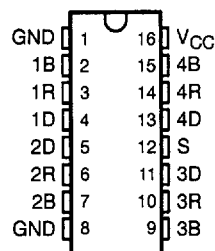


AM26S10C, AM26S11C QUADRUPLE BUS TRANSCEIVERS

SLLS116B - JANUARY 1977 - REVISED MAY 1995

- 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 and AM26S11

D OR N PACKAGE
(TOP VIEW)



description

The AM26S10C and AM26S11C are quadruple bus transceivers 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 AM26S11 IS NOT RECOMMENDED
FOR NEW DESIGNS**

The driver of the AM26S10C is inverting; the driver of the AM26S11C is noninverting. Each device has two ground connections for improved ground current-handling capability. For proper operation, the ground pins should be tied together.

The AM26S10C and AM26S11C are 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

AM26S11C
(transmitting)

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

AM26S10C AND AM26S11C
(receiving)

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

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

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.

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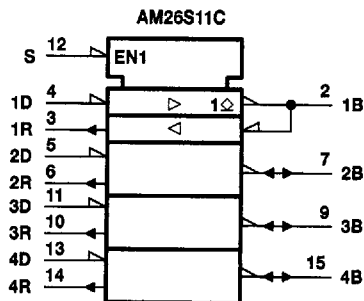
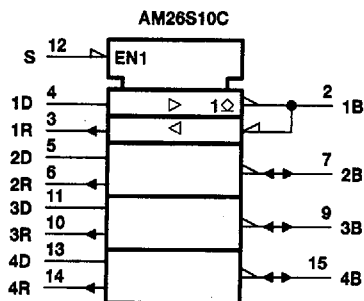
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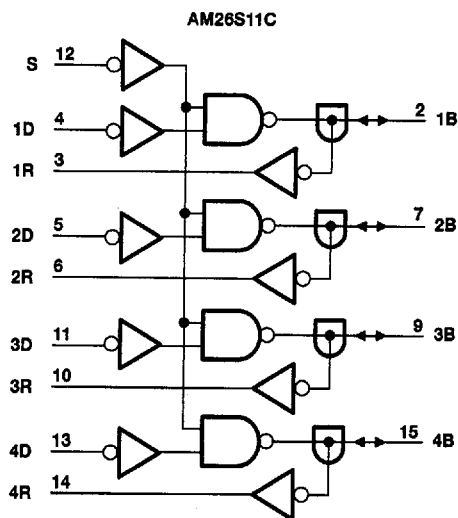
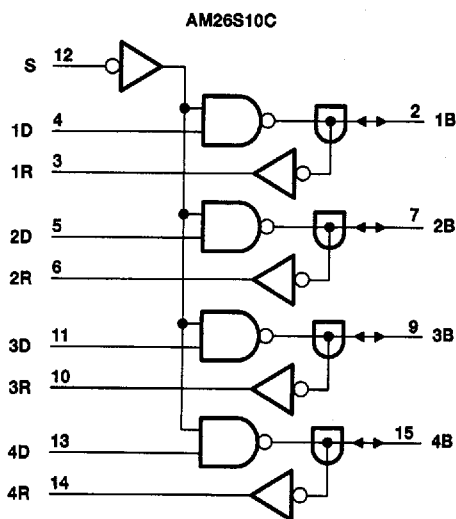
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logic symbols†



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

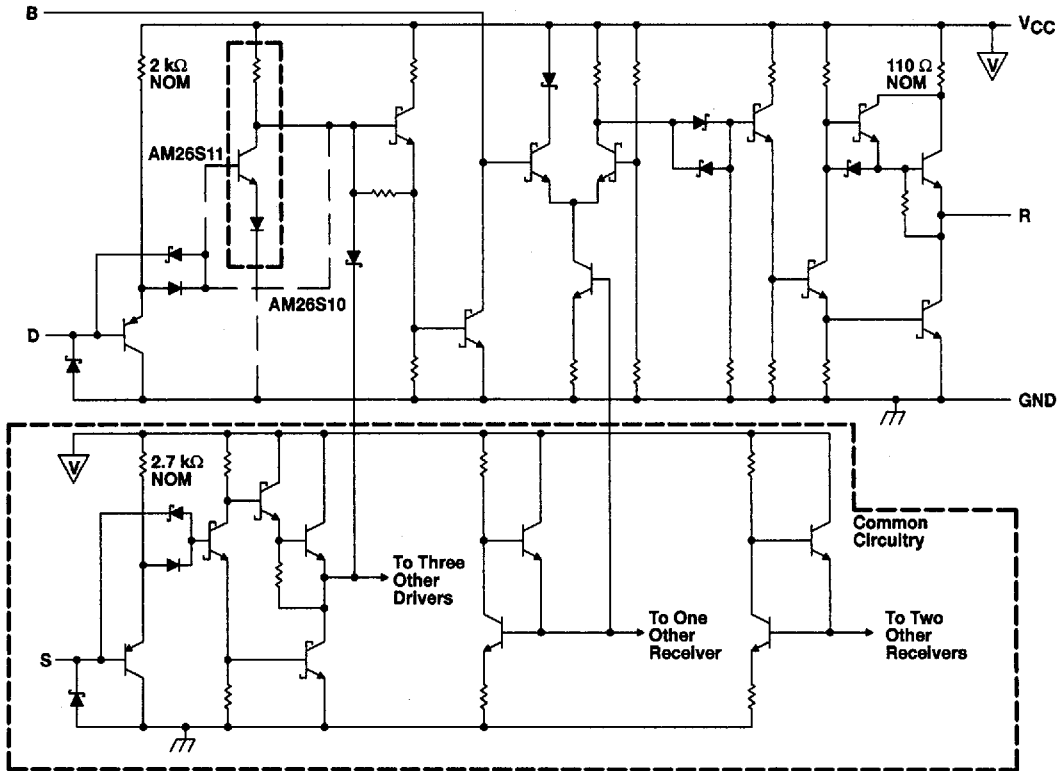
logic diagrams (positive logic)



AM26S10C, AM26S11C QUADRUPLE BUS TRANSCEIVERS

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schematic (each transceiver)



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AM26S10C, AM26S11C QUADRUPLE BUS TRANSCEIVERS

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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

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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 $T_A = 25^\circ\text{C}$ and $V_{CC} = 5 \text{ V}$.

‡ 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, $V_{CC} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	AM26S10C			AM26S11C			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	
t _{PLH} Propagation delay time, low-to-high-level output	D	B	See Figure 1	10	15		12	19	ns	
t _{PHL} Propagation delay time, high-to-low-level output				10	15		12	19		
t _{PLH} Propagation delay time, low-to-high-level output	S	B		14	18		15	20	ns	
t _{PHL} Propagation delay time, high-to-low-level output				13	18		14	20		
t _{PLH} Propagation delay time, low-to-high-level output	B	R		10	15		10	15	ns	
t _{PHL} Propagation delay time, high-to-low-level output				10	15		10	15		
t _{TLH} Transition time, low-to-high-level output		B		4	10		4	10	ns	
t _{THL} Transition time, high-to-low-level output				2	4		2	4		



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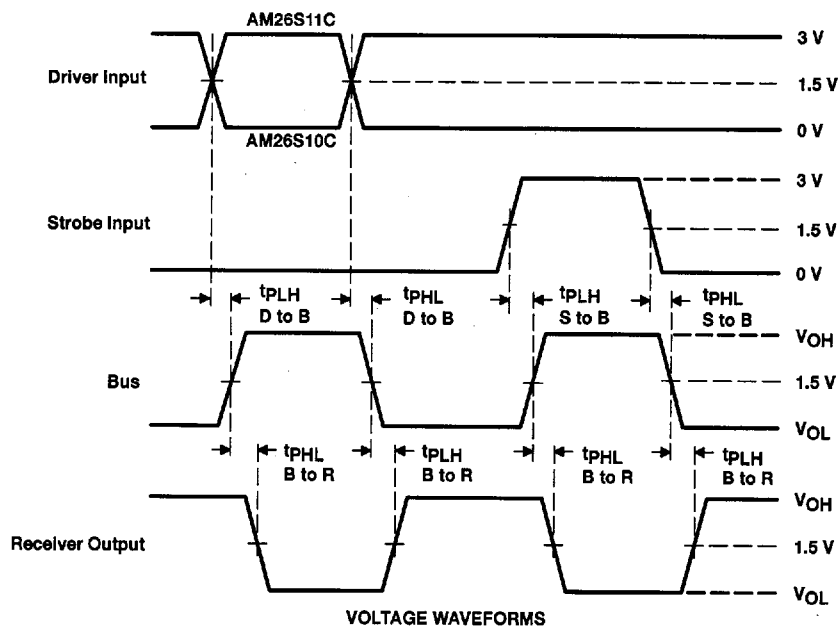
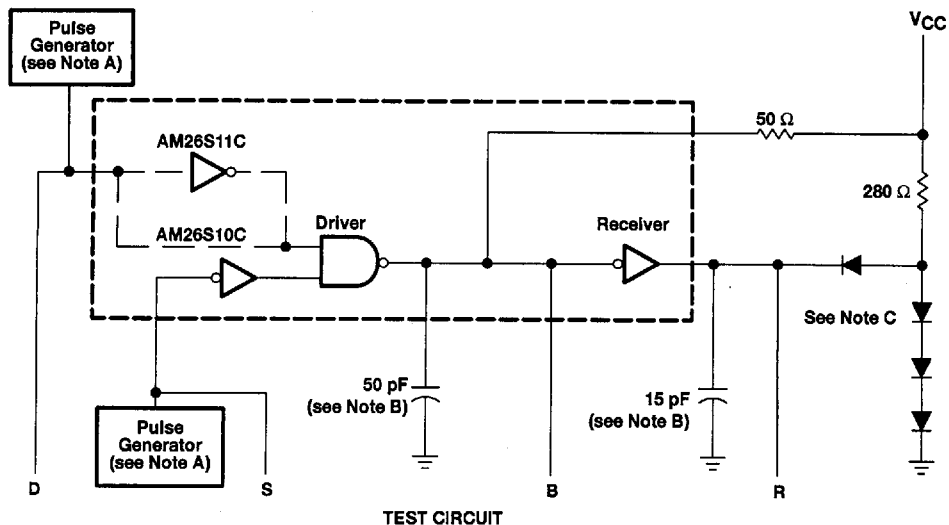
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AM26S10C, AM26S11C QUADRUPLE BUS TRANSCEIVERS

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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

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APPLICATION INFORMATION

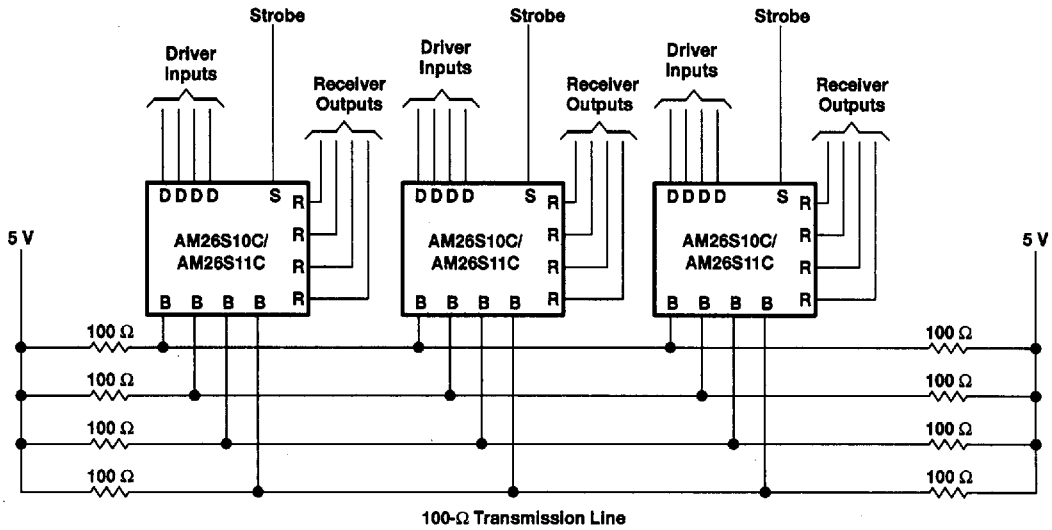


Figure 2. Party-Line System



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