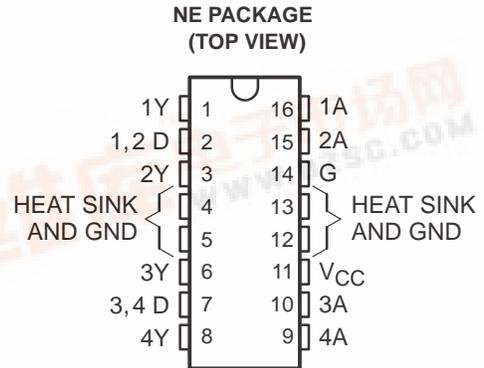


- **Saturating Outputs With Low On-State Resistance**
- **High-Impedance Inputs Compatible With CMOS and TTL Levels**
- **Very Low Standby Power . . . 21 mW Max**
- **High-Voltage Outputs . . . 70 V Min**
- **No Power-Up or Power-Down Output Glitch**
- **No Latch-Up Within Recommended Operating Conditions**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

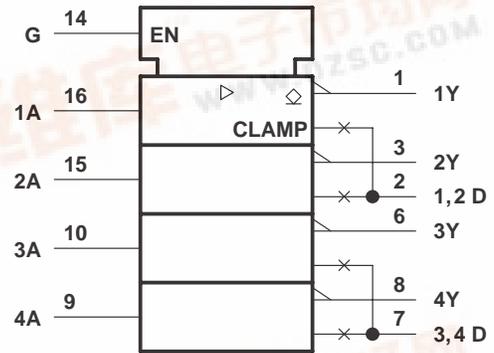
description

The SN75436 and SN75437A quadruple peripheral drivers are designed for use in systems requiring high current, high voltage, and high load power. Each device features four inverting open-collector outputs with a common-enable 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 SN75436 and SN75437A are offered in a 16-pin wide-body surface-mount (NE) package and is characterized for operation over the free-air temperature of 0°C to 70°C.



logic symbol†



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

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

SELECTION GUIDE

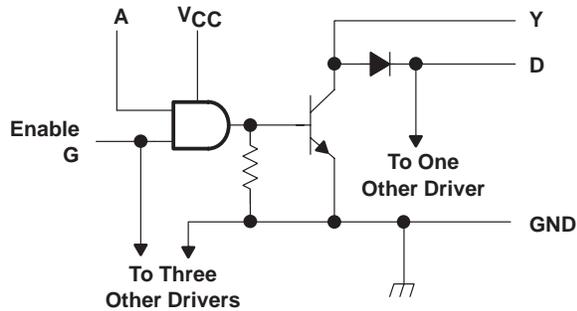
FEATURE	SN75436	SN75437A	UNIT
Maximum recommended output current	0.5	0.5	A
Maximum V_{OL} at maximum I_{OL}	0.5	0.5	V
Maximum recommended output supply voltage in an inductive switching circuit, V_S	50	35	V



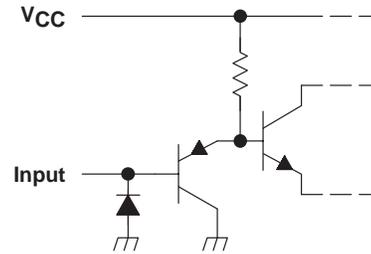
SN75436, SN75437A QUADRUPLE PERIPHERAL DRIVERS

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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
Operating free-air temperature range, T_A	0°C to 70°C
Storage temperature range, T_{stg}	-65°C to 150°C
Lead temperature 1,6 mm (1/16-inch) from case for 10 seconds	260°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	SN75436			SN75437A			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
Supply voltage, V_{CC}	4.75	5	5.25	4.75	5	5.25	V
High-level input voltage, V_{IH}	2			2			V
Low-level input voltage, V_{IL}			0.8			0.8	V
Output supply voltage in inductive switching circuit (see Figure 2), V_S			50			35	V
Output current, I_O			0.5			0.5	A
Operating free-air temperature, T_A	0		70	0		70	°C

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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	$V_{CC} = 4.75\text{ V}$, $I_{OL} = 250\text{ mA}$	0.14	0.25		V
		$V_{IH} = 2\text{ V}$, $I_{OL} = 500\text{ mA}$	0.28	0.5		
$V_{R(K)}$	Output clamp-diode reverse voltage	$V_{CC} = 4.75\text{ V}$, $I_R = 100\text{ }\mu\text{A}$	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	$V_{CC} = 4.75\text{ V}$, $V_{IH} = 2\text{ V}$, $V_{IL} = 0.8\text{ V}$, $V_{OH} = 70\text{ V}$	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 $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$.

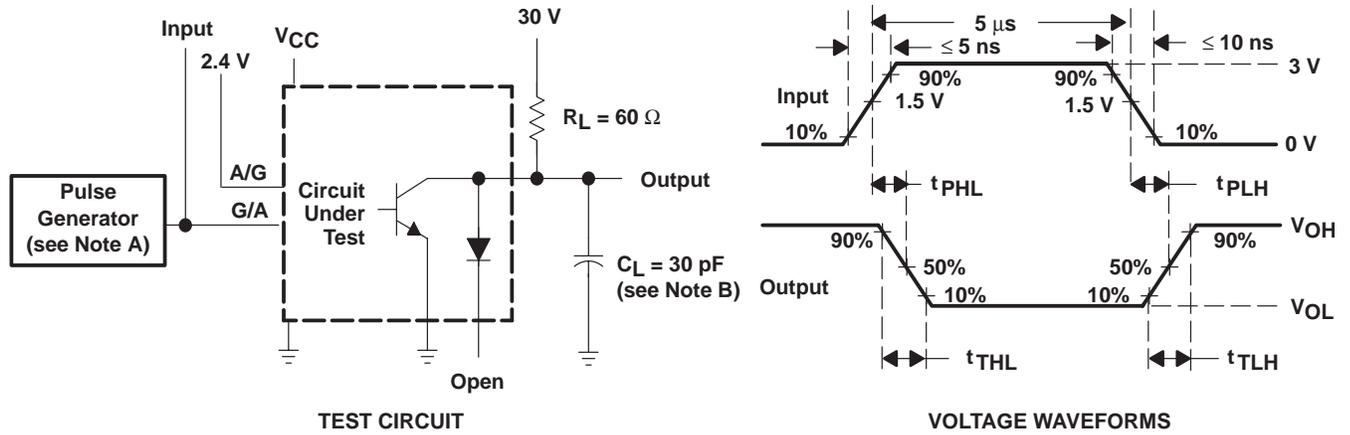
switching characteristics, $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	Propagation delay time, low-to-high-level output	$C_L = 30\text{ pF}$, $R_L = 60\text{ }\Omega$, 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	SN75436 $V_S = 50\text{ V}$, $I_O \approx 500\text{ mA}$, $R_L = 100\text{ }\Omega$, See Figure 2	$V_S - 10$			mV
		SN75437A $V_S = 35\text{ V}$, $I_O \approx 500\text{ mA}$, $R_L = 70\text{ }\Omega$, See Figure 2	$V_S - 10$			mV

SN75436, SN75437A QUADRUPLE PERIPHERAL DRIVERS

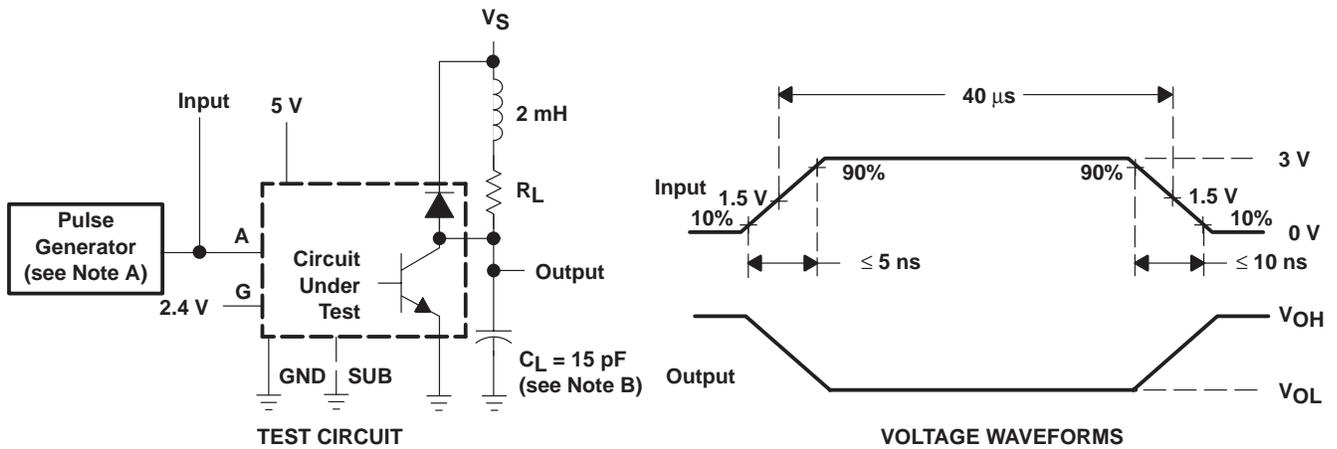
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PARAMETER MEASUREMENT INFORMATION



- 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

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