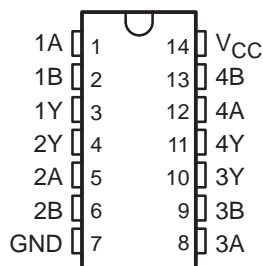


# SN54HC266, SN74HC266 QUADRUPLE 2-INPUT EXCLUSIVE-NOR GATES WITH OPEN-DRAIN OUTPUTS

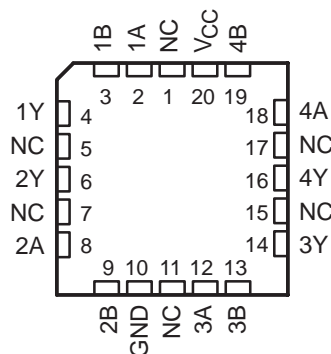
SCLS135F – DECEMBER 1982 – REVISED AUGUST 2003

- Wide Operating Voltage Range of 2 V to 6 V
- High-Current Inverting Outputs Drive Up To 10 LSTTL Loads
- Low Power Consumption, 20- $\mu$ A Max  $I_{CC}$
- Typical  $t_{pd} = 10$  ns
- $\pm 4$ -mA Output Drive at 5 V
- Low Input Current of 1  $\mu$ A Max

SN54HC266 . . . J OR W PACKAGE  
SN74HC266 . . . D, N, OR NS PACKAGE  
(TOP VIEW)



SN54HC266 . . . FK PACKAGE  
(TOP VIEW)



NC – No internal connection

## description/ordering information

The 'HC266 devices have four independent 2-input exclusive-NOR gates and feature open-drain outputs. They perform the Boolean function  $Y = A \otimes B$  or  $Y = \overline{AB} + A\overline{B}$  in positive logic.

## ORDERING INFORMATION

$T_A$	PACKAGE†		ORDERABLE PART NUMBER	TOP-SIDE MARKING
-40°C to 85°C	PDIP – N	Tube of 25	SN74HC266N	SN74HC266N
	SOIC – D	Tube of 50	SN74HC266D	HC266
		Reel of 2500	SN74HC266DR	
		Reel of 250	SN74HC266DT	
SOP – NS	Reel of 2000	SN74HC266NSR	HC266	
-55°C to 125°C	CDIP – J	Tube of 25	SNJ54HC266J	SNJ54HC266J
	CFP – W	Tube of 150	SNJ54HC266W	SNJ54HC266W
	LCCC – FK	Tube of 55	SNJ54HC266FK	SNJ54HC266FK

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



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

UNLESS OTHERWISE NOTED this document contains PRODUCTION DATA information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

 **TEXAS  
INSTRUMENTS**

POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

Copyright © 2003, Texas Instruments Incorporated

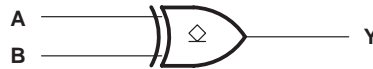
# SN54HC266, SN74HC266 QUADRUPLE 2-INPUT EXCLUSIVE-NOR GATES WITH OPEN-DRAIN OUTPUTS

SCLS135F – DECEMBER 1982 – REVISED AUGUST 2003

FUNCTION TABLE

INPUTS		OUTPUT
A	B	Y
L	L	H
L	H	L
H	L	L
H	H	H

logic diagram, each gate (positive logic)



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

Supply voltage range, $V_{CC}$	-0.5 V to 7 V
Input clamp current, $I_{IK}$ ( $V_I < 0$ or $V_I > V_{CC}$ ) (see Note 1)	$\pm 20$ mA
Output clamp current, $I_{OK}$ ( $V_O < 0$ or $V_O > V_{CC}$ ) (see Note 1)	$\pm 20$ mA
Continuous output current, $I_O$ ( $V_O = 0$ to $V_{CC}$ )	$\pm 25$ mA
Continuous current through $V_{CC}$ or GND	$\pm 50$ mA
Package thermal impedance, $\theta_{JA}$ (see Note 2): D package	86°C/W
N package	80°C/W
NS package	76°C/W
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. The input and output voltage ratings may be exceeded if the input and output current ratings are observed.  
2. The package thermal impedance is calculated in accordance with JESD 51-7.

recommended operating conditions (see Note 3)

		SN54HC266			SN74HC266			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
$V_{CC}$	Supply voltage	2	5	6	2	5	6	V
$V_{IH}$	High-level input voltage	$V_{CC} = 2$ V		1.5	1.5		V	
		$V_{CC} = 4.5$ V		3.15	3.15			
		$V_{CC} = 6$ V		4.2	4.2			
$V_{IL}$	Low-level input voltage	$V_{CC} = 2$ V			0.5		V	
		$V_{CC} = 4.5$ V			1.35			
		$V_{CC} = 6$ V			1.8			
$V_I$	Input voltage	0		$V_{CC}$	0		$V_{CC}$	V
$V_O$	Output voltage	0		$V_{CC}$	0		$V_{CC}$	V
$\Delta t/\Delta v$	Input transition rise/fall time	$V_{CC} = 2$ V			1000		ns	
		$V_{CC} = 4.5$ V			500			
		$V_{CC} = 6$ V			400			
$T_A$	Operating free-air temperature	-55		125	-40		85	°C

NOTE 3: All unused inputs of the device must be held at  $V_{CC}$  or GND to ensure proper device operation. Refer to the TI application report, *Implications of Slow or Floating CMOS Inputs*, literature number SCBA004.

PRODUCT PREVIEW information concerns products in the formative or design phase of development. Characteristic data and other specifications are design goals. Texas Instruments reserves the right to change or discontinue these products without notice.



POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

# SN54HC266, SN74HC266 QUADRUPLE 2-INPUT EXCLUSIVE-NOR GATES WITH OPEN-DRAIN OUTPUTS

SCLS135F – DECEMBER 1982 – REVISED AUGUST 2003

electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS	V <sub>CC</sub>	T <sub>A</sub> = 25°C			SN54HC266		SN74HC266		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
I <sub>OH</sub>	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> , V <sub>O</sub> = V <sub>CC</sub>	6 V		0.01	0.5		10		5	μA
V <sub>OL</sub>	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>	I <sub>OL</sub> = 20 μA	2 V	0.002	0.1		0.1		0.1	V
			4.5 V	0.001	0.1		0.1		0.1	
			6 V	0.001	0.1		0.1		0.1	
		I <sub>OL</sub> = 4 mA	4.5 V	0.17	0.26		0.4		0.33	
		I <sub>OL</sub> = 5.2 mA	6 V	0.15	0.26		0.4		0.33	
I <sub>I</sub>	V <sub>I</sub> = V <sub>CC</sub> or 0	6 V		±0.1	±100		±1000		±1000	nA
I <sub>CC</sub>	V <sub>I</sub> = V <sub>CC</sub> or 0, I <sub>O</sub> = 0	6 V			2		40		20	μA
C <sub>i</sub>		2 V to 6 V		3	10		10		10	pF

switching characteristics over recommended operating free-air temperature range, C<sub>L</sub> = 50 pF (unless otherwise noted) (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V <sub>CC</sub>	T <sub>A</sub> = 25°C			SN54HC266		SN74HC266		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t <sub>PLH</sub>	A or B	Y	2 V		60	125		190		155	ns
			4.5 V		13	25		38		31	
			6 V		10	23		32		26	
t <sub>PHL</sub>	A or B	Y	2 V		60	100		150		125	ns
			4.5 V		13	20		30		25	
			6 V		10	17		25		21	
t <sub>t</sub>		Y	2 V		28	75		110		95	ns
			4.5 V		8	15		22		19	
			6 V		6	13		19		16	

operating characteristics, T<sub>A</sub> = 25°C

PARAMETER	TEST CONDITIONS	TYP	UNIT
C <sub>pd</sub> Power dissipation capacitance per gate	No load	35	pF

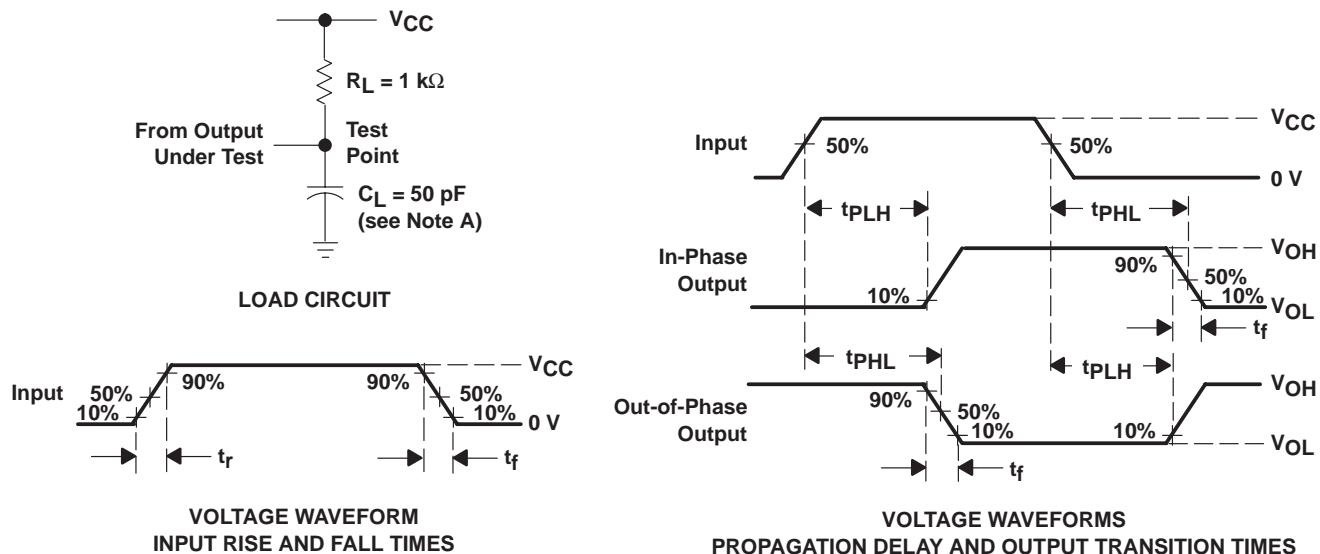
PRODUCT PREVIEW information concerns products in the formative or design phase of development. Characteristic data and other specifications are design goals. Texas Instruments reserves the right to change or discontinue these products without notice.



# SN54HC266, SN74HC266 QUADRUPLE 2-INPUT EXCLUSIVE-NOR GATES WITH OPEN-DRAIN OUTPUTS

SCLS135F – DECEMBER 1982 – REVISED AUGUST 2003

## PARAMETER MEASUREMENT INFORMATION



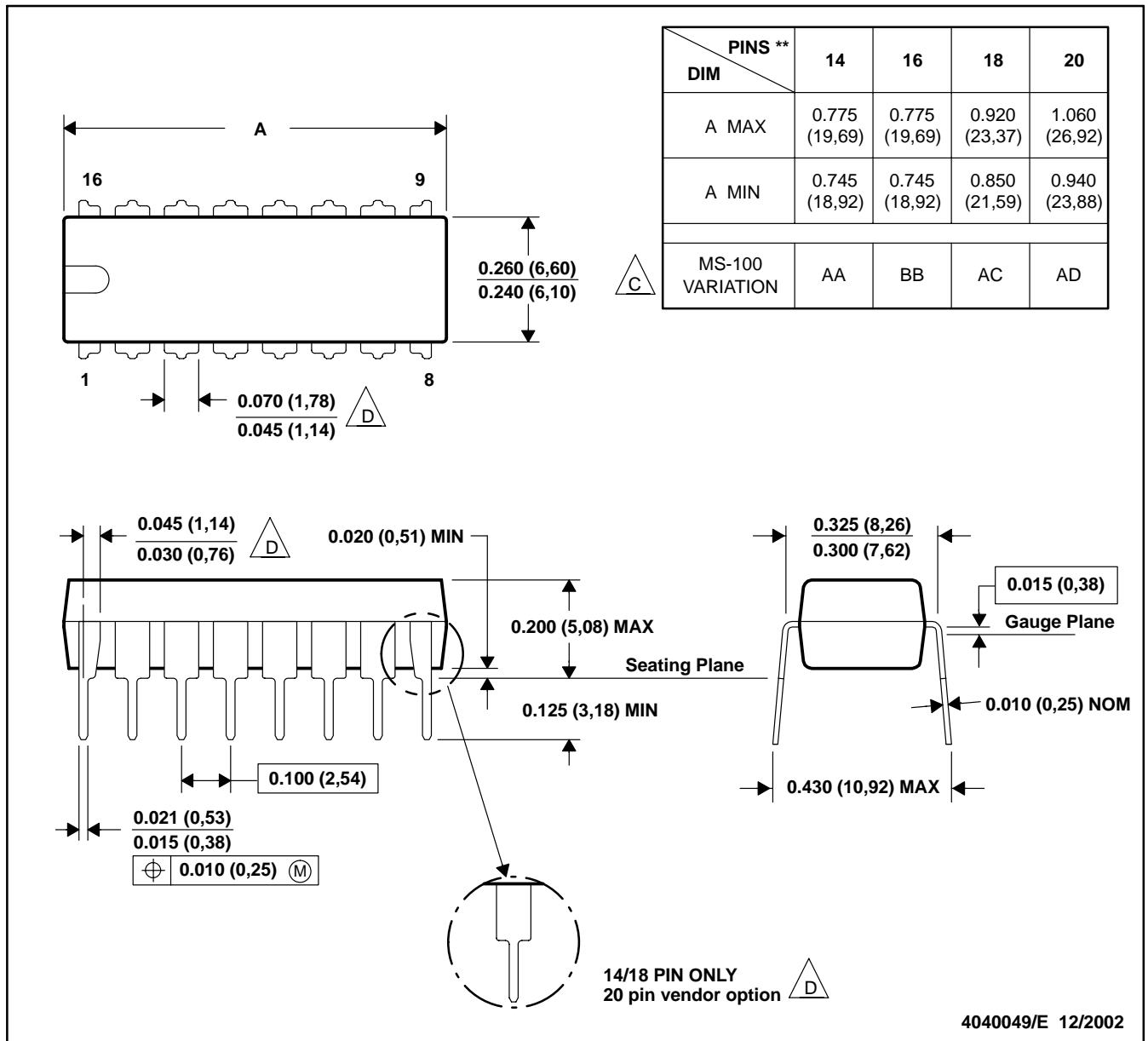
- NOTES: A.  $C_L$  includes probe and test-fixture capacitance.  
 B. Phase relationships between waveforms were chosen arbitrarily. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 1 \text{ MHz}$ ,  $Z_O = 50 \Omega$ ,  $t_r = 6 \text{ ns}$ ,  $t_f = 6 \text{ ns}$ .  
 C. The outputs are measured one at a time with one input transition per measurement.

Figure 1. Load Circuit and Voltage Waveforms

N (R-PDIP-T\*\*)

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



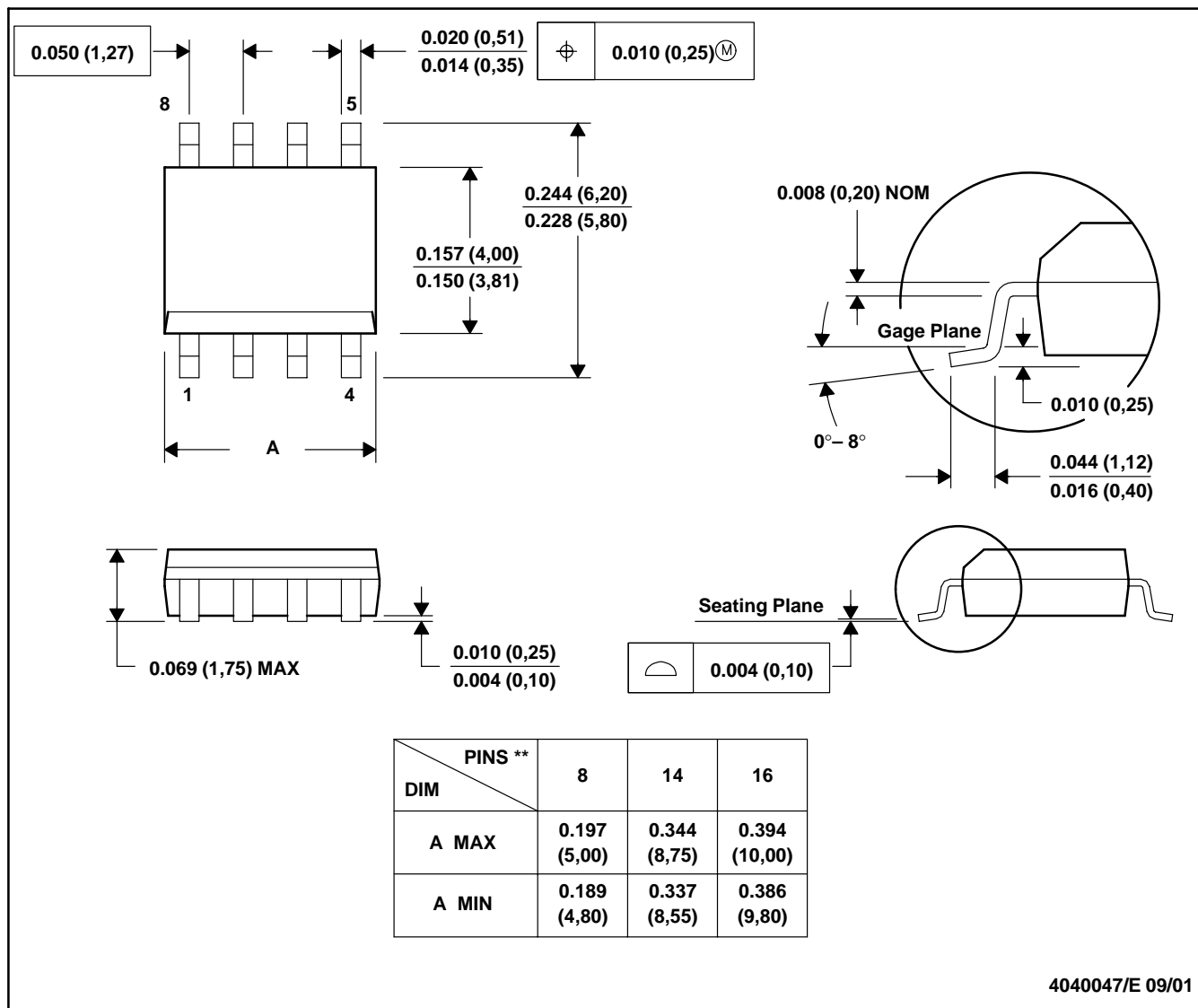
- NOTES: A. All linear dimensions are in inches (millimeters).  
 B. This drawing is subject to change without notice.  
 C Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).  
 D The 20 pin end lead shoulder width is a vendor option, either half or full width.

4040049/E 12/2002

D (R-PDSO-G\*\*)

PLASTIC SMALL-OUTLINE PACKAGE

8 PINS SHOWN



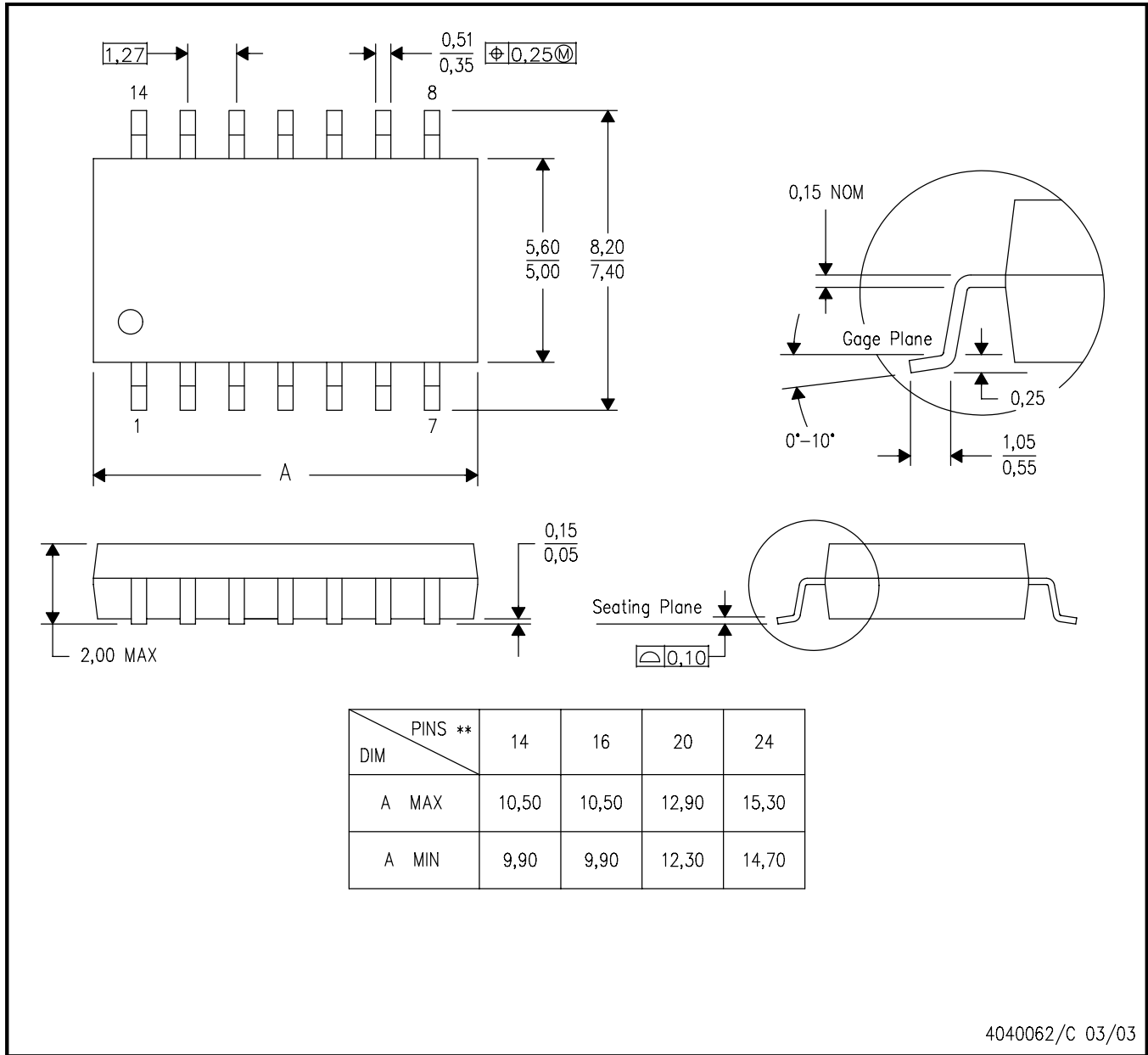
- NOTES: A. All linear dimensions are in inches (millimeters).  
 B. This drawing is subject to change without notice.  
 C. Body dimensions do not include mold flash or protrusion, not to exceed 0.006 (0,15).  
 D. Falls within JEDEC MS-012

# MECHANICAL DATA

NS (R-PDSO-G\*\*)

PLASTIC SMALL-OUTLINE PACKAGE

14-PINS SHOWN



- 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.

## IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

<b>Products</b>		<b>Applications</b>	
Amplifiers	<a href="http://amplifier.ti.com">amplifier.ti.com</a>	Audio	<a href="http://www.ti.com/audio">www.ti.com/audio</a>
Data Converters	<a href="http://dataconverter.ti.com">dataconverter.ti.com</a>	Automotive	<a href="http://www.ti.com/automotive">www.ti.com/automotive</a>
DSP	<a href="http://dsp.ti.com">dsp.ti.com</a>	Broadband	<a href="http://www.ti.com/broadband">www.ti.com/broadband</a>
Interface	<a href="http://interface.ti.com">interface.ti.com</a>	Digital Control	<a href="http://www.ti.com/digitalcontrol">www.ti.com/digitalcontrol</a>
Logic	<a href="http://logic.ti.com">logic.ti.com</a>	Military	<a href="http://www.ti.com/military">www.ti.com/military</a>
Power Mgmt	<a href="http://power.ti.com">power.ti.com</a>	Optical Networking	<a href="http://www.ti.com/opticalnetwork">www.ti.com/opticalnetwork</a>
Microcontrollers	<a href="http://microcontroller.ti.com">microcontroller.ti.com</a>	Security	<a href="http://www.ti.com/security">www.ti.com/security</a>
		Telephony	<a href="http://www.ti.com/telephony">www.ti.com/telephony</a>
		Video & Imaging	<a href="http://www.ti.com/video">www.ti.com/video</a>
		Wireless	<a href="http://www.ti.com/wireless">www.ti.com/wireless</a>

Mailing Address: Texas Instruments  
Post Office Box 655303 Dallas, Texas 75265

Copyright © 2003, Texas Instruments Incorporated