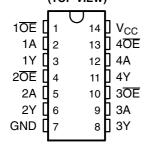
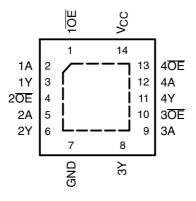
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- Typical V<sub>OLP</sub> (Output Ground Bounce) <1 V at  $V_{CC}$  = 5 V,  $T_A$  = 25°C
- High-Drive Outputs (-32-mA I<sub>OH</sub>, 64-mA I<sub>OL</sub>)
- Ioff and Power-Up 3-State Support Hot Insertion
- Latch-Up Performance Exceeds 500 mA Per **JEDEC Standard JESD-17**
- **ESD Protection Exceeds JESD 22** 
  - 2000-V Human-Body Model (A114-A)
  - 200-V Machine Model (A115-A)

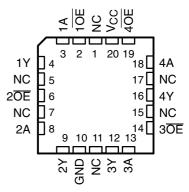
SN54ABT125...J OR W PACKAGE SN74ABT125 . . . D, DB, N, NS, **OR PW PACKAGE** (TOP VIEW)



SN74ABT125 . . . RGY PACKAGE (TOP VIEW)



SN54ABT125...FK PACKAGE (TOP VIEW)



NC - No internal connection

#### description/ordering information

The 'ABT125 quadruple bus buffer gates feature independent line drivers with 3-state outputs. Each output is disabled when the associated output-enable  $(\overline{OE})$  input is high.

These devices are fully specified for hot-insertion applications using Ioff and power-up 3-state. The Ioff circuitry disables the outputs, preventing damaging current backflow through the devices when they are powered down. The power-up 3-state circuitry places the outputs in the high-impedance state during power up and power down, which prevents driver conflict.

To ensure the high-impedance state during power up or power down,  $\overline{\text{OE}}$  should be tied to  $V_{CC}$  through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.

#### ORDERING INFORMATION

T <sub>A</sub>	PACK	AGE <sup>†</sup>	ORDERABLE PART NUMBER	TOP-SIDE MARKING
	PDIP – N	Tube	SN74ABT125N	SN74ABT125N
	QFN - RGY	Tape and reel	SN74ABT125RGYR	AB125
	colo p	Tube	SN74ABT125D	ADT405
-40°C to 85°C	SOIC - D	Tape and reel	SN74ABT125DR	ABT125
	SOP - NS	Tape and reel	ABT125	
	SSOP – DB	Tape and reel	SN74ABT125DBR	AB125
	TSSOP - PW	Tape and reel	SN74ABT125PWR	AB125
	CDIP – J	Tube	SNJ54ABT125J	SNJ54ABT125J
–55°C to 125°C	CFP – W	Tube	SNJ54ABT125W	SNJ54ABT125W
	LCCC - FK	Tube	SNJ54ABT125FK	SNJ54ABT125FK

<sup>&</sup>lt;sup>†</sup> Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at 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.

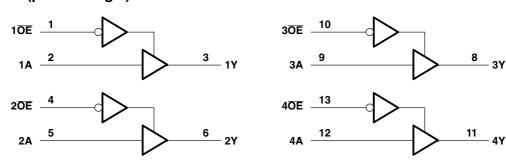


SCBS182I - FEBRUARY 1997 - REVISED NOVEMBER 2002

# FUNCTION TABLE (each buffer)

INP	JTS	OUTPUT
OE	Α	Y
L	Н	Н
L	L	L
Н	Χ	Z

#### logic diagram (positive logic)



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

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

Supply voltage range, V <sub>CC</sub>	0.5 V to 7 V
Input voltage range, V <sub>I</sub> (see Note 1)	
Voltage range applied to any output in the high or power-off state, V <sub>O</sub>	0.5 V to 5.5 V
Current into any output in the low state, I <sub>O</sub> : SN54ABT125	96 mA
SN74ABT125	128 mA
Input clamp current, I <sub>IK</sub> (V <sub>I</sub> < 0)	–18 mA
Output clamp current, I <sub>OK</sub> (V <sub>O</sub> < 0)	–50 mA
Package thermal impedance, $\theta_{JA}$ (see Note 2): D package	86°C/W
(see Note 2): DB package	96°C/W
(see Note 2): N package	80°C/W
(see Note 2): NS package	76°C/W
(see Note 2): PW package	113°C/W
(see Note 3): RGY package	47°C/W
Storage temperature range, T <sub>stg</sub>	65°C to 150°C

<sup>†</sup> 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 negative-voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
  - 2. The package thermal impedance is calculated in accordance with JESD 51-7.
  - 3. The package thermal impedance is calculated in accordance with JESD 51-5.



# recommended operating conditions (see Note 4)

		SN54A	BT125	SN74A	BT125	
		MIN	MAX	MIN	MAX	UNIT
V <sub>CC</sub>	Supply voltage	4.5	5.5	4.5	5.5	V
V <sub>IH</sub>	High-level input voltage	2		2		V
V <sub>IL</sub>	Low-level input voltage		0.8		0.8	V
VI	Input voltage	0	$V_{CC}$	0	$V_{CC}$	٧
I <sub>OH</sub>	High-level output current		-24		-32	mA
l <sub>OL</sub>	Low-level output current		48		64	mA
Δt/Δν	Input transition rise or fall rate		10		10	ns/V
Δt/ΔV <sub>CC</sub>	Power-up ramp rate	200		200		μs/V
T <sub>A</sub>	Operating free-air temperature	-55	125	-40	85	°C

NOTE 4: 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.



## SN54ABT125, SN74ABT125 QUADRUPLE BUS BUFFER GATES WITH 3-STATE OUTPUTS

SCBS182I - FEBRUARY 1997 - REVISED NOVEMBER 2002

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

				7	Γ <sub>A</sub> = 25°(	2	SN54A	BT125	SN74A	BT125	
PARA	METER	TEST COI	NDITIONS	MIN	TYP†	MAX	MIN	MAX	MIN	MAX	UNIT
V <sub>IK</sub>		$V_{CC} = 4.5 \text{ V},$	I <sub>I</sub> = -18 mA			-1.2		-1.2		-1.2	V
		$V_{CC} = 4.5 \text{ V},$	$I_{OH} = -3 \text{ mA}$	2.5			2.5		2.5		
		V <sub>CC</sub> = 5 V,	$I_{OH} = -3 \text{ mA}$	3			3		3		.,
V <sub>OH</sub>		V 45V	I <sub>OH</sub> = -24 mA	2			2				V
		V <sub>CC</sub> = 4.5 V	I <sub>OH</sub> = -32 mA	2*					2		
V		V 45V	I <sub>OL</sub> = 48 mA			0.55		0.55			
$V_{OL}$		V <sub>CC</sub> = 4.5 V	$I_{OL} = 64 \text{ mA}$			0.55*				0.55	V
V <sub>hys</sub>					100						mV
II		$V_{CC} = 0 \text{ to } 5.5 \text{ V},$	$V_I = V_{CC}$ or GND			±1		±1		±1	μА
I <sub>OZPU</sub>		$V_{CC} = 0$ to 2.1 V, $V_{O} = 0$	0.5 V to 2.7 V, <del>OE</del> = X			±50		±50		±50	μΑ
I <sub>OZPD</sub>		$V_{CC} = 2.1 \text{ V to } 0, V_{O} = 0$	0.5 V to 2.7 V, <del>OE</del> = X			±50		±50		±50	μΑ
I <sub>OZH</sub>		$V_{CC} = 2.1 \text{ V to } 5.5 \text{ V},$	$V_O = 2.7 \text{ V}, \overline{OE} \ge 2 \text{ V}$			10		10		10	μА
I <sub>OZL</sub>		$V_{CC} = 2.1 \text{ V to } 5.5 \text{ V},$	$V_O = 0.5 \text{ V}, \overline{OE} \ge 2 \text{ V}$			-10		-10		-10	μΑ
I <sub>off</sub>		$V_{CC} = 0$ ,	$V_I$ or $V_O \le 4.5 \text{ V}$			±100				±100	μΑ
I <sub>CEX</sub>		$V_{CC} = 5.5 \text{ V},$ $V_{O} = 5.5 \text{ V}$	Outputs high			50		50		50	μΑ
lo <sup>‡</sup>		$V_{CC} = 5.5 \text{ V},$	V <sub>O</sub> = 2.5 V	-50	-100	-200 <sup>§</sup>	-50	-200§	-50	-200§	mA
		$V_{CC} = 5.5 \text{ V},$	Outputs high		1	250		250		250	μΑ
$I_{CC}$		$I_{O}=0$ ,	Outputs low		24	30		30		30	mA
		$V_I = V_{CC}$ or GND	Outputs disabled		0.5	250		250		250	μΑ
	Data	$V_{CC} = 5.5 \text{ V},$ One input at 3.4 V,	Outputs enabled			1.5		1.5		1.5	
$\Delta I_{CC}^{\P}$	inputs	Other inputs at V <sub>CC</sub> or GND	Outputs disabled			0.05		0.05		0.05	mA
	Control inputs	$V_{CC} = 5.5 \text{ V}$ , One input of Other inputs at $V_{CC}$ or $C$				1.5		1.5		1.5	
Ci		V <sub>I</sub> = 2.5 V or 0.5 V			3						pF
Co		$V_0 = 2.5 \text{ V or } 0.5 \text{ V}$			7						pF

<sup>\*</sup> On products compliant to MIL-PRF-38535, this parameter does not apply.



<sup>&</sup>lt;sup>†</sup> All typical values are at  $V_{CC} = 5 \text{ V}$ .

<sup>&</sup>lt;sup>‡</sup> Not more than one output should be tested at a time, and the duration of the test should not exceed one second.

<sup>§</sup> This limit may vary among suppliers.

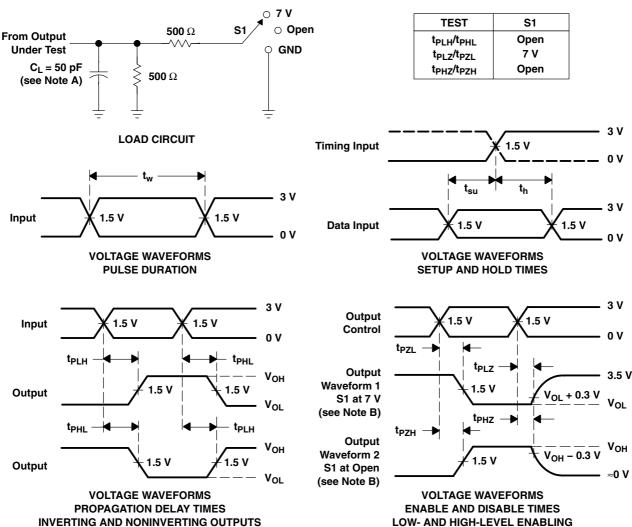
 $<sup>\</sup>P$  This is the increase in supply current for each input that is at the specified TTL voltage level, rather than  $V_{CC}$  or GND.

# switching characteristics over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted) (see Figure 1)

PARAMETER	FROM	TO (OUTPUT)	V <sub>CC</sub> = 5 V, T <sub>A</sub> = 25°C			SN54A	BT125	SN74A	UNIT	
	(INPUT)		MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t <sub>PLH</sub> †	А	V	1	3.2	4.6	1	6	1	4.9	
t <sub>PHL</sub> †		Y	1	2.5	4.6	1	6.2	1	4.9	ns
t <sub>PZH</sub> †		Υ	1	3.6	5	1	6	1	5.9	
t <sub>PZL</sub> †	ŌĒ		1	2.5	6.2	1	7.5	1	6.8	ns
t <sub>PHZ</sub>	ŌĒ	Υ	1	3.8	5.4	1	6.3	1	6.2	ns
t <sub>PLZ</sub> †	OE		1	3.3	5.3	1	6.5	1	6.2	

<sup>†</sup> This limit may vary among suppliers.

#### PARAMETER MEASUREMENT INFORMATION



NOTES: A. C<sub>L</sub> 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. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.
- C. All input pulses are supplied by generators having the following characteristics: PRR  $\leq$  10 MHz,  $Z_0 = 50 \ \Omega$ ,  $t_r \leq$  2.5 ns.  $t_f \leq$  2.5 ns.
- D. The outputs are measured one at a time with one transition per measurement.
- E. All parameters and waveforms are not applicable to all devices.

Figure 1. Load Circuit and Voltage Waveforms



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#### **PACKAGING INFORMATION**

Orderable part number	Status (1)	Material type	Package   Pins	Package qty   Carrier	<b>RoHS</b> (3)	Lead finish/ Ball material	MSL rating/ Peak reflow	Op temp (°C)	Part marking (6)
5962-9676801Q2A	Active	Production	LCCC (FK)   20	55   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962- 9676801Q2A SNJ54ABT 125FK
5962-9676801QCA	Active	Production	CDIP (J)   14	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9676801QC A SNJ54ABT125J
5962-9676801QDA	Active	Production	CFP (W)   14	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9676801QD A SNJ54ABT125W
SN74ABT125D	Active	Production	SOIC (D)   14	50   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125D.B	Active	Production	SOIC (D)   14	50   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125DBR	Active	Production	SSOP (DB)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125DBR.B	Active	Production	SSOP (DB)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125DBRG4	Active	Production	SSOP (DB)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125DBRG4.B	Active	Production	SSOP (DB)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125DE4	Active	Production	SOIC (D)   14	50   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125DG4	Active	Production	SOIC (D)   14	50   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125DR	Active	Production	SOIC (D)   14	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125DR.B	Active	Production	SOIC (D)   14	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125DRE4	Active	Production	SOIC (D)   14	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125DRG4	Active	Production	SOIC (D)   14	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125N	Active	Production	PDIP (N)   14	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	-40 to 85	SN74ABT125N
SN74ABT125N.B	Active	Production	PDIP (N)   14	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	-40 to 85	SN74ABT125N
SN74ABT125NS.B	Active	Production	SOP (NS)   14	50   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125NSR	Active	Production	SOP (NS)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125NSR.B	Active	Production	SOP (NS)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT125
SN74ABT125PW	Active	Production	TSSOP (PW)   14	90   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125PW.B	Active	Production	TSSOP (PW)   14	90   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125PWG4	Active	Production	TSSOP (PW)   14	90   TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125PWR	Active	Production	TSSOP (PW)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125



11-Nov-2025



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Orderable part number	Status	Material type	Package   Pins	Package qty   Carrier	RoHS (3)	Lead finish/ Ball material	MSL rating/ Peak reflow	Op temp (°C)	Part marking (6)
SN74ABT125PWR.B	Active	Production	TSSOP (PW)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125PWRE4	Active	Production	TSSOP (PW)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125PWRG4	Active	Production	TSSOP (PW)   14	2000   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB125
SN74ABT125RGYR	Active	Production	VQFN (RGY)   14	3000   LARGE T&R	Yes	NIPDAU	Level-2-260C-1 YEAR	-40 to 85	AB125
SN74ABT125RGYR.B	Active	Production	VQFN (RGY)   14	3000   LARGE T&R	Yes	NIPDAU	Level-2-260C-1 YEAR	-40 to 85	AB125
SN74ABT125RGYRG4	Active	Production	VQFN (RGY)   14	3000   LARGE T&R	Yes	NIPDAU	Level-2-260C-1 YEAR	-40 to 85	AB125
SN74ABT125RGYRG4.B	Active	Production	VQFN (RGY)   14	3000   LARGE T&R	Yes	NIPDAU	Level-2-260C-1 YEAR	-40 to 85	AB125
SNJ54ABT125FK	Active	Production	LCCC (FK)   20	55   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962- 9676801Q2A SNJ54ABT 125FK
SNJ54ABT125J	Active	Production	CDIP (J)   14	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9676801QC A SNJ54ABT125J
SNJ54ABT125W	Active	Production	CFP (W)   14	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9676801QD A SNJ54ABT125W

<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.



### **PACKAGE OPTION ADDENDUM**

www.ti.com 11-Nov-2025

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 SN54ABT125, SN74ABT125:

Catalog: SN74ABT125

Military: SN54ABT125

NOTE: Qualified Version Definitions:

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

www.ti.com 24-Jul-2025

#### TAPE AND REEL INFORMATION



# TAPE DIMENSIONS WHO WE PI WHO WE PI WHO WE BO WE Cavity AO WE Cavity AO WE Cavity

A0	Dimension designed to accommodate the component width
В0	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		SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
SN74ABT125DBR	SSOP	DB	14	2000	330.0	16.4	8.35	6.6	2.4	12.0	16.0	Q1
SN74ABT125DBRG4	SSOP	DB	14	2000	330.0	16.4	8.35	6.6	2.4	12.0	16.0	Q1
SN74ABT125DR	SOIC	D	14	2500	330.0	16.4	6.5	9.0	2.1	8.0	16.0	Q1
SN74ABT125NSR	SOP	NS	14	2000	330.0	16.4	8.1	10.4	2.5	12.0	16.0	Q1
SN74ABT125PWR	TSSOP	PW	14	2000	330.0	12.4	6.9	5.6	1.6	8.0	12.0	Q1
SN74ABT125RGYR	VQFN	RGY	14	3000	330.0	12.4	3.75	3.75	1.15	8.0	12.0	Q1
SN74ABT125RGYRG4	VQFN	RGY	14	3000	330.0	12.4	3.75	3.75	1.15	8.0	12.0	Q1



www.ti.com 24-Jul-2025



\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74ABT125DBR	SSOP	DB	14	2000	353.0	353.0	32.0
SN74ABT125DBRG4	SSOP	DB	14	2000	353.0	353.0	32.0
SN74ABT125DR	SOIC	D	14	2500	353.0	353.0	32.0
SN74ABT125NSR	SOP	NS	14	2000	353.0	353.0	32.0
SN74ABT125PWR	TSSOP	PW	14	2000	353.0	353.0	32.0
SN74ABT125RGYR	VQFN	RGY	14	3000	353.0	353.0	32.0
SN74ABT125RGYRG4	VQFN	RGY	14	3000	353.0	353.0	32.0



www.ti.com 24-Jul-2025

#### **TUBE**



\*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (µm)	B (mm)
5962-9676801Q2A	FK	LCCC	20	55	506.98	12.06	2030	NA
5962-9676801QDA	W	CFP	14	25	506.98	26.16	6220	NA
SN74ABT125D	D	SOIC	14	50	507	8	3940	4.32
SN74ABT125D	D	SOIC	14	50	506.6	8	3940	4.32
SN74ABT125D.B	D	SOIC	14	50	506.6	8	3940	4.32
SN74ABT125D.B	D	SOIC	14	50	507	8	3940	4.32
SN74ABT125DE4	D	SOIC	14	50	506.6	8	3940	4.32
SN74ABT125DE4	D	SOIC	14	50	507	8	3940	4.32
SN74ABT125DG4	D	SOIC	14	50	507	8	3940	4.32
SN74ABT125DG4	D	SOIC	14	50	506.6	8	3940	4.32
SN74ABT125N	N	PDIP	14	25	506	13.97	11230	4.32
SN74ABT125N	N	PDIP	14	25	506	13.97	11230	4.32
SN74ABT125N.B	N	PDIP	14	25	506	13.97	11230	4.32
SN74ABT125N.B	N	PDIP	14	25	506	13.97	11230	4.32
SN74ABT125NS.B	NS	SOP	14	50	530	10.5	4000	4.1
SN74ABT125PW	PW	TSSOP	14	90	530	10.2	3600	3.5
SN74ABT125PW.B	PW	TSSOP	14	90	530	10.2	3600	3.5
SN74ABT125PWG4	PW	TSSOP	14	90	530	10.2	3600	3.5
SNJ54ABT125FK	FK	LCCC	20	55	506.98	12.06	2030	NA
SNJ54ABT125W	W	CFP	14	25	506.98	26.16	6220	NA

3.5 x 3.5, 0.5 mm pitch

PLASTIC QUAD FLATPACK - NO LEAD

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



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PLASTIC QUAD FLATPACK - NO LEAD



- 1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
- This drawing is subject to change without notice.
   The package thermal pad must be soldered to the printed circuit board for thermal and mechanical performance.



PLASTIC QUAD FLATPACK - NO LEAD



NOTES: (continued)

4. This package is designed to be soldered to a thermal pad on the board. For more information, see Texas Instruments literature number SLUA271 (www.ti.com/lit/slua271).



PLASTIC QUAD FLATPACK - NO LEAD



NOTES: (continued)

5. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.





SMALL OUTLINE INTEGRATED CIRCUIT



- 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 0.43 mm, per side.
- 5. Reference JEDEC registration MS-012, variation AB.



SMALL OUTLINE INTEGRATED CIRCUIT



NOTES: (continued)

6. Publication IPC-7351 may have alternate designs.

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



SMALL OUTLINE INTEGRATED CIRCUIT



NOTES: (continued)

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



#### **MECHANICAL DATA**

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

# 14-PINS SHOWN

#### PLASTIC SMALL-OUTLINE PACKAGE



- 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.



# W (R-GDFP-F14)

## CERAMIC DUAL FLATPACK



- 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







- 1. All linear dimensions are in millimeters. Any 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. Reference JEDEC registration MO-150.





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.





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.



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.



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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





CERAMIC DUAL IN LINE PACKAGE



- 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 hermitically sealed with a ceramic lid using glass frit.
- His package is remitted by sealed with a ceramic its using glass mit.
   Index point is provided on cap for terminal identification only and on press ceramic glass frit seal only.
   Falls within MIL-STD-1835 and GDIP1-T14.



CERAMIC DUAL IN LINE PACKAGE



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

## PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



- 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.







- 1. All linear dimensions are in millimeters. Any 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.
- 5. Reference JEDEC registration MO-153.





NOTES: (continued)

6. Publication IPC-7351 may have alternate designs.

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





NOTES: (continued)

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



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