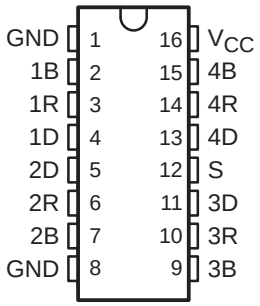
- **Schottky Circuitry for High Speed, Typical Propagation Delay Time . . . 12 ns**
- **Drivers Feature Open-Collector Outputs for Party-Line (Data Bus) Operation**
- **Driver Outputs Can Sink 100 mA at 0.8 V Maximum**
- **pnp Inputs for Minimal Input Loading**
- **Designed to Be Interchangeable With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

D OR N PACKAGE
(TOP VIEW)



description

The AM26S10C is a quadruple 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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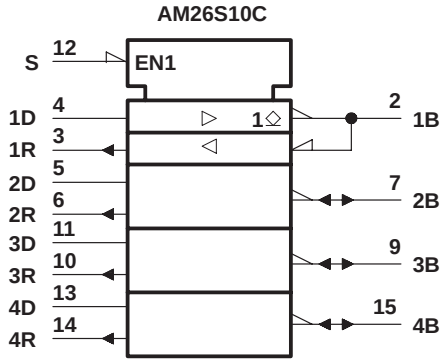
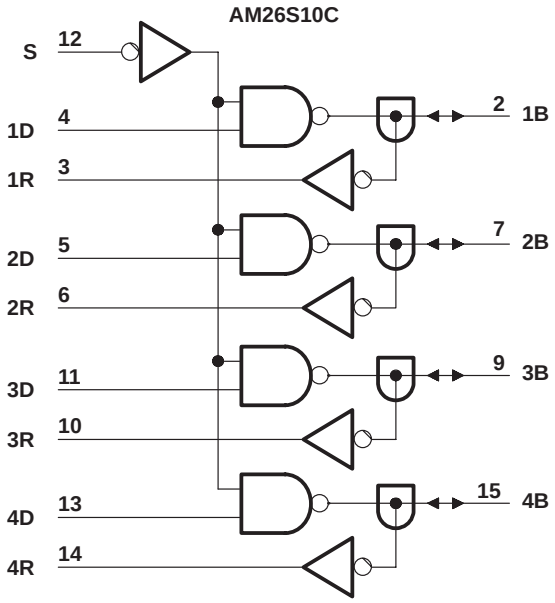
logic symbol†

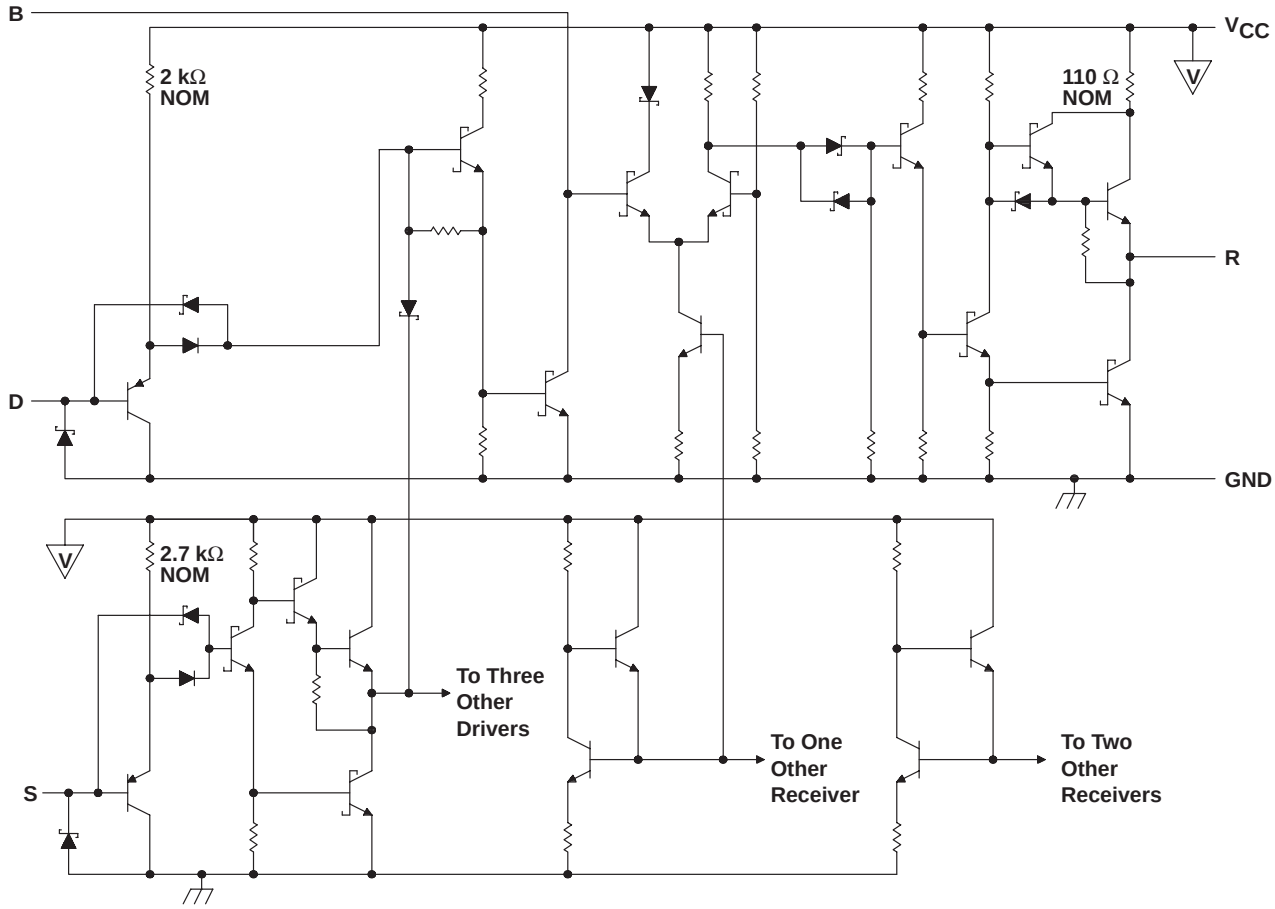


† These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

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	$T_A \le 25°C$ POWER RATING	DERATING FACTOR ABOVE $T_A = 25°C$	$T_A = 70°C$ 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-levael 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

electrical characteristics over recommended operating free-air temperature range

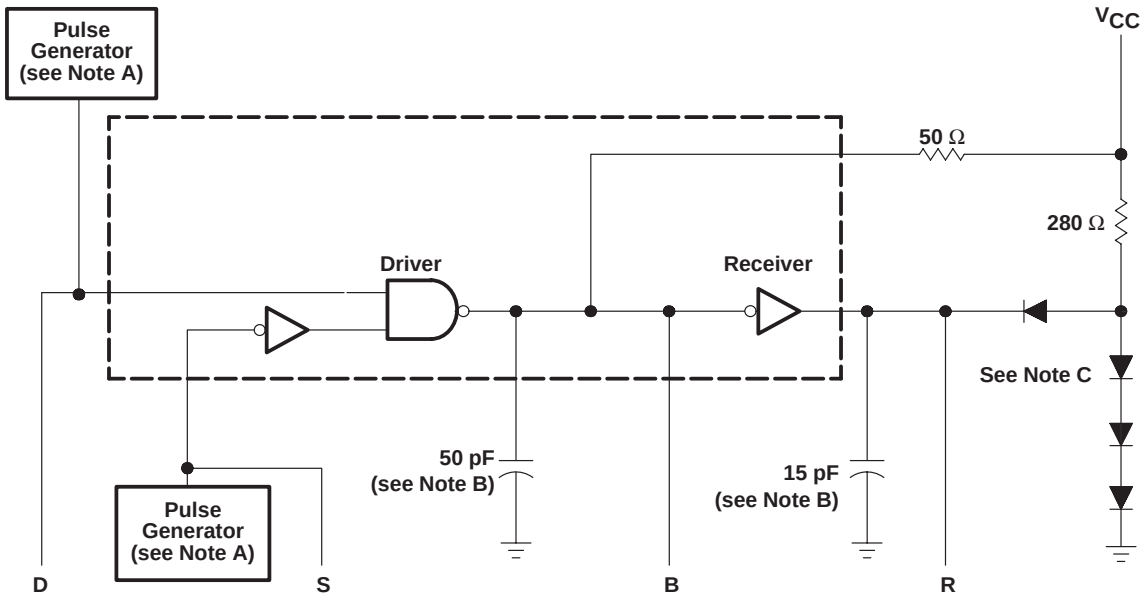
PARAMETER			TEST CONDITIONS			MIN	TYP†	MAX	UNIT
V_{IK}	Input clamp voltage	D or S	V_{CC} = 4.75 V, I_I = –18 mA					–1.2	V
V_{OH}	High-level output voltage	R	V_{CC} = 4.75 V, I_{OH} = –1 mA	V_{IH} = 2 V,	V_{IL} = 0.8 V,	2.7	3.4		V
V_{OH}	Low-level output voltage	R	V_{CC} = 4.75 V, V_{IL} = 0.8 V	V_{IH} = 2 V,	I_{OL} = 20 mA			0.5	V
		B			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, All driver outputs low	Strobe at 0 V,	No load,		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.

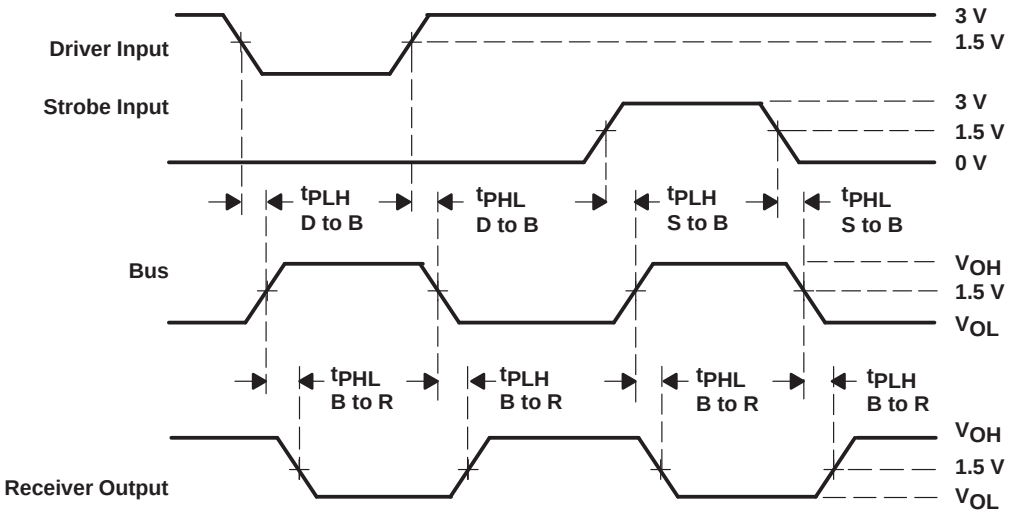
switching characteristics, V_{CC} = 5 V, T_A = 25°C

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



TEST CIRCUIT



VOLTAGE WAVEFORMS

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

Figure 1. Test Circuit and Voltage Waveforms

APPLICATION INFORMATION

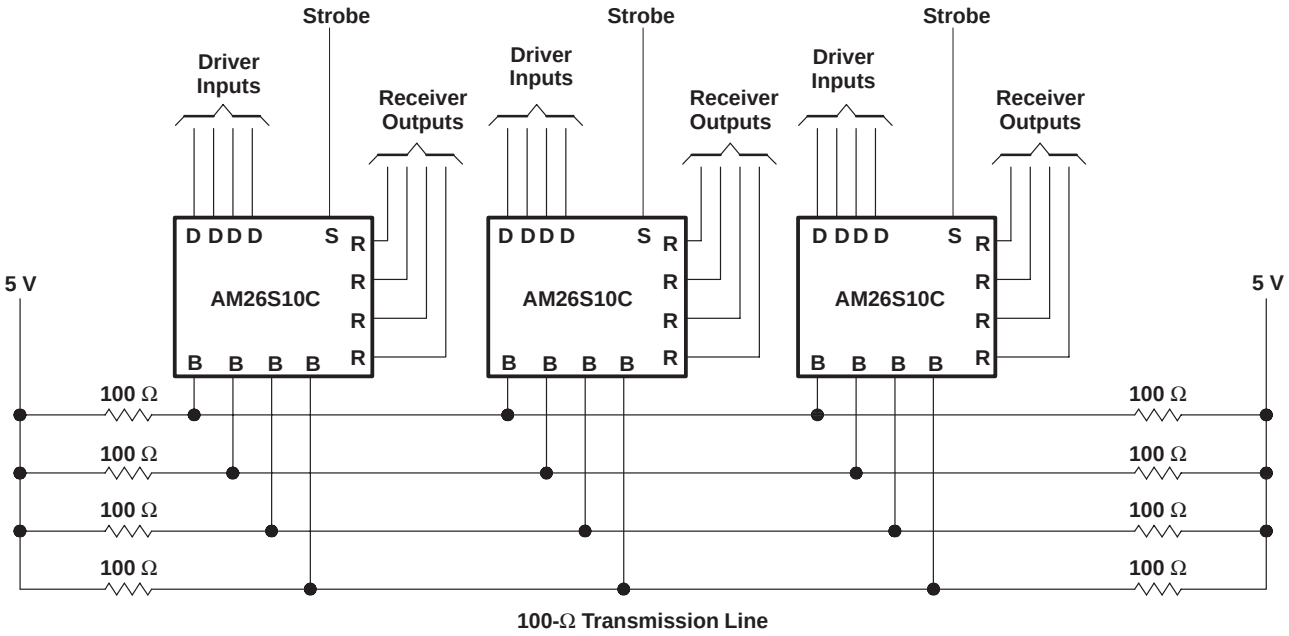


Figure 2. Party-Line System

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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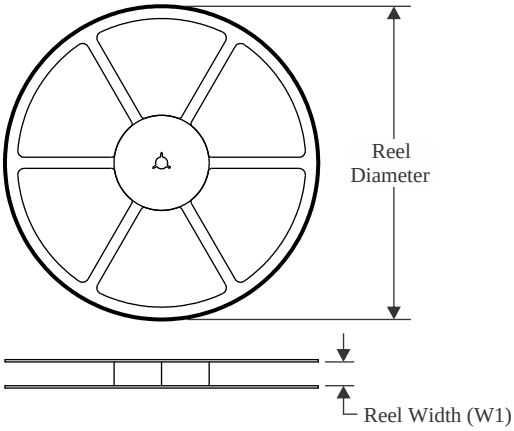
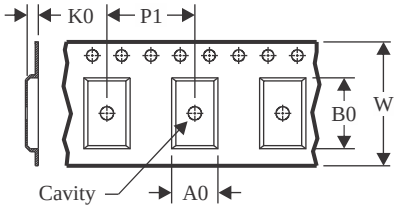
TAPE AND REEL INFORMATION

REEL DIMENSIONS

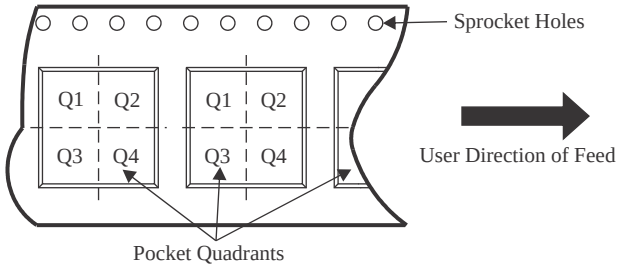


TAPE DIMENSIONS



A0	Dimension designed to accommodate the component width
B0	Dimension designed to accommodate the component length
K0	Dimension designed to accommodate the component thickness
W	Overall width of the carrier tape
P1	Pitch between successive cavity centers

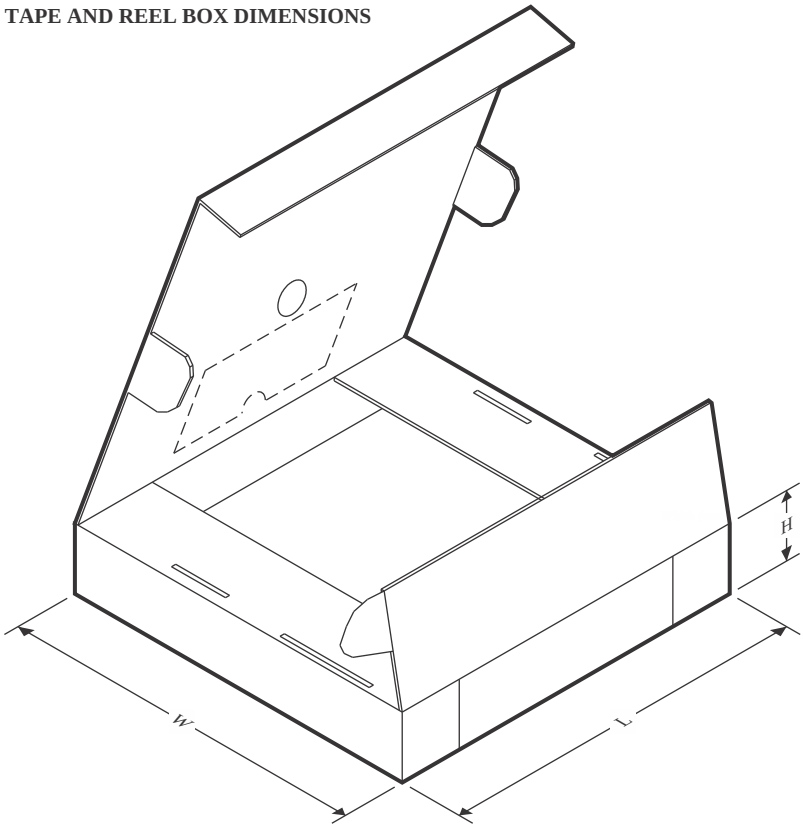
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*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

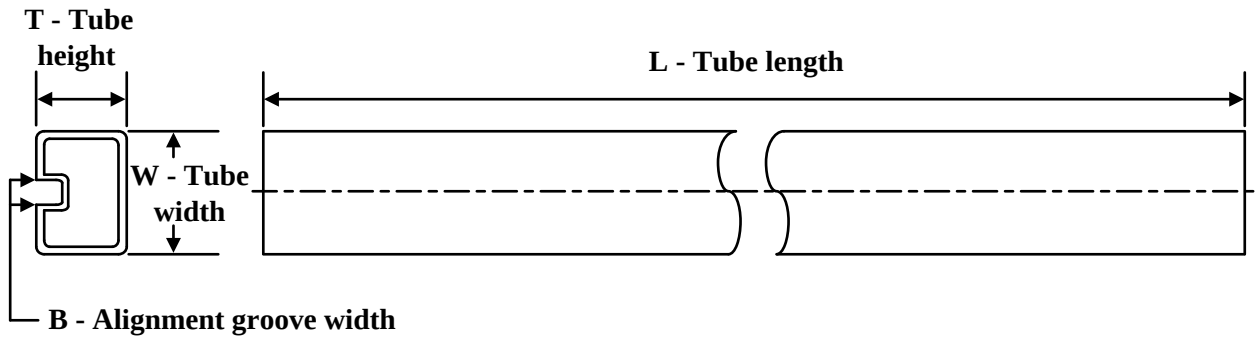
TAPE AND REEL BOX DIMENSIONS



*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

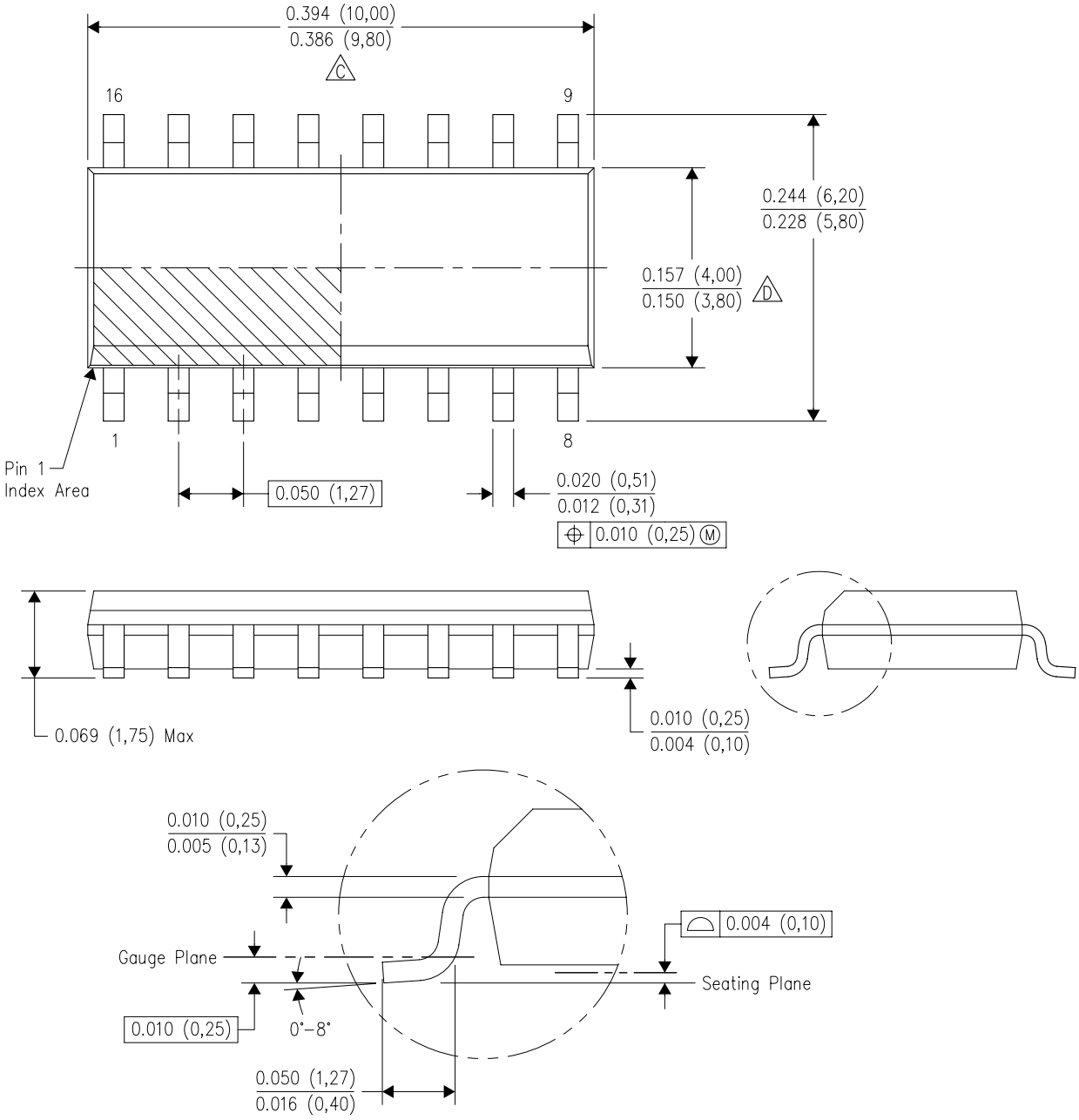
TUBE



*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

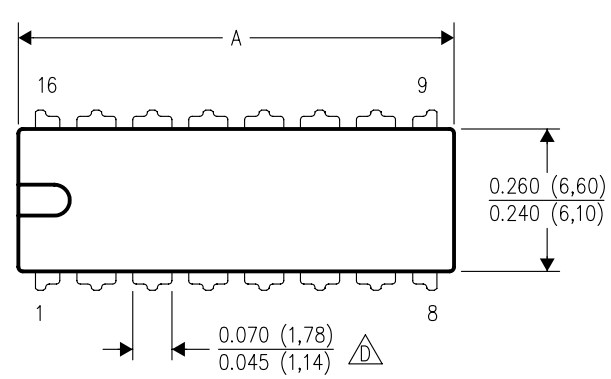


NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.006 (0,15) each side.
D. Body width does not include interlead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

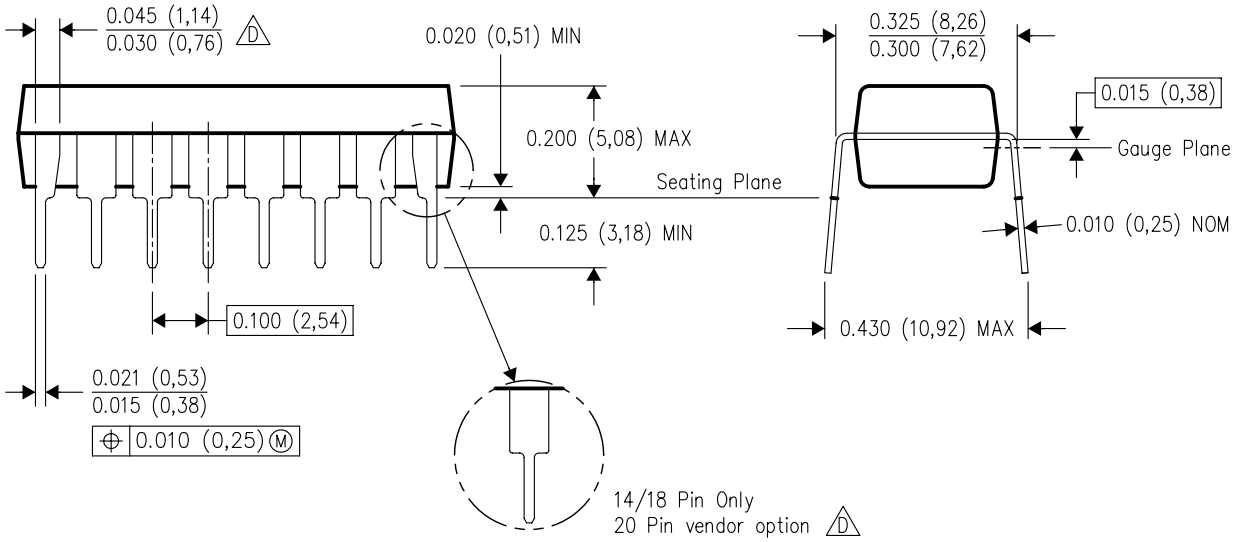
N (R–PDIP–T**)

PLASTIC DUAL–IN–LINE PACKAGE

16 PINS SHOWN



DIM \ PINS **	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 (C)	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.
C. Falls within JEDEC MS–001, except 18 and 20 pin minimum body length (Dim A).
D. The 20 pin end lead shoulder width is a vendor option, either half or full width.

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