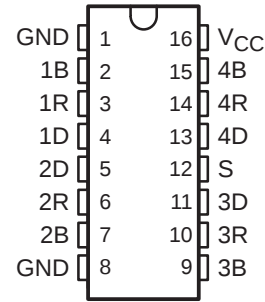


- Schottky Circuitry for High Speed, Typical Propagation Delay Time . . . 12 ns
- Drivers Feature Open-Collector Outputs for Party-Line (Data Bus) Operation
- Driver Outputs Can Sink 100 mA at 0.8 V Maximum
- pnp Inputs for Minimal Input Loading
- Designed to Be Interchangeable With Advanced Micro Devices AM26S10

D OR N PACKAGE
(TOP VIEW)



description

The AM26S10C is a quadruplex bus transceiver utilizing Schottky-diode-clamped transistors for high speed. The drivers feature open-collector outputs capable of sinking 100 mA at 0.8 V maximum. The driver and strobe inputs use pnp transistors to reduce the input loading.

The driver of the AM26S10C is inverting and has two ground connections for improved ground current-handling capability. For proper operation, the ground pins should be tied together.

The AM26S10C is characterized for operation over the temperature range of 0°C to 70°C.

Function Tables

AM26S10C
(transmitting)

INPUTS		OUTPUTS	
S	D	B	R
L	H	L	H
L	L	H	L

AM26S10C
(receiving)

INPUTS			OUTPUT
S	B	D	R
H	H	X	L
H	L	X	H

H = high level, L = low level, X = irrelevant



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PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

**TEXAS
INSTRUMENTS**

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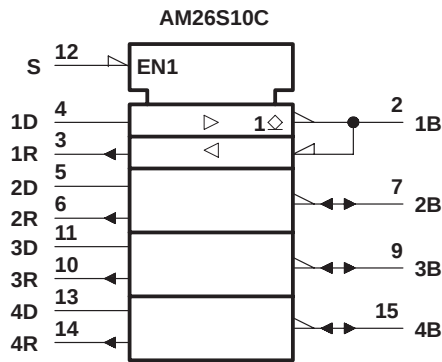
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AM26S10C

QUADRUPLE BUS TRANSCEIVERS

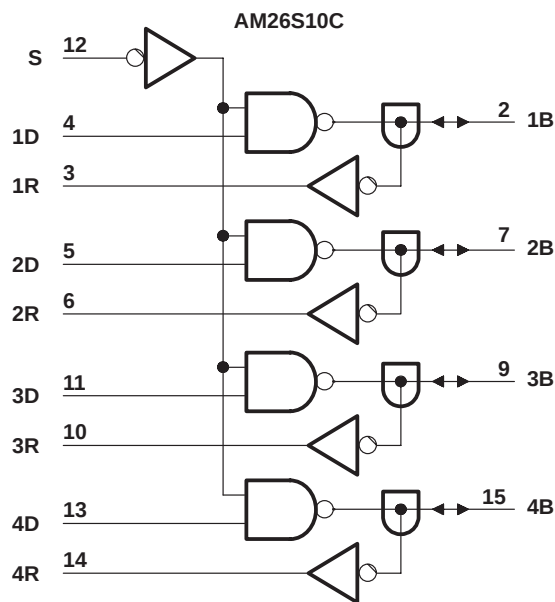
SLLS116C – JANUARY 1977 – REVISED MARCH 1997

logic symbol†

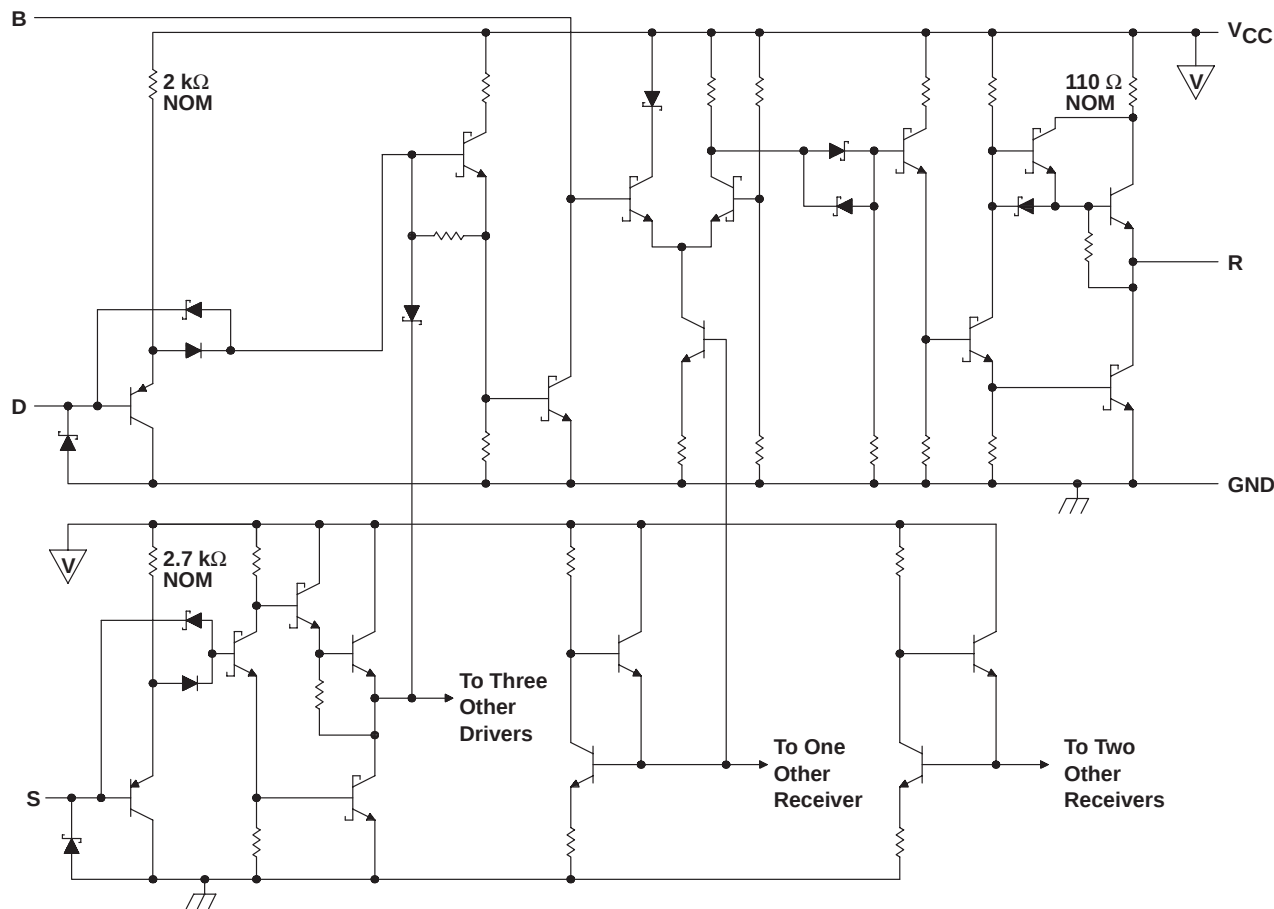


† These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagram (positive logic)



schematic (each transceiver)



absolute maximum ratings over operating free-air temperature range (unless otherwise noted)[†]

Supply voltage, V_{CC} (see Note 1)	–0.5 V to 7 V
Driver or strobe input voltage range, V_I	–0.5 V to 5.5 V
Bus voltage range, driver output off, V_O	–0.5 V to 5.25 V
Driver or strobe input current range, I_I	–30 mA to 5 mA
Driver output current, I_O	200 mA
Receiver output current, I_O	30 mA
Continuous total power dissipation	See Dissipation Rating Table
Operating free-air temperature range, T_A	0°C to 70°C
Storage temperature range, T_{stg}	–65°C to 150°C
Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds	260°C

[†] Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

NOTE 1: All voltage values are with respect to network ground terminals connected together.

DISSIPATION RATING TABLE

PACKAGE	$T_A \leq 25^\circ\text{C}$ POWER RATING	DERATING FACTOR ABOVE $T_A = 25^\circ\text{C}$	$T_A = 70^\circ\text{C}$ POWER RATING
D	950 mW	7.6 mW/°C	608 mW
N	1150 mW	9.2 mW/°C	736 mW

recommended operating conditions

		MIN	NOM	MAX	UNIT
Supply voltage, V _{CC}		4.75	5	5.25	V
High-level input voltage, V _{IH}	D or S	2			V
	B	2.25			
Low-level input voltage, V _{IL}	D or S	0.8			V
	B	1.75			
Receiver high-level output current, I _{OH}		−1			mA
Low-level output current, I _{OL}	Driver	100			mA
	Receiver	20			
Operating free-air temperature, T _A		0		70	°C

AM26S10C

QUADRUPLE BUS TRANSCEIVERS

SLLS116C – JANUARY 1977 – REVISED MARCH 1997

electrical characteristics over recommended operating free-air temperature range

PARAMETER			TEST CONDITIONS			MIN	TYP [†]	MAX	UNIT
V _{IK}	Input clamp voltage	D or S	V _{CC} = 4.75 V, I _I = −18 mA			−1.2		V	
V _{OH}	High-level output voltage	R	V _{CC} = 4.75 V, I _{OH} = −1 mA, V _{IH} = 2 V, V _{IL} = 0.8 V,			2.7	3.4	V	
V _{OH}	Low-level output voltage	R	V _{CC} = 4.75 V, V _{IH} = 2 V, V _{IL} = 0.8 V		I _{OL} = 20 mA	0.5		V	
		I _{OL} = 40 mA			0.33	0.5			
		I _{OL} = 70 mA			0.42	0.7			
		I _{OL} = 100 mA			0.51	0.8			
I _{O(off)}	Off-stage output current	B	V _{IH} = 2 V, V _{IL} = 0.8 V	V _{CC} = 5.25 V, V _O = 0.8 V	−50		μA		
				V _{CC} = 5.25 V, V _O = 4.5 V	100				
				V _{CC} = 0, V _O = 4.5 V	100				
I _{IH}	High-level input current	D	V _{CC} = 5.25 V, V _I = 2.7 V		30		μA		
		S			20				
I _I	Input current at maximum input voltage	D or S	V _{CC} = 5.25 V, V _I = 5.5 V		100		μA		
I _{IL}	Low-level input current	D	V _{CC} = 5.25 V, V _I = 0.4 V		−0.54		mA		
		S			−0.36				
I _{OS}	Short-circuit output current [‡]	R	V _{CC} = 5.25 V		−18	−60	mA		
I _{CC}	Supply current	V _{CC} = 5.25 V, Strobe at 0 V, No load, All driver outputs low		45		70	mA		
				80					

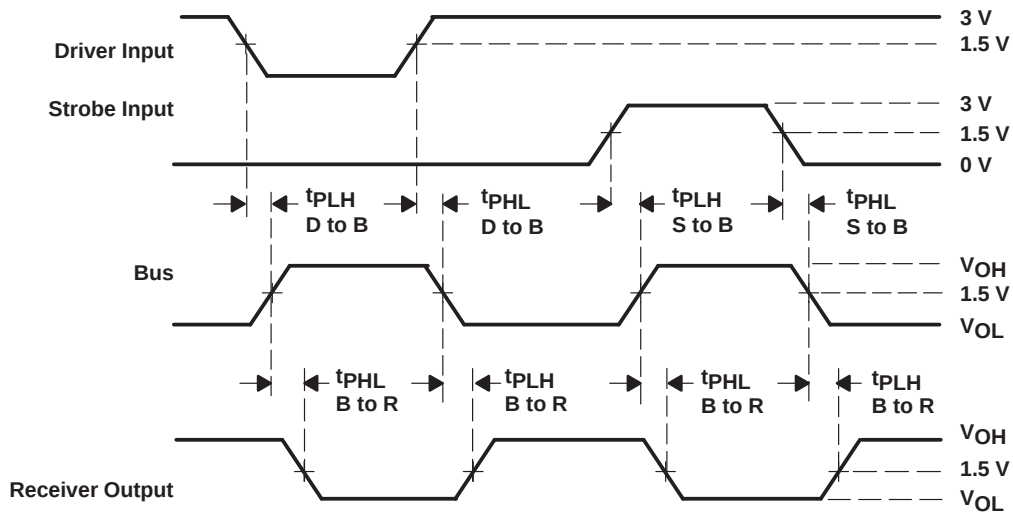
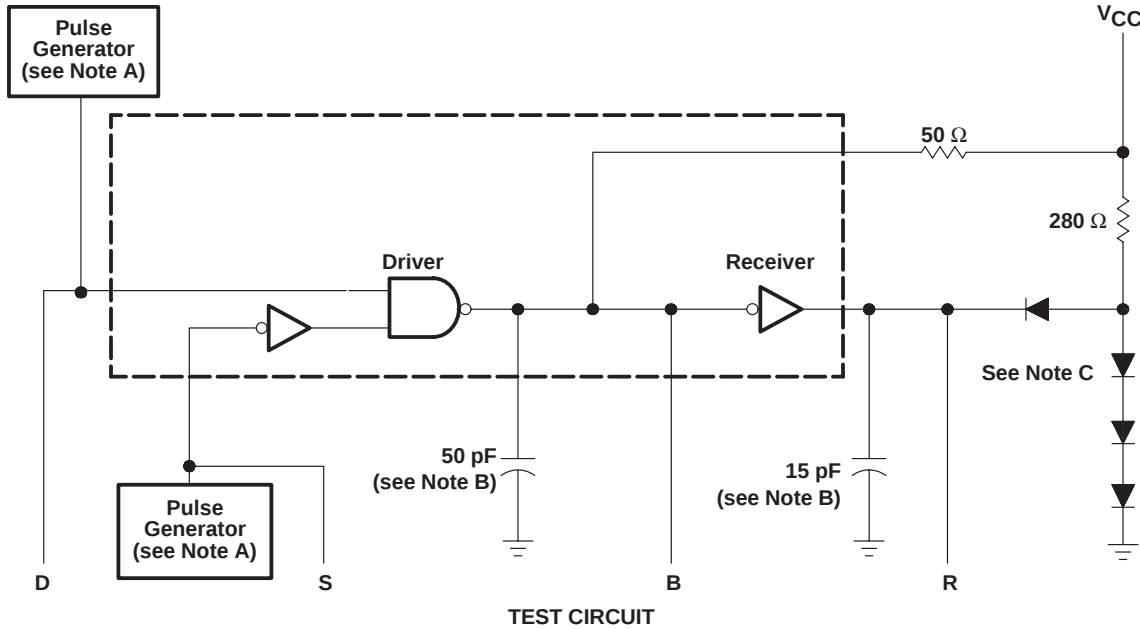
[†] All typical values are at T_A = 25°C and V_{CC} = 5 V.

[‡] Not more than one output should be shorted to ground at a time, and duration of the short circuit should not exceed one second.

switching characteristics, V_{CC} = 5 V, T_A = 25°C

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	AM26S10C			UNIT
				MIN	TYP	MAX	
t _{PLH} Propagation delay time, low-to-high-level output	D	B	See Figure 1	10		15	ns
t _{PHL} Propagation delay time, high-to-low-level output				10		15	
t _{PLH} Propagation delay time, low-to-high-level output	S	B		14		18	ns
t _{PHL} Propagation delay time, high-to-low-level output				13		18	
t _{PLH} Propagation delay time, low-to-high-level output	B	R		10		15	ns
t _{PHL} Propagation delay time, high-to-low-level output				10		15	
t _{TLH} Transition time, low-to-high-level output		B		4		10	ns
t _{THL} Transition time, high-to-low-level output				2		4	

PARAMETER MEASUREMENT INFORMATION



- NOTES: A. The pulse generators have the following characteristics: $Z_O = 50 \Omega$, $t_r = 10 \pm 5$ ns.
B. Includes probe and jig capacitance.
C. All diodes are 1N916 or equivalent.

Figure 1. Test Circuit and Voltage Waveforms

AM26S10C
QUADRUPLE BUS TRANSCEIVERS

SLLS116C – JANUARY 1977 – REVISED MARCH 1997

APPLICATION INFORMATION

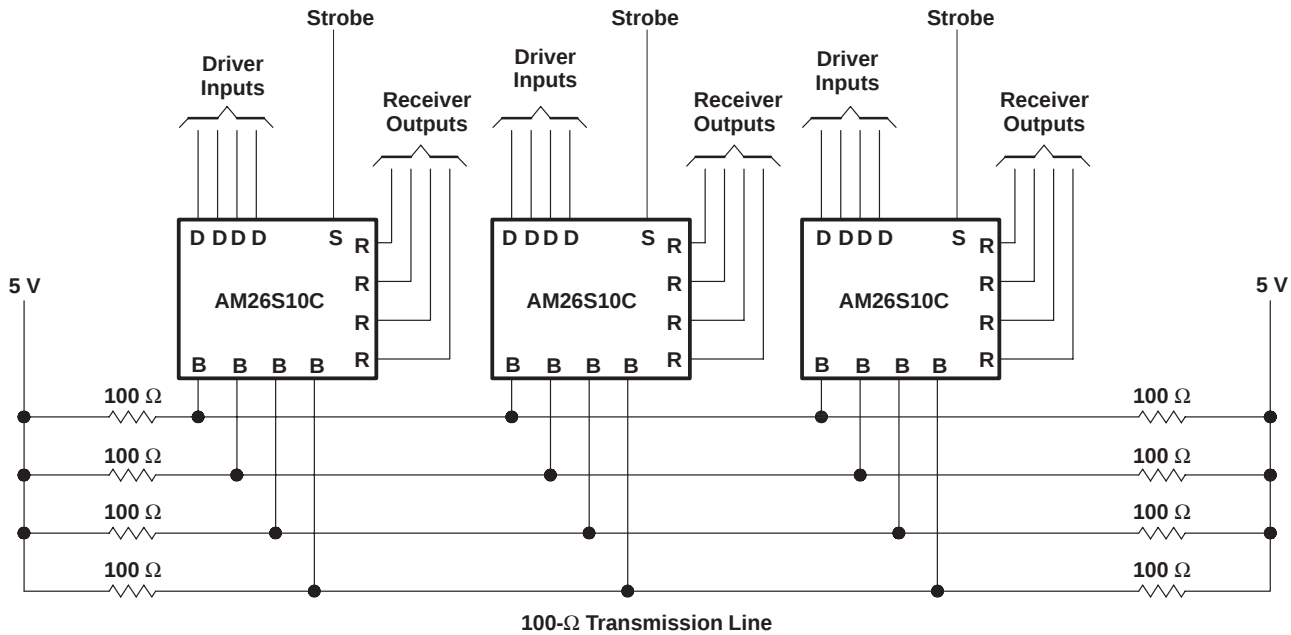


Figure 2. Party-Line System

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