

2-INPUT 4-BIT DIGITAL MULTIPLEXER

82S33 82S34

DIGITAL 8000 SERIES SCHOTTKY TTL/MSI

DESCRIPTION

These devices are 2-input, 4-Bit Digital Multiplexers designed for general purpose data-selection applications.

The 82S33 features non-inverting data paths; and, the 82S34 features inverting data paths.

The 82S34 has open collector outputs which permit direct wiring to other open collector outputs (collector logic) to yield "free" four-bit words. As many as forty four-bit words can be multiplexed by using twenty 82S34's in the WIRED-AND mode.

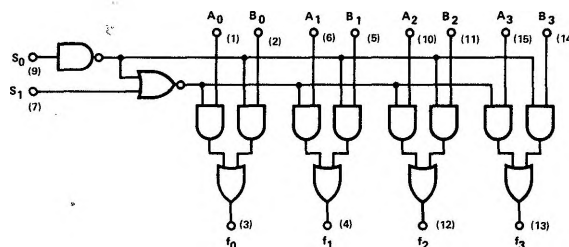
The inhibit state $S_0 = S_1 = 1$ can be used to facilitate transfer operations in an arithmetic section.

FEATURES

- SCHOTTKY-CLAMPED TTL STRUCTURE
- PNP INPUTS
- OPEN COLLECTOR OUTPUTS (82S34)
- INHIBIT STATE

LOGIC DIAGRAM

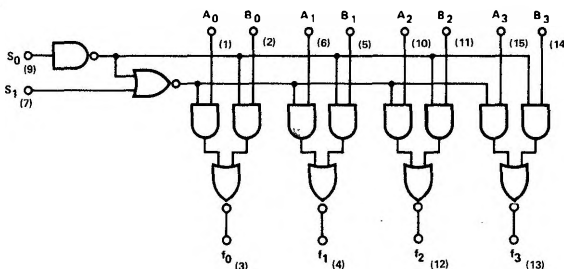
82S33



S_0	S_1	f_n
0	0	B
1	0	A
0	1	B
1	1	0

$V_{CC} = (16)$
 $GND = (8)$
 () = Denotes Pin Numbers

82S34



S_0	S_1	f_n
0	0	$\overline{B}$
1	0	$\overline{A}$
0	1	$\overline{B}$
1	1	1

$V_{CC} = (16)$
 $GND = (8)$
 () = Denotes Pin Numbers

SIGNETICS DIGITAL 8000 SERIES TTL/MSI – 82S33/34

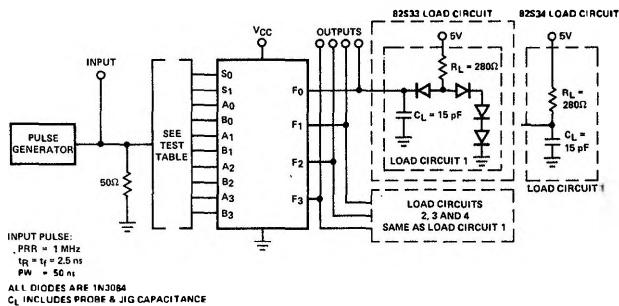
ELECTRICAL CHARACTERISTICS (Over Recommended Operating Temperature and Voltage)

CHARACTERISTICS	LIMITS				TEST CONDITIONS				OUTPUTS	NOTES
					INPUTS					
	MIN	TYP	MAX	UNITS	A _n	B _n	S ₀	S ₁		
"1" Output Voltage (82S33)	2.7			V	2.0V	2.0V	0.8V	0.8V	-1mA	
"0" Output Voltage (82S33)			0.5	V	0.8V	2.0V	2.0V	0.8V	20mA	
"0" Output Voltage (82S34)			0.5	V	0V	2.0V	0.8V	0.8V	20mA	
"1" Output Leakage Current (82S34)			250	μA	2.0V	2.0V	2.0V	2.0V	5.5V	
"0" Input Current (ALL)			400	μA	0.5V	0.5V	0.5V	0.5V		
"1" Input Current (ALL)			-10	μA	4.5V	4.5V	4.5V	4.5V		
Output Short Circuit Current (82S33)	-40		-100	mA	5V	5V	0V	0V	0V	
Input Clamp Voltage (ALL)			-1.2V	V	-18mA	-18mA	-18mA	-18mA		

T_A = 25°C and V_{CC} = 5.0V

CHARACTERISTICS	LIMITS				TEST CONDITIONS				OUTPUTS	NOTES
					INPUTS					
	MIN	TYP	MAX	UNITS	A _n	B _n	S ₀	S ₁		
Power/Current Consumption:										
82S33			305/58	mW/mA		0V		0V		14
82S34			265/50	mW/mA		0V		0V		14
82S33/34 Turn-On/Turn-Off Times										
A _n , B _n to f _n			12	ns						8,13
S ₀ to f _n			20	ns						8,13
S ₁ to f _n			18	ns						8,13

AC TEST FIGURE AND WAVEFORMS



TEST TABLE														
TEST NO.	INPUTS										OUTPUTS			
	S ₀	S ₁	A ₀	B ₀	A ₁	B ₁	A ₂	B ₂	A ₃	B ₃	F ₀	F ₁	F ₂	F ₃
1	PG	0	1	0	1	0	1	0	1	0	T			
2	PG	0	1	0	1	0	1	0	1	0	T	T	T	
3	PG	0	0	1	0	1	0	1	0	1		T		
4	1	PG	1	0	1	0	1	0	1	0			T	
5	0	0	0	PG	0	0	0	0	0	0	T			
6	0	1	0	0	0	PG	0	0	0	0		T		
7	1	0	0	0	0	0	PG	0	0	0			T	
8	1	0	0	0	0	0	0	0	PG	0				T

"1" = 2.7V "0" = GROUND

- NOTE:
- A.C. TEST JIG'S MUST NOT HAVE ANY SWITCHES.
 - A.C. TEST JIG'S MUST HAVE LESS THAN 1/8 INCH LEAD LENGTH FROM PACKAGE PINS.

