

# SN54ALS257A, SN54ALS258A, SN74ALS257A, SN74ALS258A, SN74AS257, SN74AS258 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MUXES WITH 3-STATE OUTPUTS

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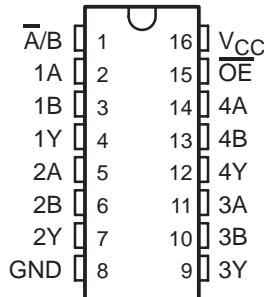
- 3-State Outputs Interface Directly With System Bus
- Provide Bus Interface From Multiple Sources in High-Performance Systems
- Package Options Include Plastic Small-Outline (D) Packages, Ceramic Chip Carriers (FK), and Standard Plastic (N) and Ceramic (J) 300-mil DIPs

## description

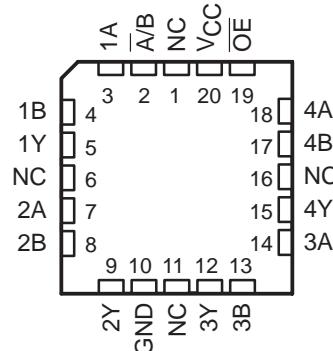
These data selectors/multiplexers are designed to multiplex signals from 4-bit data sources to 4-output data lines in bus-organized systems. The 3-state outputs do not load the data lines when the output-enable ( $\overline{OE}$ ) input is at a high logic level.

The SN54ALS257A and SN54ALS258A are characterized for operation over the full military temperature range of  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ . The SN74ALS257A, SN74ALS258A, SN74AS257, and SN74AS258 are characterized for operation from  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ .

SN54ALS257A, SN54ALS258A . . . J PACKAGE  
SN74ALS257A, SN74ALS258A, SN74AS257,  
SN74AS258 . . . D OR N PACKAGE  
(TOP VIEW)



SN54ALS257A, SN54ALS258A . . . FK PACKAGE  
(TOP VIEW)



NC – No internal connection

FUNCTION TABLE

INPUTS			OUTPUT Y		
$\overline{OE}$	$\overline{A/B}$	DATA		SN54ALS257A	SN54ALS258A
		A	B	SN74ALS257A	SN74ALS258A
H	X	X	X	Z	Z
L	L	L	X	L	H
L	L	H	X	H	L
L	H	X	L	L	H
L	H	X	H	H	L



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PRODUCTION DATA information is 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.

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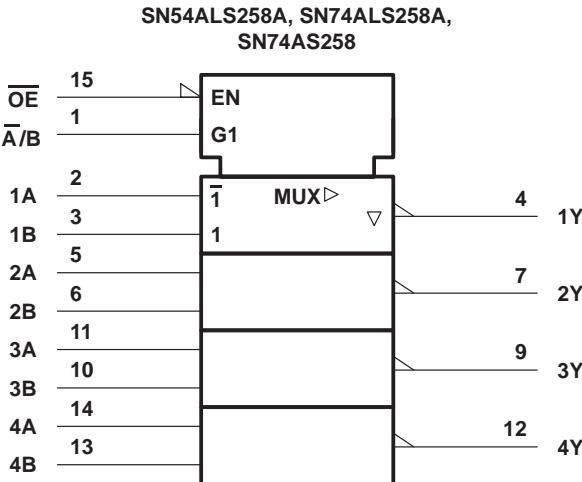
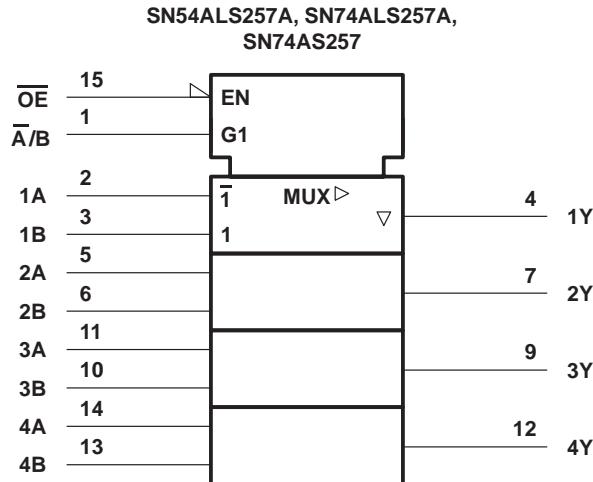


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**SN54ALS257A, SN54ALS258A, SN74ALS257A, SN74ALS258A, SN74AS257, SN74AS258**  
**QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MUXES**  
**WITH 3-STATE OUTPUTS**

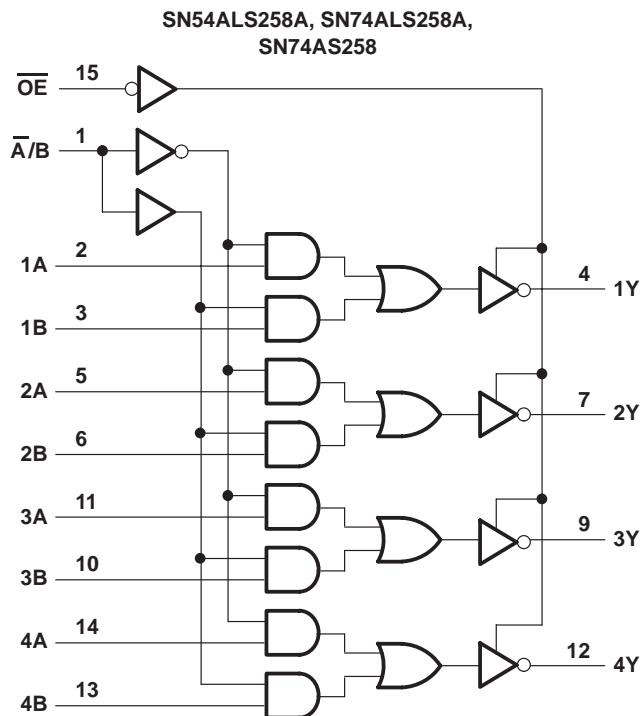
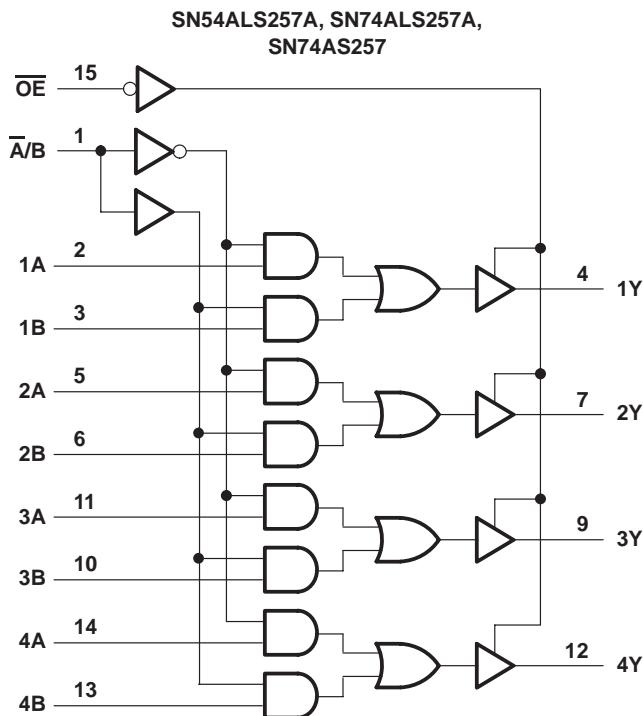
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**logic symbols<sup>†</sup>**



<sup>†</sup> These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.  
Pin numbers shown are for the D, J, and N packages.

**logic diagrams (positive logic)**



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

**SN54ALS257A, SN54ALS258A, SN74ALS257A, SN74ALS258A, SN74AS257, SN74AS258  
QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS  
WITH 3-STATE OUTPUTS**

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

Supply voltage, $V_{CC}$	7 V
Input voltage, $V_I$	7 V
Voltage applied to a disabled 3-state output	5.5 V
Maximum power dissipation at $T_A = 55^\circ\text{C}$ (in still air) (see Note 1):	
D package	1.3 W
N package	1.1 W
Operating free-air temperature range, $T_A$ :	
SN54ALS257A, SN54ALS258A	-55°C to 125°C
SN74ALS257A, SN74ALS258A	0°C to 70°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.

NOTE 1: The maximum package power dissipation is calculated using a junction temperature of 150°C and a board trace length of 750 mils, except for the N package, which has a trace length of zero.

### **recommended operating conditions**

		SN54ALS257A SN54ALS258A			SN74ALS257A SN74ALS258A			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V <sub>CC</sub>	Supply voltage	4.5	5	5.5	4.5	5	5.5	V
V <sub>IH</sub>	High-level input voltage		2			2		V
V <sub>IL</sub>	Low-level input voltage			0.7			0.8	V
I <sub>OH</sub>	High-level output current			-1			-2.6	mA
I <sub>OL</sub>	Low-level output current			12			24	mA
T <sub>A</sub>	Operating free-air temperature	-55		125	0		70	°C

**SN54ALS257A, SN54ALS258A, SN74ALS257A, SN74ALS258A, SN74AS257, SN74AS258**  
**QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MUXES**  
**WITH 3-STATE OUTPUTS**

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

PARAMETER	TEST CONDITIONS	SN54ALS257A SN54ALS258A			SN74ALS257A SN74ALS258A			UNIT
		MIN	TYP†	MAX	MIN	TYP†	MAX	
V <sub>IK</sub>	V <sub>CC</sub> = 4.5 V, I <sub>I</sub> = -18 mA		-1.5			-1.5		V
V <sub>OH</sub>	V <sub>CC</sub> = 4.5 V to 5.5 V, I <sub>OH</sub> = -0.4 mA	V <sub>CC</sub> -2			V <sub>CC</sub> -2			V
	V <sub>CC</sub> = 4.5 V	I <sub>OH</sub> = -1 mA	2.4	3.3				
		I <sub>OH</sub> = -2.6 mA			2.4	3.2		
V <sub>OH</sub>	V <sub>CC</sub> = 4.5 V	I <sub>OL</sub> = 12 mA	0.25	0.4	0.25	0.4		V
		I <sub>OL</sub> = 24 mA			0.35	0.5		
I <sub>OZH</sub>	V <sub>CC</sub> = 5.5 V, V <sub>O</sub> = 2.7 V		20			20		µA
I <sub>OZL</sub>	V <sub>CC</sub> = 5.5 V, V <sub>O</sub> = 0.4 V		-20			-20		µA
I <sub>I</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 7 V		0.1			0.1		mA
I <sub>IH</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 2.7 V		20			20		µA
I <sub>IL</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 0.4 V		-0.1			-0.1		mA
I <sub>O‡</sub>	V <sub>CC</sub> = 5.5 V, V <sub>O</sub> = 2.25 V	-20	-112	-30	-112			mA
I <sub>CC</sub>	SN54ALS257A, SN74ALS257A	Outputs high	3	8	3	6		mA
		Outputs low	8	12	8	12		
		Outputs disabled	9	14	9	14		
	SN54ALS258A, SN74ALS258A	Outputs high	2.5	5	2.5	4		
		Outputs low	7	11	7	11		
		Outputs disabled	8	13	8	13		

† All typical values are at V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C.

‡ The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I<sub>OS</sub>.

**switching characteristics (see Figure 1)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V <sub>CC</sub> = 4.5 V to 5.5 V, C <sub>L</sub> = 50 pF, R <sub>1</sub> = 500 Ω, R <sub>2</sub> = 500 Ω, T <sub>A</sub> = MIN to MAX§				UNIT	
			SN54ALS257A		SN74ALS257A			
			MIN	MAX	MIN	MAX		
t <sub>PLH</sub>	A or B	Any Y	2	12	2	10	ns	
t <sub>PHL</sub>			2	14	2	12		
t <sub>PLH</sub>	A/B	Any Y	4	21	6	18	ns	
t <sub>PHL</sub>			6	25	6	22		
t <sub>PZH</sub>	OE	Any Y	3	20	4	16	ns	
t <sub>PZL</sub>			4	22	5	18		
t <sub>PHZ</sub>	OE	Any Y	2	12	2	10	ns	
t <sub>PLZ</sub>			2	35	4	15		

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



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**QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MUXES**  
**WITH 3-STATE OUTPUTS**

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**switching characteristics (see Figure 1)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5\text{ V to }5.5\text{ V}$ , $C_L = 50\text{ pF}$ , $R1 = 500\text{ }\Omega$ , $R2 = 500\text{ }\Omega$ , $T_A = \text{MIN to MAX}^{\dagger}$				UNIT	
			SN54ALS258A		SN74ALS258A			
			MIN	MAX	MIN	MAX		
$t_{PLH}$	A or B	Any Y	1	12	2	8	ns	
$t_{PHL}$			2	9	2	7		
$t_{PLH}$	A/B	Any Y	4	28	5	25	ns	
$t_{PHL}$			5	25	6	20		
$t_{PZH}$	$\overline{OE}$	Any Y	3	20	4	18	ns	
$t_{PZL}$			5	21	5	18		
$t_{PHZ}$	$\overline{OE}$	Any Y	2	12	2	10	ns	
$t_{PLZ}$			3	37	4	18		

<sup>†</sup> For conditions shown MIN or MAX, use the appropriate value specified under recommended operating conditions.

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

Supply voltage, $V_{CC}$ .....	7 V
Input voltage, $V_I$ .....	7 V
Voltage applied to a disabled 3-state output .....	5.5 V
Maximum power dissipation at $T_A = 55^\circ\text{C}$ (in still air) (see Note 1): D package .....	1.3 W
N package .....	1.1 W
Operating free-air temperature range, $T_A$ : SN74AS257, SN74AS258 .....	0°C to 70°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.

NOTE 1: The maximum package power dissipation is calculated using a junction temperature of 150°C and a board trace length of 750 mils, except for the N package, which has a trace length of zero.

**recommended operating conditions**

		SN74AS257 SN74AS258			UNIT
		MIN	NOM	MAX	
$V_{CC}$	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
$I_{OH}$	High-level output current			-15	mA
$I_{OL}$	Low-level output current			48	mA
$T_A$	Operating free-air temperature	0	70		°C



**SN54ALS257A, SN54ALS258A, SN74ALS257A, SN74ALS258A, SN74AS257, SN74AS258  
QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MUXES  
WITH 3-STATE OUTPUTS**

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

PARAMETER	TEST CONDITIONS	SN74AS257 SN74AS258			UNIT
		MIN	TYP†	MAX	
$V_{IK}$	$V_{CC} = 4.5 \text{ V}$ , $I_I = -18 \text{ mA}$			-1.2	V
$V_{OH}$	$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$ , $I_{OH} = -2 \text{ mA}$	$V_{CC} - 2$			V
	$V_{CC} = 4.5 \text{ V}$ , $I_{OH} = -15 \text{ mA}$	2.4	3.2		
$V_{OL}$	$V_{CC} = 4.5 \text{ V}$ , $I_{OL} = 48 \text{ mA}$		0.35	0.5	V
$I_{OZH}$	$V_{CC} = 5.5 \text{ V}$ , $V_O = 2.7 \text{ V}$			50	$\mu\text{A}$
$I_{OZL}$	$V_{CC} = 5.5 \text{ V}$ , $V_O = 0.4 \text{ V}$			-50	$\mu\text{A}$
$I_I$	$A, B, \text{ or } \overline{OE}$ $\overline{A}/B$	$V_{CC} = 5.5 \text{ V}$ , $V_I = 7 \text{ V}$		0.1	mA
				0.2	
$I_{IH}$	$A, B, \text{ or } \overline{OE}$ $\overline{A}/B$	$V_{CC} = 5.5 \text{ V}$ , $V_I = 2.7 \text{ V}$		20	$\mu\text{A}$
				40	
$I_{IL}$	$A, B, \text{ or } \overline{OE}$ $\overline{A}/B$	$V_{CC} = 5.5 \text{ V}$ , $V_I = 0.4 \text{ V}$		-0.5	mA
				-1	
$I_O^\ddagger$	$V_{CC} = 5.5 \text{ V}$ , $V_O = 2.25 \text{ V}$		-30	-112	mA
$I_{CC}$	SN74AS257	$V_{CC} = 5.5 \text{ V}$	Outputs high	12.1	mA
			Outputs low	19	
			Outputs disabled	19.7	
	SN74AS258	$V_{CC} = 5.5 \text{ V}$	Outputs high	8.4	mA
			Outputs low	15.2	
			Outputs disabled	15.5	

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

‡ The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current,  $I_{OS}$ .

**SN54ALS257A, SN54ALS258A, SN74ALS257A, SN74ALS258A, SN74AS257, SN74AS258**  
**QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MUXES**  
**WITH 3-STATE OUTPUTS**

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**switching characteristics (see Figure 1)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5\text{ V to }5.5\text{ V},$ $C_L = 50\text{ pF},$ $R1 = 500\text{ }\Omega,$ $R2 = 500\text{ }\Omega,$ $T_A = \text{MIN to MAX}^\dagger$	UNIT	
			SN74AS257		
			MIN	MAX	
$t_{PLH}$	A or B	Any Y	1	5.5	ns
$t_{PHL}$			1	6	
$t_{PLH}$	$\overline{A/B}$	Any Y	2	11	ns
$t_{PHL}$			2	10	
$t_{PZH}$	$\overline{OE}$	Any Y	2	7.5	ns
$t_{PZL}$			2	9.5	
$t_{PHZ}$	$\overline{OE}$	Any Y	1.5	6.5	ns
$t_{PLZ}$			2	7	

**switching characteristics (see Figure 1)**

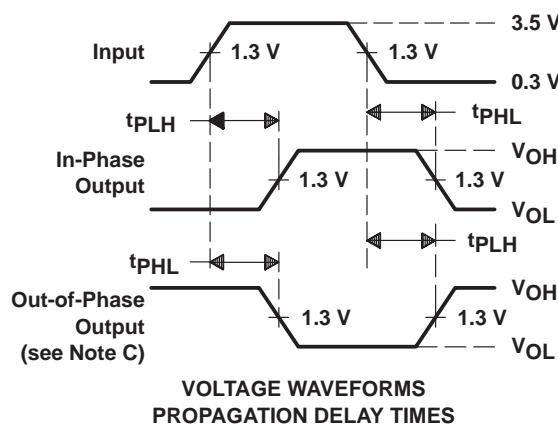
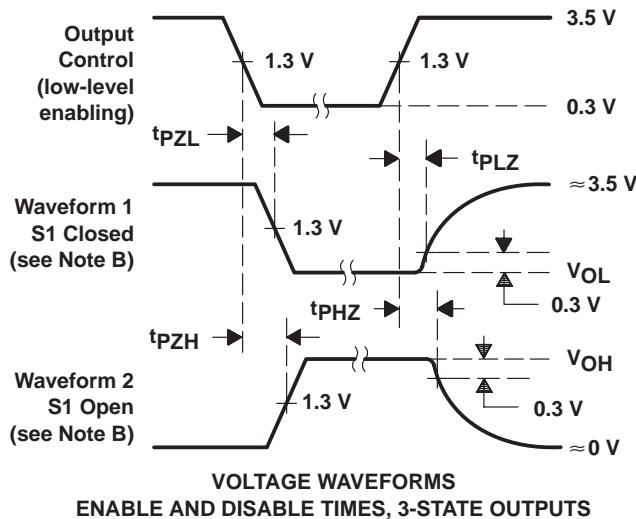
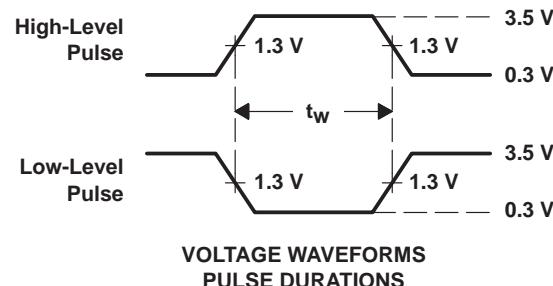
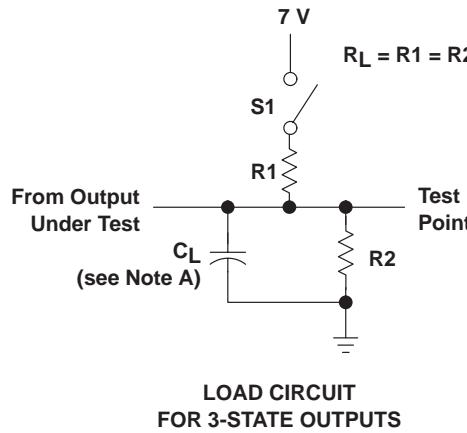
PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5\text{ V to }5.5\text{ V},$ $C_L = 50\text{ pF},$ $R1 = 500\text{ }\Omega,$ $R2 = 500\text{ }\Omega,$ $T_A = \text{MIN to MAX}^\dagger$	UNIT	
			SN74AS258		
			MIN	MAX	
$t_{PLH}$	A or B	Any Y	1	5	ns
$t_{PHL}$			1	4	
$t_{PLH}$	$\overline{A/B}$	Any Y	2	9.5	ns
$t_{PHL}$			2	10	
$t_{PZH}$	$\overline{OE}$	Any Y	2	8	ns
$t_{PZL}$			2	10	
$t_{PHZ}$	$\overline{OE}$	Any Y	1.5	6	ns
$t_{PLZ}$			2	6.5	

<sup>†</sup> For conditions shown MIN or MAX, use the appropriate value specified under recommended operating conditions.

**SN54ALS257A, SN54ALS258A, SN74ALS257A, SN74ALS258A, SN74AS257, SN74AS258  
QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MUXES  
WITH 3-STATE OUTPUTS**

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**PARAMETER MEASUREMENT INFORMATION  
SERIES 54ALS/74ALS AND 54AS/74AS DEVICES**



NOTES: A.  $C_L$  includes probe and jig capacitance.  
 B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control.  
 C. When measuring propagation delay items of 3-state outputs, switch S1 is open.  
 D. All input pulses have the following characteristics: PRR  $\leq$  1 MHz,  $t_r = t_f = 2$  ns, duty cycle = 50%.  
 E. The outputs are measured one at a time with one transition per measurement.

**Figure 1. Load Circuits and Voltage Waveforms**

**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)
5962-8862601EA	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-8862601EA SNJ54ALS258AJ
85097012A	Active	Production	LCCC (FK)   20	55   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	85097012A SNJ54ALS 257AFK
8509701EA	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	8509701EA SNJ54ALS257AJ
SN74ALS257AD	Obsolete	Production	SOIC (D)   16	-	-	Call TI	Call TI	0 to 70	ALS257A
SN74ALS257ADR	Active	Production	SOIC (D)   16	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	ALS257A
SN74ALS257ADR.A	Active	Production	SOIC (D)   16	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	ALS257A
SN74ALS257AN	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN74ALS257AN
SN74ALS257AN.A	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN74ALS257AN
SN74ALS257ANSR	Active	Production	SOP (NS)   16	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	ALS257A
SN74ALS257ANSR.A	Active	Production	SOP (NS)   16	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	ALS257A
SN74ALS258AN	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN74ALS258AN
SN74ALS258AN.A	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN74ALS258AN
SN74AS257D	Active	Production	SOIC (D)   16	40   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	AS257
SN74AS257D.A	Active	Production	SOIC (D)   16	40   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	AS257
SN74AS257N	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN74AS257N
SN74AS257N.A	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN74AS257N
SN74AS257NSR	Active	Production	SOP (NS)   16	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	74AS257
SN74AS257NSR.A	Active	Production	SOP (NS)   16	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	74AS257
SN74AS258N	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN74AS258N
SN74AS258N.A	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN74AS258N
SNJ54ALS257AFK	Active	Production	LCCC (FK)   20	55   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	85097012A SNJ54ALS 257AFK
SNJ54ALS257AFK.A	Active	Production	LCCC (FK)   20	55   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	85097012A SNJ54ALS 257AFK

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)
<a href="#">SNJ54ALS257AJ</a>	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	8509701EA SNJ54ALS257AJ
SNJ54ALS257AJ.A	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	8509701EA SNJ54ALS257AJ
<a href="#">SNJ54ALS258AJ</a>	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-8862601EA SNJ54ALS258AJ
SNJ54ALS258AJ.A	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-8862601EA SNJ54ALS258AJ

<sup>(1)</sup> **Status:** For more details on status, see our [product life cycle](#).

<sup>(2)</sup> **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.

<sup>(3)</sup> **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

<sup>(4)</sup> **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.

<sup>(5)</sup> **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.

<sup>(6)</sup> **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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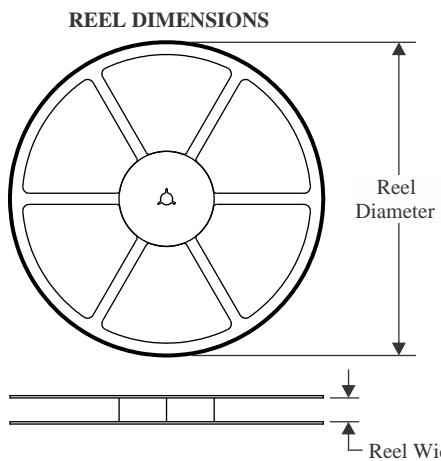
In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

**OTHER QUALIFIED VERSIONS OF SN54ALS257A, SN54ALS258A, SN74ALS257A, SN74ALS258A :**

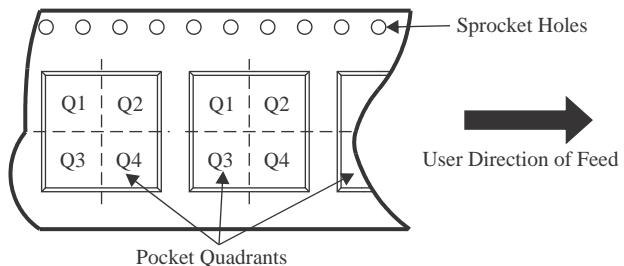
- Catalog : [SN74ALS257A](#), [SN74ALS258A](#)
- Military : [SN54ALS257A](#), [SN54ALS258A](#)

**NOTE: Qualified Version Definitions:**

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

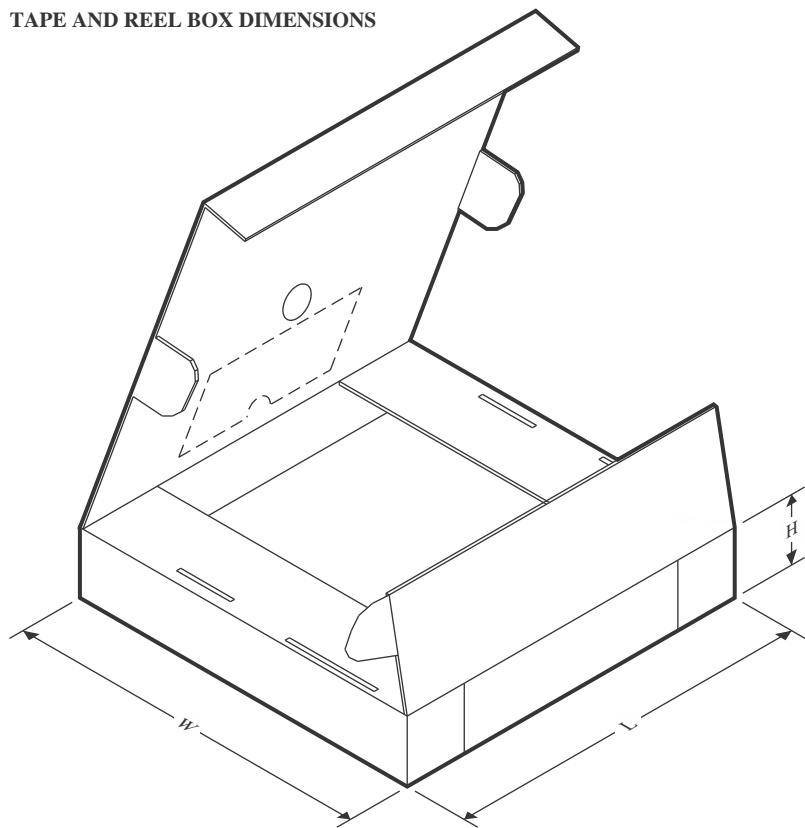
**TAPE AND REEL INFORMATION**


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**


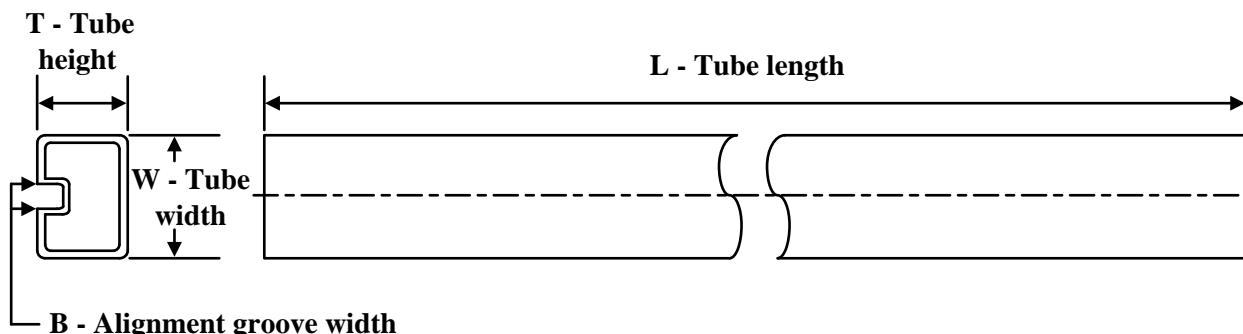
\*All dimensions are nominal

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
SN74ALS257ADR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
SN74ALS257ANSR	SOP	NS	16	2000	330.0	16.4	8.1	10.4	2.5	12.0	16.0	Q1
SN74AS257NSR	SOP	NS	16	2000	330.0	16.4	8.1	10.4	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)
SN74ALS257ADR	SOIC	D	16	2500	340.5	336.1	32.0
SN74ALS257ANSR	SOP	NS	16	2000	353.0	353.0	32.0
SN74AS257NSR	SOP	NS	16	2000	353.0	353.0	32.0

**TUBE**


\*All dimensions are nominal

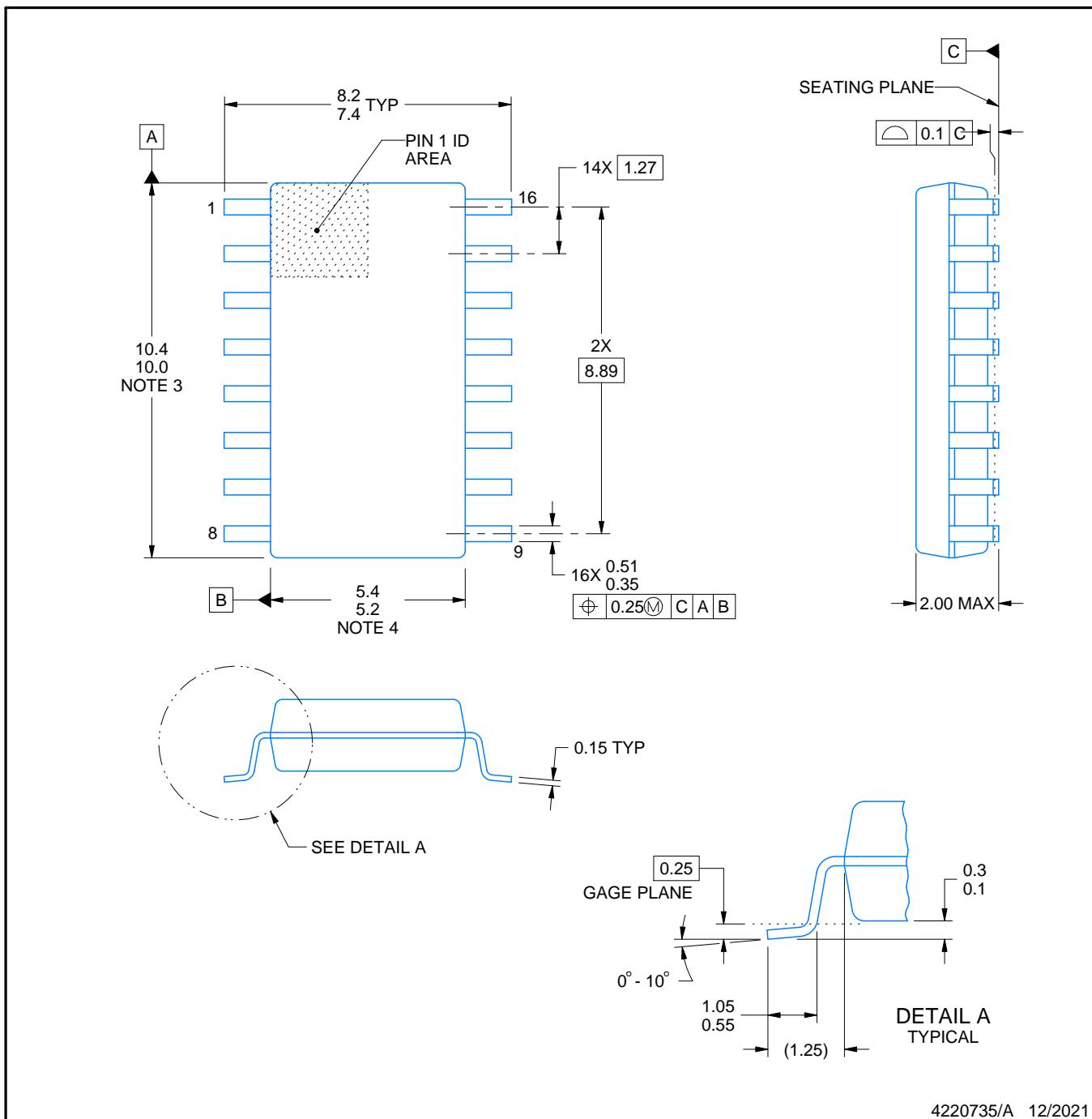
Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (μm)	B (mm)
85097012A	FK	LCCC	20	55	506.98	12.06	2030	NA
SN74ALS257AN	N	PDIP	16	25	506	13.97	11230	4.32
SN74ALS257AN	N	PDIP	16	25	506	13.97	11230	4.32
SN74ALS257AN.A	N	PDIP	16	25	506	13.97	11230	4.32
SN74ALS257AN.A	N	PDIP	16	25	506	13.97	11230	4.32
SN74ALS258AN	N	PDIP	16	25	506	13.97	11230	4.32
SN74ALS258AN	N	PDIP	16	25	506	13.97	11230	4.32
SN74ALS258AN.A	N	PDIP	16	25	506	13.97	11230	4.32
SN74ALS258AN.A	N	PDIP	16	25	506	13.97	11230	4.32
SN74AS257D	D	SOIC	16	40	507	8	3940	4.32
SN74AS257D.A	D	SOIC	16	40	507	8	3940	4.32
SN74AS257N	N	PDIP	16	25	506	13.97	11230	4.32
SN74AS257N	N	PDIP	16	25	506	13.97	11230	4.32
SN74AS257N.A	N	PDIP	16	25	506	13.97	11230	4.32
SN74AS257N.A	N	PDIP	16	25	506	13.97	11230	4.32
SN74AS258N	N	PDIP	16	25	506	13.97	11230	4.32
SN74AS258N	N	PDIP	16	25	506	13.97	11230	4.32
SN74AS258N.A	N	PDIP	16	25	506	13.97	11230	4.32
SN74AS258N.A	N	PDIP	16	25	506	13.97	11230	4.32
SNJ54ALS257AFK	FK	LCCC	20	55	506.98	12.06	2030	NA
SNJ54ALS257AFK.A	FK	LCCC	20	55	506.98	12.06	2030	NA



# PACKAGE OUTLINE

## SOP - 2.00 mm max height

SOP



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### NOTES:

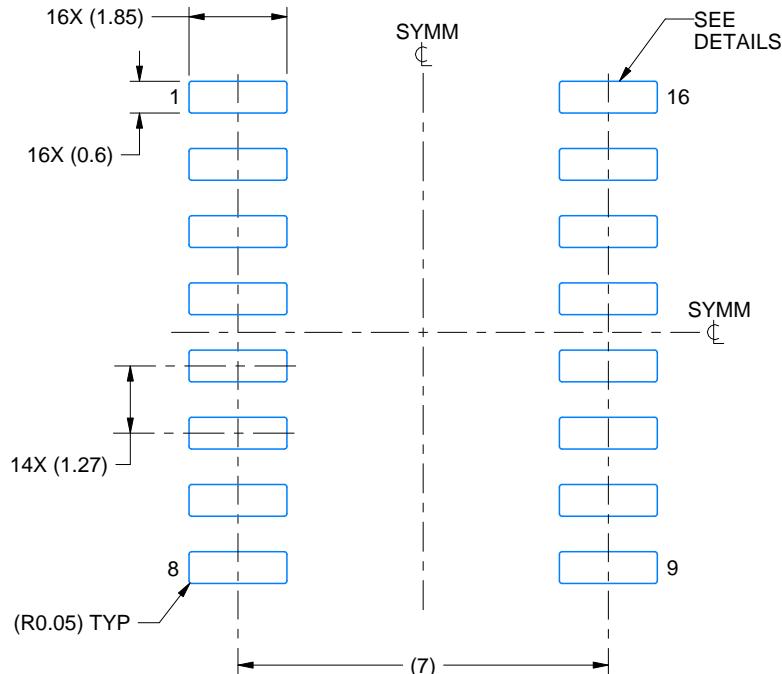
1. All linear dimensions are in millimeters. Dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm, per side.
4. This dimension does not include interlead flash. Interlead flash shall not exceed 0.25 mm, per side.

# EXAMPLE BOARD LAYOUT

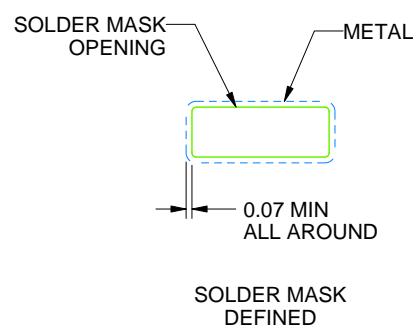
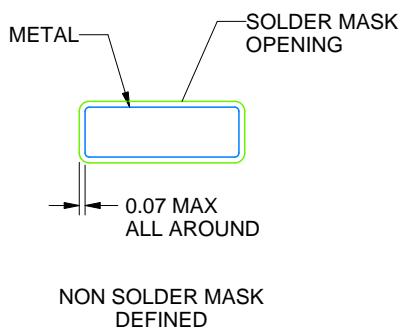
NS0016A

SOP - 2.00 mm max height

SOP



LAND PATTERN EXAMPLE  
SCALE:7X



SOLDER MASK DETAILS

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NOTES: (continued)

5. Publication IPC-7351 may have alternate designs.

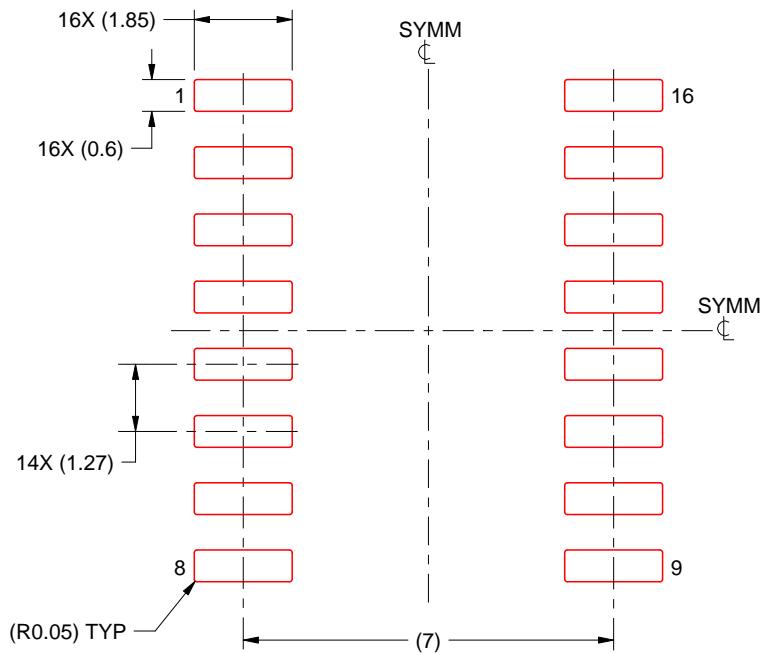
6. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

# EXAMPLE STENCIL DESIGN

NS0016A

SOP - 2.00 mm max height

SOP



SOLDER PASTE EXAMPLE  
BASED ON 0.125 mm THICK STENCIL  
SCALE:7X

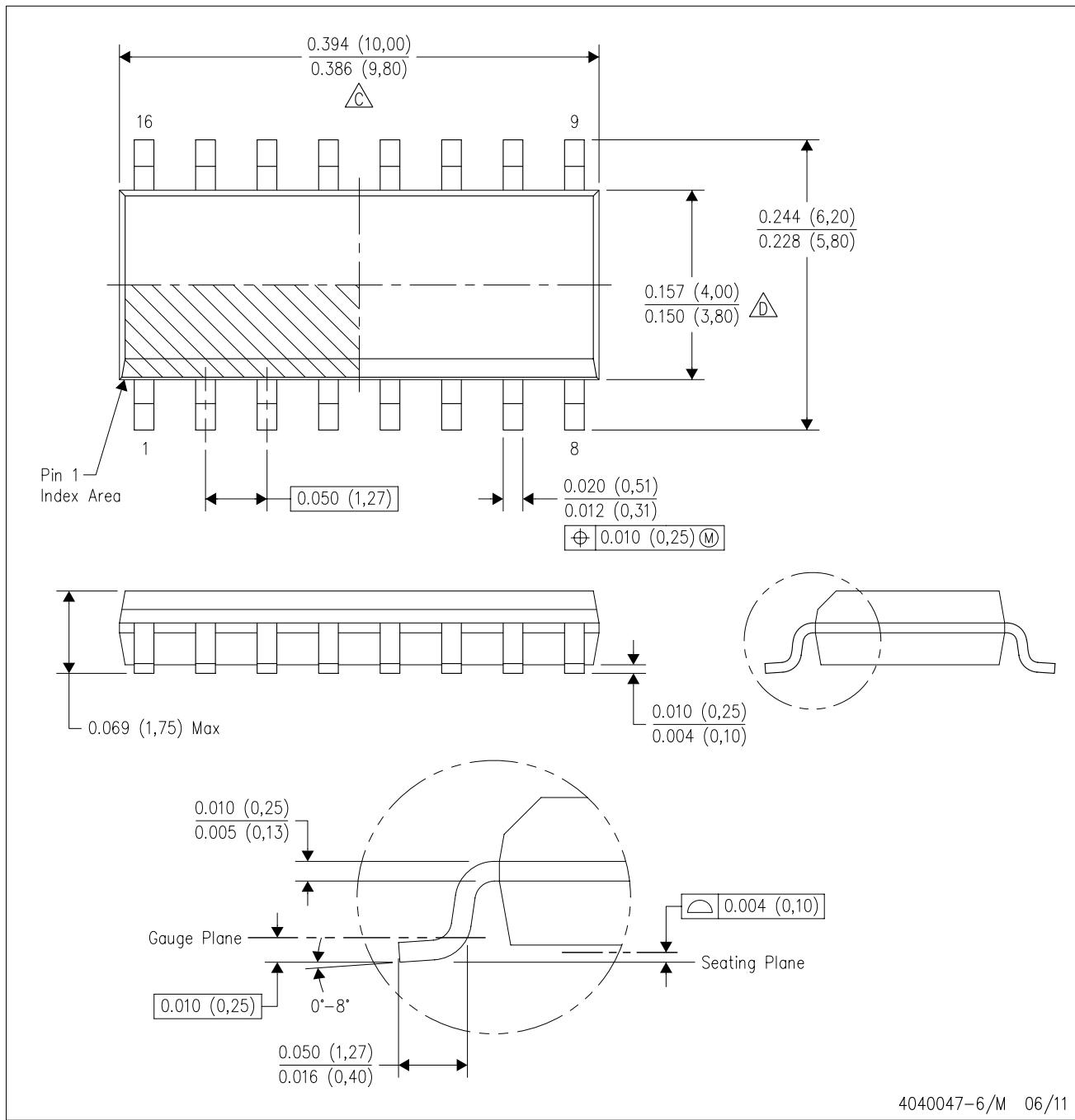
4220735/A 12/2021

NOTES: (continued)

7. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
8. Board assembly site may have different recommendations for stencil design.

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.

# GENERIC PACKAGE VIEW

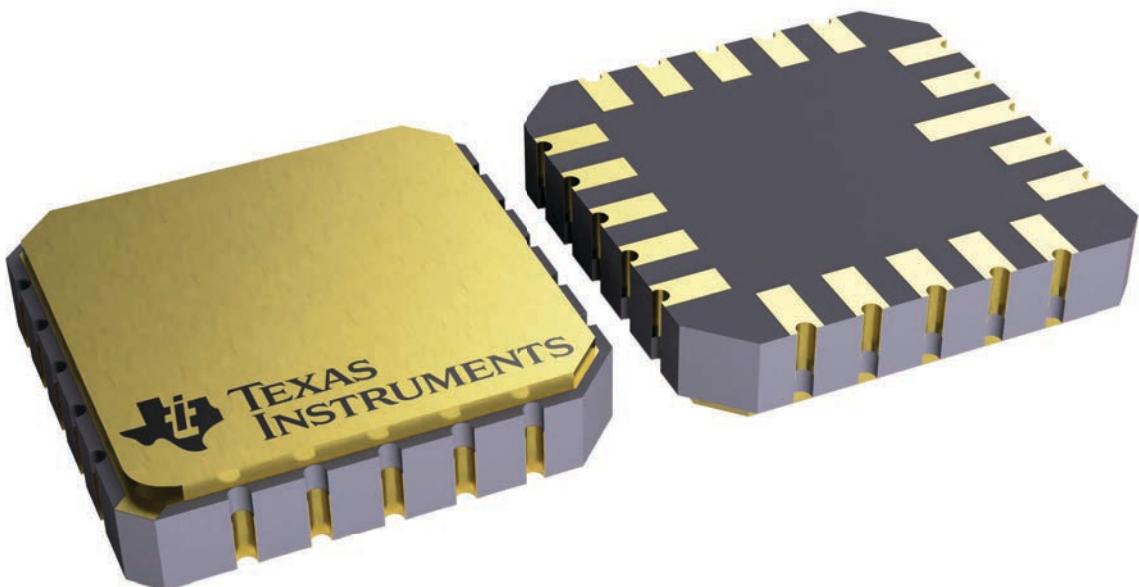
**FK 20**

**LCCC - 2.03 mm max height**

**8.89 x 8.89, 1.27 mm pitch**

**LEADLESS CERAMIC CHIP CARRIER**

This image is a representation of the package family, actual package may vary.  
Refer to the product data sheet for package details.



4229370VA\

J (R-GDIP-T\*\*)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



PINS ** DIM	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: 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.

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

16 PINS SHOWN

## PLASTIC DUAL-IN-LINE PACKAGE



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