

Quad high-speed differential line receivers

AM26LS32B

DESCRIPTION

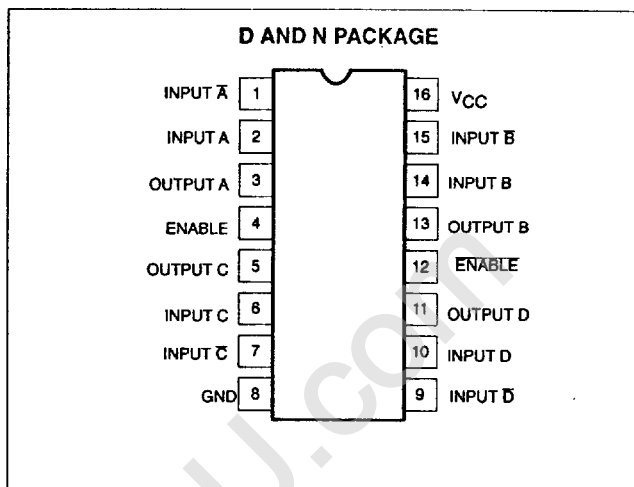
The AM26LS32B is a quad line receiver designed to meet all of the requirements of RS-422 and RS-423, CCITT V.10 and V.11 and Federal Standards 1020 and 1030 for balanced and unbalanced digital data transmission.

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 $T_A = 25^\circ\text{C}$	DERATING FACTOR ABOVE T_A
N	1,275mW	10.2mW/ $^\circ\text{C}$
D	1,262mW	10.1mW/ $^\circ\text{C}$

DC ELECTRICAL CHARACTERISTICS

$V_{CC} = 5.0V \pm 10\%$ for Am26LS32BMX, $V_{CC} = 5.0V \pm 5\%$ 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}	$0V \leq V_{CM} \leq 5V$	-100		+100	mV
			$-7V \leq V_{CM} \leq +12V$	-200		+200	
R_{IN}	Input resistance	$-15V \leq V_{CM} \leq +15V$ (one input AC ground)	6.0			k Ω	
I_{IN}	Input current (under test)	$V_{IN} = +15V$ Other input $-15V \leq V_{IN} \leq +15V$			2.3	mA	
I_{IN}	Input current (under test)	$V_{IN} = -15V$ Other input $+15V \leq V_{IN} \leq -15V$	-2.8			mA	
V_{OH}	Output HIGH voltage	$V_{CC} = \text{min.},$ $\Delta V_{IN} = +1.0V$ $V_{EN} = 0.8V$	$I_{OH} = -12mA$	2.0			V
			$I_{OH} = -1mA$	2.4			
V_{OL}	Output LOW voltage	$V_{CC} = \text{min.},$ $\Delta V_{IN} = -1.0V$ $V_{EN} = 0.8V$	$I_{OH} = 16mA$			0.4	V
			$I_{OH} = 24mA$			0.5	
V_{IL}	Enable LOW voltage	$V_{CC} = \text{max}$			0.8	V	
V_{IH}	Enable HIGH voltage		2.0			V	
V_I	Enable clamp voltage	$V_{CC} = \text{min.}, I_{IN} = -1.8mA$	-1.5			V	
I_O	Off state (high impedance) output current	$V_{CC} = \text{max}$	$V_O = 2.4V$			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	$V_{CC} = \text{max.}, \Delta V_{IN} = +1V, V_{OUT} = \text{GND}$	-30		-120	mA	
I_{CC}	Power supply current	$V_{CC} = \text{max.},$ all $V_{IN} = \text{GND}$ 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}				3.0		4.0	
t_{ZL}	Output enable time, EN to OUTPUT	$C_L = 50pF$ (see test circuit)		22		33	ns
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.
- $V_{CC} = 5V$

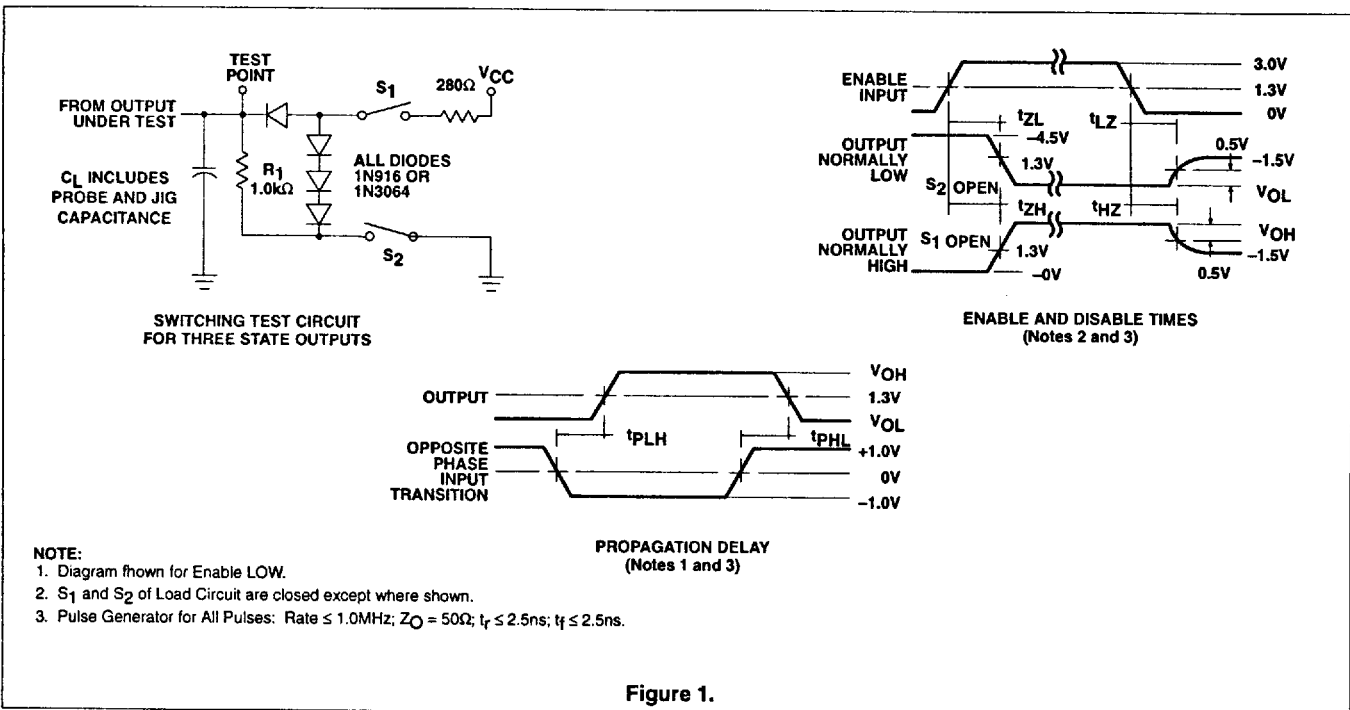


Figure 1.