- Meets or Exceeds the Requirements of ANSI TIA/EIA-422-B, TIA/EIA-423-B, and ITU Recommendation V.10 and V.11
- Low Power, I_{CC} = 10 mA Typ
- ±7-V Common-Mode Range With ±200-mV Sensitivity
- Input Hysteresis . . . 60 mV Typ
- t_{pd} = 17 ns Typ
- Operates From a Single 5-V Supply
- 3-State Outputs
- Input Fail-Safe Circuitry
- Improved Replacements for AM26LS32
- Available in Q-Temp Automotive
  – High Reliability Automotive Applications
  – Configuration Control/Print Support
  – Qualification to Automotive Standards

AM26C32C . . . D, N, OR NS PACKAGE
AM26C32I . . . D, N, NS, OR PW PACKAGE
AM26C32Q . . . D PACKAGE
AM26C32M . . . J OR W PACKAGE
(TOP VIEW)

1B	1	16	V_{CC}
1A	2	15	4B
1Y	3	14	4A
G	4	13	4Y
2Y	5	12	$\overline{G}$
2A	6	11	3Y
2B	7	10	3A
GND	8	9	3B

AM26C32M . . . FK PACKAGE
(TOP VIEW)

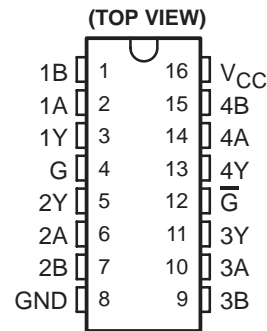NC – No internal connection

description/ordering information

The AM26C32 is a quadruple differential line receiver for balanced or unbalanced digital data transmission. The enable function is common to all four receivers and offers a choice of active-high or active-low input. The 3-state outputs permit connection directly to a bus-organized system. Fail-safe design specifies that if the inputs are open, the outputs always are high.
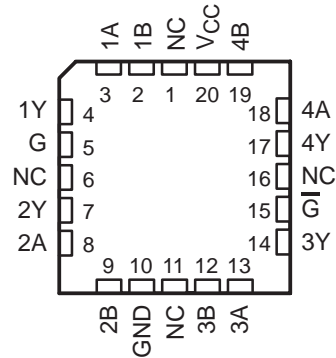
The AM26C32 devices are manufactured using a BiCMOS process, which is a combination of bipolar and CMOS transistors. This process provides the high voltage and current of bipolar with the low power of CMOS to reduce the power consumption to about one-fifth that of the standard AM26LS32, while maintaining ac and dc performance.

The AM26C32C is characterized for operation from 0°C to 70°C. The AM26C32I is characterized for operation from –40°C to 85°C. The AM26C32Q is characterized for operation from –40°C to 125°C. The AM26C32M is characterized for operation over the full military temperature range of –55°C to 125°C.

TEXAS INSTRUMENTS

description/ordering information (continued)

ORDERING INFORMATION

T_A	PACKAGE†		ORDERABLE PART NUMBER	TOP-SIDE MARKING
0°C to 70°C	PDIP (N)	Tube of 25	AM26C32CN	AM26C32CN
	SOIC (D)	Tube of 40	AM26C32CD	AM26C32C
		Reel of 2500	AM26C32CDR	
	SOP (NS)	Reel of 2000	AM26C32CNSR	26C32
−40°C to 85°C	PDIP (N)	Tube of 25	AM26C32IN	AM26C32IN
	SOIC (D)	Tube of 40	AM26C32ID	AM26C32I
		Reel of 2500	AM26C32IDR	
	SOP (NS)	Reel of 2000	AM26C32INSR	26C32I
	TSSOP (PW)	Tube of 90	AM26C32IPW	26C32I
−40°C to 125°C	SOIC (D)	Tube of 40	AM26C32QD	AM26C32QD
−55°C to 125°C	CDIP (J)	Tube of 25	AM26C32MJ	AM26C32MJ
	CFP (W)	Tube of 150	AM26C32MW	AM26C32MW
	LCCC (FK)	Tube of 55	AM26C32MFK	AM26C32MFK

† Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.

FUNCTION TABLE
(each receiver)

DIFFERENTIAL INPUT	ENABLES		OUTPUT Y
	G	$\overline{G}$	
$V_{ID} \geq V_{IT+}$	H	X	H
	X	L	H
$V_{IT-} < V_{ID} < V_{IT+}$	H	X	?
	X	L	?
$V_{ID} \leq V_{IT-}$	H	X	L
	X	L	L
X	L	H	Z

H = high level, L = low level, X = irrelevant
Z = high impedance (off), ? = indeterminate

logic diagram (positive logic)

G 4
G̅ 12

1A 2
1B 1
3 1Y

2A 6
2B 7
5 2Y

3A 10
3B 9
11 3Y

4A 14
4B 15
13 4Y

Pin numbers shown are for the D, J, N, NS, PW, and W packages.

schematics

EQUIVALENT OF A OR B INPUT	EQUIVALENT OF G OR G̅ INPUT	TYPICAL OF ALL OUTPUTS

V_CC

17 kΩ NOM   1.7 kΩ NOM

Input

288 kΩ NOM

1.7 kΩ NOM

V_CC (A inputs) or GND (B inputs)

GND

V_CC

Input

GND

V_CC

Output

GND

AM26C32
QUADRUPLE DIFFERENTIAL LINE RECEIVER

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)†

Supply voltage, V_{CC} (see Note 1)		7 V
Input voltage range, V_I: A or B inputs		–11 V to 14 V
G or $\overline{G}$ inputs		–0.5 V to V_{CC} + 0.5 V
Differential input voltage range, V_{ID}		–14 V to 14 V
Output voltage range, V_O		–0.5 V to V_{CC} + 0.5 V
Output current, I_O		±25 mA
Package thermal impedance, θ_{JA} (see Notes 2 and 3): D package		73°C/W
N package		67°C/W
NS package		64°C/W
PW package		108°C/W
Operating virtual junction temperature, T_J		150°C
Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds		260°C
Storage temperature range, T_{stg}		–65°C to 150°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.

NOTES: 1. All voltage values, except differential output voltage, V_{OD}, are with respect to network GND. Currents into the device are positive and currents out of the device are negative.
2. Maximum power dissipation is a function of T_J(max), θ_{JA}, and T_A. The maximum allowable power dissipation at any allowable ambient temperature is $P_D = (T_J(max) - T_A)/\theta_{JA}$. Operating at the absolute maximum T_J of 150°C can affect reliability.
3. The package thermal impedance is calculated in accordance with JESD 51-7.

recommended operating conditions

			MIN	NOM	MAX	UNIT
V_{CC}	Supply voltage		4.5	5	5.5	V
V_{IH}	High-level input voltage		2			V
V_{IL}	Low-level input voltage				0.8	V
V_{IC}	Common-mode input voltage				±7	V
I_{OH}	High-level output current				–6	mA
I_{OL}	Low-level output current				6	mA
T_A	Operating free-air temperature	AM26C32C	0		70	°C
		AM26C32I	–40		85	
		AM26C32Q	–40		125	
		AM26C32M	–55		125	

electrical characteristics over recommended ranges of V_{CC}, V_{IC}, and operating free-air temperature (unless otherwise noted)

PARAMETER		TEST CONDITIONS		MIN	TYP†	MAX	UNIT
V_{IT+}	Differential input high-threshold voltage	$V_O = V_{OH}$(min), $I_{OH} = -440\ \mu A$	$V_{IC} = -7$ V to 7 V			0.2	V
			$V_{IC} = 0$ to 5.5 V			0.1	
V_{IT-}	Differential input low-threshold voltage	$V_O = 0.45$ V, $I_{OL} = 8$ mA	$V_{IC} = -7$ V to 7 V	-0.2‡			V
			$V_{IC} = 0$ to 5.5 V	-0.1‡			
V_{hys}	Hysteresis voltage ($V_{IT+} - V_{IT-}$)				60		mV
V_{IK}	Enable input clamp voltage	$V_{CC} = 4.5$ V,	$I_I = -18$ mA			-1.5	V
V_{OH}	High-level output voltage	$V_{ID} = 200$ mV,	$I_{OH} = -6$ mA	3.8			V
V_{OL}	Low-level output voltage	$V_{ID} = -200$ mV,	$I_{OL} = 6$ mA		0.2	0.3	V
I_{OZ}	Off-state (high-impedance state) output current	$V_O = V_{CC}$ or GND			±0.5	±5	μA
I_I	Line input current	$V_I = 10$ V,	Other input at 0 V			1.5	mA
		$V_I = -10$ V,	Other input at 0 V			-2.5	
I_{IH}	High-level enable current	$V_I = 2.7$ V				20	μA
I_{IL}	Low-level enable current	$V_I = 0.4$ V				-100	μA
r_i	Input resistance	One input to ground		12	17		$k\Omega$
I_{CC}	Supply current	$V_{CC} = 5.5$ V			10	15	mA

† All typical values are at $V_{CC} = 5$ V, $V_{IC} = 0$, and $T_A = 25°C$.
‡ The algebraic convention, in which the less positive (more negative) limit is designated minimum, is used in this data sheet for common-mode input voltage.

switching characteristics over recommended ranges of operation conditions, $C_L = 50$ pF (unless otherwise noted)

PARAMETER		TEST CONDITIONS	AM26C32C AM26C32I			AM26C32Q AM26C32M			UNIT
			MIN	TYP†	MAX	MIN	TYP†	MAX	
t_{PLH}	Propagation delay time, low- to high-level output	See Figure 1	9	17	27	9	17	27	ns
t_{PHL}	Propagation delay time, high- to low-level output		9	17	27	9	17	27	ns
t_{TLH}	Output transition time, low- to high-level output	See Figure 1		4	9		4	10	ns
t_{THL}	Output transition time, high- to low-level output			4	9		4	9	ns
t_{PZH}	Output enable time to high level	See Figure 2		13	22		13	22	ns
t_{PZL}	Output enable time to low level			13	22		13	22	ns
t_{PHZ}	Output disable time from high level	See Figure 2		13	22		13	26	ns
t_{PLZ}	Output disable time from low level			13	22		13	25	ns

† All typical values are at $V_{CC} = 5$ V, $T_A = 25°C$.

PARAMETER MEASUREMENT INFORMATION
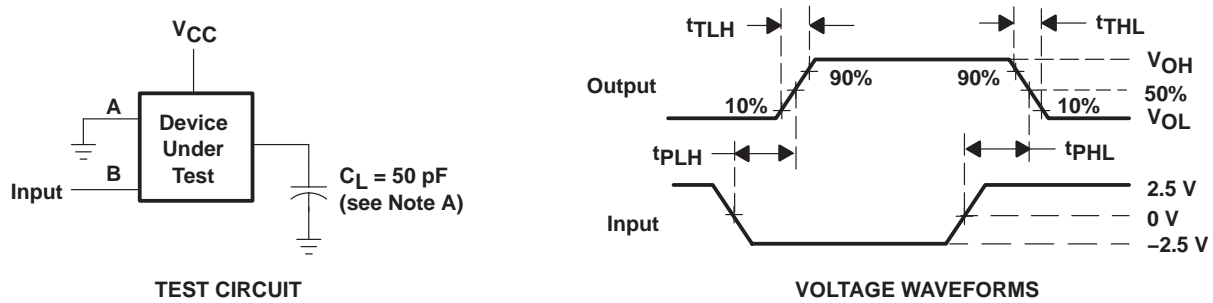
NOTE A: C_L includes probe and jig capacitance.

Figure 1. Switching Test Circuit and Voltage Waveforms

t_{PZL}, t_{PLZ} Measurement: S1 to V_{CC}
t_{PZH}, t_{PHZ} Measurement: S1 to GND

TEST CIRCUIT
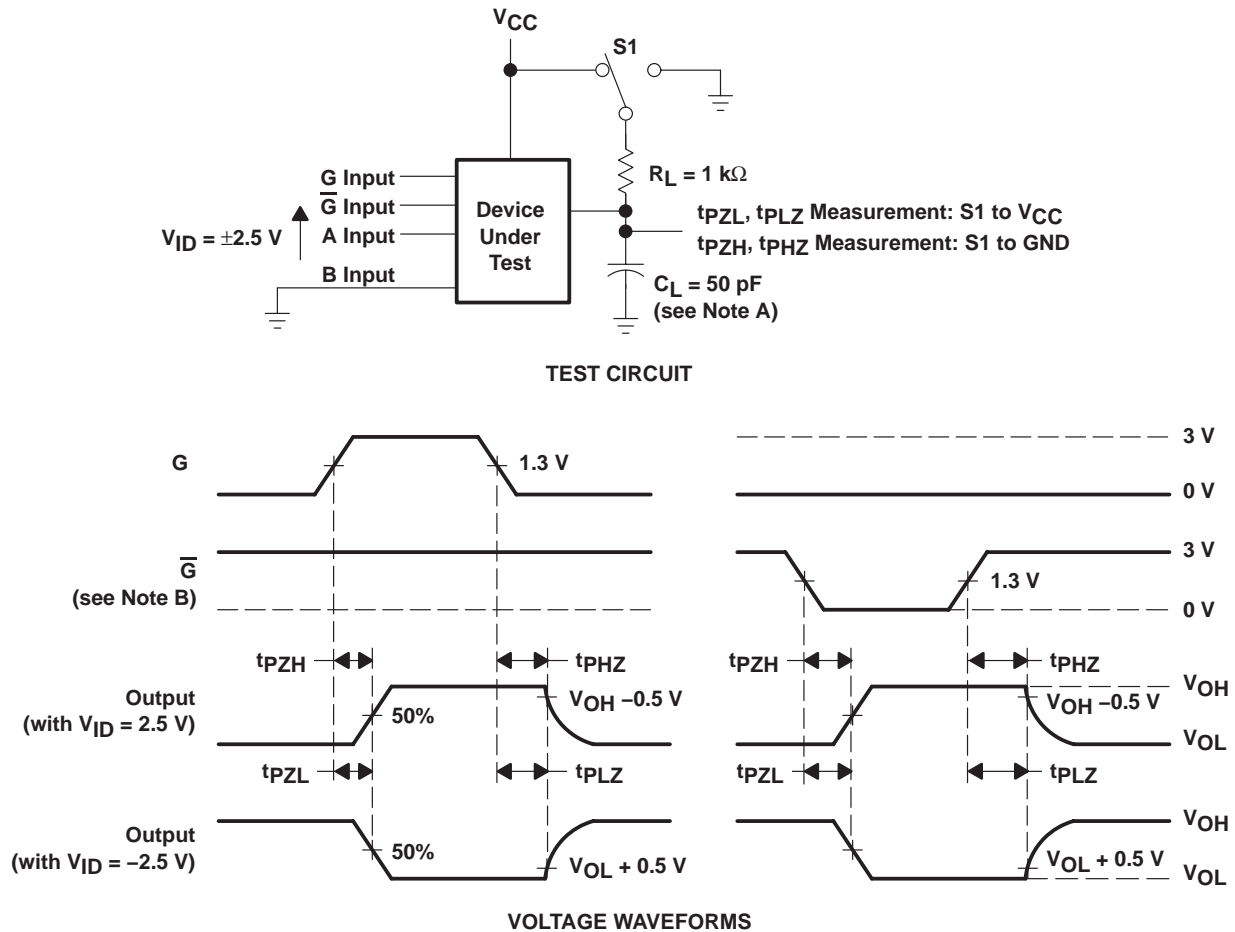
VOLTAGE WAVEFORMS

NOTES: A. C_L includes probe and jig capacitance.
     B. The input pulse is supplied by a generator having the following characteristics: PRR = 1 MHz, duty cycle ≤ 50%, t_r = t_f = 6 ns.

Figure 2. Enable/Disable Time Test Circuit and Output Voltage Waveforms

TEXAS INSTRUMENTS

POST OFFICE BOX 655303 ● DALLAS, TEXAS 75265

PACKAGING INFORMATION

Orderable Device	Status [1]	Package Type	Package Drawing	Pins	Package Qty	Eco Plan [2]	Lead/Ball Finish	MSL Peak Temp [3]
5962-9164001Q2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
5962-9164001QEA	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
5962-9164001QFA	ACTIVE	CFP	W	16	1	TBD	A42 SNPB	N / A for Pkg Type
AM26C32CD	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32CDBLE	OBSOLETE	SSOP	DB	16		TBD	Call TI	Call TI
AM26C32CDE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32CDG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32CDR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32CDRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32CDRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32CN	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
AM26C32CNE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
AM26C32CNSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32CNSRE4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32CNSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32ID	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IDBLE	OBSOLETE	SSOP	DB	16		TBD	Call TI	Call TI
AM26C32IDE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IDG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IDR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IDRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IDRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IN	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
AM26C32INE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
AM26C32INSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32INSRE4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32INSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
AM26C32IPW	ACTIVE	TSSOP	PW	16	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IPWE4	ACTIVE	TSSOP	PW	16	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IPWG4	ACTIVE	TSSOP	PW	16	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IPWR	ACTIVE	TSSOP	PW	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32IPWRG4	ACTIVE	TSSOP	PW	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
AM26C32MFKB	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
AM26C32MJB	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
AM26C32MWB	ACTIVE	CFP	W	16	1	TBD	A42 SNPB	N / A for Pkg Type
AM26C32QD	ACTIVE	SOIC	D	16	40	TBD	CU NIPDAU	Level-1-220C-UNLIM
AM26C32QDG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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OTHER QUALIFIED VERSIONS OF AM26C32, AM26C32M :
● Enhanced Product: AM26C32-EP

NOTE: Qualified Version Definitions:
● Enhanced Product - Supports Defense, Aerospace and Medical Applications

TAPE AND REEL INFORMATION

REEL DIMENSIONS

Reel Diameter

Reel Width (W1)

TAPE DIMENSIONS

Cavity

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

Sprocket Holes

User Direction of Feed

Pocket Quadrants

*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
AM26C32CDR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
AM26C32CNSR	SO	NS	16	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1
AM26C32IDR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
AM26C32INSR	SO	NS	16	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1
AM26C32IPWR	TSSOP	PW	16	2000	330.0	12.4	7.0	5.6	1.6	8.0	12.0	Q1

TAPE AND REEL BOX DIMENSIONS

*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
AM26C32CDR	SOIC	D	16	2500	333.2	345.9	28.6
AM26C32CNSR	SO	NS	16	2000	346.0	346.0	33.0
AM26C32IDR	SOIC	D	16	2500	333.2	345.9	28.6
AM26C32INSR	SO	NS	16	2000	346.0	346.0	33.0
AM26C32IPWR	TSSOP	PW	16	2000	346.0	346.0	29.0

DB (R-PDSO-G**)　　　　　　　　　　　　　　　　　　　　　**PLASTIC SMALL-OUTLINE**

28 PINS SHOWN

PINS ** DIM	14	16	20	24	28	30	38
A MAX	6,50	6,50	7,50	8,50	10,50	10,50	12,90
A MIN	5,90	5,90	6,90	7,90	9,90	9,90	12,30

4040065 /E 12/01

NOTES:　A.　All linear dimensions are in millimeters.
　　　　　B.　This drawing is subject to change without notice.
　　　　　C.　Body dimensions do not include mold flash or protrusion not to exceed 0,15.
　　　　　D.　Falls within JEDEC MO-150

NS (R-PDSO-G)**   PLASTIC SMALL-OUTLINE PACKAGE

14-PINS SHOWN

PINS ** DIM	14	16	20	24
A MAX	10,50	10,50	12,90	15,30
A MIN	9,90	9,90	12,30	14,70

4040062/C 03/03

NOTES: A.   All linear dimensions are in millimeters.
         B.   This drawing is subject to change without notice.
         C.   Body dimensions do not include mold flash or protrusion, not to exceed 0,15.

FK (S-CQCC-N**)

LEADLESS CERAMIC CHIP CARRIER

28 TERMINAL SHOWN
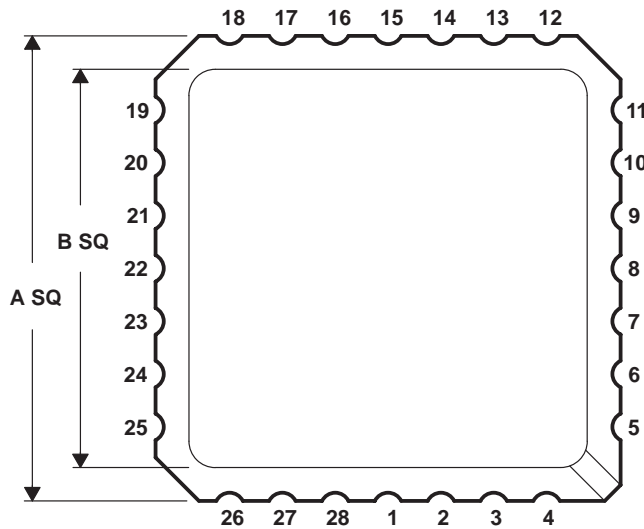
NO. OF TERMINALS **	A		B	
	MIN	MAX	MIN	MAX
20	0.342 (8,69)	0.358 (9,09)	0.307 (7,80)	0.358 (9,09)
28	0.442 (11,23)	0.458 (11,63)	0.406 (10,31)	0.458 (11,63)
44	0.640 (16,26)	0.660 (16,76)	0.495 (12,58)	0.560 (14,22)
52	0.739 (18,78)	0.761 (19,32)	0.495 (12,58)	0.560 (14,22)
68	0.938 (23,83)	0.962 (24,43)	0.850 (21,6)	0.858 (21,8)
84	1.141 (28,99)	1.165 (29,59)	1.047 (26,6)	1.063 (27,0)
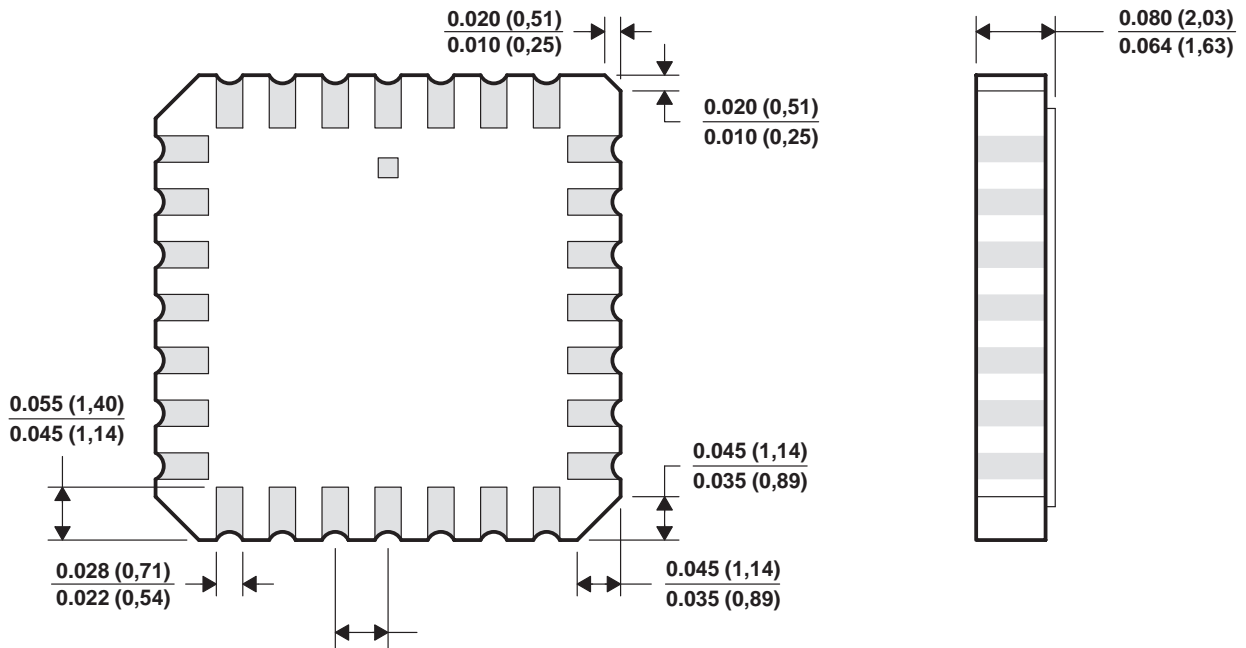
4040140 / D 10/96

PW (R-PDSO-G**)   **PLASTIC SMALL-OUTLINE PACKAGE**

14 PINS SHOWN

PINS ** DIM	8	14	16	20	24	28
A MAX	3,10	5,10	5,10	6,60	7,90	9,80
A MIN	2,90	4,90	4,90	6,40	7,70	9,60

4040064/F 01/97

NOTES: A. All linear dimensions are in millimeters.
　　　　B. This drawing is subject to change without notice.
　　　　C. Body dimensions do not include mold flash or protrusion not to exceed 0,15.
　　　　D. Falls within JEDEC MO-153

J (R-GDIP-T**)   CERAMIC DUAL IN-LINE PACKAGE
14 LEADS SHOWN

DIM \ PINS **	14	16	18	20
A	0.300 (7,62) BSC	0.300 (7,62) BSC	0.300 (7,62) BSC	0.300 (7,62) BSC
B MAX	0.785 (19,94)	.840 (21,34)	0.960 (24,38)	1.060 (26,92)
B MIN	—	—	—	—
C MAX	0.300 (7,62)	0.300 (7,62)	0.310 (7,87)	0.300 (7,62)
C MIN	0.245 (6,22)	0.245 (6,22)	0.220 (5,59)	0.245 (6,22)

B

14   8

C

1   7

0.065 (1,65)
0.045 (1,14)

0.005 (0,13) MIN

0.060 (1,52)
0.015 (0,38)

0.200 (5,08) MAX

Seating Plane

0.130 (3,30) MIN

0.026 (0,66)
0.014 (0,36)

0.100 (2,54)

A

0°-15°

0.014 (0,36)
0.008 (0,20)

4040083/F 03/03

NOTES: A. All linear dimensions are in inches (millimeters).
          B. This drawing is subject to change without notice.
          C. This package is hermetically sealed with a ceramic lid using glass frit.
          D. Index point is provided on cap for terminal identification only on press ceramic glass frit seal only.
          E. Falls within MIL STD 1835 GDIP1-T14, GDIP1-T16, GDIP1-T18 and GDIP1-T20.

W (R—GDFP—F16)   CERAMIC DUAL FLATPACK

$\frac{0.045\ (1,14)}{0.026\ (0,66)}$

$\frac{0.285\ (7,24)}{0.245\ (6,22)}$

Base and Seating Plane

$\frac{0.080\ (2,03)}{0.055\ (1,40)}$

0.006

0.305 (7,75) MAX

1   16

$\frac{0.430\ (10,92)}{0.370\ (9,40)}$

$\frac{0.360\ (9}{0.250}$

07/03
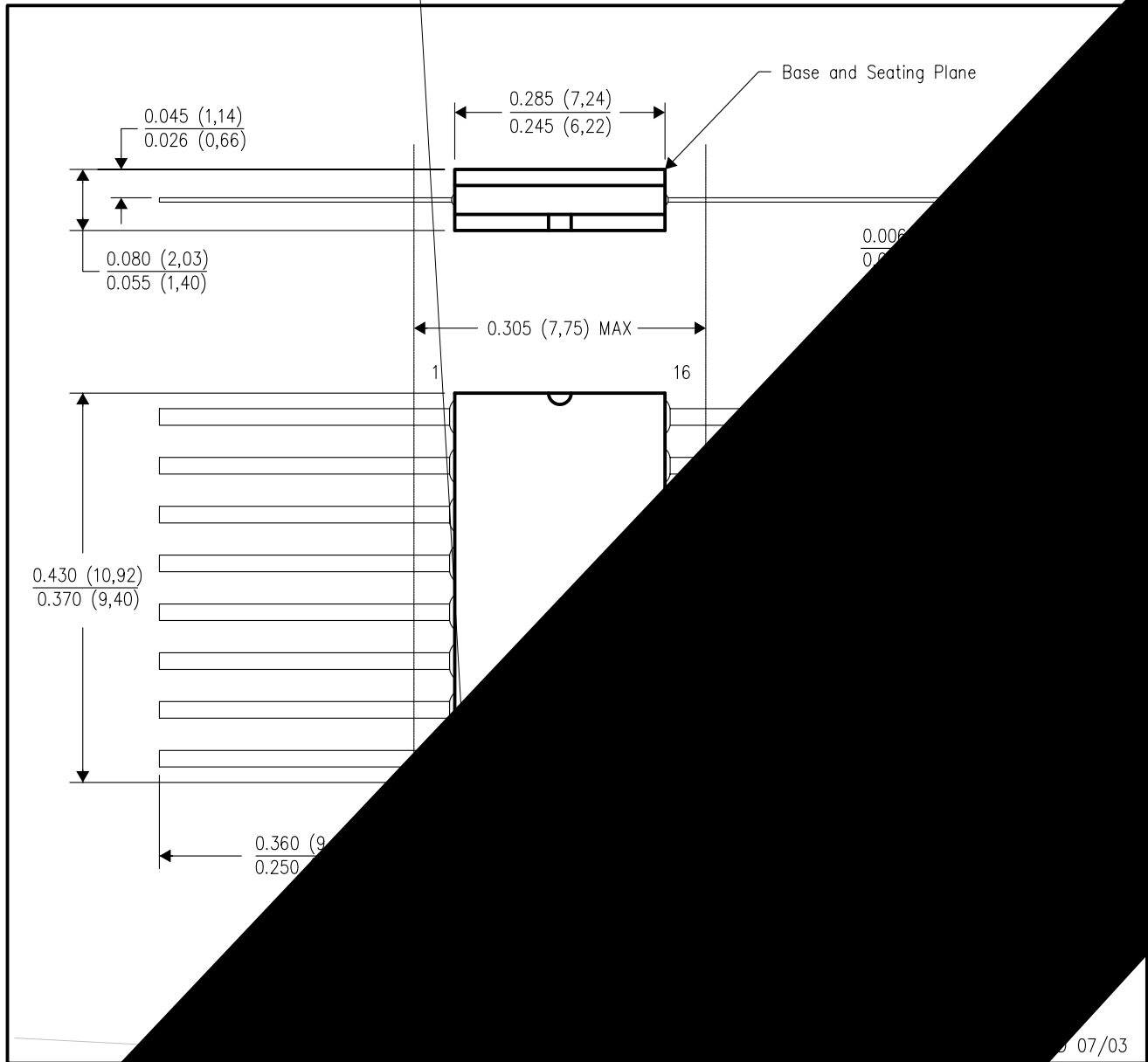
NOTES:

D (R−PDSO−G16)   PLASTIC SMALL−OUTLINE PACKAGE
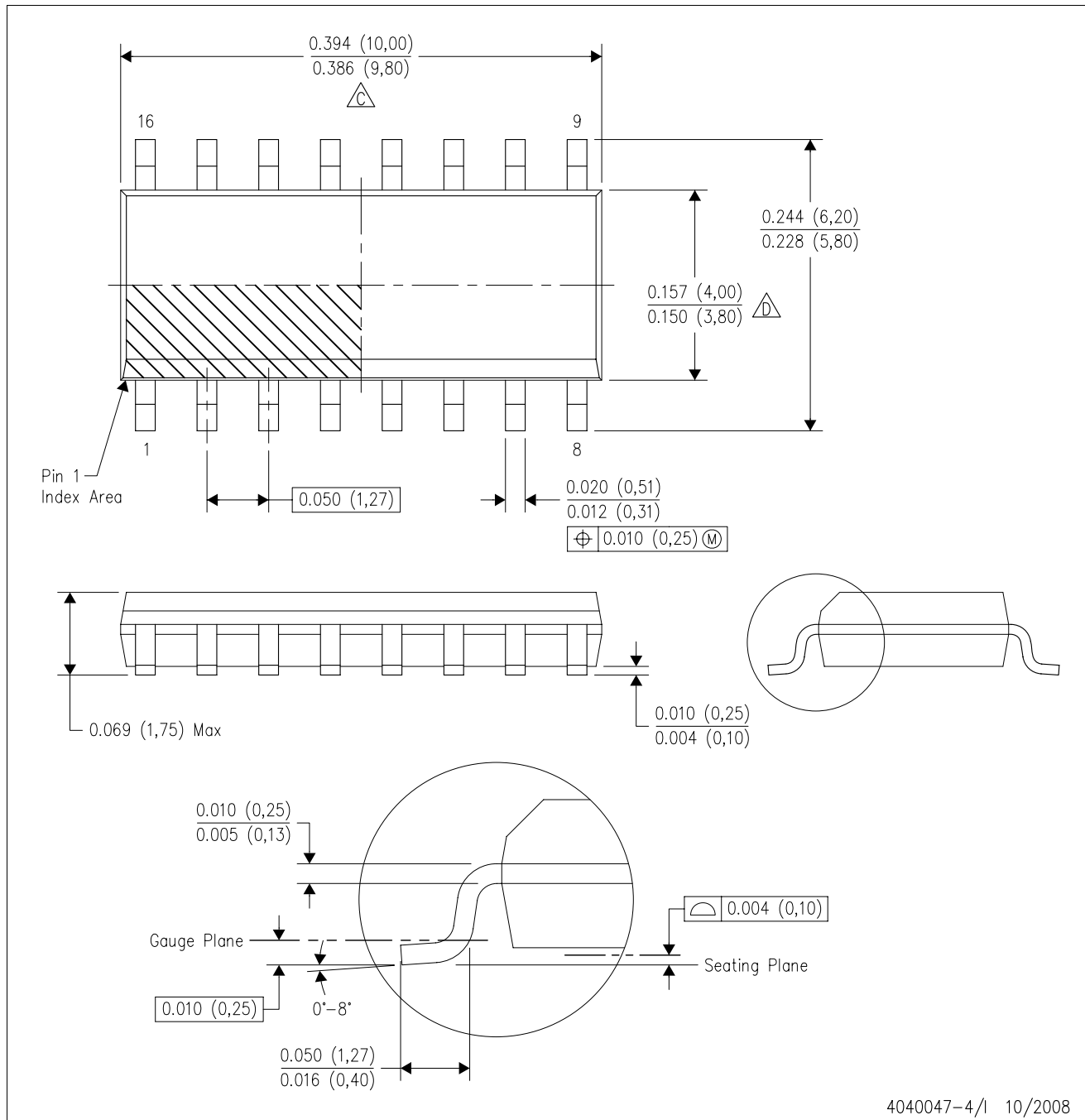
0.394 (10,00)
0.386 (9,80)
△C

16   9

0.244 (6,20)
0.228 (5,80)

0.157 (4,00)
0.150 (3,80) △D

1   8

Pin 1
Index Area

0.050 (1,27)   0.020 (0,51)
                    0.012 (0,31)

⊕ 0.010 (0,25) Ⓜ

0.069 (1,75) Max

0.010 (0,25)
0.004 (0,10)

0.010 (0,25)
0.005 (0,13)

Gauge Plane

0.004 (0,10)

Seating Plane

0.010 (0,25)   0°−8°

0.050 (1,27)
0.016 (0,40)

4040047−4/I 10/2008

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 .006 (0,15) per end.
     △D Body width does not include interlead flash. Interlead flash shall not exceed .017 (0,43) per side.
         E. Reference JEDEC MS−012 variation AC.

TEXAS
INSTRUMENTS
www.ti.com
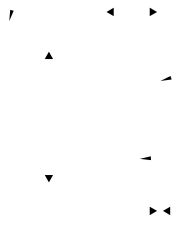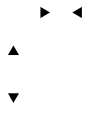
N (R−PDIP−T**)   PLASTIC DUAL−IN−LINE PACKAGE

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	AA	BB	AC	AD

0.260 (6,60) / 0.240 (6,10)

0.070 (1,78) / 0.045 (1,14)

0.045 (1,14) / 0.030 (0,76)

0.020 (0,51) MIN

0.200 (5,08) MAX

Seating Plane

0.125 (3,18) MIN

0.100 (2,54)

0.021 (0,53) / 0.015 (0,38)

⊕ 0.010 (0,25) Ⓜ

14/18 Pin Only
20 Pin vendor option

0.325 (8,26) / 0.300 (7,62)

0.015 (0,38)

Gauge Plane

0.010 (0,25) NOM

0.430 (10,92) MAX

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.