

# SN5430, SN54LS30, SN54S30 SN7430, SN74LS30, SN74S30 8-INPUT POSITIVE-NAND GATES

SDLS099 - DECEMBER 1983 - REVISED MARCH 1988

- Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers and Flat Packages, and Plastic and Ceramic DIPs
- Dependable Texas Instruments Quality and Reliability

## description

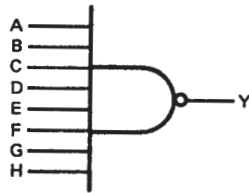
These devices contain a single 8-input NAND gate.

The SN5430, SN54LS30, and SN54S30 are characterized for operation over the full military range of -55°C to 125°C. The SN7430, SN74LS30, and SN74S30 are characterized for operation from 0°C to 70°C.

FUNCTION TABLE

INPUTS A THRU H	OUTPUT Y
All inputs H	L
One or more inputs L	H

## logic diagram

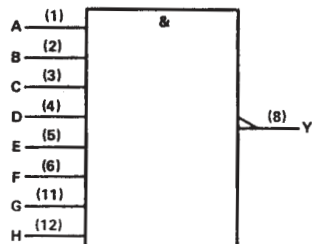


## positive logic

$$Y = \overline{A \cdot B \cdot C \cdot D \cdot E \cdot F \cdot G \cdot H} \quad \text{or}$$

$$Y = \overline{A} + \overline{B} + \overline{C} + \overline{D} + \overline{E} + \overline{F} + \overline{G} + \overline{H}$$

## logic symbol†

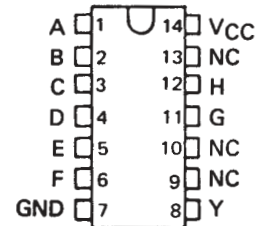


†This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

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

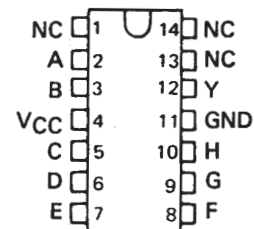
SN5430 . . . J PACKAGE  
SN54LS30, SN54S30 . . . J OR W PACKAGE  
SN7430 . . . N PACKAGE  
SN74LS30, SN74S30 . . . D OR N PACKAGE

(TOP VIEW)



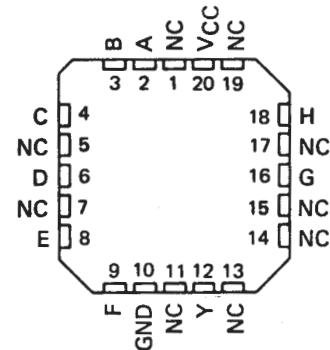
SN5430 . . . W PACKAGE

(TOP VIEW)



SN54LS30, SN54S30 . . . FK PACKAGE

(TOP VIEW)

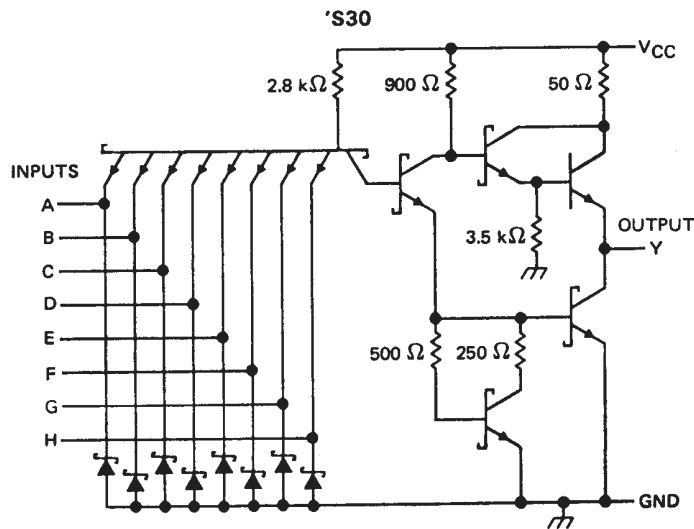
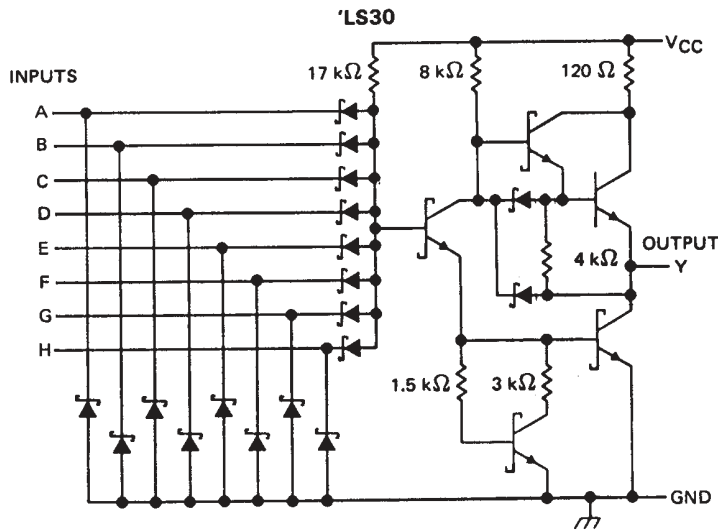
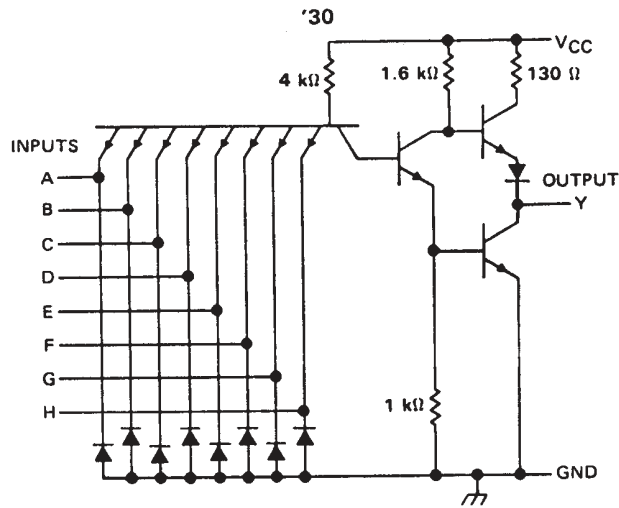


NC - No internal connection

**SN5430, SN54LS30, SN54S30  
SN7430, SN74LS30, SN74S30  
8-INPUT POSITIVE-NAND GATES**

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**schematics (each gate)**



Resistor values shown are nominal.

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

Supply voltage, $V_{CC}$ (see Note 1) .....	7 V
Input voltage .....	5.5 V
Operating free-air temperature range: SN5430 .....	–55 °C to 125 °C
SN7430 .....	0 °C to 70 °C
Storage temperature range .....	–65 °C to 150 °C

NOTE 1: Voltage values are with respect to network ground terminal.

**recommended operating conditions**

	SN5430			SN7430			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
$V_{CC}$ Supply voltage	4.5	5	5.5	4.75	5	5.25	V
$V_{IH}$ High-level input voltage	2			2			V
$V_{IL}$ Low-level input voltage			0.8			0.8	V
$I_{OH}$ High-level output current			–0.4			–0.4	mA
$I_{OL}$ Low-level output current			16			16	mA
$T_A$ Operating free-air temperature	–55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †	SN5430			SN7430			UNIT
		MIN	TYP ‡	MAX	MIN	TYP ‡	MAX	
$V_{IK}$	$V_{CC} = \text{MIN}, I_I = -12 \text{ mA}$			–1.5			–1.5	V
$V_{OH}$	$V_{CC} = \text{MIN}, V_{IL} = 0.8 \text{ V}, I_{OH} = -0.4 \text{ mA}$	2.4	3.4		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		0.2	0.4	V
$I_I$	$V_{CC} = \text{MAX}, V_I = 5.5 \text{ V}$			1			1	mA
$I_{IH}$	$V_{CC} = \text{MAX}, V_I = 2.4 \text{ V}$			40			40	µA
$I_{IL}$	$V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}$			–1.6			–1.6	mA
$I_{OS} §$	$V_{CC} = \text{MAX}$	–20		–55	–18		–55	mA
$I_{CCH}$	$V_{CC} = \text{MAX}, V_I = 0$		1	2		1	2	mA
$I_{CCL}$	$V_{CC} = \text{MAX}, V_I = 4.5 \text{ V}$		3	6		3	6	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ 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.

**switching characteristics,  $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$  (see note 2)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
$t_{PLH}$	Any	Y	$R_L = 400 \Omega, C_L = 15 \text{ pF}$		13	22	ns
$t_{PHL}$					8	15	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

**SN5430, SN54LS30, SN54S30  
SN7430, SN74LS30, SN74S30  
8-INPUT POSITIVE-NAND GATES**

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

Supply voltage, $V_{CC}$ (see Note 1) .....	7 V
Input voltage .....	7 V
Operating free-air temperature range: SN54LS30 .....	-55°C to 125°C
SN74LS30 .....	0°C to 70°C
Storage temperature range .....	-65°C to 150°C

NOTE 1: Voltage values are with respect to network ground terminal.

**recommended operating conditions**

	SN54LS30			SN74LS30			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
$V_{CC}$ Supply voltage	4.5	5	5.5	4.75	5	5.25	V
$V_{IH}$ High-level input voltage	2			2			V
$V_{IL}$ Low-level input voltage			0.7			0.8	V
$I_{OH}$ High-level output current			-0.4			-0.4	mA
$I_{OL}$ Low-level output current			4			8	mA
$T_A$ Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †	SN54LS30			SN74LS30			UNIT
		MIN	TYP‡	MAX	MIN	TYP‡	MAX	
$V_{IK}$	$V_{CC} = \text{MIN}, I_I = -18 \text{ mA}$			-1.5			-1.5	V
$V_{OH}$	$V_{CC} = \text{MIN}, V_{IL} = \text{MAX}, I_{OH} = -0.4 \text{ mA}$	2.5	3.4		2.7	3.4		V
$V_{OL}$	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, I_{OL} = 4 \text{ mA}$		0.25	0.4			0.4	V
	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, I_{OL} = 8 \text{ mA}$					0.25	0.5	
$I_I$	$V_{CC} = \text{MAX}, V_I = 7 \text{ V}$			0.1			0.1	mA
$I_{IH}$	$V_{CC} = \text{MAX}, V_I = 2.7 \text{ V}$			20			20	µA
$I_{IL}$	$V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}$			-0.4			-0.4	mA
$I_{OS}§$	$V_{CC} = \text{MAX}$	-20		-100	-20		-100	mA
$I_{CCH}$	$V_{CC} = \text{MAX}, V_I = 0$		0.35	0.5		0.35	0.5	mA
$I_{CCL}$	$V_{CC} = \text{MAX}, V_I = 4.5 \text{ V}$		0.6	1.1		0.6	1.1	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ 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, and the duration of the short-circuit should not exceed one second.

**switching characteristics,  $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$  (see note 2)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
$t_{PLH}$	Any	Y	$R_L = 2 \text{ k}\Omega, C_L = 15 \text{ pF}$		8	15	ns
$t_{PHL}$					13	20	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.



**SN5430, SN54LS30, SN54S30**  
**SN7430, SN74LS30, SN74S30**  
**8-INPUT POSITIVE-NAND GATES**  
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**absolute maximum ratings over operating free-air temperature range (unless otherwise noted)**

Supply voltage, $V_{CC}$ (see Note 1) .....	7 V
Input voltage .....	5.5 V
Operating free-air temperature range: SN54S30 .....	–55 °C to 125 °C
SN74S30 .....	0 °C to 70 °C
Storage temperature range .....	–65 °C to 150 °C

NOTE 1: Voltage values are with respect to network ground terminal.

**recommended operating conditions**

	SN54S30			SN74S30			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
$V_{CC}$ Supply voltage	4.5	5	5.5	4.75	5	5.25	V
$V_{IH}$ High-level input voltage	2			2			V
$V_{IL}$ Low-level input voltage			0.8			0.8	V
$I_{OH}$ High-level output current			–1			–1	mA
$I_{OL}$ Low-level output current			20			20	mA
$T_A$ Operating free-air temperature	–55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †	SN54S30			SN74S30			UNIT
		MIN	TYP ‡	MAX	MIN	TYP ‡	MAX	
$V_{IK}$	$V_{CC} = \text{MIN}, I_I = -18 \text{ mA}$			–1.2			–1.2	V
$V_{OH}$	$V_{CC} = \text{MIN}, V_{IL} = 0.8 \text{ V}, I_{OH} = -1 \text{ mA}$	2.5	3.4		2.7	3.4		V
$V_{OL}$	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, I_{OL} = 20 \text{ mA}$			0.5			0.5	V
$I_I$	$V_{CC} = \text{MAX}, V_I = 5.5 \text{ V}$			1			1	mA
$I_{IH}$	$V_{CC} = \text{MAX}, V_I = 2.7 \text{ V}$			50			50	µA
$I_{IL}$	$V_{CC} = \text{MAX}, V_I = 0.5 \text{ V}$			–2			–2	mA
$I_{OS} §$	$V_{CC} = \text{MAX}$	–40		–100	–40		–100	mA
$I_{CCH}$	$V_{CC} = \text{MAX}, V_I = 0$		3	5		3	5	mA
$I_{CCL}$	$V_{CC} = \text{MAX}, V_I = 4.5 \text{ V}$		5.5	10		5.5	10	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ 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, and the duration of the short-circuit should not exceed one second.

**switching characteristics,  $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$  (see note 2)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
$t_{PLH}$	Any	Y	$R_L = 280 \Omega, C_L = 15 \text{ pF}$		4	6	ns
$t_{PHL}$					4.5	7	ns
$t_{PLH}$			$R_L = 280 \Omega, C_L = 50 \text{ pF}$		5.5		ns
$t_{PHL}$					6.5		ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.



**PACKAGING INFORMATION**

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
5962-9679201QCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9679201QC A SNJ54S30J	<a href="#">Samples</a>
5962-9679201QDA	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9679201QD A SNJ54S30W	<a href="#">Samples</a>
5962-9679201QDA	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9679201QD A SNJ54S30W	<a href="#">Samples</a>
JM38510/30009B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	JM38510/ 30009B2A	<a href="#">Samples</a>
JM38510/30009B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	JM38510/ 30009B2A	<a href="#">Samples</a>
JM38510/30009BCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 30009BCA	<a href="#">Samples</a>
JM38510/30009BCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 30009BCA	<a href="#">Samples</a>
JM38510/30009BDA	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 30009BDA	<a href="#">Samples</a>
JM38510/30009BDA	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 30009BDA	<a href="#">Samples</a>
M38510/30009B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	JM38510/ 30009B2A	<a href="#">Samples</a>
M38510/30009B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	JM38510/ 30009B2A	<a href="#">Samples</a>
M38510/30009BCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 30009BCA	<a href="#">Samples</a>
M38510/30009BCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 30009BCA	<a href="#">Samples</a>
M38510/30009BDA	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 30009BDA	<a href="#">Samples</a>
M38510/30009BDA	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 30009BDA	<a href="#">Samples</a>
SN5430J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SN5430J	<a href="#">Samples</a>

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
SN5430J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SN5430J	<a href="#">Samples</a>
SN54LS30J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SN54LS30J	<a href="#">Samples</a>
SN54LS30J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SN54LS30J	<a href="#">Samples</a>
SN54S30J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SN54S30J	<a href="#">Samples</a>
SN54S30J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SN54S30J	<a href="#">Samples</a>
SN74LS30D	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS30	<a href="#">Samples</a>
SN74LS30D	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS30	<a href="#">Samples</a>
SN74LS30DR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS30	<a href="#">Samples</a>
SN74LS30DR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS30	<a href="#">Samples</a>
SN74LS30N	ACTIVE	PDIP	N	14	25	Green (RoHS & no Sb/Br)	NIPDAU	N / A for Pkg Type	0 to 70	SN74LS30N	<a href="#">Samples</a>
SN74LS30N	ACTIVE	PDIP	N	14	25	Green (RoHS & no Sb/Br)	NIPDAU	N / A for Pkg Type	0 to 70	SN74LS30N	<a href="#">Samples</a>
SN74LS30NE4	ACTIVE	PDIP	N	14	25	Green (RoHS & no Sb/Br)	NIPDAU	N / A for Pkg Type	0 to 70	SN74LS30N	<a href="#">Samples</a>
SN74LS30NE4	ACTIVE	PDIP	N	14	25	Green (RoHS & no Sb/Br)	NIPDAU	N / A for Pkg Type	0 to 70	SN74LS30N	<a href="#">Samples</a>
SN74LS30NSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	74LS30	<a href="#">Samples</a>
SN74LS30NSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	74LS30	<a href="#">Samples</a>
SNJ5430J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ5430J	<a href="#">Samples</a>
SNJ5430J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ5430J	<a href="#">Samples</a>
SNJ5430W	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ5430W	<a href="#">Samples</a>
SNJ5430W	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ5430W	<a href="#">Samples</a>

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
SNJ54LS30FK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	SNJ54LS30FK	<a href="#">Samples</a>
SNJ54LS30FK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	SNJ54LS30FK	<a href="#">Samples</a>
SNJ54LS30J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ54LS30J	<a href="#">Samples</a>
SNJ54LS30J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ54LS30J	<a href="#">Samples</a>
SNJ54LS30W	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ54LS30W	<a href="#">Samples</a>
SNJ54LS30W	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ54LS30W	<a href="#">Samples</a>
SNJ54S30J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9679201QC A SNJ54S30J	<a href="#">Samples</a>
SNJ54S30J	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9679201QC A SNJ54S30J	<a href="#">Samples</a>
SNJ54S30W	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9679201QD A SNJ54S30W	<a href="#">Samples</a>
SNJ54S30W	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9679201QD A SNJ54S30W	<a href="#">Samples</a>

(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.

**OBSELETE:** TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

**RoHS Exempt:** TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

**Green:** TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.



- (3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.
- (4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.
- (5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "-" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.
- (6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

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**OTHER QUALIFIED VERSIONS OF SN54LS30, SN74LS30 :**

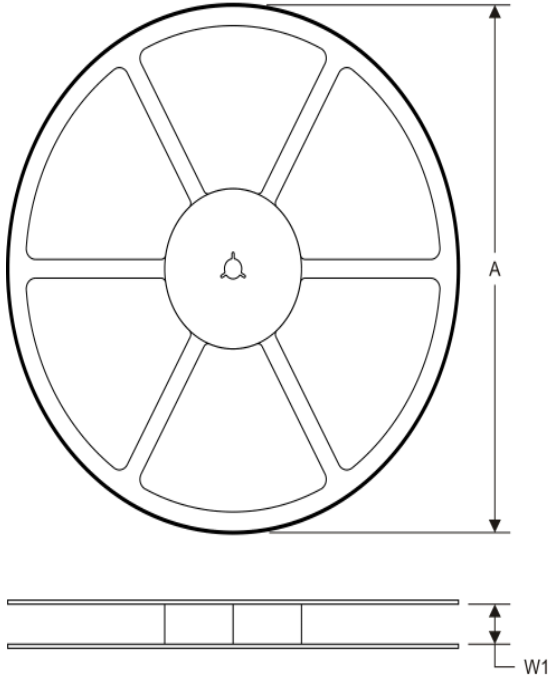
- Catalog: [SN74LS30](#)
- Military: [SN54LS30](#)

NOTE: Qualified Version Definitions:

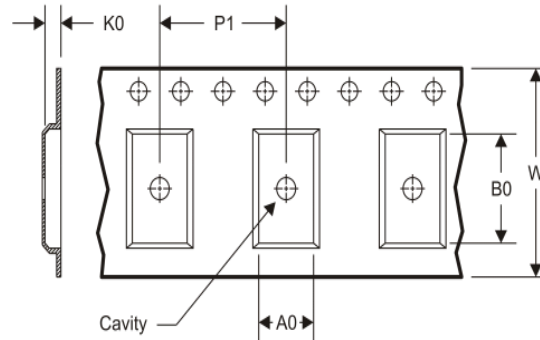
- Catalog - TI's standard catalog product
- Military - QML certified for Military and Defense Applications

**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

**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
SN74LS30DR	SOIC	D	14	2500	330.0	16.4	6.5	9.0	2.1	8.0	16.0	Q1
SN74LS30NSR	SO	NS	14	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1

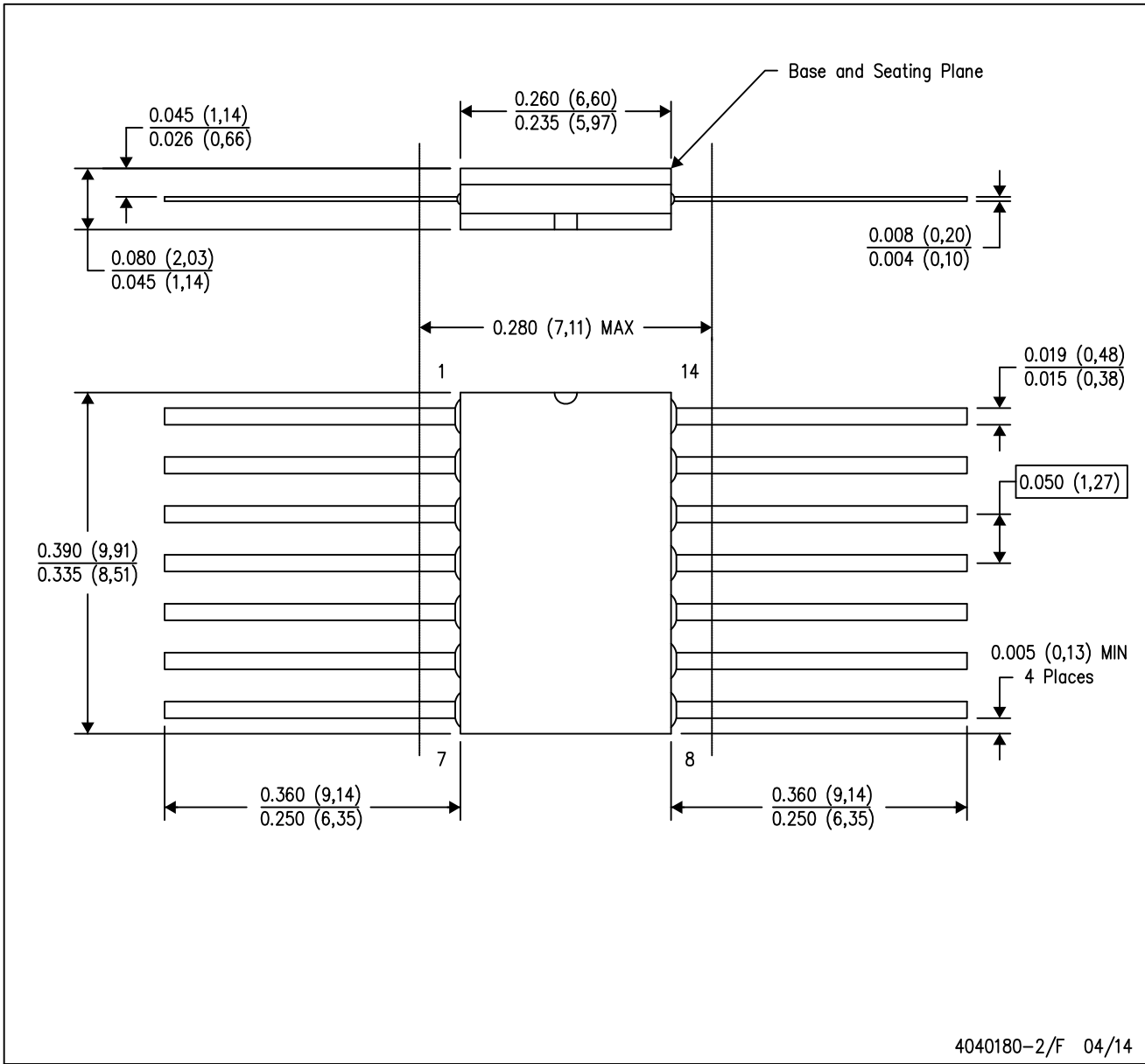
**TAPE AND REEL BOX DIMENSIONS**


\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74LS30DR	SOIC	D	14	2500	367.0	367.0	38.0
SN74LS30NSR	SO	NS	14	2000	367.0	367.0	38.0

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

J 14

**GENERIC PACKAGE VIEW**  
**CDIP - 5.08 mm max height**  
CERAMIC DUAL IN LINE PACKAGE



Images above are just a representation of the package family, actual package may vary.  
Refer to the product data sheet for package details.

4040083-5/G

J0014A



# PACKAGE OUTLINE

CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE



4214771/A 05/2017

**NOTES:**

1. All controlling linear dimensions are in inches. Dimensions in brackets are in millimeters. Any dimension in brackets or parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This package is hermetically sealed with a ceramic lid using glass frit.
4. Index point is provided on cap for terminal identification only and on press ceramic glass frit seal only.
5. Falls within MIL-STD-1835 and GDIP1-T14.

# EXAMPLE BOARD LAYOUT

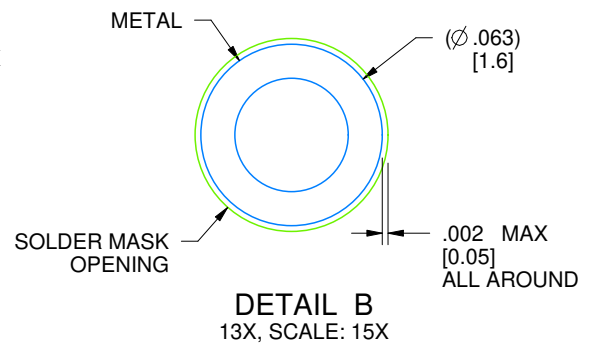
J0014A

CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE



LAND PATTERN EXAMPLE  
NON-SOLDER MASK DEFINED  
SCALE: 5X

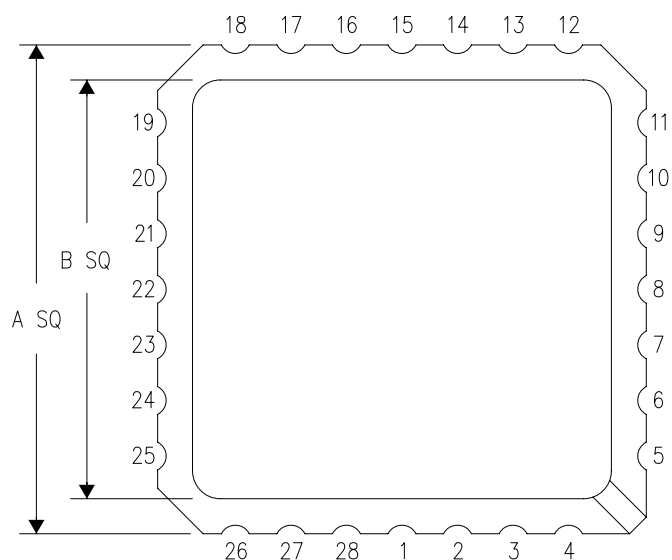


4214771/A 05/2017

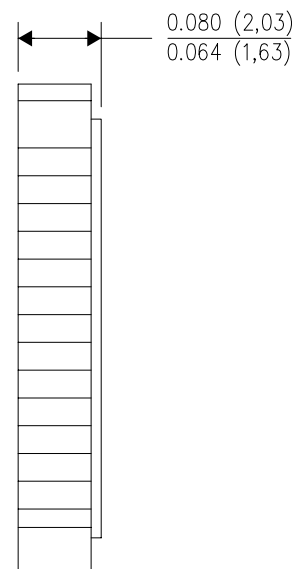
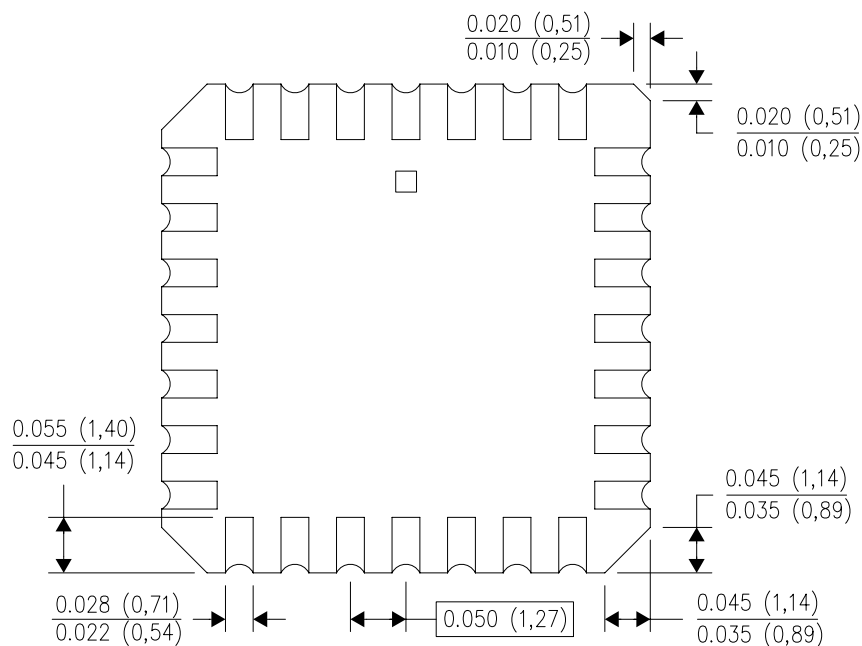
FK (S-CQCC-N\*\*)

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	0.740 (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 01/11

- NOTES:
- All linear dimensions are in inches (millimeters).
  - This drawing is subject to change without notice.
  - This package can be hermetically sealed with a metal lid.
  - Falls within JEDEC MS-004



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

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN

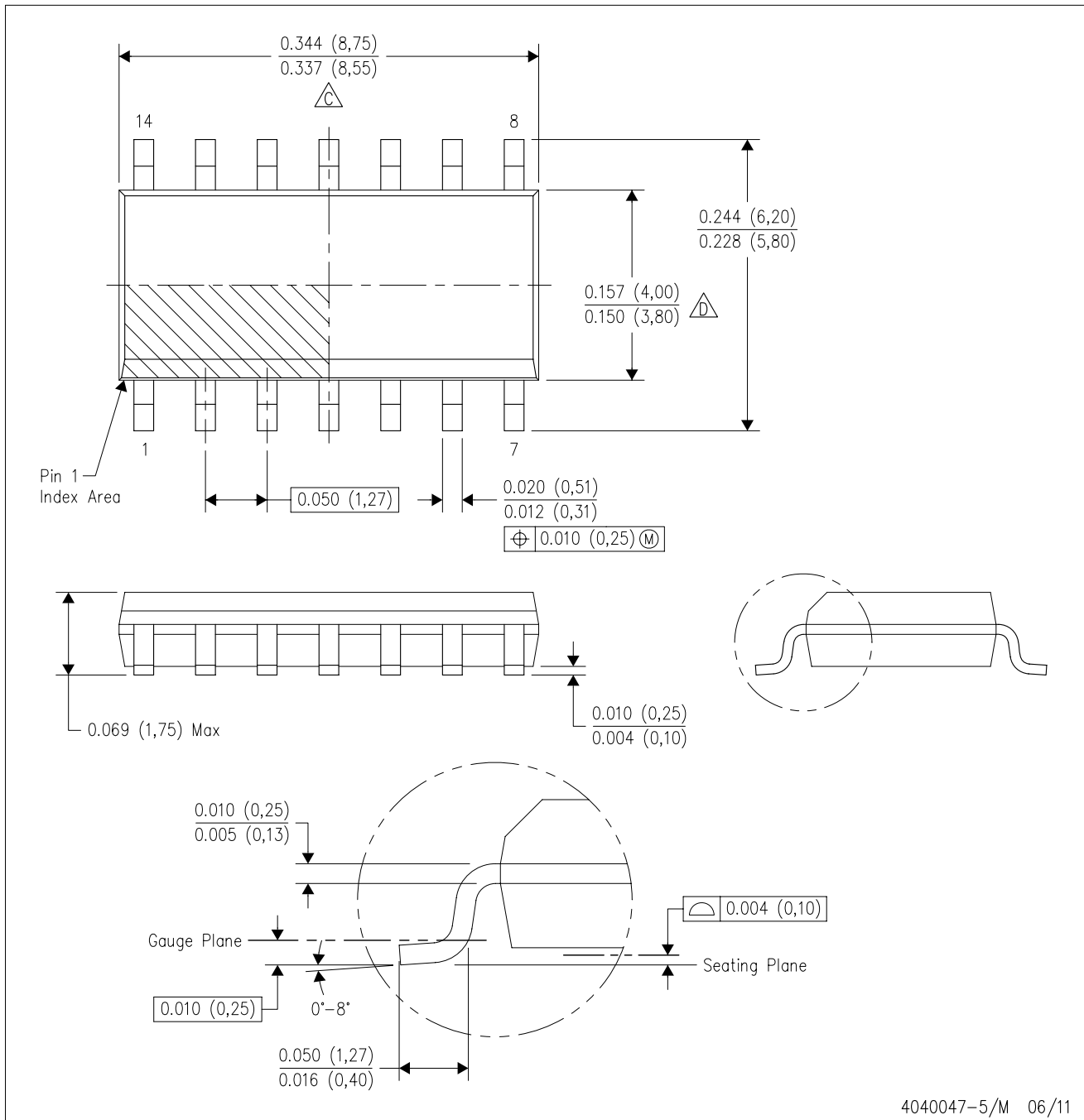


- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - $\triangle C$  Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
  - $\triangle D$  The 20 pin end lead shoulder width is a vendor option, either half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

4040049/E 12/2002

D (R-PDSO-G14)

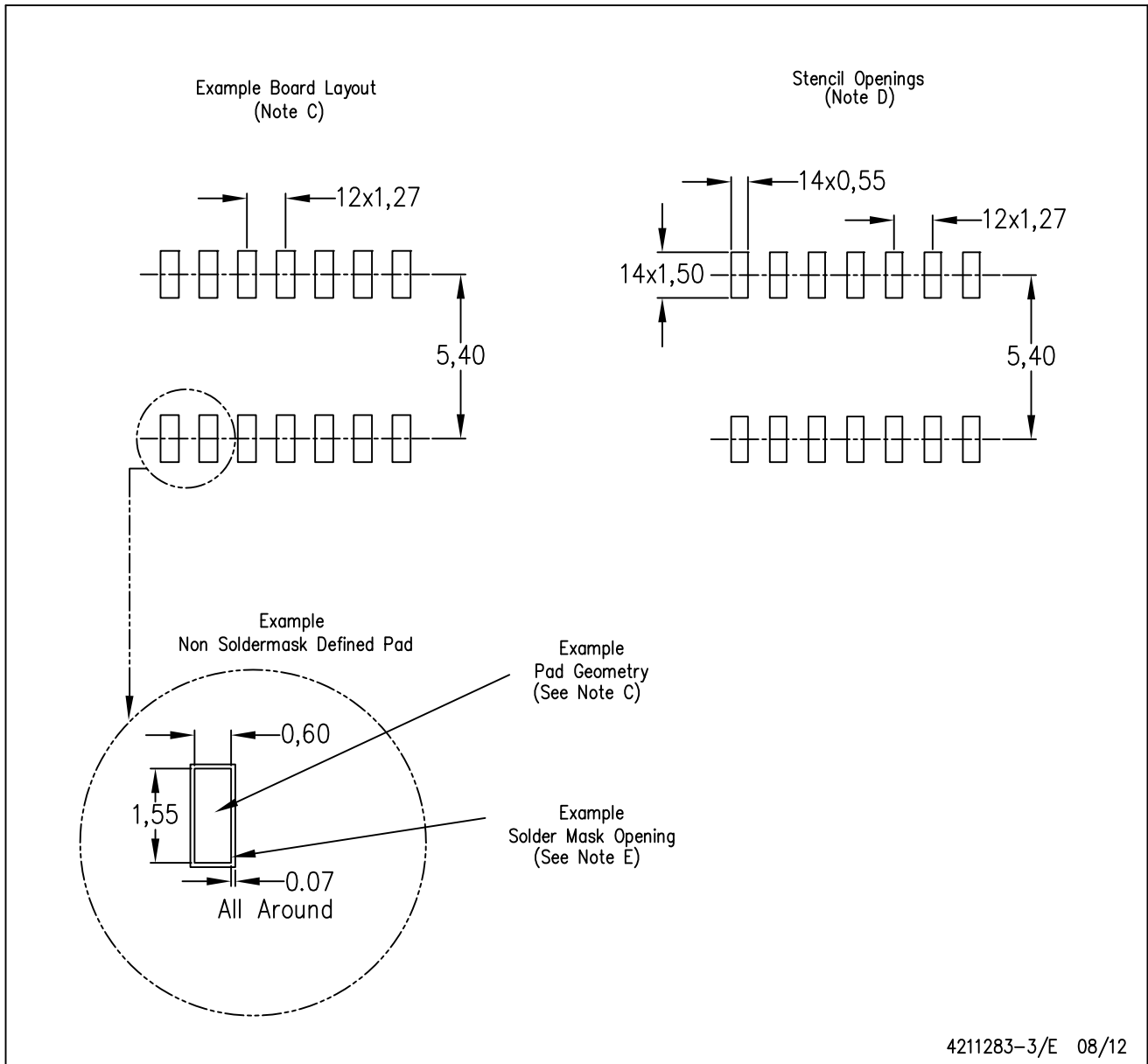
PLASTIC SMALL OUTLINE



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - $\triangle C$  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.
  - $\triangle D$  Body width does not include interlead flash. Interlead flash shall not exceed 0.017 (0,43) each side.
  - E. Reference JEDEC MS-012 variation AB.

D (R-PDSO-G14)

PLASTIC SMALL OUTLINE



- NOTES:
- All linear dimensions are in millimeters.
  - This drawing is subject to change without notice.
  - Publication IPC-7351 is recommended for alternate designs.
  - Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
  - Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.

# 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.

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