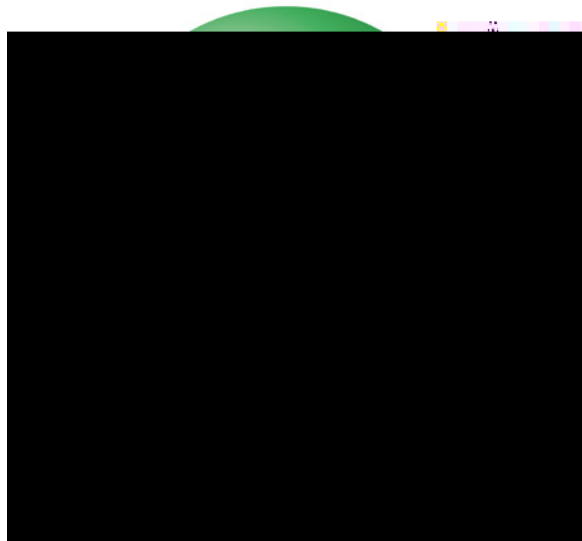




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NC7WB3125

2-Bit Low Power Bus Switch

General Description

The NC7WB3125 is a 2-bit ultra high-speed CMOS FET bus switch with TTL-compatible active LOW control inputs. The low On Resistance of the switch allows inputs to be connected to outputs with minimal propagation delay and without generating additional ground bounce noise. The device is organized as a 2-bit switch with independent bus enable (\overline{OE}) controls. When \overline{OE} is LOW, the switch is ON and Port A is connected to Port B. When \overline{OE} is HIGH, the switch is OPEN and a high-impedance state exists between the two ports. Control inputs tolerate voltages up to 5.5V independent of V_{CC} .

Features

- Space saving US8 surface mount package
- MicroPak™ Pb-Free leadless package
- Typical 3Ω switch resistance at 5.0V V_{CC}
- Minimal propagation delay through the switch
- Power down high impedance input/output
- Zero bounce in flow through mode
- TTL compatible active LOW control inputs
- Control inputs are overvoltage tolerant
- Bus switch replacement for Logic x125 part

Ordering Code:

Order Number	Package Number	Product Code Top Mark	Package Description	Supplied As
NC7WB3125K8X	MAB08A	WB25	8-Lead US8, JEDEC MO-187, Variation CA 3.1mm Wide	3k Units on Tape and Reel
NC7WB3125L8X (Preliminary)	MAC08A	T4	Pb-Free 8-Lead MicroPak, 1.6 mm Wide	5k Units on Tape and Reel

Pb-Free package per JEDEC J-STD-020B.

MircoPak™ is a trademark of Fairchild Semiconductor Corporation.

Logic Diagram

Connection Diagrams

Pin Descriptions

**(Top View)
Pin One Orientation Diagram**

Function Table

AAA represents Product Code Top Mark - see ordering code

Note:

Absolute Maximum Ratings(Note 1)

Supply Voltage (V_{CC})	-0.5V to +7.0V
DC Switch Voltage (V_S)	-0.5V to +7.0V
DC Output Voltage (V_{IN}) (Note 2)	-0.5V to +7.0V
DC Input Diode Current	
(I_{IK}) $V_{IN} < 0V$	-50 mA
DC Output (I_{OUT}) Current	128 mA
DC V_{CC} or Ground Current	
(I_{CC}/I_{GND})	± 100 mA
Storage Temperature Range (T_{STG})	

Recommended Operating Conditions (Note 3)

Note 1: The "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the Electrical Characteristics tables are not guaranteed at the absolute maximum ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

Note 2: The input and output negative voltage ratings may be exceeded if the input and output diode current ratings are observed.

Note 3: Unused logic inputs must be held HIGH or LOW. They may not float.

DC Electrical Characteristics

Note 4: Measured by the voltage drop between A and B pins at the indicated current through the switch. On Resistance is determined by the lower of the voltages on the two (A or B) pins.

Note 5: Per TTL driven input ($V_{IN} = 3.4V$, control input only). A and B pins do not contribute to I_{CC} .

AC Electrical Characteristics

$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$,

Symbol	Parameter	V
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Note 6: This parameter is guaranteed by design. The bus switch contributes no propagation delay other than the RC delay of the typical On Resistance of the switch and the 50 pF load capacitance, when driven by an ideal voltage source (zero output impedance). The specified limit is calculated on this basis.

Capacitance

AC Loading and Waveforms

Input driven by 50Ω source terminated in 50Ω

C_L includes load and stray capacitance

Input PRR = 1.0 MHz; $t_W = 500$ ns

FIGURE 1. AC Test Circuit

FIGURE 2. AC Waveforms

DC Characteristics

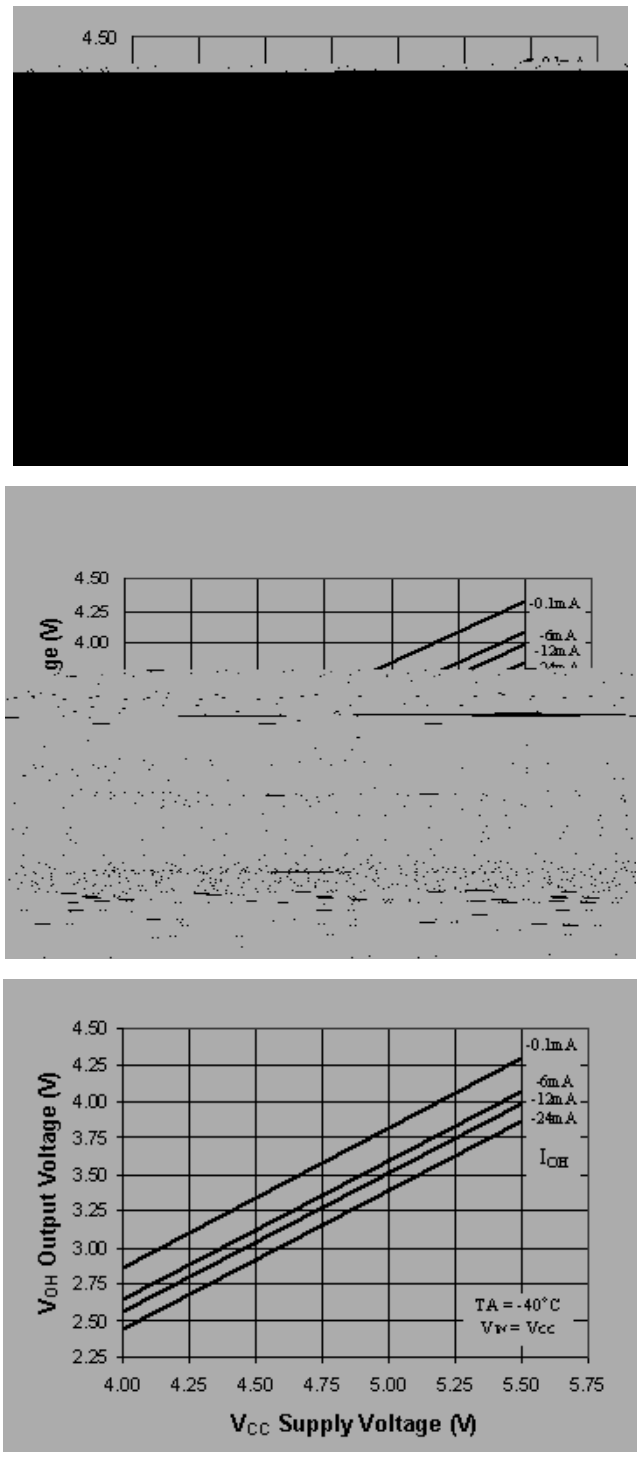


FIGURE 3. Typical High Level Output Voltage vs. Supply Voltage

Tape and Reel Specification

TAPE FORMAT for US8

Package Designator	Tape Section	Number Cavities	Cavity Status	Cover Tape Status
K8X	Leader (Start End)	125 (typ)	Empty	Sealed
	Carrier	250	Filled	Sealed
	Trailer (Hub End)	75 (typ)	Empty	Sealed

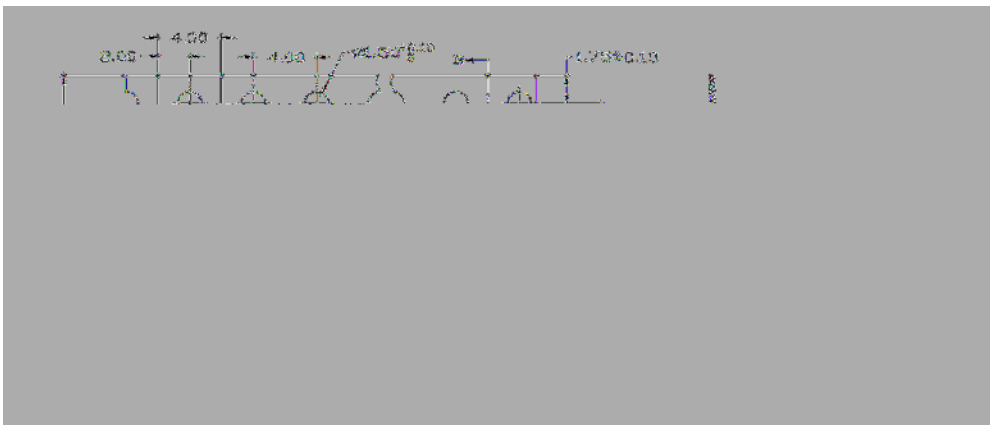
TAPE DIMENSIONS inches (millimeters)



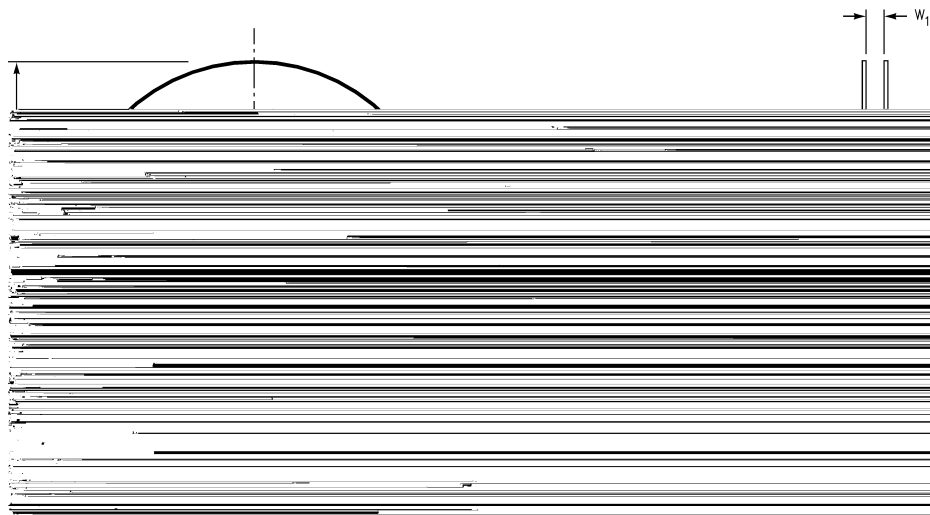
TAPE FORMAT for MicroPak

Package Designator	Tape Section	Number Cavities	Cavity Status	Cover Tape Status
L8X	Leader (Start End)	125 (typ)	Empty	Sealed
	Carrier	250	Filled	Sealed
	Trailer (Hub End)	75 (typ)	Empty	Sealed

TAPE DIMENSIONS inches (millimeters)



REEL DIMENSIONS inches (millimeters)

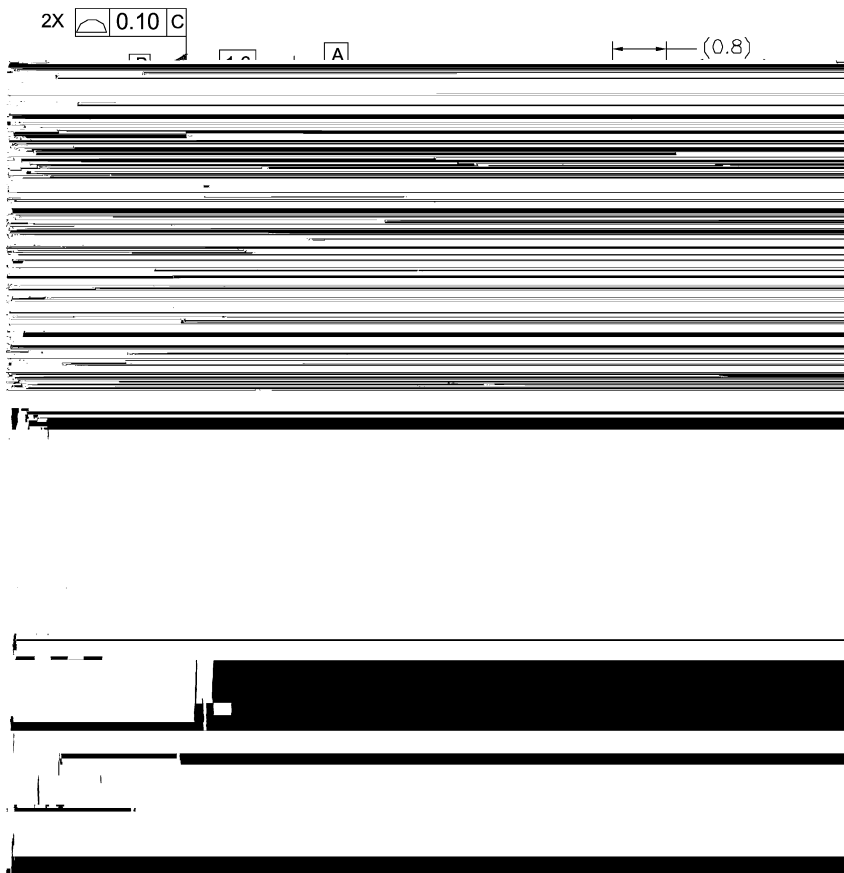


Tape Size	A	B	C	D	N	W1	W2	W3
8 mm	7.0 (177.8)	0.059 (1.50)	0.512 (13.00)	0.795 (20.20)	2.165 (55.00)	0.331 + 0.059/-0.000 (8.40 + 1.50/-0.00)	0.567 (14.40)	W1 + 0.078/-0.039 (W1 + 2.00/-1.00)

Physical Dimensions inches (millimeters) unless otherwise noted

8-Lead US8, JEDEC MO-187, Variation CA 3.1mm Wide

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



**Pb-Free 8-Lead MicroPak, 1.6 mm Wide
Package Number MAC08A**

