega$ Input Transition Times $\leq 20$ ns
$t_{PHL}$			74	135		30	65		20	52	ns	
$t_{TLH}$	Output Transition		45	100		22	50		15	35	ns	
$t_{THL}$	Time		45	100		22	50		15	35	ns	

### NOTES:

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

TYPICAL ELECTRICAL CHARACTERISTICS

