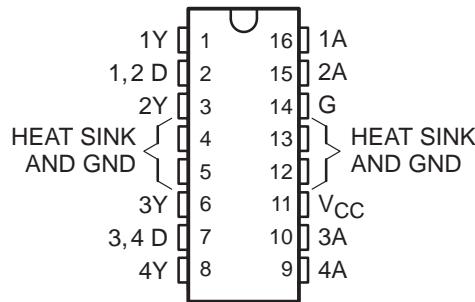


- Saturating Outputs With Low On-State Resistance
- High-Impedance Inputs Compatible With CMOS and TTL Levels
- Very Low Standby Power . . . 21 mW Max
- High-Voltage Outputs . . . 70 V Min
- No Power-Up or Power-Down Output Glitch
- No Latch-Up Within Recommended Operating Conditions
- Output-Clamp Diodes for Transient Suppression
- Packaged in 2-W Power, Thermally Enhanced Plastic DIP

NE PACKAGE
(TOP VIEW)



description

The SN75437A quadruple peripheral driver is designed for use in systems requiring high current, high voltage, and high load power. This device features four inverting open-collector outputs with a common-enable (G) input that, when taken low, disables all four outputs. The envelope of 1-V characteristics exceeds the specifications sufficiently to avoid high-current latch-up. Applications include driving relays, lamps, solenoids, motors, LEDs, transmission lines, hammers, and other high-power-demand devices.

The SN75437A is characterized for operation over the free-air temperature range of 0°C to 70°C.

FUNCTION TABLE
(each NAND driver)

INPUTS		OUTPUT
A	G	Y
H	H	L
L	X	H
X	L	H

H = high level, L = low level,
X = irrelevant

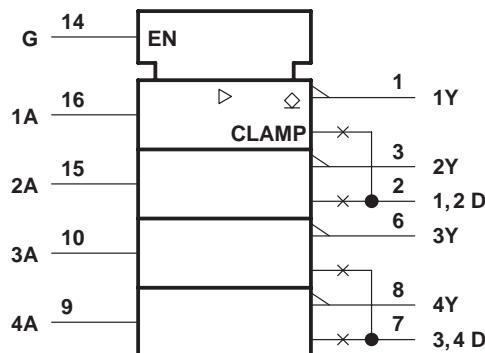


Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

SN75437A QUADRUPLE PERIPHERAL DRIVER

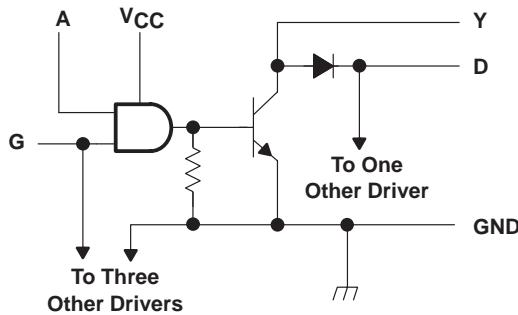
SLRS019B – DECEMBER 1986 – REVISED SEPTEMBER 2000

logic diagram (positive logic)[†]

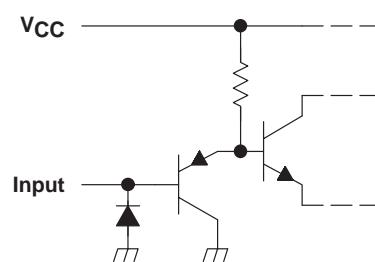


[†] This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC publication 617-12.

logic diagram (positive logic, each driver)



equivalent schematic of each input



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

Supply voltage, V_{CC}	7 V
Input voltage, V_I	30 V
Output current (see Note 1)	0.75 A
Output clamp-diode current, I_{OK}	1.25 A
Output voltage, V_O (off state)	70 V
Continuous total power dissipation at (or below) 25°C free-air temperature (see Note 2)	2075 mW
Lead temperature 1.6 mm (1/16-inch) from case for 10 seconds	260°C
Storage temperature range, T_{stg}	–65°C to 150°C

NOTES: 1. All four sections of these circuits may conduct rated current simultaneously; however, power dissipation averaged over a short time interval must fall within the continuous dissipation ratings.
2. For operation above 25°C free-air temperature, derate linearly to 1328 mW at 70°C at the rate of 16.6 mW/°C.

recommended operating conditions

PARAMETER	MIN	NOM	MAX	UNIT
Supply voltage, V_{CC}	4.75	5	5.25	V
High-level input voltage, V_{IH}	2			V
Low-level input voltage, V_{IL}			0.8	V
Output supply voltage in inductive switching circuit (see Figure 2), V_S			35	V
Output current, I_O			0.5	A
Operating free-air temperature, T_A	0		70	°C

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

PARAMETER	TEST CONDITIONS	MIN	TYP†	MAX	UNIT
V_{IK} Input clamp voltage	$V_{CC} = 4.75 \text{ V}$, $I_I = -12 \text{ mA}$		-0.9	-1.5	V
V_{OL} Low-level output voltage	$V_{CC} = 4.75 \text{ V}$, $V_{IH} = 2 \text{ V}$	$I_{OL} = 250 \text{ mA}$	0.14	0.25	V
		$I_{OL} = 500 \text{ mA}$	0.28	0.5	
$V_{R(K)}$ Output clamp-diode reverse voltage	$V_{CC} = 4.75 \text{ V}$, $I_R = 100 \mu\text{A}$	70	100		V
$V_{F(K)}$ Output clamp-diode forward voltage	$I_F = 500 \text{ mA}$		1	1.6	V
I_{OH} High-level output current	$V_{CC} = 4.75 \text{ V}$, $V_{IL} = 0.8 \text{ V}$, $V_{OH} = 70 \text{ V}$		1	100	μA
I_{IH} High-level input current	$V_{CC} = 5.25 \text{ V}$, $V_I = 5.25 \text{ V}$		0.1	10	μA
I_{IL} Low-level input current	$V_{CC} = 5.25 \text{ V}$, $V_I = 0.8 \text{ V}$		-0.25	-10	μA
I_{CCH} Supply current, outputs high	$V_{CC} = 5.25 \text{ V}$, $V_I = 0$		1	4	mA
I_{CCL} Supply current, outputs low	$V_{CC} = 5.25 \text{ V}$, $V_I = 5 \text{ V}$		45	65	mA

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

switching characteristics, $V_{CC} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$

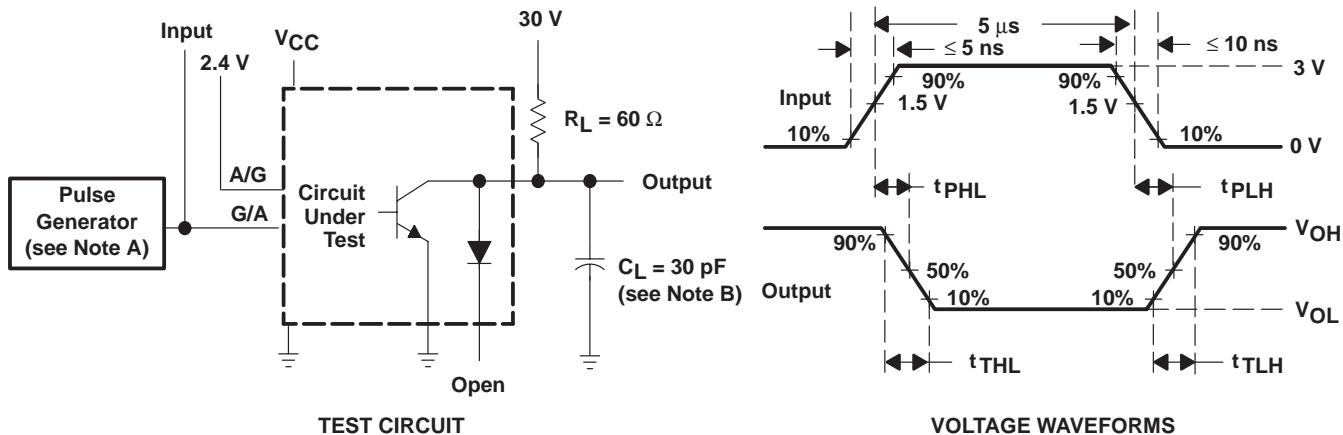
PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH} Propagation delay time, low-to-high-level output	$C_L = 30 \text{ pF}$, See Figure 1		1950	5000	ns
t_{PHL} Propagation delay time, high-to-low-level output			150	500	ns
t_{TLH} Transition time, low-to-high-level output			40		ns
t_{THL} Transition time, high-to-low-level output			36		ns
V_{OH} High-level output voltage after switching	$V_S = 35 \text{ V}$, $R_L = 70 \Omega$, See Figure 2	$V_S - 10$			mV

SN75437A

QUADRUPLE PERIPHERAL DRIVER

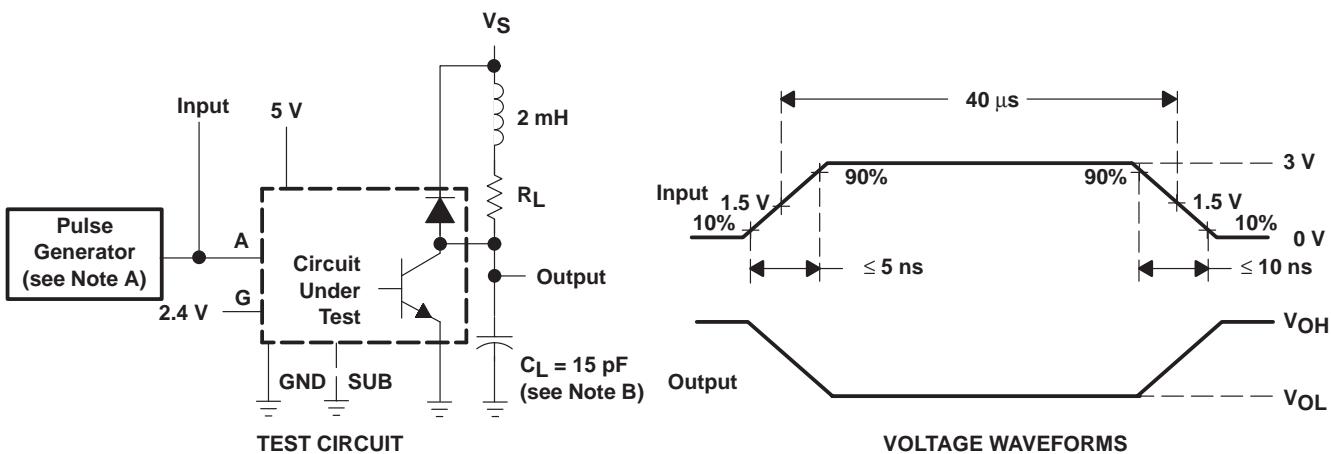
SLRS019B – DECEMBER 1986 – REVISED SEPTEMBER 2000

PARAMETER MEASUREMENT INFORMATION



NOTES: A. The pulse generator has the following characteristics: PRR = 100 kHz, $Z_O = 50 \Omega$.
 B. C_L includes probe and jig capacitance.

Figure 1. Test Circuit and Voltage Waveforms



NOTES: A. The pulse generator has the following characteristics: PRR = 12.5 kHz, $Z_O = 50 \Omega$.
 B. C_L includes probe and jig capacitance.

Figure 2. Latch-Up Test 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)
SN75437ANE	Active	Production	PDIP (NE) 16	25 TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN75437ANE
SN75437ANE.A	Active	Production	PDIP (NE) 16	25 TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN75437ANE
SN75437ANEE4	Active	Production	PDIP (NE) 16	25 TUBE	Yes	NIPDAU	N/A for Pkg Type	0 to 70	SN75437ANE

⁽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.

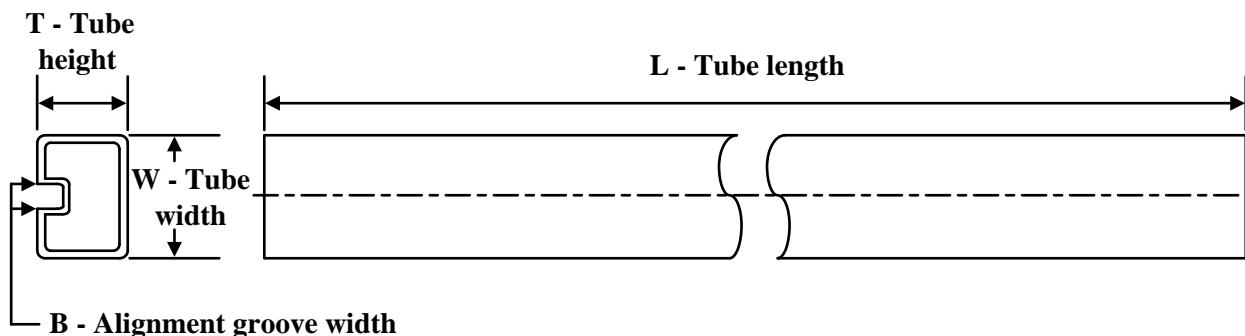
⁽⁵⁾ **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will 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


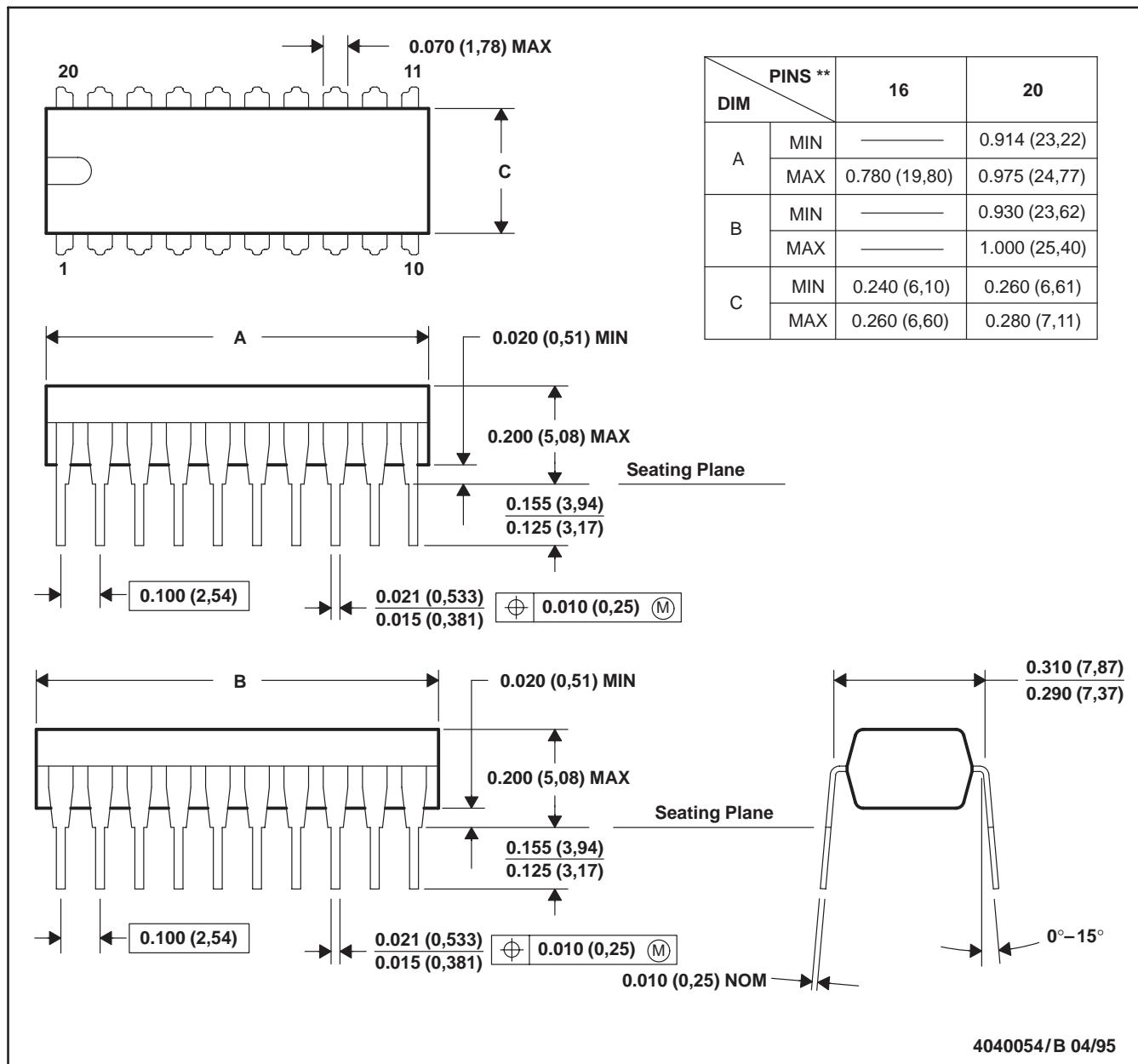
*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (μm)	B (mm)
SN75437ANE	NE	PDIP	16	25	506	13.97	11230	4.32
SN75437ANE.A	NE	PDIP	16	25	506	13.97	11230	4.32
SN75437ANEE4	NE	PDIP	16	25	506	13.97	11230	4.32

NE (R-PDIP-T**)

PLASTIC DUAL-IN-LINE PACKAGE

20 PIN SHOWN



NOTES: A. All linear dimensions are in inches (millimeters).

B. This drawing is subject to change without notice.

C. Falls within JEDEC MS-001 (16 pin only)

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATA SHEETS), 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 will 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](#) or other applicable terms available either on [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.

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

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2025, Texas Instruments Incorporated