

Quad high-speed differential line receivers

AM26LS32B

DESCRIPTION

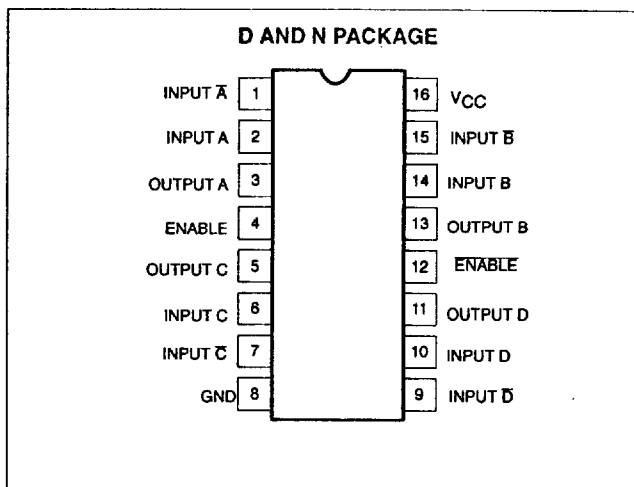
The AM26LS32B is a quad line receiver designed to meet all of the requirements of RS-422 and RS-423, CCITT V.10 and V.11 and Federal Standards 1020 and 1030 for balanced and unbalanced digital data transmission.

The AM26LS32B features an input sensitivity of +100mV over the common mode input voltage range of 0V to +5V and +200mV over the common mode input voltage range of -7V to +12V.

The AM26LS32B guarantees a minimum hysteresis and propagation delay skew resulting in a higher noise margin and better system performance.

The AM26LS32B provides an enable and disable function common to all four receivers. It features 3-state outputs with 24mA sink capability and incorporates a fail-safe input-output relationship which keeps the outputs high when the inputs are open.

PIN CONFIGURATION



FEATURES

- ±100mV sensitivity over the input range of 0V to 5V
- +200mV sensitivity over the V_{CM} range
- Typical input voltage hysteresis of 120mV
- 3V maximum open circuit voltage
- Three state outputs disabled power up and power down
- All AC and DC parameters guaranteed over operating temp range
- Single +5V supply
- Advance low-power Schottky processing

ORDERING INFORMATION

DESCRIPTION	TEMPERATURE RANGE	ORDER CODE	DWG #
16-Pin Plastic Dual In-Line Package (DIP)	0 to +70°C	AM26LS32BCN	0406C
16-Pin Small Outline (SO) Package	0 to +70°C	AM26LS32BCD	0005D
16-Pin Plastic Dual In-Line Package (DIP)	-40 to +85°C	AM26LS32BIN	0406C
16-Pin Small Outline (SO) Package	-40 to +85°C	AM26LS32BID	0005D
16-Pin Plastic Dual In-Line Package (DIP)	-55 to +125°C	AM26LS32BMN	0406C

ABSOLUTE MAXIMUM RATINGS (Above which the useful life may be impaired.)

SYMBOL	PARAMETER	RATING	UNIT
V_{CC}	Power supply	7	V
V_{IN}	Enable voltage	7	V
	Output sink current	50	mA
	Common mode range	±25	V
V_{TH}	Differential input voltage	±30	V
T_{STG}	Storage temperature range	-55 to +150	°C
T_{SOLD}	Lead soldering temperature (10sec.)	300	°C
θ_{JA}	Thermal impedance		°C/W

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PACKAGE POWER DISSIPATION DERATING TABLE

PACKAGE	POWER DISSIPATION AT T _A = 25°C	DERATING FACTOR ABOVE T _A
N	1,275mW	10.2mW/°C
D	1,262mW	10.1mW/°C

DC ELECTRICAL CHARACTERISTICS

V_{CC} = 5.0V ±10% for Am26LS32BMX, V_{CC} = 5.0V ±5% for Am26LS32BCX over operating temperature range unless otherwise specified.

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
V _{TH}	Differential input voltage	V _{OUT} = V _{OL} or V _{OH}	0V ≤ V _{CM} ≤ 5V	-100		+100	mV
			-7V ≤ V _{CM} ≤ +12V	-200		+200	
R _{IN}	Input resistance	-15V ≤ V _{CM} ≤ +15V (one input AC ground)	6.0			kΩ	
I _{IN}	Input current (under test)	V _{IN} = +15V Other input -15V ≤ V _{IN} ≤ +15V			2.3	mA	
I _{IN}	Input current (under test)	V _{IN} = -15V Other input +15V ≤ V _{IN} ≤ -15V	-2.8			mA	
V _{OH}	Output HIGH voltage	V _{CC} = min., ΔV _{IN} = +1.0V V _{EN} = 0.8V	I _{OH} = -12mA	2.0			V
			I _{OH} = -1mA	2.4			
V _{OL}	Output LOW voltage	V _{CC} = min., ΔV _{IN} = -1.0V V _{EN} = 0.8V	I _{OH} = 16mA			0.4	V
			I _{OH} = 24mA			0.5	
V _{IL}	Enable LOW voltage	V _{CC} = max			0.8	V	
V _{IH}	Enable HIGH voltage		2.0			V	
V _I	Enable clamp voltage	V _{CC} = min, I _{IN} = -1.8mA	-1.5			V	
I _O	Off state (high impedance) output current	V _{CC} = max	V _O = 2.4V			20	μA
			V _O = 0.4V			-20	
I _{IL}	Enable LOW current	V _{IN} = 0.4V			-0.36	mA	
I _{IH}	Enable HIGH current	V _{IN} = 2.7V			20	μA	
I _I	Enable input HIGH current	V _{IN} = 5.5V			100	μA	
I _{SC}	Output short circuit current	V _{CC} = max, ΔV _{IN} = +1V, V _{OUT} = GND	-30		-120	mA	
I _{CC}	Power supply current	V _{CC} = max, all V _{IN} = GND outputs disabled			70	mA	
V _{HYST}	Input hysteresis	V _{CC} = 5.0V, V _{CM} = 0V	80		200	mV	
V _{IOC}	Open circuit input voltage		1		3	V	

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AC ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS				UNIT
			ROOM TEMPERATURE ²		COMMERCIAL/MILITARY ¹		
			TYP	MAX	TYP	MAX	
t_{PLH}	Propagation delay, input to output	$C_L = 50pF$ (see test circuit)		21		26	ns
t_{PHL}				21		26	
t_{SKEW}	Propagation delay skew, $t_{PLH} - t_{PHL}$			3.0		4.0	
t_{ZL}	Output enable time, EN to OUTPUT			22		33	
t_{ZH}				16		22	
t_{LZ}	Output disable time, EN to OUTPUT	$C_L = 5pF$ (see test circuit)		18		27	ns
t_{HZ}				18		27	

NOTES:

- AC performance over the operating temperature range is guaranteed by testing defined in Group A, Subgroup 9.
- $V_{CC} = 5V$

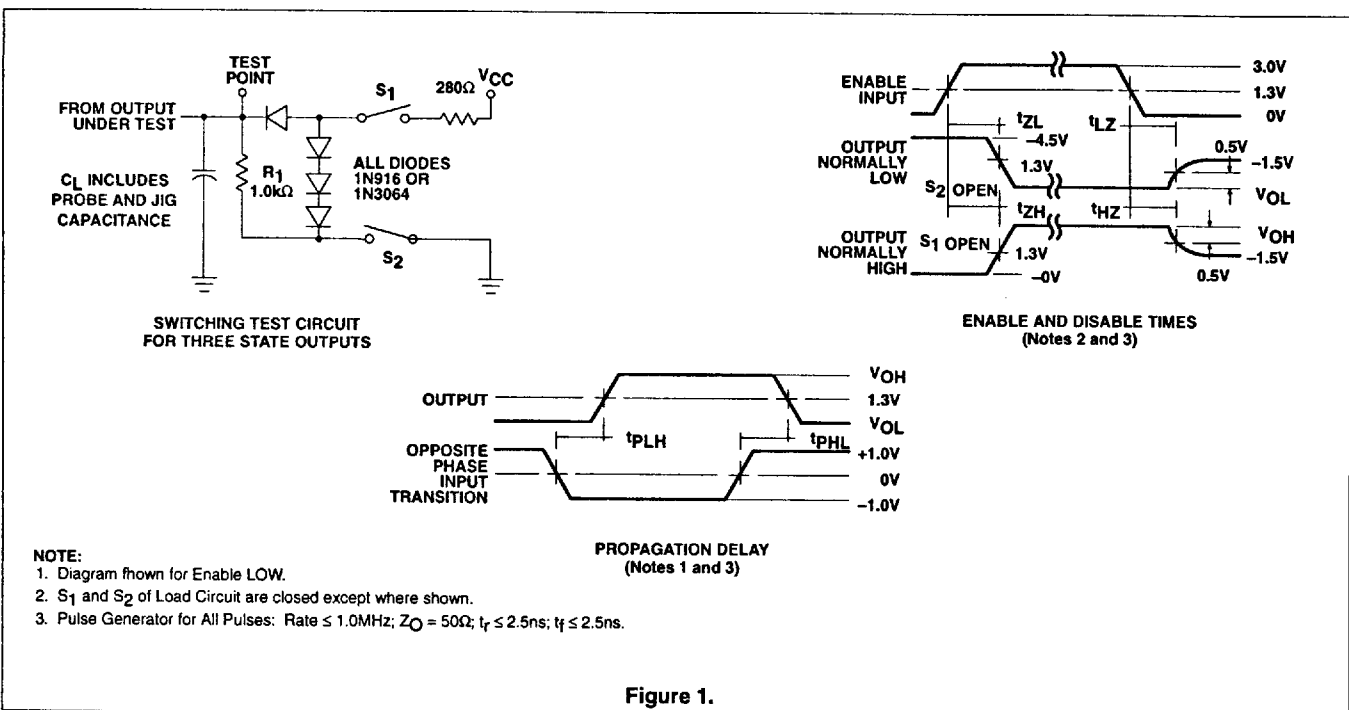


Figure 1.