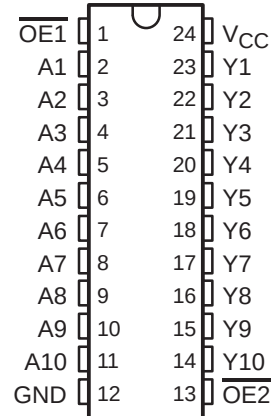


SN74ALS29827, SN74ALS29828 10-BIT BUFFERS AND BUS DRIVERS WITH 3-STATE OUTPUTS

SDAS095B – JANUARY 1986 – REVISED JANUARY 1995

- Functionally Equivalent to AMD's AM29827 and AM29828
- 3-State Outputs Drive Bus Lines or Buffer Memory Address Registers
- pnp Inputs Reduce dc Loading
- Data Flow-Through Pinout (All Inputs on Opposite Side From Outputs)
- Power-Up High-Impedance State
- Package Options Include Plastic Small-Outline (DW) Packages and Standard Plastic (NT) 300-mil DIPs

DW OR NT PACKAGE
(TOP VIEW)



description

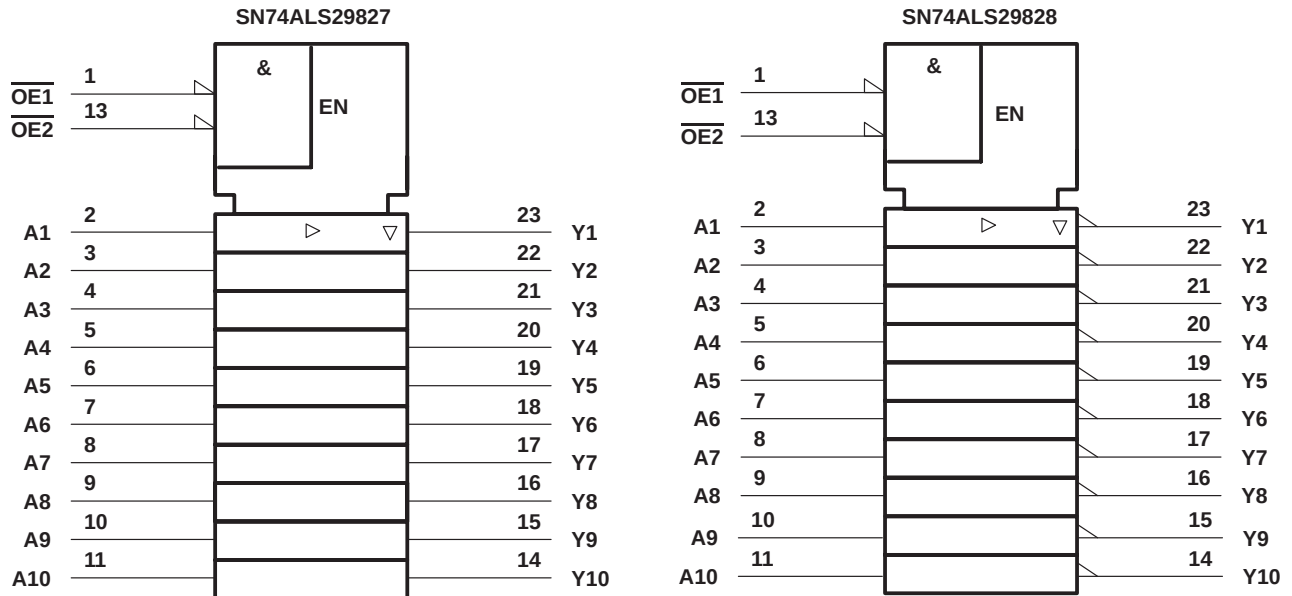
These 10-bit buffers and bus drivers provide high-performance bus interface for wide data paths or buses carrying parity.

The 3-state control gate is a 2-input NOR such that if either output-enable ($\overline{OE1}$ or $\overline{OE2}$) input is high, all ten outputs are in the high-impedance state.

The SN74ALS29827 provides true data and the SN74ALS29828 provides inverted data at their respective outputs.

The SN74ALS29827 and SN74ALS29828 are characterized for operation from 0°C to 70°C.

logic symbols†

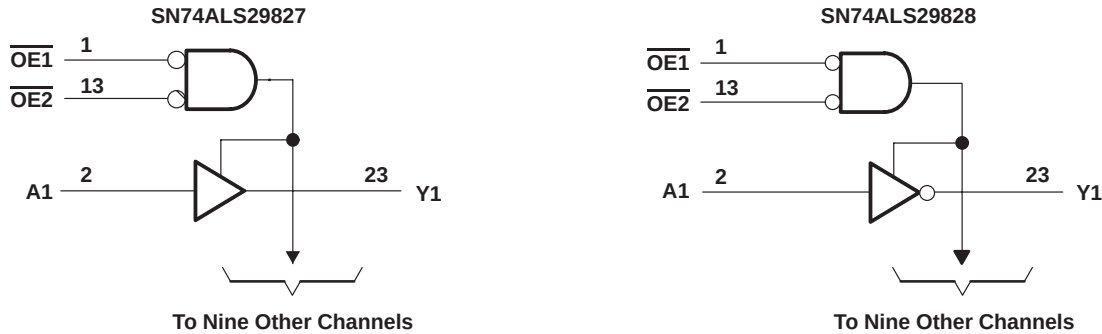


† These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

SN74ALS29827, SN74ALS29828 10-BIT BUFFERS AND BUS DRIVERS WITH 3-STATE OUTPUTS

SDAS095B – JANUARY 1986 – REVISED JANUARY 1995

logic diagrams (positive logic)



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

Supply voltage, V_{CC}	7 V
Input voltage, V_I	5.5 V
Voltage applied to a disabled 3-state output	5.5 V
Operating free-air temperature range, T_A	0°C to 70°C
Storage temperature range	–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.

recommended operating conditions

		SN74ALS29827 SN74ALS29828			UNIT
		MIN	NOM	MAX	
V_{CC}	Supply voltage	4.75	5	5.25	V
V_{IH}	High-level input voltage	2			V
V_{IL}	Low-level input voltage			0.8	V
I_{OH}	High-level output current			–24	mA
I_{OL}	Low-level output current			48	mA
T_A	Operating free-air temperature	0		70	°C

SN74ALS29827, SN74ALS29828
10-BIT BUFFERS AND BUS DRIVERS
WITH 3-STATE OUTPUTS

SDAS095B – JANUARY 1986 – REVISED JANUARY 1995

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

PARAMETER	TEST CONDITIONS	SN74ALS29827 SN74ALS29828			UNIT
		MIN	TYP [†]	MAX	
V_{IK}	$V_{CC} = 4.75 \text{ V}$, $I_I = -18 \text{ mA}$			-1.2	V
V_{OH}	$V_{CC} = 4.75 \text{ V}$, $I_{OH} = -15 \text{ mA}$	2.4			V
	$I_{OH} = -24 \text{ mA}$	2			
V_{OL}	$V_{CC} = 4.75 \text{ V}$, $I_{OL} = 48 \text{ mA}$	0.35	0.5		V
I_{OZH}	$V_{CC} = 5.25 \text{ V}$, $V_O = 2.4 \text{ V}$			20	μA
I_{OZL}	$V_{CC} = 5.25 \text{ V}$, $V_O = 0.4 \text{ V}$			-20	μA
I_I	$V_{CC} = 5.25 \text{ V}$, $V_I = 5.5 \text{ V}$			0.1	mA
I_{IH}	$V_{CC} = 5.25 \text{ V}$, $V_I = 2.7 \text{ V}$			20	μA
I_{IL}	$V_{CC} = 5.25 \text{ V}$, $V_I = 0.4 \text{ V}$			-0.1	mA
$I_{OS}^{\ddagger}$	$V_{CC} = 5.25 \text{ V}$, $V_O = 0$	-75		-250	mA
I_{CC}	$V_{CC} = 5.25 \text{ V}$		25	40	mA

[†] 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 (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	V _{CC} = 4.75 V to 5.25 V				UNIT
				SN74ALS29827		SN74ALS29828		
				MIN	MAX	MIN	MAX	
t _{PLH}	A	Y	C _L = 300 pF	15	14	ns		
t _{PHL}				15	14			
t _{PLH}	A	Y	C _L = 50 pF	8	7	ns		
t _{PHL}				8	7.5			
t _{PZH}	$\overline{OE}$	Y	C _L = 300 pF	20	20	ns		
t _{PZL}				23	23			
t _{PZH}	$\overline{OE}$	Y	C _L = 50 pF	15	15	ns		
t _{PZL}				15	15			
t _{PHZ}	$\overline{OE}$	Y	C _L = 50 pF	17	17	ns		
t _{PLZ}				12	12			
t _{PHZ}	$\overline{OE}$	Y	C _L = 5 pF	9	9	ns		
t _{PLZ}				9	9			

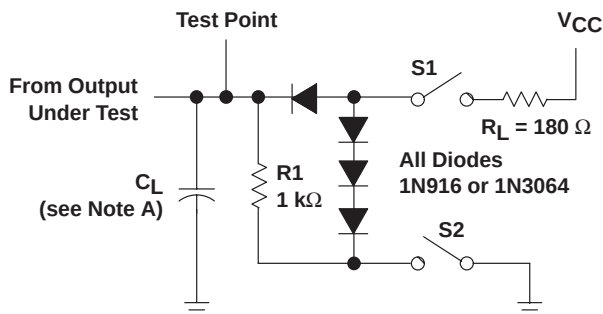
SN74ALS29827, SN74ALS29828

10-BIT BUFFERS AND BUS DRIVERS

WITH 3-STATE OUTPUTS

SDAS095B – JANUARY 1986 – REVISED JANUARY 1995

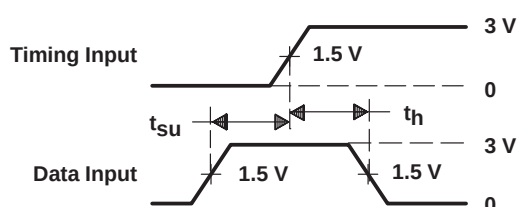
PARAMETER MEASUREMENT INFORMATION



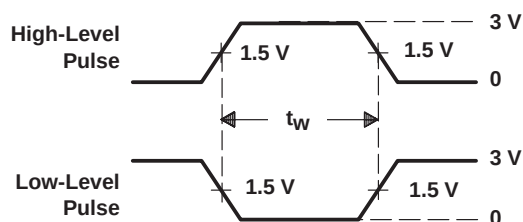
LOAD CIRCUIT

SWITCH POSITION TABLE

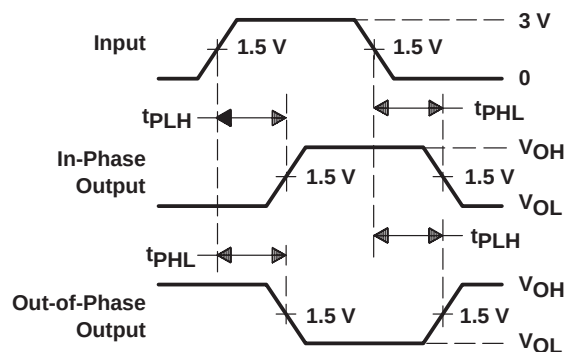
TEST	S1	S2
t_{PLH}	Closed	Closed
t_{PHL}	Closed	Closed
t_{PZH}	Open	Closed
t_{PZL}	Closed	Open
t_{PHZ}	Closed	Closed
t_{PLZ}	Closed	Closed



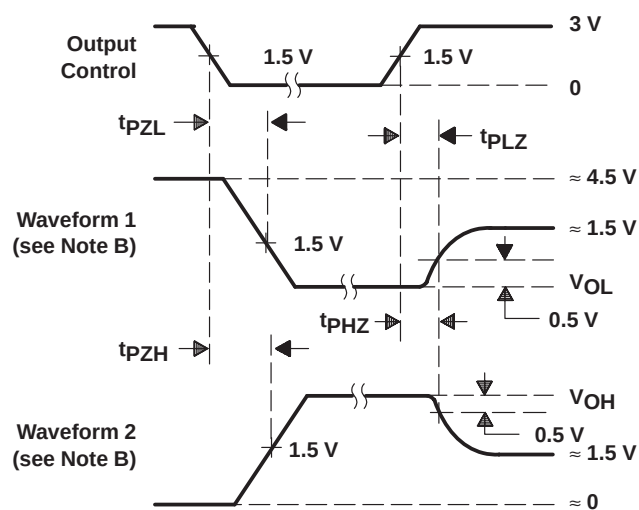
VOLTAGE WAVEFORMS
SETUP AND HOLD TIMES



VOLTAGE WAVEFORMS
PULSE DURATIONS



VOLTAGE WAVEFORMS
PROPAGATION DELAY TIMES



VOLTAGE WAVEFORMS
ENABLE AND DISABLE TIMES, 3-STATE OUTPUTS

- 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. 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: $PRR \leq 10 \text{ MHz}$, $Z_O = 50 \Omega$, $t_r \leq 2.5 \text{ ns}$, $t_f \leq 2.5 \text{ ns}$.

Figure 1. Load Circuit 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)
SN74ALS29827DW	Active	Production	SOIC (DW) 24	25 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	ALS29827
SN74ALS29827DW.A	Active	Production	SOIC (DW) 24	25 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	ALS29827

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

⁽²⁾ **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.

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

⁽⁴⁾ **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.

⁽⁵⁾ **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.

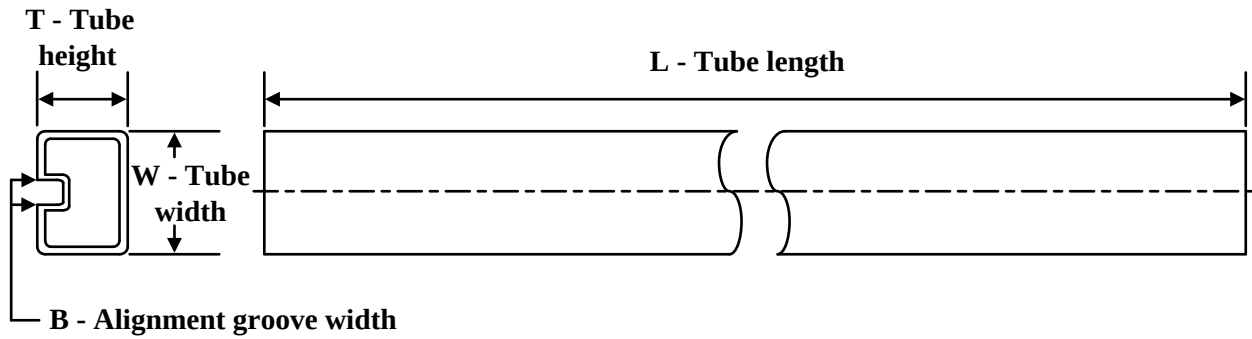
⁽⁶⁾ **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

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.

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.

TUBE

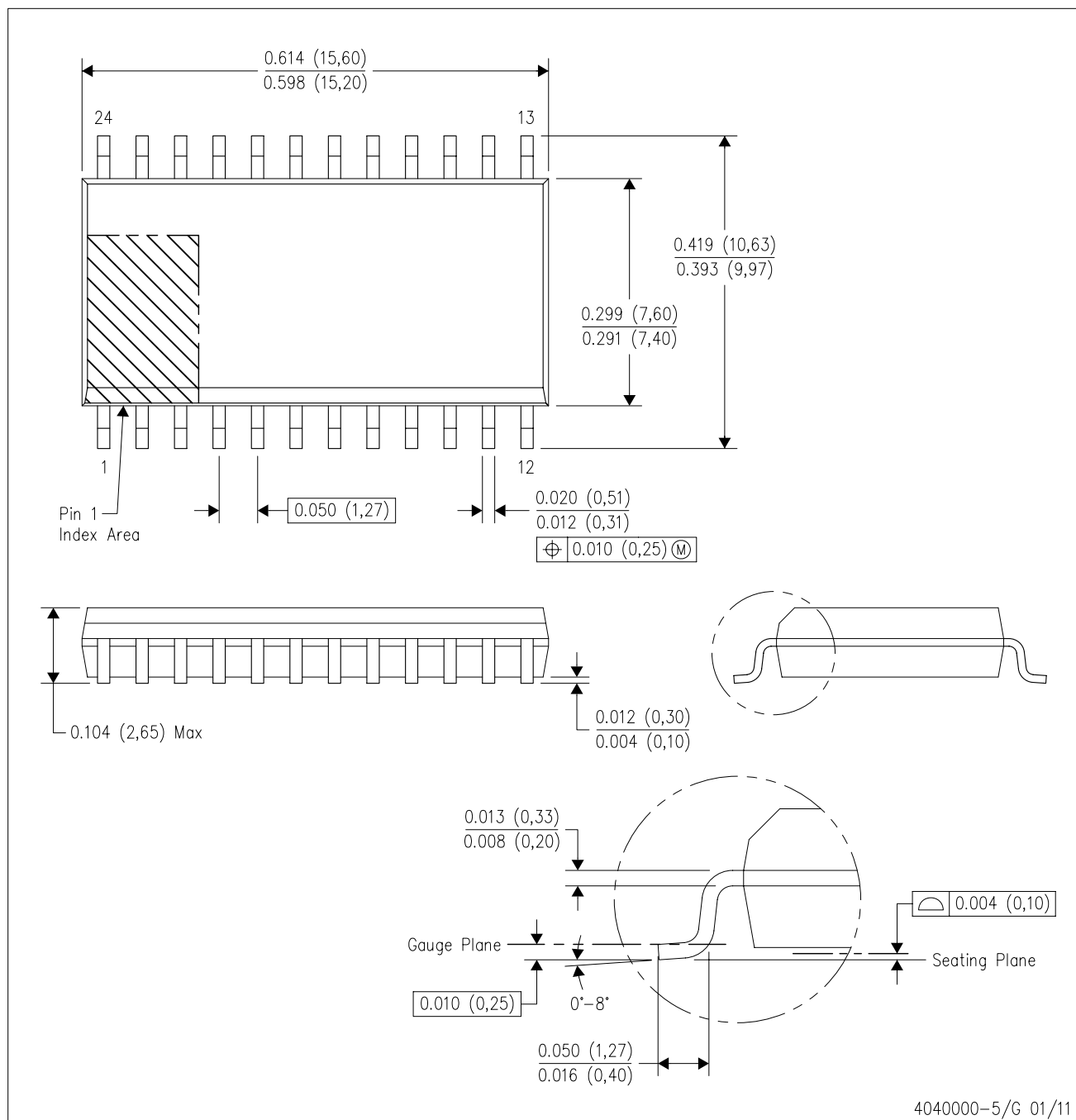


*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (μm)	B (mm)
SN74ALS29827DW	DW	SOIC	24	25	506.98	12.7	4826	6.6
SN74ALS29827DW.A	DW	SOIC	24	25	506.98	12.7	4826	6.6

DW (R-PDSO-G24)

PLASTIC SMALL OUTLINE



- NOTES:
- All linear dimensions are in inches (millimeters). Dimensioning and tolerancing per ASME Y14.5M-1994.
 - This drawing is subject to change without notice.
 - Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
 - Falls within JEDEC MS-013 variation AD.

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you fully indemnify TI and its representatives against any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to [TI's Terms of Sale](#), [TI's General Quality Guidelines](#), or other applicable terms available either on [ti.com](https://www.ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products. Unless TI explicitly designates a product as custom or customer-specified, TI products are standard, catalog, general purpose devices.

TI objects to and rejects any additional or different terms you may propose.

Copyright © 2026, Texas Instruments Incorporated

Last updated 10/2025