

SN5423, SN5425, SN7423, SN7425 DUAL 4-INPUT NOR GATES WITH STROBE

SDLS082

DECEMBER 1983—REVISED MARCH 1988

- Package Options Include Plastic and Ceramic DIPs and Ceramic Flat Packages
- Dependable Texas Instruments Quality and Reliability

description

These devices contain dual 4-input positive NOR gates with strobe. They perform the Boolean function:

$$Y = \overline{G(A+B+C+D)}$$

(with 1X and 1X̄ of '23 left open).

The SN5423 and the SN5425 are characterized for operation over the full military temperature range of -55°C to 125°C. The SN7423 and the SN7425 are characterized for operation from 0°C to 70°C.

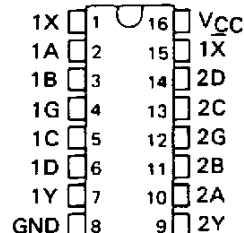
FUNCTION TABLE

INPUTS					OUTPUT
A	B	C	D	G	Y
H	X	X	X	H	L
X	H	X	X	H	L
X	X	H	X	H	L
X	X	X	H	H	L
L	L	L	L	X	H
X	X	X	X	L	H

Expander inputs are open,
H = high level, L = low level, X = irrelevant

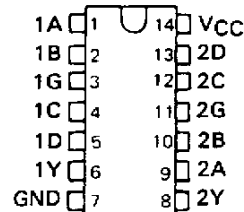
SN5423 . . . J OR W PACKAGE
SN7423 . . . N PACKAGE

(TOP VIEW)

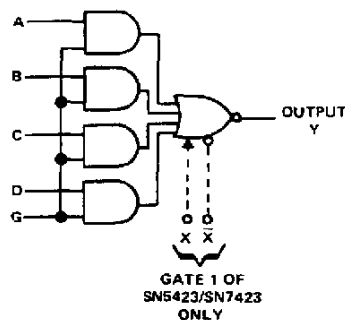


SN5425 . . . J OR W PACKAGE
SN7425 . . . N PACKAGE

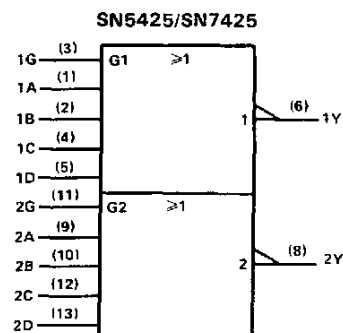
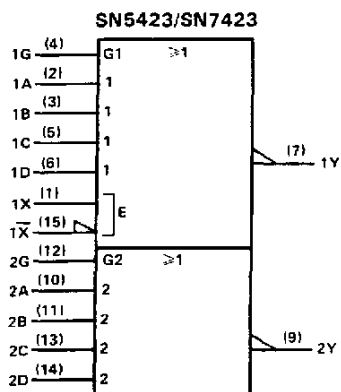
(TOP VIEW)



logic diagram



logic symbols†



†These symbols are in accordance with ANSI/IEEE Std. 91-1984 and IEC Publication 617-12. Pin numbers are for J, N, or W packages.

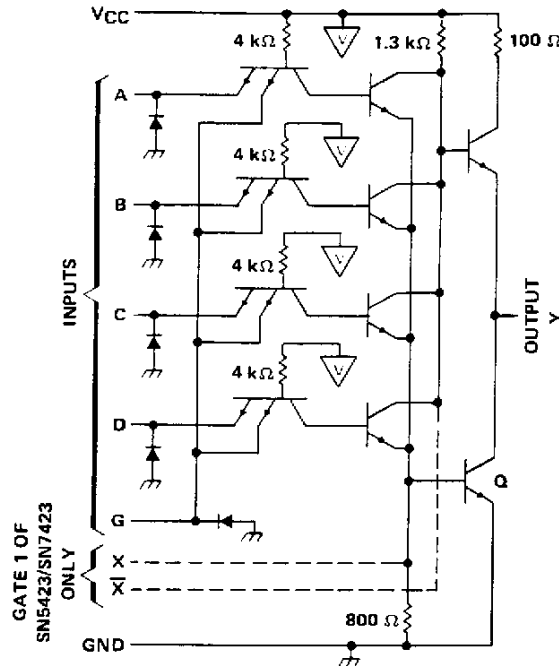
PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

TEXAS
INSTRUMENTS


POST OFFICE BOX 655012 • DALLAS, TEXAS 75265

SN5423, SN5425, SN7423, SNSN7425 DUAL 4-INPUT NOR GATES WITH STROBE

schematic (each gate)



- NOTES: A. Component values shown are nominal.
 B. Both expander inputs are used simultaneously for expanding.
 C. If expander is not used leave X and X' open.
 D. A total of four expander gates can be connected to the expander inputs.

 - VCC bus

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

Supply voltage V_{CC} (see Note 1)	7 V
Input voltage (see Note 1)	5.5 V
Intermitter voltage (see Note 2)	5.5 V
Operating free-air temperature range: SN5423, SN5425 Circuits	-55°C to 125°C
SN7423, SN7425 Circuits	0°C to 70°C
Storage temperature range	-65°C to 150°C

- NOTES: 1. Voltage values, except intermitter voltage, are with respect to network ground terminal.
 2. This is the voltage between two emitters of a multiple-emitter transistor.

recommended operating conditions

		'23, '25			UNIT
		MIN	NOM	MAX	
V_{CC} Supply voltage	54 Family	4.5	5	5.5	V
	74 Family	4.75	5	5.25	
V_{IH} High-level input voltage		2			V
V_{IL} Low-level input voltage		0.8			V
I_{OH} High-level output current		-0.8			mA
I_{OL} Low-level output current	54 Family	16			mA
	74 Family	16			
T_A Operating free-air temperature range	54 Family	-55	125		°C
	74 Family	0	70		

The '23 is designed for use with up to four '60 expanders.

TEXAS
INSTRUMENTS

POST OFFICE BOX 655012 • DALLAS, TEXAS 75265

SN5423, SN5425, SN7423, SN7425 DUAL 4-INPUT NOR GATES WITH STROBE

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

PARAMETER		TEST CONDITIONS†	MIN	TYP‡	MAX	UNIT	
V_I		$V_{CC} = \text{MIN}$, $I_I = -12 \text{ mA}$			-1.5	V	
V_{OH}		$V_{CC} = \text{MIN}$, $V_{IL} = 0.8 \text{ V}$, $I_{OH} = -0.8 \text{ mA}$	2.4	3.4		V	
V_{OL}		$V_{CC} = \text{MIN}$, $V_{IH} = 2 \text{ V}$, $I_{OL} = 16 \text{ mA}$		0.2	0.4	V	
I_I		$V_{CC} = \text{MAX}$, $V_I = 5.5 \text{ V}$			1	mA	
I_{IH}	data inputs	$V_{CC} = \text{MAX}$, $V_I = 2.4 \text{ V}$			40	μA	
	strobe inputs				160		
I_{IL}	data inputs	$V_{CC} = \text{MAX}$, $V_I = 0.4 \text{ V}$			-1.6	mA	
	strobe inputs				-6.4		
$I_{OS}\S$		$V_{CC} = \text{MAX}$	54 Family		-20	-55	mA
			74 Family		-18	-55	
I_{CCH}		$V_{CC} = \text{MAX}$, All inputs at 0 V			8	16	mA
I_{CCL}		$V_{CC} = \text{MAX}$, All inputs at 5 V			10	19	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type. Expander inputs X and \bar{X} are open.

‡ All typical values are at $V_{CC} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$.

§ Not more than one output should be shorted at a time.

electrical characteristics (SN5423 circuits) using expander inputs, $V_{CC} = 4.5 \text{ V}$, $T_A = -55^\circ\text{C}$

PARAMETER		TEST CONDITIONS	MIN	TYP†	MAX	UNIT
$I_{\bar{X}}$	Expander current	$V_{X\bar{X}} = 0.4 \text{ V}$, $I_{OL} = 16 \text{ mA}$			-3.5	mA
$V_{BE(Q)}$	Base-Emitter voltage of output transistor (Q)	$I_{OL} = 16 \text{ mA}$, $I_X + I_{\bar{X}} = 0.41 \text{ mA}$, $R_{X\bar{X}} = 0$			1.1	V
V_{OH}	High-level output voltage	$I_{OH} = -0.4 \text{ mA}$, $I_X = 0.15 \text{ mA}$, $I_{\bar{X}} = -0.15 \text{ mA}$	2.4	3.4		V
V_{OL}	Low-level output voltage	$I_{OL} = 16 \text{ mA}$, $I_X + I_{\bar{X}} = 0.3 \text{ mA}$, $R_{X\bar{X}} = 114 \Omega$		0.2	0.4	V

electrical characteristics (SN7423 circuits) using expander inputs, $V_{CC} = 4.75 \text{ V}$, $T_A = 0^\circ\text{C}$

PARAMETER		TEST CONDITIONS	MIN	TYP†	MAX	UNIT
$I_{\bar{X}}$	Expander current	$V_{X\bar{X}} = 0.4 \text{ V}$, $I_{OL} = 16 \text{ mA}$			-3.8	mA
$V_{BE(Q)}$	Base-Emitter voltage of output transistor (Q)	$I_{OL} = 16 \text{ mA}$, $I_X + I_{\bar{X}} = 0.62 \text{ mA}$, $R_{X\bar{X}} = 0$			1	V
V_{OH}	High-level output voltage	$I_{OH} = -0.4 \text{ mA}$, $I_X = 0.27 \text{ mA}$, $I_{\bar{X}} = -0.27 \text{ mA}$	2.4	3.4		V
V_{OL}	Low-level output voltage	$I_{OL} = 16 \text{ mA}$, $I_X + I_{\bar{X}} = 0.43 \text{ mA}$, $R_{X\bar{X}} = 130 \Omega$		0.2	0.4	V

† All typical values are at $V_{CC} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$.

switching characteristics, $V_{CC} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$, $N = 10$, (see note 3)

PARAMETER	TEST CONDITIONS		MIN	TYP	MAX	UNIT
t_{PLH}	$R_L = 400 \Omega$,	$C_L = 15 \text{ pF}$		13	22	ns
t_{PHL}	$R_L = 400 \Omega$,	$C_L = 15 \text{ pF}$		8	15	ns

NOTE 3: Switching characteristics of the SN5423 and SN7424 are tested with the expander pins open.

PACKAGING INFORMATION

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/Ball Finish	MSL Peak Temp ⁽³⁾
5962-9763601QEA	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
JM38510/00403BCA	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
JM38510/00403BCA	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SN5423J	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
SN5423J	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
SN5425J	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SN5425J	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SN7423N	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN7423N	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN7425N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
SN7425N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
SN7425N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN7425N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN7425NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
SN7425NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
SNJ5423J	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
SNJ5423J	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
SNJ5423W	OBSOLETE			16		TBD	Call TI	Call TI
SNJ5423W	OBSOLETE			16		TBD	Call TI	Call TI
SNJ5425J	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SNJ5425J	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SNJ5425W	ACTIVE	CFP	W	14	1	TBD	A42	N / A for Pkg Type
SNJ5425W	ACTIVE	CFP	W	14	1	TBD	A42	N / A for Pkg Type

⁽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.

Important Information and Disclaimer:The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

J (R-GDIP-T**)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



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)

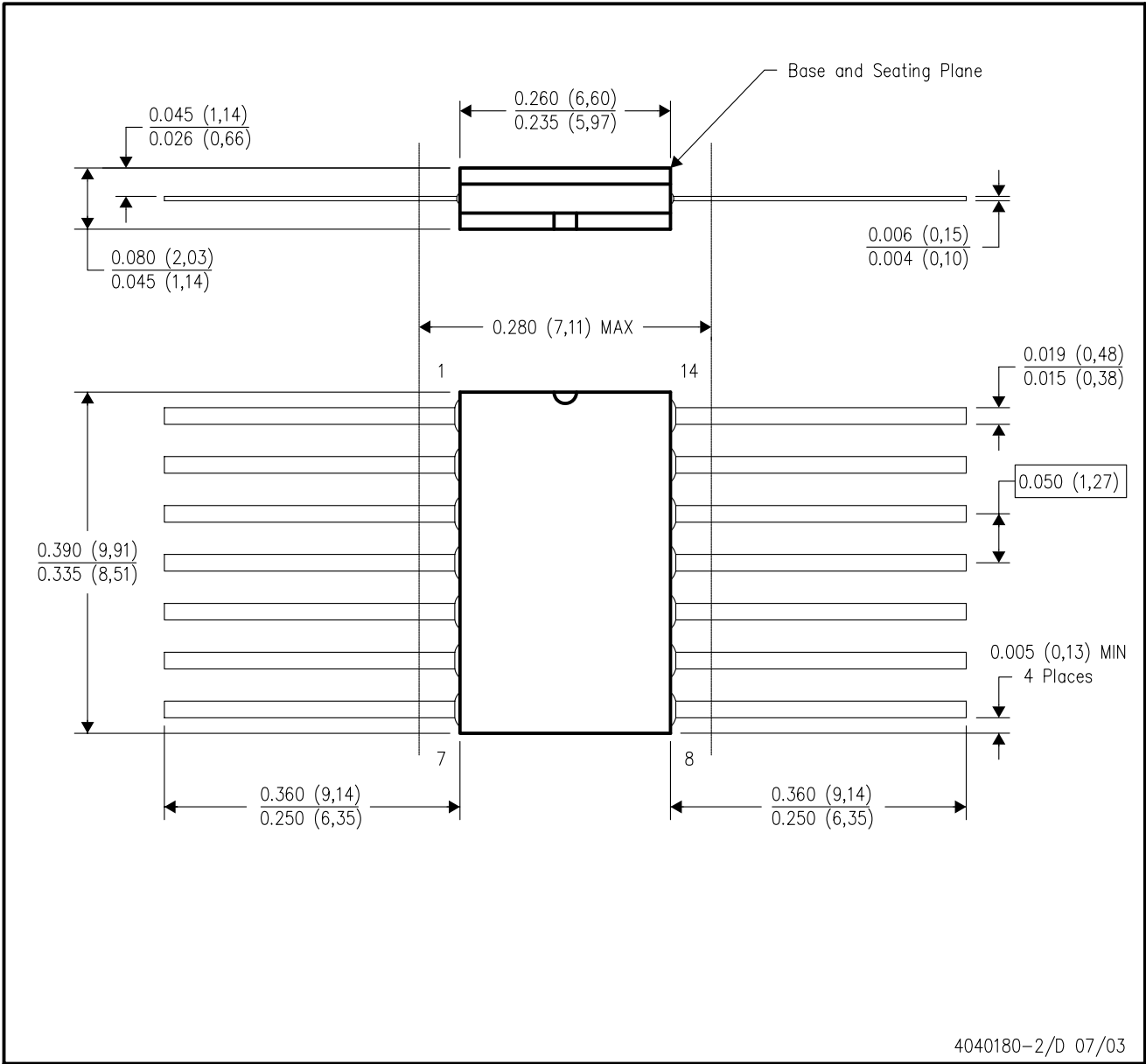


4040083/F 03/03

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

W (R-GDFP-F14)

CERAMIC DUAL FLATPACK



4040180-2/D 07/03

- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - B. This drawing is subject to change without notice.
 - C. This package can be hermetically sealed with a ceramic lid using glass frit.
 - D. Index point is provided on cap for terminal identification only.
 - E. Falls within MIL STD 1835 GDFP1-F14 and JEDEC MO-092AB

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.
 - 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.

PACKAGING INFORMATION

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/Ball Finish	MSL Peak Temp ⁽³⁾
5962-9763601QEA	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
JM38510/00403BCA	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
JM38510/00403BCA	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SN5425J	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SN5425J	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SN7423N	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN7423N	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN7425N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
SN7425N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
SN7425N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN7425N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN7425NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
SN7425NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
SNJ5423J	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
SNJ5423J	ACTIVE	CDIP	J	16	1	TBD	A42 SNPB	N / A for Pkg Type
SNJ5423W	OBSOLETE			16		TBD	Call TI	Call TI
SNJ5423W	OBSOLETE			16		TBD	Call TI	Call TI
SNJ5425J	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SNJ5425J	ACTIVE	CDIP	J	14	1	TBD	A42 SNPB	N / A for Pkg Type
SNJ5425W	ACTIVE	CFP	W	14	1	TBD	A42	N / A for Pkg Type
SNJ5425W	ACTIVE	CFP	W	14	1	TBD	A42	N / A for Pkg Type

⁽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.

Important Information and Disclaimer:The information provided on this page represents TI's knowledge and belief as of the date that it is

provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

J (R-GDIP-T**)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



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)



4040083/F 03/03

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

W (R-GDFP-F14)

CERAMIC DUAL FLATPACK



- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - B. This drawing is subject to change without notice.
 - C. This package can be hermetically sealed with a ceramic lid using glass frit.
 - D. Index point is provided on cap for terminal identification only.
 - E. Falls within MIL STD 1835 GDFP1-F14 and JEDEC MO-092AB

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.
 - 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.

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 TI 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. Information of third parties may be subject to additional restrictions.

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.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

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

Products

Amplifiers	amplifier.ti.com
Data Converters	dataconverter.ti.com
DLP® Products	www.dlp.com
DSP	dsp.ti.com
Clocks and Timers	www.ti.com/clocks
Interface	interface.ti.com
Logic	logic.ti.com
Power Mgmt	power.ti.com
Microcontrollers	microcontroller.ti.com
RFID	www.ti-rfid.com
RF/IF and ZigBee® Solutions	www.ti.com/lprf

Applications

Audio	www.ti.com/audio
Automotive	www.ti.com/automotive
Broadband	www.ti.com/broadband
Digital Control	www.ti.com/digitalcontrol
Medical	www.ti.com/medical
Military	www.ti.com/military
Optical Networking	www.ti.com/opticalnetwork
Security	www.ti.com/security
Telephony	www.ti.com/telephony
Video & Imaging	www.ti.com/video
Wireless	www.ti.com/wireless

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2009, Texas Instruments Incorporated