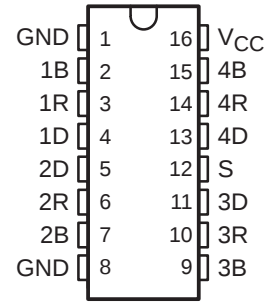


- Schottky Circuitry for High Speed, Typical Propagation Delay Time . . . 12 ns
- Drivers Feature Open-Collector Outputs for Party-Line (Data Bus) Operation
- Driver Outputs Can Sink 100 mA at 0.8 V Maximum
- pnp Inputs for Minimal Input Loading
- Designed to Be Interchangeable With Advanced Micro Devices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

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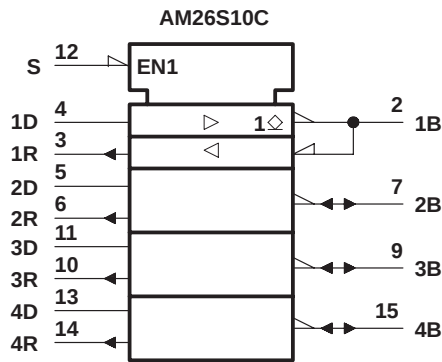
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AM26S10C

QUADRUPLE BUS TRANSCEIVERS

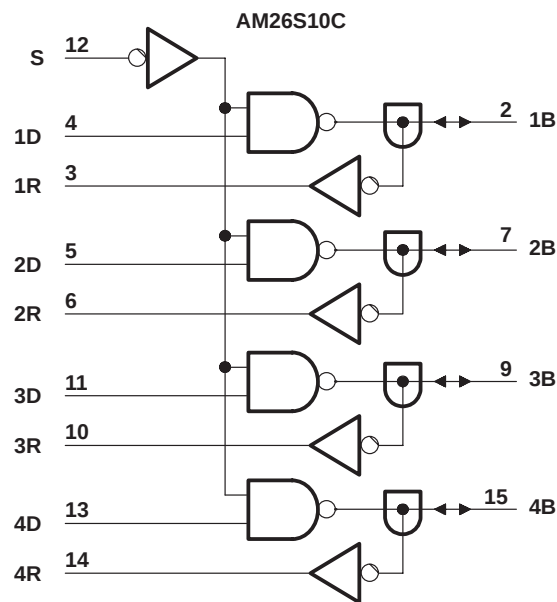
SLLS116C – JANUARY 1977 – REVISED MARCH 1997

logic symbol†

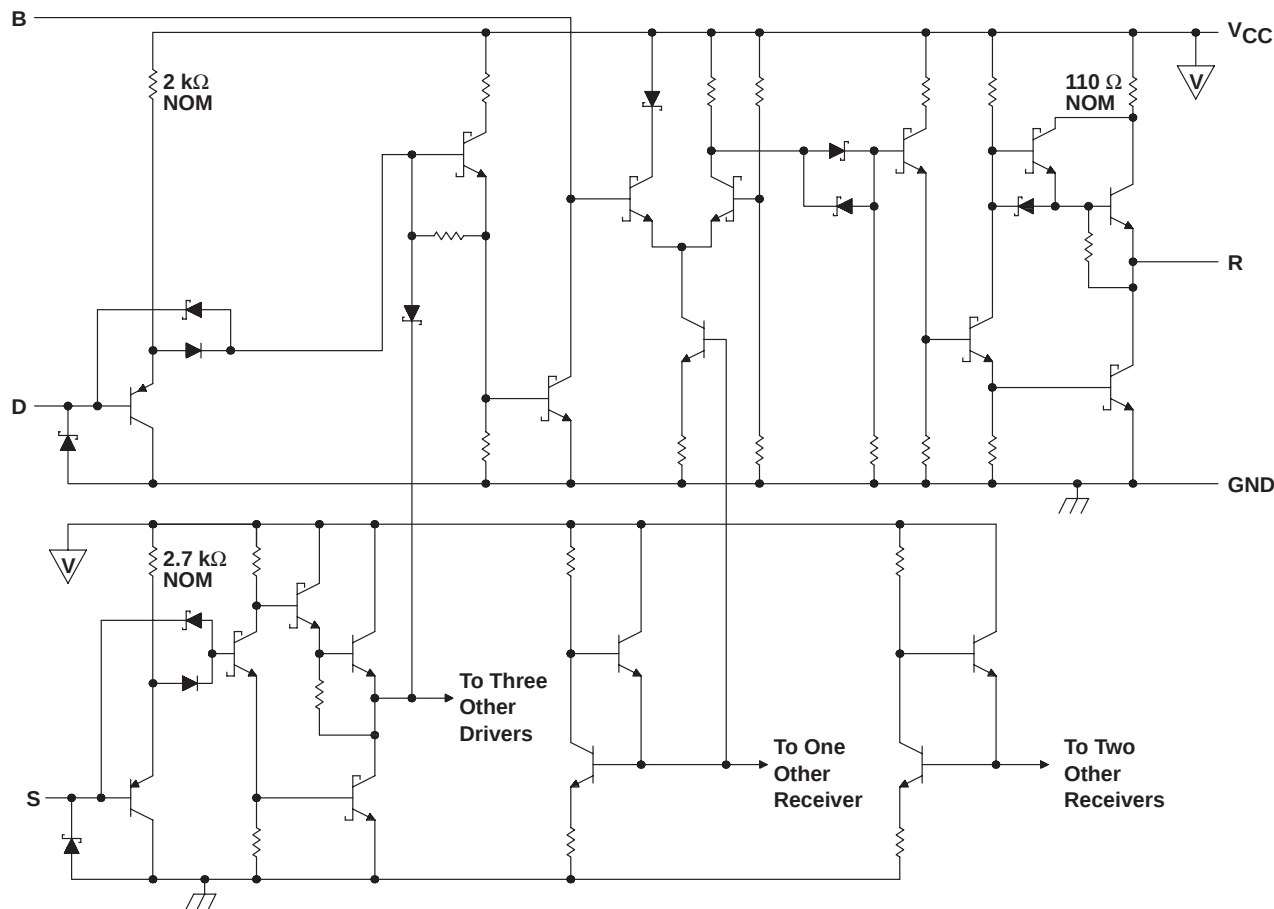


† These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

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

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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			

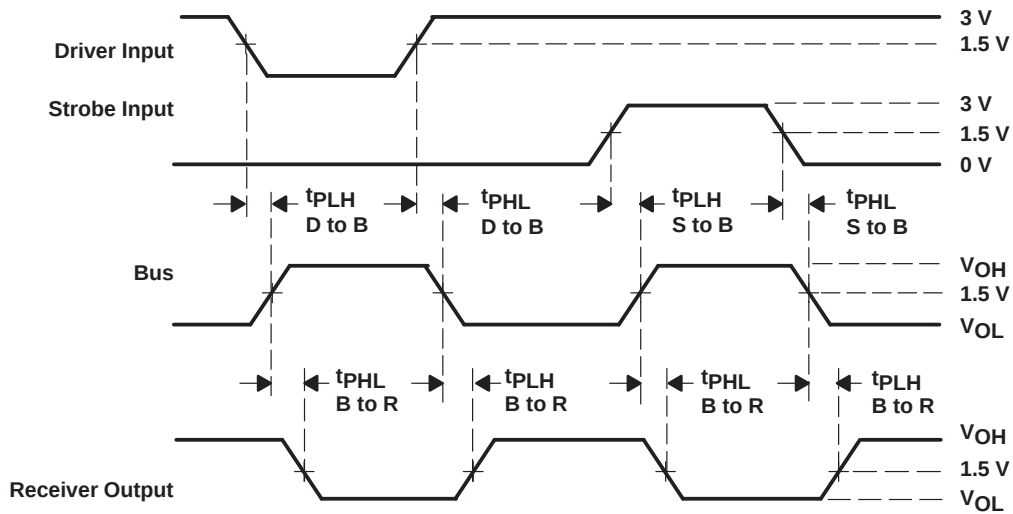
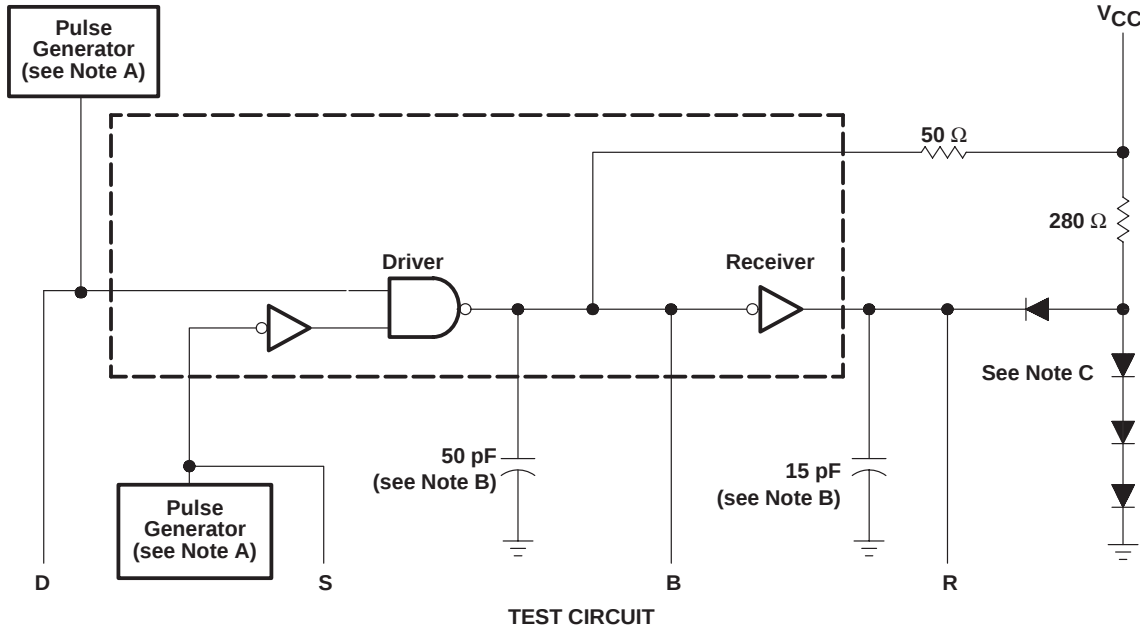
[†] All typical values are at T_A = 25°C and V_{CC} = 5 V.

[‡] 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

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APPLICATION INFORMATION

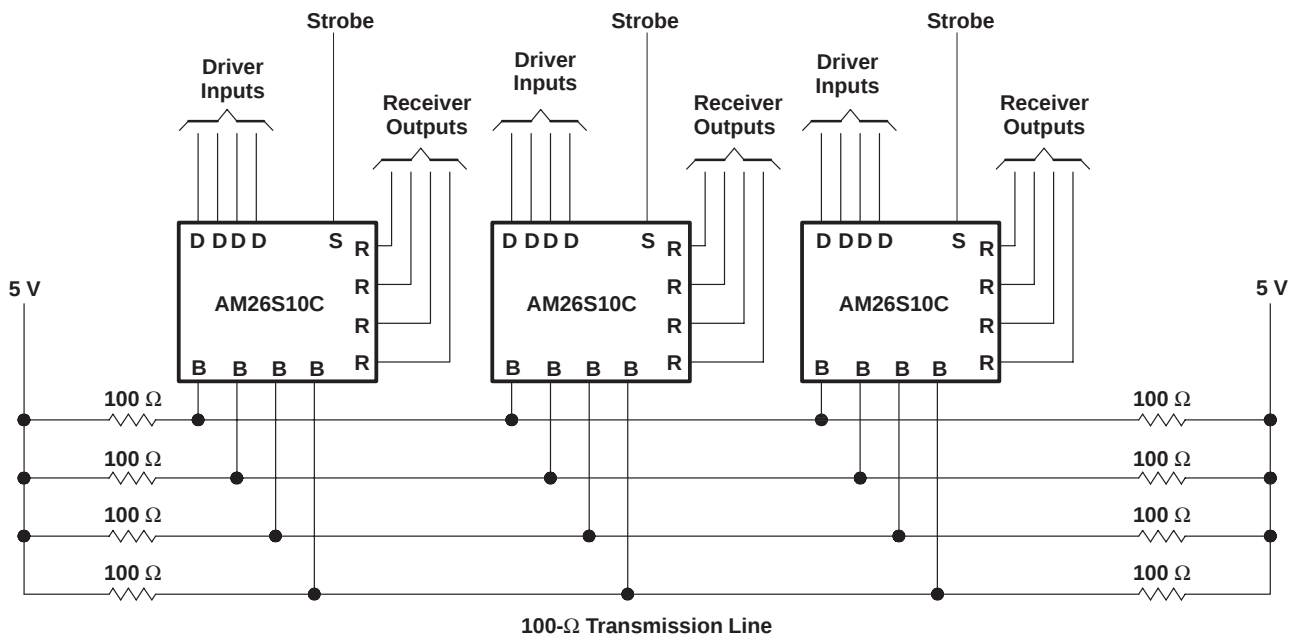


Figure 2. Party-Line System

PACKAGING INFORMATION

Orderable part number	Status (1)	Material type (2)	Package Pins	Package qty Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
AM26S10CD	Active	Production	SOIC (D) 16	40 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	AM26S10C
AM26S10CD.A	Active	Production	SOIC (D) 16	40 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	AM26S10C
AM26S10CDR	Active	Production	SOIC (D) 16	2500 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	AM26S10C
AM26S10CDR.A	Active	Production	SOIC (D) 16	2500 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	AM26S10C
AM26S10CN	Active	Production	PDIP (N) 16	25 TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	AM26S10CN
AM26S10CN.A	Active	Production	PDIP (N) 16	25 TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	AM26S10CN
AM26S10CNE4	Active	Production	PDIP (N) 16	25 TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	AM26S10CN

⁽¹⁾ **Status:** For more details on status, see our [product life cycle](#).

⁽²⁾ **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

⁽³⁾ **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

⁽⁴⁾ **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

⁽⁵⁾ **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

⁽⁶⁾ **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "-" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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TAPE AND REEL INFORMATION



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
AM26S10CDR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1

TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
AM26S10CDR	SOIC	D	16	2500	353.0	353.0	32.0

TUBE


*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (μm)	B (mm)
AM26S10CD	D	SOIC	16	40	507	8	3940	4.32
AM26S10CD.A	D	SOIC	16	40	507	8	3940	4.32
AM26S10CN	N	PDIP	16	25	506	13.97	11230	4.32
AM26S10CN.A	N	PDIP	16	25	506	13.97	11230	4.32
AM26S10CNE4	N	PDIP	16	25	506	13.97	11230	4.32

D (R-PDSO-G16)

PLASTIC SMALL OUTLINE



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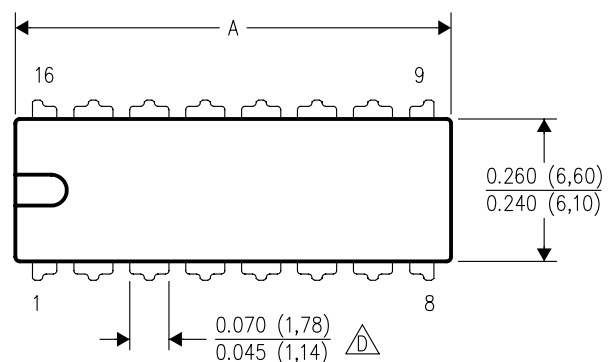
NOTES:

- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- C. Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.006 (0,15) each side.
- D. Body width does not include interlead flash. Interlead flash shall not exceed 0.017 (0,43) each side.
- E. Reference JEDEC MS-012 variation AC.

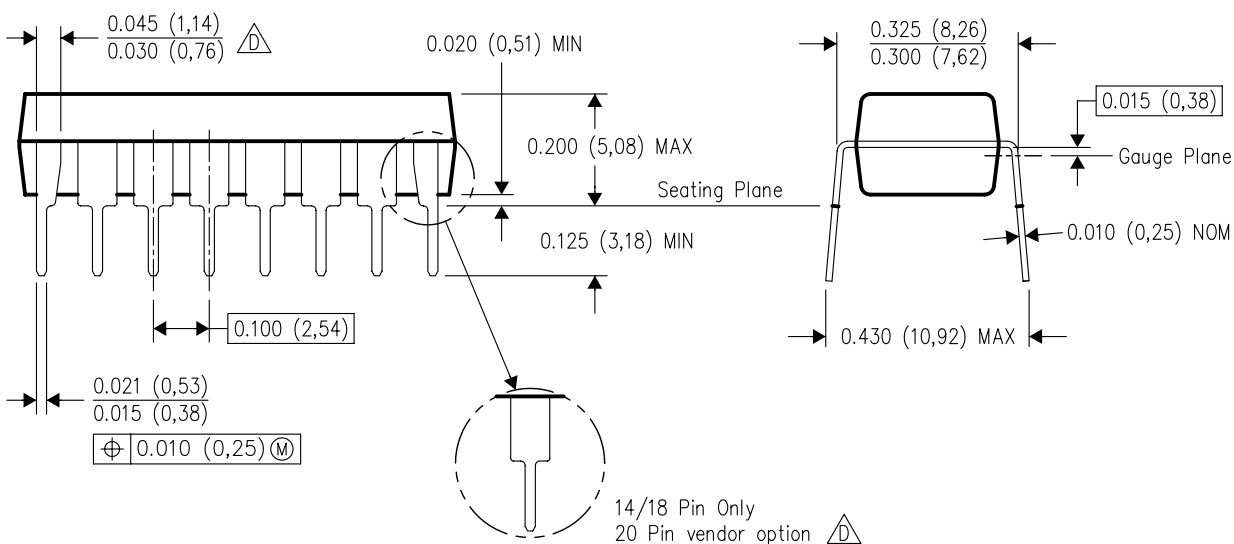
N (R-PDIP-T**)

16 PINS SHOWN

PLASTIC DUAL-IN-LINE PACKAGE



PINS ** DIM	14	16	18	20
A MAX	0.775 (19,69)	0.775 (19,69)	0.920 (23,37)	1.060 (26,92)
A MIN	0.745 (18,92)	0.745 (18,92)	0.850 (21,59)	0.940 (23,88)
MS-001 VARIATION	AA	BB	AC	AD



4040049/E 12/2002

- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - B. This drawing is subject to change without notice.
 -  Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
 -  The 20 pin end lead shoulder width is a vendor option, either half or full width.

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