



# M8216/M8226

## 4-BIT PARALLEL BIDIRECTIONAL BUS DRIVER

*Military*

- Not Recommended for New Designs
- Data Bus Buffer Driver for M8080A CPU
- Low Input Load Current: 0.25 mA Maximum
- High Output Drive Capability for Driving System Data Bus
- 16-Pin Dual-In-Line Package
- 3.40V Output High Voltage for Direct Interface to M8080A CPU
- 3-State Outputs
- Military Temperature Range:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  ( $T_C$ )
- $\pm 10\%$  Power Supply Tolerance

The M8216/M8226 is a 4-bit directional bus driver/receiver. All inputs are low power TTL compatible. For driving MOS, the DO outputs provide a high 3.40V  $V_{OH}$ , and for high capacitance terminated bus structures, the DB outputs provide a high 50 mA  $I_{OL}$  capability. A non-inverting (M8216) and an inverting (M8226) are available to meet a wide variety of applications for buffering in microcomputer systems.

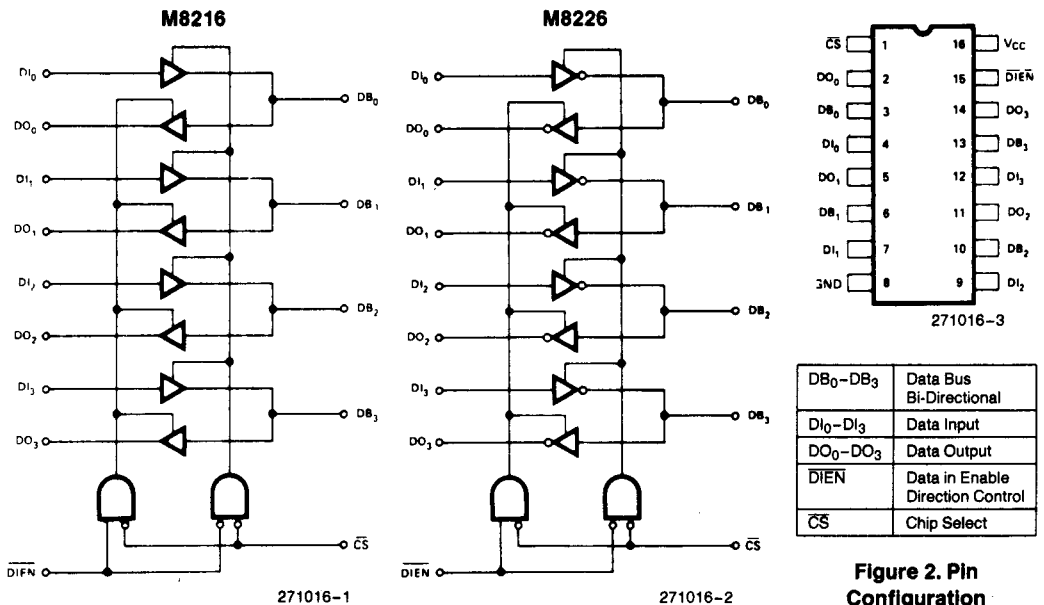
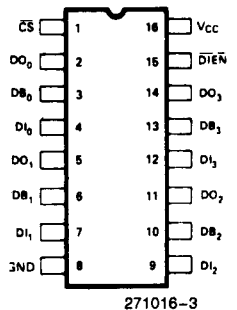


Figure 1. Logic Diagrams



DB <sub>0</sub> -DB <sub>3</sub>	Data Bus Bi-Directional
DI <sub>0</sub> -DI <sub>3</sub>	Data Input
DO <sub>0</sub> -DO <sub>3</sub>	Data Output
DIEN	Data in Enable Direction Control
CS	Chip Select

Figure 2. Pin Configuration

**A.C. CHARACTERISTICS**  $T_C = -55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ ,  $V_{CC} = +5\text{V} \pm 10\%$

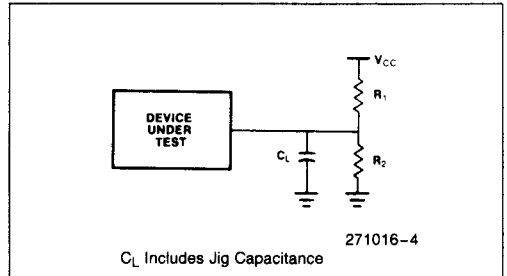
Symbol	Parameter	Limits			Unit	Conditions
		Min	Typ(1)	Max		
$T_{PD1}$	Input to Output Delay DO Outputs		15	25	ns	(Note 2)
$T_{PD2}$	Input to Output Delay DB Outputs M8216		19	33	ns	(Note 2)
$T_{PD2}$	Input to Output Delay DB Outputs M8226		16	26	ns	(Note 2)
$T_E$	Output Enable Time M8216		42	75	ns	(Note 2)
$T_E$	Output Enable Time M8226		36	62	ns	(Note 2)
$T_D$	Output Disable Time M8216		16	40	ns	(Note 2)
$T_D$	Output Disable Time M8226		16	38	ns	(Note 2)

**NOTES:**

1. Typical values are for  $T_C = 25^{\circ}\text{C}$ ,  $V_{CC} = 5.0\text{V}$ .
- 2.

Test	$C_L$	$R_1$	$R_2$
$T_{PD1}$	30 pF	300 $\Omega$	600 $\Omega$
$T_{PD2}$	300 pF	90 $\Omega$	180 $\Omega$
$T_{E, (DO, ENABLE \uparrow)}$	30 pF	10 K $\Omega$	1 K $\Omega$
$T_{E, (DO, ENABLE \downarrow)}$	30 pF	300 $\Omega$	600 $\Omega$
$T_{E, (DB, ENABLE \uparrow)}$	300 pF	10 K $\Omega$	1 K $\Omega$
$T_{E, (DB, ENABLE \downarrow)}$	300 pF	90 $\Omega$	180 $\Omega$
$T_{D, (DO, DISABLE \uparrow)}$	5 pF	300 $\Omega$	600 $\Omega$
$T_{D, (DO, DISABLE \downarrow)}$	5 pF	10 K $\Omega$	1 K $\Omega$
$T_{D, (DB, DISABLE \uparrow)}$	5 pF	90 K $\Omega$	180 $\Omega$
$T_{D, (DB, DISABLE \downarrow)}$	5 pF	10 K $\Omega$	1 K $\Omega$

**A.C. TESTING LOAD**



**WAVEFORMS**

